EdLoop

EdLoop EAPCET

MATHEMATICS · EAPCET (EAMCET)

Circles

Previous Year Questions with answers

801 questions · **149** papers · **2010–2026** · newest paper first

Step-by-step solutions for every question: free in the EdLoop EAPCET app (Google Play) · pyq.edloop.in

What is in this PDF: every Circles question we hold from past AP and TS EAPCET (called EAMCET until 2020 in Andhra Pradesh and 2023 in Telangana) papers, with its options and answer. Where an answer comes from a source other than the official final key, it says so next to the answer.

Step-by-step solutions for every question are free in the EdLoop EAPCET app (Google Play) and on app.edloop.in. More chapters: pyq.edloop.in/free-pdfs/

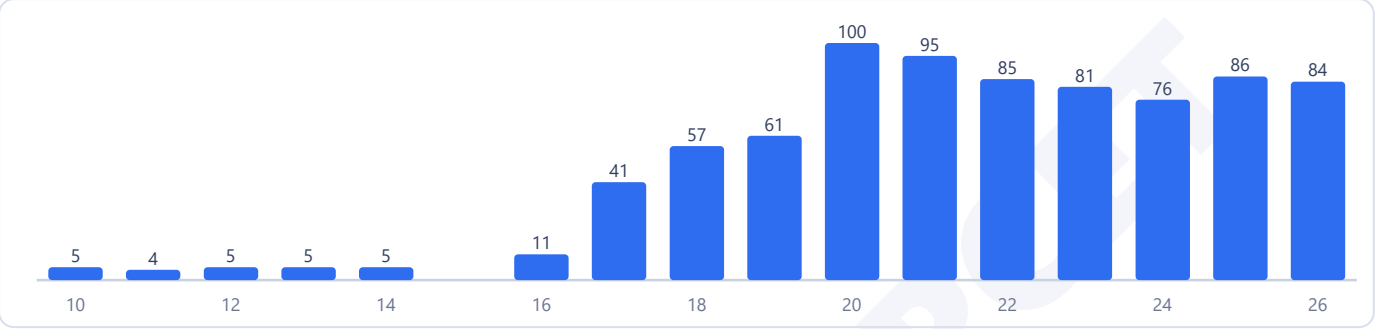
EdLoop EA

Chapter at a glance

6.7%	801	77 of 77	801 / 0
of Mathematics questions, 2022–2026	questions, 2010–2026	papers asked it, 2022–2026	MCQ / numerical, 2010–2026

Trend. Steady: 5.3 questions per paper in 2024–2026 against 5.4 in 2022–2023.

Questions per year



Counts are the questions we hold: 801 in 149 papers. 18 questions in this chapter came back in more than one paper.

Most-asked topics in this chapter (2010–2026)

Family of Circles & Two Circles	372
Tangents & Normals	240
Equation of a Circle	189

How often it comes up

Circles represents a massive, foundational pillar of coordinate geometry in the senior secondary syllabus. Across the entire historical timeline from 2010 through 2026, Circles supplied 801 questions across 149 evaluated exam papers, featuring in all 149 papers to maintain an average of 5.4 questions per paper and a 6.7 percent subject share. In contemporary testing from 2022 to 2026, Circles preserved this complete appearance in every sitting, delivering 412 questions across 77 papers (yielding 5.4 questions per paper and a 6.7 percent subject share). This extraordinary volume positions Circles at rank 4 among all 29 mathematics chapters.

Every recent paper features between five and six questions on circle geometry. Across the three most recent testing years from 2024 to 2026, question setters included 246 questions across 46 sittings (present in all 46 papers, averaging 5.3 questions per test and a 6.7 percent share). During the older examination timeframe from 2010 to 2021, the chapter provided 389 questions across 72 sittings (appearing in all 72 papers, 5.4 per test, 6.8 percent share). Evaluating historical stability, comparing early testing with the last three years shows the share is about the same, and comparing recent testing with the last three years also shows the share is about the same. Across the two regional boards between 2022 and 2026, Andhra Pradesh administered 240 questions across 48 papers (all 48 papers, 5.0 per test, 6.3 percent share), while Telangana administered 172 questions across 29 papers (all 29 papers, 5.9 per test, 7.4 percent share).

Most-asked topics

Questions in this unit distribute across three core analytical branches:

- **Family of Circles & Two Circles**: Delivering 372 total questions, with 183 appearing in modern sessions (tested through 2026). Key concepts encompass radical axis and radical center, orthogonal circles condition (two g one g two plus two f one f two equals c one plus c two), coaxial systems of circles, limiting points, direct and transverse common tangents, external and internal centers of similitude, and common chords.

- **Tangents & Normals**: Supplying 240 total questions, with 116 emerging in recent testing (tested through 2026). Coverage includes tangent equation at a point, condition of tangency for y equals m x plus c, length of tangent from an external point (square root of S one one), pair of tangents (S S one one equals S one squared), chord of contact, pole and polar relationships, and normal lines passing through the center.
- **Equation of a Circle**: Accounting for 189 total questions, with 113 set in recent examinations (tested through 2026). Focus areas involve standard and general forms, circles passing through three non-collinear points, parametric equations (x equals h plus r cos theta, y equals k plus r sin theta), circles touching coordinate axes, power of a point, and inverse points with respect to a circle.

What the questions look like

Examiners test interactions between circles, common tangents, radical axes, and parametric points.

A ubiquitous problem asks for the condition of orthogonality between two circles, requiring students to equate two g one g two plus two f one f two to c one plus c two to solve for unknown linear coefficients. Another classic format involves finding the external or internal center of similitude, where candidates divide the line segment joining circle centers in the direct ratio of their radii (externally or internally). Tangent questions frequently ask for the length of chord of contact or area of the triangle formed by a pair of tangents and their chord of contact, evaluated via r L cubed divided by r squared plus L squared.

How to practise it

Master the relative positions of two circles with centers C one, C two and radii r one, r two. If center distance d exceeds r one plus r two, four common tangents exist; if d equals r one plus r two, three tangents exist; if absolute difference of radii is less than d less than their sum, two tangents exist; if d equals their difference, one tangent exists; if d is strictly less than their difference, zero tangents exist.

Memorize the orthogonality condition: two g one g two plus two f one f two equals c one plus c two. For the radical axis of two non-concentric circles, subtract their normalized equations: S minus S prime equals zero. Tangents drawn from any point on the radical axis to both circles have equal lengths.

EdLoop EAPCET

Q1 AP EAPCET 2026 · 18 May · Shift 1 MCQ

If the centre of a circle S is $(2, 4)$ and the length of the chord made by the secant $x + y + 2 = 0$ drawn to S is 6 units, then the equation of the circle S is

(A) $x^2 + y^2 - 4x - 8y + 21 = 0$
(B) $x^2 + y^2 + 4x + 8y + 21 = 0$
(C) $x^2 + y^2 - 4x - 8y - 21 = 0$
(D) $x^2 + y^2 + 4x + 8y - 21 = 0$

Answer: (C) $x^2 + y^2 - 4x - 8y - 21 = 0$ · The council's preliminary key

Q2 AP EAPCET 2026 · 18 May · Shift 1 MCQ

The equation of the line that is a tangent to the circle $x^2 + y^2 - 6x + 4y + 12 = 0$ is

(A) $x + 3y + 7 = 0$
(B) $12x + 5y + 11 = 0$
(C) $5x + 12y - 4 = 0$
(D) $x - 3y - 7 = 0$

Answer: (C) $5x + 12y - 4 = 0$ · The council's preliminary key

Q3 AP EAPCET 2026 · 18 May · Shift 1 MCQ

If the points $(2, 0)$, $(0, 1)$, $(4, 0)$, $(0, k)$ are concyclic, then $k =$

(A) 4
(B) 6
(C) 8
(D) 2

Answer: (C) 8 · The council's preliminary key

Q4 AP EAPCET 2026 · 18 May · Shift 1 MCQ

For all real values of λ, the point that lies on the polar of $(2\lambda, \lambda - 4)$ with respect to the circle $x^2 + y^2 - 4x - 6y + 1 = 0$ is

(A) $(2, 1)$
(B) $(1, 1)$
(C) $(3, -1)$
(D) $(3, 1)$

Answer: (D) $(3, 1)$ · The council's preliminary key

EdLoop EAPCET

Q5 AP EAPCET 2026 · 18 May · Shift 1 MCQ

The equation of the circle passing through the points of intersection of the circles $x^2+y^2-2x-4y+1=0$, $x^2+y^2-4x-2y+4=0$ and having its centre on the line $x-2y-3=0$ is

(A) $x^2+y^2-6x+7=0$
(B) $x^2+y^2+6x+7=0$
(C) $x^2+y^2+6x-7=0$
(D) $x^2+y^2-6x-7=0$

Answer: (A) $x^2+y^2-6x+7=0$ · The council's preliminary key

Q6 AP EAPCET 2026 · 18 May · Shift 2 MCQ

If $2x+y-2=0$ and $6x-4y+1=0$ are two normals of a circle S and the length of the perpendicular drawn from $(2,3)$ to the line $3x+4y-3=0$ is the radius of S, then the interior point of the circle S among the following options is

(A) $(-1,-3)$
(B) $(-3,1)$
(C) $(1,-3)$
(D) $(3,1)$

Answer: (D) $(3,1)$ · The council's preliminary key

Q7 AP EAPCET 2026 · 18 May · Shift 2 MCQ

The line $5x-12y-4=0$ cuts the circle $x^2+y^2-2x+2y+c=0$ at two points A,B . If $AB=2\sqrt{3}$, then the length of the tangent drawn from the point $(2,1)$ to the given circle is

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (A) 1 · The council's preliminary key

Q8 AP EAPCET 2026 · 18 May · Shift 2 MCQ

The perpendicular distance from origin to the tangent drawn at the point $P\left(\frac{\pi}{4}\right)$ to the circle $x^2+y^2-4x-4y+6=0$ is

(A) 4
(B) $3\sqrt{2}$
(C) 6
(D) $5\sqrt{2}$

Answer: (B) $3\sqrt{2}$ · The council's preliminary key

Q9 AP EAPCET 2026 · 18 May · Shift 2 MCQ

The sum of the slopes of the common tangents drawn to the circles $x^2+y^2+4x-2y-11=0$ and $x^2+y^2-2x+6y+6=0$ is

(A) $\frac{24}{5}$
(B) $-\frac{24}{5}$
(C) $\frac{8}{3}$
(D) $-\frac{8}{3}$

Answer: (B) $-\frac{24}{5}$ · The council's preliminary key

Q10 AP EAPCET 2026 · 18 May · Shift 2 MCQ

Let θ be the angle between the circles $x^2+y^2-4x+2fy-f=0$ and $x^2+y^2+2fx-4y-f=0$. If $\cos\theta=\frac{9}{16}$ and $f\in\mathbb{Z}$ then the distance between the centres of these circles is

(A) $\frac{10\sqrt{2}}{3}$
(B) $5\sqrt{2}$
(C) 5
(D) 13

Answer: (B) $5\sqrt{2}$ · The council's preliminary key

Q11 AP EAPCET 2026 · 15 May · Shift 1 MCQ

If a circle S passes through the point (a,b) and cuts the circle $x^2+y^2=4$ orthogonally, then the locus of the centre of S is

(A) $2ax-2by+(a^2+b^2+4)=0$
(B) $2ax+2by-(a^2+b^2+4)=0$
(C) $2ax+2by+(a^2+b^2+4)=0$
(D) $2ax-2by-(a^2+b^2+4)=0$

Answer: (B) $2ax+2by-(a^2+b^2+4)=0$ · The council's preliminary key

Q12 AP EAPCET 2026 · 15 May · Shift 1 MCQ

The interval in which all real values of λ lie for which exactly two common tangents can be drawn to the circles $x^2+y^2-4x-4y+6=0$ and $x^2+y^2-10x-10y+\lambda=0$ is

(A) $(12, 24)$
(B) $(12, 32)$
(C) $(18, 42)$
(D) $(18, 48)$

Answer: (C) $(18, 42)$ · The council's preliminary key

Q13 AP EAPCET 2026 · 15 May · Shift 1 MCQ

The sum of the squares of the lengths of the chords intercepted on the circle $x^2 + y^2 = 16$ by the lines $x + y = n, n \in \mathbb{N}$ is

(A) 320
(B) 210
(C) 180
(D) 120

Answer: (B) 210 · The council's preliminary key

Q14 AP EAPCET 2026 · 15 May · Shift 1 MCQ

Two circles, each of radius 5 units, touch each other at $(1, 2)$. If the equation of their common tangent is $4x + 3y = 10$, then equation of one of those circles is

(A) $x^2 + y^2 - 10x + 2y + 1 = 0$
(B) $x^2 + y^2 + 6x - 10y + 9 = 0$
(C) $x^2 + y^2 + 6x + 2y - 15 = 0$
(D) $x^2 + y^2 = 5$

Answer: (C) $x^2 + y^2 + 6x + 2y - 15 = 0$ · The council's preliminary key

Q15 AP EAPCET 2026 · 15 May · Shift 1 MCQ

A circle C cuts the circles $x^2 + y^2 - 4x + 6y + 4 = 0$ and $x^2 + y^2 + 6x - 4y + 9 = 0$ orthogonally. If origin lies on this circle C, then the radius of the circle C is

(A) 10
(B) $\frac{\sqrt{85}}{2}$
(C) $2\sqrt{3}$
(D) 5

Answer: (B) $\frac{\sqrt{85}}{2}$ · The council's preliminary key

Q16 AP EAPCET 2026 · 15 May · Shift 2 MCQ

A square is inscribed in a circle with a center at $(5, 3)$ and radius 2. If one side of the square is parallel to the line $x - y + 3 = 0$, then the sum of the y-coordinates of the four vertices of the square is

EdLoop EAPCET

(A) 20
(B) -15
(C) -25
(D) 12

Answer: (D) 12 · The council's preliminary key

Q17 AP EAPCET 2026 · 15 May · Shift 2 MCQ

$S=0$ is a circle with center at $(1,1)$ and of radius 1. $S'=0$ is another circle having center at $(-1,0)$ and radius 2. If the length of the common chord of these two circles is k, then $5k^2+1=$

(A) $\sqrt{2}$
(B) 17
(C) 16
(D) $\sqrt{5}$

Answer: (B) 17 · The council's preliminary key

Q18 AP EAPCET 2026 · 15 May · Shift 2 MCQ

If the equation of a circle passing through the points of intersection of the circles $x^2+y^2-6x-8y+10=0$ and $x^2+y^2+2x-4y-2=0$ and also passing through the center of the circle $x^2+y^2=4$ is $x^2+y^2+2gx+2fy=0$, then $g+f=$

(A) 5
(B) -3
(C) -2
(D) 7

Answer: (C) -2 · The council's preliminary key

Q19 AP EAPCET 2026 · 15 May · Shift 2 MCQ

If the pole of the line $2x+3y-20=0$ with respect to the circle $x^2+y^2-4x+6y-12=0$ is (α,β), then the number of tangents that can be drawn through (α,β) to the given circle is

(A) β
(B) $\alpha-2$
(C) $\beta+1$
(D) α

Answer: (A) β · The council's preliminary key

Q20 AP EAPCET 2026 · 15 May · Shift 2 MCQ

The centre of the circle which intersects the circles $x^2+y^2-8x+10y+5=0$, $x^2+y^2-2x+2y+1=0$ and $x^2+y^2+2x-2y-7=0$ orthogonally is

(A) $(-6, -4)$
(B) $(6, 4)$
(C) $(3, 5)$
(D) $(-3, -5)$

Answer: (B) $(6, 4)$ · The council's preliminary key

Q21 AP EAPCET 2026 · 14 May · Shift 1 MCQ

If the chord $y = mx + 1$ of the circle $x^2 + y^2 = 1$ subtends an angle 45° at the major segment of the circle, then the value of m is

(A) $2 \pm \sqrt{2}$
(B) $-2 \pm \sqrt{2}$
(C) $-1 \pm \sqrt{2}$
(D) ± 1

Answer: (D) ± 1 · The council's preliminary key

Q22 AP EAPCET 2026 · 14 May · Shift 1 MCQ

Equation of the circle with origin as centre and passing through the vertices of an equilateral triangle whose median is of length 3a is

(A) $x^2 + y^2 = 4a^2$
(B) $x^2 + y^2 = 2a^2$
(C) $x^2 + y^2 = 9a^2$
(D) $x^2 + y^2 = 16a^2$

Answer: (A) $x^2 + y^2 = 4a^2$ · The council's preliminary key

Q23 AP EAPCET 2026 · 14 May · Shift 1 MCQ

The tangent to the circle $C_1 : x^2 + y^2 - 2x - 1 = 0$ at the point $(2, 1)$ cuts off a chord of length 4 units from a circle C_2 whose centre is $(3, -2)$. The radius of the circle C_2 is

(A) $\sqrt{6}$
(B) 2
(C) 3
(D) $2\sqrt{2}$

Answer: (A) $\sqrt{6}$ · The council's preliminary key

Q24 AP EAPCET 2026 · 14 May · Shift 1 MCQ

If the radical axis of the circles $x^2 + y^2 + 2gx + 2fy + c = 0$ and $2x^2 + 2y^2 + 3x + 8y + 2c = 0$ touches the circle $x^2 + y^2 + 2x + 2y + 1 = 0$, then

EdLoop EAPCET

(A) $g = \frac{3}{2}$ or $f \neq 2$
(B) $g \neq \frac{3}{4}$ or $f = \frac{1}{2}$
(C) $g = \frac{1}{2}$ or $f = \frac{3}{4}$
(D) $g = \frac{3}{4}$ or $f = 2$

Answer: (D) $g = \frac{3}{4}$ or $f = 2$ · The council's preliminary key

Q25 AP EAPCET 2026 · 14 May · Shift 1 MCQ

The radical axis of two orthogonal circles is $x + 1 = 0$. If one of those circles is $x^2 + y^2 = 4$, then the other circle is

(A) $x^2 + y^2 + 8x + 4 = 0$
(B) $x^2 + y^2 - 4x + 4 = 0$
(C) $x^2 + y^2 - 8x + 2y + 8 = 0$
(D) $x^2 + y^2 - 16 = 0$

Answer: (A) $x^2 + y^2 + 8x + 4 = 0$ · The council's preliminary key

Q26 AP EAPCET 2026 · 14 May · Shift 2 MCQ

The point of intersection of the lines $2x + 3y - 12 = 0$ and $3x - 2y - 5 = 0$ is the centre of a circle $S = 0$. If AB is a chord of $S = 0$ and it is a diameter of the circle $x^2 + y^2 - 10x + 4y + 13 = 0$, then the radius of the circle $S = 0$ is

(A) 4
(B) 6
(C) 16
(D) 12

Answer: (B) 6 · The council's preliminary key

Q27 AP EAPCET 2026 · 14 May · Shift 2 MCQ

The centre of a circle $S = 0$ is at $(2, 5)$ and its radius is r. $S_1 = 0$ is a circle which lies in the second quadrant and touches the coordinate axes and intersects the circle $S = 0$ at two points. If radius of circle $S_1 = 0$ is 2, then the possible values of r lie in the interval

(A) $(2, 8)$
(B) $(8, 14)$
(C) $(3, 7)$
(D) $(7, 10)$

Answer: (C) $(3, 7)$ · The council's preliminary key

EdLoop EAPCET

Q28 AP EAPCET 2026 · 14 May · Shift 2 MCQ

If the tangent drawn at $(\sqrt{2}, 1)$ on the circle $x^2 + y^2 = 3$ is also a tangent to the two circles of equal radius $2\sqrt{3}$ with centres at $(0, \beta_1)$ and $(0, \beta_2)$, then $|\beta_1 - \beta_2| =$

(A) 6
(B) 12
(C) 18
(D) 5

Answer: (B) 12 · The council's preliminary key

Q29 AP EAPCET 2026 · 14 May · Shift 2 MCQ

The external centre of similitude of the two circles
$x^2 + y^2 - 4x + 6y + 4 = 0$ and $x^2 + y^2 - 2x + 2y - 2 = 0$ is

(A) $(1, -3)$
(B) $(-1, 3)$
(C) $(-1, -3)$
(D) $(1, 3)$

Answer: (B) $(-1, 3)$ · The council's preliminary key

Q30 AP EAPCET 2026 · 14 May · Shift 2 MCQ

If $x^2 + y^2 - 2x + 2fy + c = 0$ intersects the two circles $x^2 + y^2 + 2x - 4y + 1 = 0$ and $x^2 + y^2 - 4x - 2y - 11 = 0$ orthogonally, then $f + c =$

(A) 20
(B) 17
(C) 12
(D) 24

Answer: (D) 24 · The council's preliminary key

Q31 AP EAPCET 2026 · 13 May · Shift 1 MCQ

If a circle passing through the points $(1, 5)$ and $(4, 0)$ makes equal intercepts on coordinate axes and if its centre lies in the first quadrant, then $\sqrt{4g^2 - c^2} =$

(A) 2
(B) 4
(C) 3
(D) 5

Answer: (C) 3 · The council's preliminary key

Q32 AP EAPCET 2026 · 13 May · Shift 1 MCQ

If a tangent drawn to the circle $x^2 + y^2 - 6x - 8y - 11 = 0$ is perpendicular to the line $3x + 4y + k = 0$ then the distance from the origin to this tangent is

(A) 4
(B) 5
(C) 6
(D) 2

Answer: (C) 6 · The council's preliminary key

Q33 AP EAPCET 2026 · 13 May · Shift 1 MCQ

If L represents a normal drawn at the point $P\left(\frac{\pi}{4}\right)$ on the circle $x^2 + y^2 + 6x - 6y - 14 = 0$, then the equation of the diameter of this circle which is perpendicular to L is

(A) $x - y + 6 = 0$
(B) $2x + y + 3 = 0$
(C) $3x + 2y + 3 = 0$
(D) $x + y = 0$

Answer: (D) $x + y = 0$ · The council's preliminary key

Q34 AP EAPCET 2026 · 13 May · Shift 1 MCQ

If (h, k) is the pole of the line $2x - 3y + 4 = 0$ with respect to the circle $x^2 + y^2 - 4x + 6y - 3 = 0$, then $10\,h + k =$

(A) 0
(B) 1
(C) 4
(D) 3

Answer: (B) 1 · The council's preliminary key

Q35 AP EAPCET 2026 · 13 May · Shift 1 MCQ

If the equation of a circle passing through the point $(2, 1)$ and the points of intersection of the circles $x^2 + y^2 + 4x - 6y - 3 = 0$ and $x^2 + y^2 - 2x + 2y - 2 = 0$ is $x^2 + y^2 + 2gx + 2fy + c = 0$, then $2g + f =$

(A) $-2c$
(B) $2c$
(C) c
(D) $-c$

Answer: (C) c · The council's preliminary key

Q36 AP EAPCET 2026 · 13 May · Shift 2 MCQ

If $x = \alpha + p\cos\theta,\ y = \beta + p\sin\theta$ represent a circle passing through the points $(2, -5), (3, -5)$ and $(2, 7)$, then $\frac{p^2}{\alpha^2} - \beta =$

(A) $\frac{29}{5}$
(B) $\frac{24}{5}$
(C) $\frac{12}{5}$
(D) $\frac{19}{4}$

Answer: (B) $\frac{24}{5}$ · The council's preliminary key

Q37 AP EAPCET 2026 · 13 May · Shift 2 MCQ

If θ is the angle between the tangents drawn to the circle $x^2 + y^2 - 2x + 4y + 3 = 0$ from $(1, 1)$ then, $|\tan\theta| =$

(A) $\frac{1}{\sqrt{2}}$
(B) $\frac{2\sqrt{14}}{5}$
(C) $\frac{\sqrt{3}}{2}$
(D) $\frac{\sqrt{14}}{5}$

Answer: (B) $\frac{2\sqrt{14}}{5}$ · The council's preliminary key

Q38 AP EAPCET 2026 · 13 May · Shift 2 MCQ

If $x - y - 2 = 0$ and $2x + 3y - 14 = 0$ are two diameters of the circle passing through the point P $(1, -2)$, then the point of intersection of the tangent drawn at P to the circle and the diameter $x - y - 2 = 0$ is

(A) $\left(\frac{3}{7}, \frac{-11}{7}\right)$
(B) $\left(\frac{2}{7}, \frac{-5}{7}\right)$
(C) $\left(\frac{1}{3}, \frac{-5}{3}\right)$
(D) $\left(\frac{4}{3}, \frac{-2}{3}\right)$

Answer: (A) $\left(\frac{3}{7}, \frac{-11}{7}\right)$ · The council's preliminary key

EdLoop EAPCET

Q39 AP EAPCET 2026 · 13 May · Shift 2 MCQ

From the point $(2,3)$ if the nearest and farthest points on a circle are $(2,2)$ and $(2,-8)$, then the equation of the chord of contact of the point $\mathrm{P}(2,3)$ with respect to this circle is

(A) $4x+6y-7=0$
(B) $y=\frac{7}{6}$
(C) $x=\frac{7}{3}$
(D) $2x+3y-1=0$

Answer: (B) $y=\frac{7}{6}$ · The council's preliminary key

Q40 AP EAPCET 2026 · 13 May · Shift 2 MCQ

If the circles $S\equiv x^2+y^2+4x+4y+8=0$ and $S'\equiv 2x^2+2y^2+6x+4y+c=0$ cut each other orthogonally, then the radius of $S'=0$ is

(A) 1
(B) 2
(C) $\frac{\sqrt{5}}{2}$
(D) $\frac{\sqrt{13}}{2}$

Answer: (C) $\frac{\sqrt{5}}{2}$ · The council's preliminary key

Q41 AP EAPCET 2026 · 12 May · Shift 1 MCQ

The centre of a circle $x^2+y^2+2gx+2fy+c=0$ is the point of intersection of the $X-$ axis and the line $x+by+g=0$. If the intercepts made by this circle on X and Y axes are 6 and $2\sqrt{5}$ respectively, then $g^2+f^2+c^2=$

(A) 41
(B) 32
(C) 29
(D) 25

Answer: (C) 29 · The council's preliminary key

Q42 AP EAPCET 2026 · 12 May · Shift 1 MCQ

The normal drawn at the point $(-1,-2)$ to a circle S is $y+2=0$ and the centre of the circle S does not lie in the 2^{nd} and 3^{rd} quadrants. If the intercept made by this circle on $X-axis$ is $8\sqrt{2}$, then the length of the tangent drawn to the circle from the point $(-1,-1)$ is

EdLoop EAPCET

(A) 1
(B) $\sqrt{2}$
(C) 3
(D) $\sqrt{5}$

Answer: (A) 1 · The council's preliminary key

Q43 AP EAPCET 2026 · 12 May · Shift 1 MCQ

If (h, k) is the inverse point of the point $(1, 3)$ with respect to the circle $x^2 + y^2 - 10x + 2y + 1 = 0$, then $h + k =$

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (D) 4 · The council's preliminary key

Q44 AP EAPCET 2026 · 12 May · Shift 1 MCQ

The tangents drawn from the point $(-1, -1)$ to the circle $x^2 + y^2 - 4x - 4y - 1 = 0$ touch the circle at the points A and B. If C is the centre of this circle, then the area of ΔABC is

(A) $3\sqrt{2}$
(B) $\frac{3}{\sqrt{2}}$
(C) $\frac{9}{2}$
(D) 9

Answer: (C) $\frac{9}{2}$ · The council's preliminary key

Q45 AP EAPCET 2026 · 12 May · Shift 1 MCQ

A circle $x^2 + y^2 - 2x + 2y + 1 = 0$ and a line $x - y - 1 = 0$ intersect at the points A and B. If the equation of the circle having AB as diameter is $x^2 + y^2 + 2gx + 2fy + c = 0$, then $2g + 2f =$

(A) $-2c + 1$
(B) $2c + 2$
(C) $-c + 3$
(D) c

Answer: (D) c · The council's preliminary key

EdLoop EAPCET

Q46 AP EAPCET 2026 · 12 May · Shift 2 MCQ

The power of a point $(1, 1)$ with respect to a circle S is 13 and the length of the tangent drawn from the point $(-1, 1)$ to the circle S is 1. If this circle S touches X – axis, then the radius of the circle S is

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (B) 2 · The council's preliminary key

Q47 AP EAPCET 2026 · 12 May · Shift 2 MCQ

The line $x = \alpha$ touches the circle $x^2 + y^2 + 4x + 4y - 1 = 0$ at the point $P(h, k)$. If P lies in the fourth quadrant and $Q = (-2, 2)$, then $PQ =$

(A) 5
(B) 4
(C) 3
(D) 2

Answer: (A) 5 · The council's preliminary key

Q48 AP EAPCET 2026 · 12 May · Shift 2 MCQ

If the equation of the Chord joining the points $P(\pi/6)$ and $P(\pi/3)$ on the circle $x^2 + y^2 + 6x - 4y + 9 = 0$ is $\frac{x}{a} + \frac{y}{b} = 1$, then $a^2 + b^2 =$

(A) 4
(B) 8
(C) 6
(D) 18

Answer: (C) 6 · The council's preliminary key

Q49 AP EAPCET 2026 · 12 May · Shift 2 MCQ

If $x - 2y + 3 = 0$ and $x - 5y - 8 = 0$ are the conjugate lines with respect to the circle $x^2 + y^2 - 4x + 6y + c = 0$, then $c =$

(A) -3
(B) -12
(C) 9
(D) 4

Answer: (D) 4 · The council's preliminary key

Q50 AP EAPCET 2026 · 12 May · Shift 2 MCQ

The equation of the circle passing through the points of intersection of the two circles $x^2+y^2-8x-2y+16=0$, $x^2+y^2-4x-4y-1=0$ and passing through $(2,-4)$ is

(A) $x^2+y^2+104x-58y-460=0$
(B) $x^2+y^2-104x+58y-460=0$
(C) $x^2+y^2+52x-104y+60=0$
(D) $x^2+y^2-104x-52y-60=0$

Answer: (A) $x^2+y^2+104x-58y-460=0$ · The council's preliminary key

Q51 TS EAPCET 2026 · 11 May · Shift 1 MCQ

A circle $S\equiv x^2+y^2+4x+2fy+c=0$ passes through the centre of the circle $x^2+y^2-4x+6y-2=0$. If the line $3x-3y=c$ passes through the centre of the circle $S=0$ then the length of the tangent drawn from the point $(1,1)$ to the circle $S=0$ is

(A) 8
(B) $\sqrt{2}$
(C) 5
(D) $\sqrt{10}$

Answer: (C) 5 · The council's preliminary key

Q52 TS EAPCET 2026 · 11 May · Shift 1 MCQ

Let $P=(0,2)$. Let $A(x_1,y_1)$ and $B(x_2,y_2)$ be two points on the circle $x^2+y^2-6x+4y+4=0$ such that PA is minimum and PB is maximum. Then $\dfrac{3(y_1-y_2)}{(x_2-x_1)}=$

(A) 8
(B) 2
(C) 1
(D) 4

Answer: (D) 4 · The council's preliminary key

Q53 TS EAPCET 2026 · 11 May · Shift 1 MCQ

Let $A(1,1)$ and $B(-1,-1)$ be the points of contact of the tangents drawn from a point P to the circle $x^2+y^2-2x+2y-2=0$. If C is the centre of the circle, then the centre of the circle passing through the points A, B, C and P is

(A) $\left(-\frac{1}{6}, -\frac{1}{3}\right)$
(B) $(0, 0)$
(C) $\left(-\frac{4}{3}, -\frac{1}{3}\right)$
(D) $\left(\frac{1}{6}, \frac{4}{3}\right)$

Answer: (B) $(0, 0)$ · The council's preliminary key

Q54 TS EAPCET 2026 · 11 May · Shift 1 MCQ

Distance between the internal and external centres of similitude with respect to the circles $x^2 + y^2 + 4x + 6y + 12 = 0$ and $x^2 + y^2 - 6x - 4y + 9 = 0$ is

(A) $5\sqrt{2}$
(B) $\frac{20\sqrt{2}}{3}$
(C) 16
(D) 5

Answer: (B) $\frac{20\sqrt{2}}{3}$ · The council's preliminary key

Q55 TS EAPCET 2026 · 11 May · Shift 1 MCQ

If the circles $x^2 + y^2 + 2gx + 6y + 4 = 0$ and $x^2 + y^2 - gx - 2y - 14 = 0$ cut each other orthogonally for a positive integral value of 'g', then the radical axis of these two circles is

(A) $3x + 8y + 18 = 0$
(B) $9x + 8y + 18 = 0$
(C) $3x + 4y + 9 = 0$
(D) $6x + 4y + 9 = 0$

Answer: (C) $3x + 4y + 9 = 0$ · The council's preliminary key

Q56 TS EAPCET 2026 · 11 May · Shift 1 MCQ

If the equation $x + 2y = 3$ represents the chord AB of the circle $x^2 + y^2 - 4y = 0$, then the equation of the circle with AB as diameter is

(A) $2x^2 + 2y^2 + 5x + 2y - 15 = 0$
(B) $2x^2 + 2y^2 - 5x - 18y + 15 = 0$
(C) $5x^2 + 5y^2 - 2x - 24y + 6 = 0$
(D) $5x^2 + 5y^2 + 2x - 16y - 6 = 0$

Answer: (D) $5x^2 + 5y^2 + 2x - 16y - 6 = 0$ · The council's preliminary key

Q57 TS EAPCET 2026 · 11 May · Shift 2 MCQ

The locus of the midpoints of the chords of the circle $x^2 + y^2 - 2x - 2y + 1 = 0$ which are parallel to the line $x + y + 2 = 0$ is

EdLoop EAPCET

(A) $x - y = 2$
(B) $2x - 3y = 4$
(C) $3x + 4y = 2$
(D) $x - y = 0$

Answer: (D) $x - y = 0$ · The council's preliminary key

Q58 TS EAPCET 2026 · 11 May · Shift 2 MCQ

If the locus of the midpoints of the chords of the circle $S \equiv x^2 + y^2 - 6x - 8y - 11 = 0$ which subtend a right angle at $A(1, 2)$ is another circle $S' = 0$, then the centre of $S' = 0$

(A) is the midpoint of the line segment joining A and the centre of $S = 0$
(B) Divides the line segment joining A and the centre of $S = 0$ in the ratio $1 : 2$
(C) Lies outside the circle $S = 0$
(D) A vertex of the triangle having A and the centre of $S = 0$ as other two vertices

Answer: (A) is the midpoint of the line segment joining A and the centre of $S = 0$ · The council's preliminary key

Q59 TS EAPCET 2026 · 11 May · Shift 2 MCQ

Let $L = 0$ be the chord of contact of $(5, 1)$ with respect to the circle $S \equiv x^2 + y^2 + 8x + 10y - 8 = 0$. If the pole of $L = 0$ with respect to the circle $S' = x^2 + y^2 + 4y - 21 = 0$ is $(-k, -h)$, then $k + h =$

(A) 35
(B) 77
(C) 143
(D) 15

Answer: (B) 77 · The council's preliminary key

Q60 TS EAPCET 2026 · 11 May · Shift 2 MCQ

Let $S \equiv x^2 + y^2 - 6x + 4y + c = 0$, $S' \equiv x^2 + y^2 - 4x + 6y + 9 = 0$, $S'' \equiv x^2 + y^2 + 5x + 3y + k = 0$ be three circles. If the angles of intersection of the circle $S' = 0$ with the circles $S = 0$ and $S'' = 0$ are respectively $\frac{\pi}{4}$ and $\frac{\pi}{2}$, then $c + k =$

(A) 1
(B) 15
(C) 21
(D) 9

Answer: (A) 1 · The council's preliminary key

Q61 TS EAPCET 2026 · 11 May · Shift 2 MCQ

The radical axis of the circles $x^2+y^2+4x+6y+7=0$ and $4x^2+4y^2+8x+12y-24=0$ is a tangent to the circle $x^2+y^2=13$ at a point (α,β), then $\alpha+\beta=$

(A) 0
(B) $-\frac{5}{2}$
(C) 1
(D) -5

Answer: (D) -5 · The council's preliminary key

Q62 TS EAPCET 2026 · 10 May · Shift 1 MCQ

The parametric equations of a circle passing through origin are given by $x=-g+5\cos\theta$ and $y=-f+5\sin\theta$. If the straight line passing through origin with slope $-\frac{4}{3}$ is the diameter of this circle, then the sum of the intercepts made by this circle on the coordinate axes is

(A) 14
(B) 7
(C) 10
(D) 11

Answer: (A) 14 · The council's preliminary key

Q63 TS EAPCET 2026 · 10 May · Shift 1 MCQ

If the length of the chord $x+y-1=0$ of the circle $x^2+y^2-6x+2fy-2=0$ $(f>0)$ is $\frac{6\sqrt{7}}{\sqrt{2}}$, then the length of the intercept made by this circle on Y-axis is

(A) $3\sqrt{3}$
(B) $12\sqrt{3}$
(C) $6\sqrt{3}$
(D) $4\sqrt{3}$

Answer: (C) $6\sqrt{3}$ · The council's preliminary key

Q64 TS EAPCET 2026 · 10 May · Shift 1 MCQ

If the straight line $x+by+1=0$ is a polar with respect to the circle $x^2+y^2-8x+10y-8=0$, but not a tangent and not a chord then all the values of b lie in the interval

EdLoop EAPCET

(A) $(-\infty, -1)$
(B) $(-\infty, -\frac{4}{3}) \cup (-\frac{3}{4}, \infty)$
(C) $(-1, 7)$
(D) $(-\frac{4}{3}, -\frac{3}{4})$

Answer: (D) $(-\frac{4}{3}, -\frac{3}{4})$ · The council's preliminary key

Q65 TS EAPCET 2026 · 10 May · Shift 1 MCQ

If the equation of a transverse common tangent drawn to the circles $x^2 + y^2 - 2x - 10y + 1 = 0$ and $x^2 + y^2 + 8x + 14y + 1 = 0$ is $5x + by + c = 0$ then $b + c =$

(A) 17
(B) 7
(C) 12
(D) 24

Answer: (C) 12 · The council's preliminary key

Q66 TS EAPCET 2026 · 10 May · Shift 1 MCQ

If the circles $x^2 + y^2 - 10x + 8y + 5 = 0$ and $x^2 + y^2 + 6x - 4y + c = 0$ cut each other orthogonally, then the sum of radii of these circles is

(A) 14
(B) 10
(C) 12
(D) 9

Answer: (A) 14 · The council's preliminary key

Q67 TS EAPCET 2026 · 10 May · Shift 1 MCQ

The length of the common chord of the circles $x^2 + y^2 - 8x - 6y - 11 = 0$ and $x^2 + y^2 - 6x + 8y + 9 = 0$ is

(A) $\sqrt{42}$
(B) 7
(C) $\frac{13}{2}$
(D) $\sqrt{46}$

Answer: (D) $\sqrt{46}$ · The council's preliminary key

Q68 TS EAPCET 2026 · 10 May · Shift 2 MCQ

A circle makes intercepts of lengths $2\sqrt{7}$ and $2\sqrt{12}$ on X and Y-axes respectively and its centre lies in the 4^{th} quadrant. If the equation $3x + 2y = 0$ represents a diameter of this circle, then the point which lies on this circle is

(A) $(1, 2)$
(B) $(1, 1)$
(C) $(-1, 1)$
(D) $(2, 1)$

Answer: (D) $(2, 1)$ · The council's preliminary key

Q69 TS EAPCET 2026 · 10 May · Shift 2 MCQ

If the equation of the tangent drawn to the circle $x^2 + y^2 - 4x - 8y - 5 = 0$ which is equally inclined to the coordinate axes is $x + by + c = 0$, $b < 0$, $c > 0$ then $2b + c =$

(A) $4 + 5\sqrt{2}$
(B) $5\sqrt{2}$
(C) $-4 - 5\sqrt{2}$
(D) $-5\sqrt{2}$

Answer: (B) $5\sqrt{2}$ · The council's preliminary key

Q70 TS EAPCET 2026 · 10 May · Shift 2 MCQ

For the circle $x^2 + y^2 + 12x - 4y - 9 = 0$, the straight line given by the equation $x + 2y - 3 = 0$ represents

(A) a tangent
(B) a chord but not its diameter
(C) a diameter
(D) a polar but not a tangent or a chord

Answer: (B) a chord but not its diameter · The council's preliminary key

Q71 TS EAPCET 2026 · 10 May · Shift 2 MCQ

If (h, k) is the external centre of similitude for the circles $x^2 + y^2 - 6x - 10y + 9 = 0$ and $x^2 + y^2 + 6x + 6y + 2 = 0$, then $\mathrm{k} - \mathrm{h} =$

(A) $-\frac{7}{9}$
(B) -8
(C) 52
(D) $\frac{1}{9}$

Answer: (B) -8 · The council's preliminary key

Q72 TS EAPCET 2026 · 10 May · Shift 2 MCQ

If θ is the angle between the circles $x^2 + y^2 + 2x - 4y - 4 = 0$ and $x^2 + y^2 - 4x - 6y - 3 = 0$ then $\cos\theta =$

EdLoop EAPCET

(A) $\frac{1}{2}$
(B) $-\frac{5}{8}$
(C) $-\frac{3}{8}$
(D) $\frac{\sqrt{3}}{2}$

Answer: (B) $-\frac{5}{8}$ · The council's preliminary key

Q73 TS EAPCET 2026 · 10 May · Shift 2 MCQ

If (h, k) is the centre of the circle which cuts the circles $x^2 + y^2 - 10x + 8y + 16 = 0$, $x^2 + y^2 + 6x - 4y + 9 = 0$ and $x^2 + y^2 - 6x - 8y + 16 = 0$ orthogonally, then $\frac{3}{h} + \frac{1}{k} =$

(A) 52
(B) 4
(C) 7
(D) 13

Answer: (D) 13 · The council's preliminary key

Q74 TS EAPCET 2026 · 9 May · Shift 1 MCQ

Let $(-h, -k)$ (h, k are integers) be the centre and r be the radius of a circle. If $3x + 4y - 24 = 0$, $3x - 4y - 32 = 0$ are two tangents and $4x + 3y - 1 = 0$ is a normal to this circle, then $(r + h + k) =$

(A) 8
(B) 7
(C) 5
(D) 4

Answer: (C) 5 · The council's preliminary key

Q75 TS EAPCET 2026 · 9 May · Shift 1 MCQ

Let P be any point on the circle $x^2 + y^2 = 16$ and $A = (1, 2)$. If the locus of the point which divides the line segment AP in the ratio $3 : 2$ is a circle, then its radius is

(A) 5
(B) 4
(C) $\frac{12}{5}$
(D) $\frac{13}{4}$

Answer: (C) $\frac{12}{5}$ · The council's preliminary key

Q76 TS EAPCET 2026 · 9 May · Shift 1 MCQ

If the line $4x - 3y + c = 0$ $(c < -10)$ makes an intercept of length 10 units on the circle $x^2 + y^2 - 2x + 4y - 23 = 0$, then $c =$

EdLoop EAPCET

(A) $-10-\sqrt{175}$
(B) $-10-\sqrt{75}$
(C) $-10-\sqrt{125}$
(D) $-10-\sqrt{150}$

Answer: (B) $-10-\sqrt{75}$ · The council's preliminary key

Q77 TS EAPCET 2026 · 9 May · Shift 1 MCQ

The tangent drawn at a point P on the circle $x^2+y^2+6x+6y-2=0$ cuts the line $5x-2y+6=0$ at a point Q. If $PQ=5$, then a point Q having integral coordinates is

(A) $(0,3)$
(B) $(2,8)$
(C) $(-2,-2)$
(D) $(-4,-7)$

Answer: (A) $(0,3)$ · The council's preliminary key

Q78 TS EAPCET 2026 · 9 May · Shift 1 MCQ

If two vertices of a quadrilateral are the centres of the circles $S\equiv x^2+y^2-2x-2y-2=0$, $S'\equiv x^2+y^2-6x-6y+14=0$ and the other two vertices of that quadrilateral are the points of intersection of these two circles $S=0$ and $S'=0$ then the area of the quadrilateral is

(A) 4
(B) $5\sqrt{2}$
(C) 7
(D) $\frac{5}{\sqrt{2}}$

Answer: (A) 4 · The council's preliminary key

Q79 TS EAPCET 2026 · 9 May · Shift 2 MCQ

If $S\equiv x^2+y^2+2x+4y+k=0$ is a circle lying totally inside the third quadrant and the point $\left(-\frac{1}{2},-\frac{1}{2}\right)$ lies outside the circle $S=0$, then the set of all real values of k is

(A) $(4,5]$
(B) $\left(\frac{1}{2},4\right]$
(C) $\left[\frac{5}{2},5\right)$
(D) $(5,6]$

Answer: (A) $(4,5]$ · The council's preliminary key

Q80 TS EAPCET 2026 · 9 May · Shift 2 MCQ

Let $L_1 \equiv 3x + 4y - 1 = 0$, $L_2 \equiv 8x - 6y + 1 = 0$, $L_3 \equiv 12x + 9y - 1 = 0$ are three tangents drawn to the circle $x^2 + y^2 + 2gx + 2fy + c = 0$ and let $L_1 > 0$, $L_2 > 0$, $L_3 > 0$ for $x = -g$ and $y = -f$. Then $g + 2f =$

(A) 0
(B) $\frac{1}{4}$
(C) 1
(D) $\frac{1}{2}$

Answer: (B) $\frac{1}{4}$ · The council's preliminary key

Q81 TS EAPCET 2026 · 9 May · Shift 2 MCQ

If $l_1x + m_1y + n_1 = 0$ and $l_2x + m_2y + n_2 = 0$ (G.C.D. of $(l_1, m_1, n_1) = 1$, G.C.D. of $(l_2, m_2, n_2) = 1$, $m_2 \neq 0$) are the tangents drawn from the point $(2, -1)$ to the circle $x^2 + y^2 = 4$, then $n_1 + n_2 =$

(A) $l_1 + l_2 + m_1 + m_2$
(B) $l_1 + l_2 + m_1$
(C) $l_1l_2m_2$
(D) $l_1l_2m_1$

Answer: (C) $l_1l_2m_2$ · The council's preliminary key

Q82 TS EAPCET 2026 · 9 May · Shift 2 MCQ

The external centre of similitude for the circles $x^2 + y^2 + 10x - 16y - 11 = 0$ and $x^2 + y^2 - 2x + 4y - 4 = 0$ is

(A) $\left(\frac{5}{7}, -\frac{4}{7}\right)$
(B) $(-2, 3)$
(C) $\left(\frac{25}{7}, -\frac{44}{7}\right)$
(D) $(-3, 5)$

Answer: (C) $\left(\frac{25}{7}, -\frac{44}{7}\right)$ · The council's preliminary key

Q83 TS EAPCET 2026 · 9 May · Shift 2 MCQ

If a circle 'S' passing through origin cuts another circle $x^2 + y^2 - 6x + 8y + 16 = 0$ orthogonally and makes a chord of maximum length on the line $x - y - 2 = 0$, then one of the diameters of this circle S is

(A) $x + y = 2$
(B) $2x + 3y = 4$
(C) $4x - 5y + 10 = 0$
(D) $5x + 6y + 12 = 0$

Answer: (D) $5x + 6y + 12 = 0$ · The council's preliminary key

Q84 TS EAPCET 2026 · 9 May · Shift 2 MCQ

T_1, T_2 are the points of contact of a transverse common tangent drawn to the circles $x^2 + y^2 + 4x - 10y + 4 = 0$ and $x^2 + y^2 - 6x + 8y + 9 = 0$. If T_1T_2 is a horizontal line, then the midpoint of the line segment T_1T_2 is

(A) $\left(\frac{23}{10}, 0\right)$
(B) $\left(\frac{13}{10}, 0\right)$
(C) $\left(\frac{1}{2}, 0\right)$
(D) $\left(\frac{2}{5}, 0\right)$

Answer: (C) $\left(\frac{1}{2}, 0\right)$ · The council's preliminary key

Q85 AP EAPCET 2025 · 27 May · Shift 1 MCQ

A circle touches both the coordinate axes and the straight line $L \equiv 4x + 3y - 6 = 0$ in the first quadrant. If this circle lies below the line $L = 0$, then the equation of that circle is

(A) $4x^2 + 4y^2 - 4x - 4y + 1 = 0$
(B) $4x^2 + 4y^2 - 4x - 24y + 1 = 0$
(C) $x^2 + y^2 - 6x - 6y + 9 = 0$
(D) $x^2 + y^2 - 6x - y - 9 = 0$

Answer: (A) $4x^2 + 4y^2 - 4x - 4y + 1 = 0$ · The council's preliminary key

Q86 AP EAPCET 2025 · 27 May · Shift 1 MCQ

If the smallest circle through the points of intersection of $x^2 + y^2 = a^2$ and $x\cos\alpha + y\sin\alpha = p,\ 0 < p < a$ is $x^2 + y^2 - a^2 + \lambda(x\cos\alpha + y\sin\alpha - p) = 0$ then $\lambda =$

(A) 1
(B) -1
(C) $-p$
(D) $-2p$

Answer: (D) $-2p$ · The council's preliminary key

Q87 AP EAPCET 2025 · 27 May · Shift 1 MCQ

If the lines $3x - 4y + 4 = 0$ and $6x - 8y - 7 = 0$ are the tangents to the same circle, then the area of that circle (in sq.units) is

(A) $\frac{3\pi}{4}$
(B) $\frac{16\pi}{25}$
(C) $\frac{9\pi}{4}$
(D) $\frac{9\pi}{16}$

Answer: (D) $\frac{9\pi}{16}$ · The council's preliminary key

Q88 AP EAPCET 2025 · 27 May · Shift 1 MCQ

Circles are drawn through the point $(2,0)$ to cut intercepts of length 5 units on the X-axis. If their centre lie in the first quadrant, then their equation is

(A) $3x^2+3y^2-27x-2ky+42=0$, $k\in\mathbb{R}^+$
(B) $x^2+y^2-2kx-9y+14=0$, $k\in\mathbb{R}^+$
(C) $x^2+y^2-9x-2ky+14=0$, $k\in\mathbb{R}^+$
(D) $x^2+y^2-9x-2ky-42=0$, $k\in\mathbb{R}^+$

Answer: (C) $x^2+y^2-9x-2ky+14=0$, $k\in\mathbb{R}^+$ · The council's preliminary key

Q89 AP EAPCET 2025 · 26 May · Shift 1 MCQ

The circles $x^2+y^2-2x-4y-4=0$ and $x^2+y^2+2x+4y-11=0$

(A) Cut each other orthogonally
(B) do not meet
(C) intersect at the points lying on the line $4x+8y-7=0$
(D) touch each other at the point lying on the line $4x+8y-7=0$

Answer: (C) intersect at the points lying on the line $4x+8y-7=0$ · The council's preliminary key

Q90 AP EAPCET 2025 · 26 May · Shift 1 MCQ

If the line $4x-3y+7=0$ touches the circle $x^2+y^2-6x+4y-12=0$ at (α,β), then $\alpha+2\beta=$

(A) 3
(B) -1
(C) 1
(D) -3

Answer: (C) 1 · The council's preliminary key

Q91 AP EAPCET 2025 · 26 May · Shift 1 MCQ

The slope of the common tangent drawn to the circles $x^2+y^2-4x+12y-216=0$ and $x^2+y^2+6x-12y+36=0$ is

EdLoop EAPCET

(A) 1
(B) -1
(C) $\frac{5}{12}$
(D) $\frac{12}{7}$

Answer: (C) $\frac{5}{12}$ · The council's preliminary key

Q92 AP EAPCET 2025 · 26 May · Shift 1 MCQ

If r_1 and r_2 are radii of two circles touching all the four circles $(x \pm r)^2 + (y \pm r)^2 = r^2$, then $\frac{r_1+r_2}{r} =$

(A) $\frac{\sqrt{2}+1}{2}$
(B) $3\sqrt{2}$
(C) $2\sqrt{2}$
(D) $\frac{3+\sqrt{2}}{4}$

Answer: (C) $2\sqrt{2}$ · The council's preliminary key

Q93 AP EAPCET 2025 · 26 May · Shift 1 MCQ

If the equation of the circle having the common chord to the circles $x^2 + y^2 + x - 3y - 10 = 0$ and $x^2 + y^2 + 2x - y - 20 = 0$ as its diameter is $x^2 + y^2 + \alpha x + \beta y + \gamma = 0$, then $\alpha + 2\beta + \gamma =$

(A) 0
(B) 1
(C) -1
(D) 2

Answer: (A) 0 · The council's preliminary key

Q94 AP EAPCET 2025 · 26 May · Shift 2 MCQ

A circle passing through origin cuts the coordinate axes is A and B. If the straight line AB passes through a fixed point (x_1, y_1), then the locus of the centre of the circle is

(A) $\frac{x_1}{x} + \frac{y_1}{y} = 1$
(B) $x_1 y = x y_1$
(C) $x y_1 + y x_1 = 2$
(D) $\frac{x_1}{x} + \frac{y_1}{y} = 2$

Answer: (D) $\frac{x_1}{x} + \frac{y_1}{y} = 2$ · The council's preliminary key

Q95 AP EAPCET 2025 · 26 May · Shift 2 MCQ

If (α, β) is the external centre of similitude of the circles $x^2 + y^2 = 3$ and $x^2 + y^2 - 2x + 4y + 4 = 0$, then $\frac{\beta}{\alpha} =$

(A) -3
(B) -2
(C) 2
(D) 3

Answer: (B) -2 · The council's preliminary key

Q96 AP EAPCET 2025 · 26 May · Shift 2 MCQ

The equation of the circle touching the lines $|x-2|+|y-3|=4$ is

(A) $x^2+y^2-6x-4y+5=0$
(B) $x^2+y^2-4x-6y+5=0$
(C) $x^2+y^2-x-2y-5=0$
(D) $x^2+y^2-2x-y-5=0$

Answer: (B) $x^2+y^2-4x-6y+5=0$ · The council's preliminary key

Q97 AP EAPCET 2025 · 26 May · Shift 2 MCQ

If the chord joining the points $(1,2)$ and $(2,-1)$ on a circle subtends an angle of $\frac{\pi}{4}$ at any point on its circumference then the equation of such a circle is

(A) $x^2+y^2+6x-2y+5=0$
(B) $x^2+y^2-6x-2y+5=0$
(C) $x^2+y^2-6x+2y+5=0$
(D) $x^2+y^2+6x+2y+5=0$

Answer: (B) $x^2+y^2-6x-2y+5=0$ · The council's preliminary key

Q98 AP EAPCET 2025 · 26 May · Shift 2 MCQ

The equation of the circle which cuts all the three circles $4(x-1)^2+4(y-1)^2=1$, $4(x+1)^2+4(y-1)^2=1$ and $4(x+1)^2+4(y+1)^2=1$ orthogonally is

(A) $4x^2+4y^2=49$
(B) $4(x-1)^2+4(y+1)^2=1$
(C) $(x-1)^2+(y+1)^2=4$
(D) $4x^2+4y^2=7$

Answer: (D) $4x^2+4y^2=7$ · The council's preliminary key

Q99 AP EAPCET 2025 · 24 May · Shift 1 MCQ

If the equation of the circle passing through the point $(8,8)$ and having the lines $x+2y-2=0$ and $2x+3y-1=0$ as its diameters is $x^2+y^2+px+qy+r=0$, then $p^2+q^2+r=$

(A) 244
(B) 100
(C) -44
(D) 44

Answer: (C) -44 · The council's preliminary key

Q100 AP EAPCET 2025 · 24 May · Shift 1 MCQ

If $2x - 3y + 1 = 0$ is the equation of the polar of a point $P(x_1, y_1)$ with respect to the circle $x^2 + y^2 - 2x + 4y + 3 = 0$, then $3x_1 - y_1 =$

(A) $\frac{1}{3}$
(B) -3
(C) 3
(D) $-\frac{1}{3}$

Answer: (C) 3 · The council's preliminary key

Q101 AP EAPCET 2025 · 24 May · Shift 1 MCQ

If a unit circle $S \equiv x^2 + y^2 + 2gx + 2fy + c = 0$ touches the circle $S' \equiv x^2 + y^2 - 6x + 6y + 2 = 0$ externally at the point $(-1, -3)$, then $g + f + c =$

(A) 0
(B) 1
(C) 15
(D) 17

Answer: (D) 17 · The council's preliminary key

Q102 AP EAPCET 2025 · 24 May · Shift 1 MCQ

$3x + 4y - 43 = 0$ is a tangent to the circle $S \equiv x^2 + y^2 - 6x + 8y + k = 0$ at a point P. If C is the centre of the circle and Q is a point which divides CP in the ratio $-1 : 2$, then the power of the point Q with respect to the circle $S = 0$ is

(A) 50
(B) 21
(C) 0
(D) 5

Answer: (C) 0 · The council's preliminary key

Q103 AP EAPCET 2025 · 24 May · Shift 1 MCQ

If the radical axis of the circles $x^2 + y^2 + 2gx + 2fy + c = 0$ and $2x^2 + 2y^2 + 3x + 8y + 2c = 0$ touches the circle $x^2 + y^2 + 2x + 2y + 1 = 0$, then

(A) either $g = \frac{3}{2}$ or $f \neq 2$
(B) either $g \neq \frac{3}{4}$ or $f = \frac{1}{2}$
(C) either $g = \frac{3}{4}$ or $f = 2$
(D) either $g = \frac{1}{2}$ or $f = \frac{3}{4}$

Answer: (C) either $g = \frac{3}{4}$ or $f = 2$ · The council's preliminary key

Q104 AP EAPCET 2025 · 23 May · Shift 1 MCQ

Let $A(5, 4)$ and $B(5, -4)$ be two points. If P is a point in the coordinate plane such that $\angle APB = \frac{\pi}{4}$, then the point P lies on the curve

(A) $x^2 + y^2 + 10x - 17 = 0$
(B) $x^2 + y^2 - 2x - 31 = 0$
(C) $x^2 + y^2 - 10x + 17 = 0$
(D) $x^2 + y^2 + 2x - 31 = 0$

Answer: (B) $x^2 + y^2 - 2x - 31 = 0$ · The council's preliminary key

Q105 AP EAPCET 2025 · 23 May · Shift 1 MCQ

From a point $P(-4, 0)$, two tangents are drawn to the circle $x^2 + y^2 - 4x - 6y - 12 = 0$ touching the circle at A and B. If the equation of the circle passing through P, A and B is $x^2 + y^2 + 2gx + 2fy + c = 0$, then $(g, f) =$

(A) $\left(-1, \frac{3}{2}\right)$
(B) $\left(\frac{3}{2}, -1\right)$
(C) $\left(\frac{1}{2}, \frac{-3}{2}\right)$
(D) $\left(1, \frac{-3}{2}\right)$

Answer: (D) $\left(1, \frac{-3}{2}\right)$ · The council's preliminary key

Q106 AP EAPCET 2025 · 23 May · Shift 1 MCQ

If the equation of the polar of the point $(\alpha, -1)$ with respect to the circle $x^2 + y^2 - 4x - 6y - 12 = 0$ is $y = \beta$, then $4(\alpha + \beta) =$

(A) -5
(B) 7
(C) -6
(D) 0

Answer: (A) -5 · The council's preliminary key

EdLoop EAPCET

Q107 AP EAPCET 2025 · 23 May · Shift 1 MCQ

If θ is the angle between the tangents drawn from the point $(-1,-1)$ to the circle $x^2+y^2-4x-6y+c=0$ and $\cos\theta=-\frac{7}{25}$, then the radius of the circle is

(A) 4
(B) 1
(C) 2
(D) 3

Answer: (A) 4 · The council's preliminary key

Q108 AP EAPCET 2025 · 23 May · Shift 1 MCQ

If the power of the point $(1,6)$ with respect to the circle $x^2+y^2+4x-6y-a=0$ is -16, then $a=$

(A) 7
(B) 11
(C) 13
(D) 21

Answer: (D) 21 · The council's preliminary key

Q109 AP EAPCET 2025 · 23 May · Shift 1 MCQ

The radius of the circle passing through the points of intersection of the circles $x^2+y^2+2x+4y+1=0$, $x^2+y^2-2x-4y-4=0$ and intersecting the circle $x^2+y^2=6$ orthogonally is

(A) $\sqrt{19}$
(B) 5
(C) $\sqrt{39}$
(D) 4

Answer: (C) $\sqrt{39}$ · The council's preliminary key

Q110 AP EAPCET 2025 · 23 May · Shift 2 MCQ

If the circles $x^2+y^2+5kx+2y+k=0$ and $2x^2+2y^2+2kx+3y-1=0$, $k\in R$ intersect at points P and Q, then the line $4x+5y-k=0$ passes through P and Q for

(A) exactly one value of k
(B) exactly two values of k
(C) no value of k
(D) infinitely many values of k

Answer: (C) no value of k · The council's preliminary key

Q111 AP EAPCET 2025 · 23 May · Shift 2 MCQ

The slope of one of the direct common tangents drawn to the circles $x^2+y^2-2x+4y+1=0$ and $x^2+y^2-4x-2y+4=0$ is

(A) 0
(B) $\frac{4}{3}$
(C) $\frac{3}{4}$
(D) 1

Answer: (B) $\frac{4}{3}$ · The council's preliminary key

Q112 AP EAPCET 2025 · 23 May · Shift 2 MCQ

If $(1,a)$, $(b,2)$ are conjugate points with respect to the circle $x^2+y^2=25$, then $4a+2b=$

(A) 25
(B) 50
(C) 100
(D) 150

Answer: (B) 50 · The council's preliminary key

Q113 AP EAPCET 2025 · 23 May · Shift 2 MCQ

If the pole of the line $x+2by-5=0$ with respect to the circle $S\equiv x^2+y^2-4x-6y+4=0$ lies on the line $x+by+1=0$, then the polar of the point $(b,-b)$ with respect to the circle $S=0$ is

(A) $5y-6=0$
(B) $y-6=0$
(C) $x+5y-6=0$
(D) $5x+y-6=0$

Answer: (A) $5y-6=0$ · The council's preliminary key

Q114 AP EAPCET 2025 · 23 May · Shift 2 MCQ

If P(α,β) is the radical centre of the circles $S\equiv x^2+y^2+4x+7=0$, $S'\equiv 2x^2+2y^2+3x+5y+9=0$ and $S''\equiv x^2+y^2+y=0$, then the length of the tangent drawn from P to $S'=0$ is

(A) 5
(B) 8
(C) 4
(D) 2

Answer: (D) 2 · The council's preliminary key

Q115 AP EAPCET 2025 · 22 May · Shift 1 MCQ

If Q is the inverse point of P(−1, 1) with respect to the circle $x^2 + y^2 - 2x + 2y = 0$, then the line containing Q is

(A) $x - 3y - 2 = 0$
(B) $x - y + 1 = 0$
(C) $x + y - 2 = 0$
(D) $2x - 3y + 5 = 0$

Answer: (A) $x - 3y - 2 = 0$ · The council's preliminary key

Q116 AP EAPCET 2025 · 22 May · Shift 1 MCQ

If the circle passing through $(3, 5)$, $(5, 5)$ and $(3, -3)$ cuts the circle $x^2 + y^2 + 2x + 2fy = 0$ orthogonally, then $f =$

(A) -12
(B) -3
(C) -15
(D) -4

Answer: (D) -4 · The council's preliminary key

Q117 AP EAPCET 2025 · 22 May · Shift 1 MCQ

Length of the common chord of two circles of same radius is $2\sqrt{17}$. If one of the two circles is $x^2 + y^2 + 6x + 4y - 12 = 0$, then acute angle between the two circles is

(A) $\frac{\pi}{2}$
(B) $\mathrm{Sin}^{-1}\left(\frac{3}{5}\right)$
(C) $\mathrm{Cos}^{-1}\left(\frac{9}{25}\right)$
(D) $\mathrm{Tan}^{-1}\left(\frac{9}{17}\right)$

Answer: (C) $\mathrm{Cos}^{-1}\left(\frac{9}{25}\right)$ · The council's preliminary key

Q118 AP EAPCET 2025 · 22 May · Shift 1 MCQ

A circle $S \equiv x^2 + y^2 - 16 = 0$ intersects another circle $S' = 0$ of radius 5 units such that their common chord is of maximum length. If the slope of that chord is $\frac{3}{4}$, then the centre of such a circle $S' = 0$ is

(A) $\left(\frac{9}{5}, \frac{12}{5}\right)$
(B) $\left(\frac{5}{9}, \frac{-12}{5}\right)$
(C) $\left(\frac{-9}{5}, \frac{12}{5}\right)$
(D) $\left(\frac{3}{5}, \frac{4}{5}\right)$

Answer: (C) $\left(\frac{-9}{5}, \frac{12}{5}\right)$ · The council's preliminary key

Q119 AP EAPCET 2025 · 22 May · Shift 1 MCQ

Let θ be the angle between the circles $S \equiv x^2 + y^2 + 2x - 2y + c = 0$ and $S^1 \equiv x^2 + y^2 - 6x - 8y + 9 = 0$. If c is an integer and $\cos\theta = \frac{5}{16}$ then the radius of the circle $S = 0$ is

(A) 2
(B) 4
(C) 3
(D) 1

Answer: (A) 2 · The council's preliminary key

Q120 AP EAPCET 2025 · 22 May · Shift 2 MCQ

A circle passing through the point $(1, 0)$ makes an intercept of length 4 units on X-axis and an intercept of length $2\sqrt{11}$ units on Y - axis. If the centre of the circle lies in the fourth quadrant, then the radius of the circle is

(A) $4\sqrt{5}$
(B) 3
(C) $2\sqrt{5}$
(D) 5

Answer: (C) $2\sqrt{5}$ · The council's preliminary key

Q121 AP EAPCET 2025 · 22 May · Shift 2 MCQ

If $\left(\frac{1}{10}, \frac{-1}{5}\right)$ is the inverse point of a point $(-1, 2)$ with respect to the circle $x^2 + y^2 - 2x + 4y + c = 0$ then $c =$

(A) 4
(B) -4
(C) 2
(D) -2

Answer: (B) -4 · The council's preliminary key

EdLoop EAPCET

Q122 AP EAPCET 2025 · 22 May · Shift 2 MCQ

If the equation of the circle lying in the first quadrant, touching both the coordinate axes and the line $\frac{x}{3}+\frac{y}{4}=1$ is $(x-c)^2+(y-c)^2=c^2$, then $c=$

(A) 1 or 4
(B) 2 or 3
(C) 1 or 6
(D) 2 or 5

Answer: (C) 1 or 6 · The council's preliminary key

Q123 AP EAPCET 2025 · 22 May · Shift 2 MCQ

If the point of contact of the circles $x^2+y^2-6x-4y+9=0$ and $x^2+y^2+2x+2y-7=0$ is (α,β), then $7\beta=$

(A) 5α
(B) 2α
(C) 3α
(D) 4α

Answer: (D) 4α · The council's preliminary key

Q124 AP EAPCET 2025 · 22 May · Shift 2 MCQ

If the circles $x^2+y^2-2\lambda x-2y-7=0$ and $3\left(x^2+y^2\right)-8x+29y=0$ are orthogonal, then $\lambda=$

(A) 4
(B) 3
(C) 2
(D) 1

Answer: (D) 1 · The council's preliminary key

Q125 AP EAPCET 2025 · 21 May · Shift 1 MCQ

From a point P on the circle $x^2+y^2=4$, two tangents are drawn to the circle $x^2+y^2-6x-6y+14=0$. If A and B are the points of contact of those lines, then the locus of the centre of the circle passing through the points P, A and B is

(A) $x^2+y^2-3x-3y+4=0$
(B) $2x^2+2y^2+6x+6y-7=0$
(C) $x^2+y^2+3x+3y-4=0$
(D) $2x^2+2y^2-6x-6y+7=0$

Answer: (D) $2x^2+2y^2-6x-6y+7=0$ · The council's preliminary key

EdLoop EAPCET

Q126 AP EAPCET 2025 · 21 May · Shift 1 MCQ

If the product of the lengths of the perpendicular drawn from the ends of a diameter of the circle $x^2 + y^2 = 4$ on to the line $x + y + 1 = 0$ is maximum, then the two ends of that diameter are

(A) $(-2, 0), (2, 0)$
(B) $(\sqrt{3}, 1), (-\sqrt{3}, -1)$
(C) $(\sqrt{2}, \sqrt{2}), (-\sqrt{2}, -\sqrt{2})$
(D) $(0, 2), (0, -2)$

Answer: (C) $(\sqrt{2}, \sqrt{2}), (-\sqrt{2}, -\sqrt{2})$ · The council's preliminary key

Q127 AP EAPCET 2025 · 21 May · Shift 1 MCQ

If the intercepts made by a variable circle on the X-axis and Y-axis are 8 and 6 units respectively, then the locus of the centre of the circle is

(A) $x^2 - y^2 + 28 = 0$
(B) $y^2 - x^2 - 7 = 0$
(C) $x^2 - y^2 - 28 = 0$
(D) $x^2 - y^2 - 7 = 0$

Answer: (D) $x^2 - y^2 - 7 = 0$ · The council's preliminary key

Q128 AP EAPCET 2025 · 21 May · Shift 1 MCQ

The slope of the non-vertical tangent drawn from the point $(3, 4)$ to the circle $x^2 + y^2 = 9$ is

(A) $\frac{2}{3}$
(B) $\frac{3}{2}$
(C) $\frac{7}{24}$
(D) $\frac{24}{7}$

Answer: (C) $\frac{7}{24}$ · The council's preliminary key

Q129 AP EAPCET 2025 · 21 May · Shift 1 MCQ

If the acute angle between the circles $S \equiv x^2 + y^2 + 2kx + 4y - 3 = 0$ and $S^1 \equiv x^2 + y^2 - 4x + 2ky + 9 = 0$ is $\cos^{-1}\left(\frac{3}{8}\right)$ and the centre of $S^1 = 0$ lies in the first quadrant, then the radical axis of $S = 0$ and $S^1 = 0$ is

(A) $x - 5y + 6 = 0$
(B) $x - 5y - 4 = 0$
(C) $5x - y - 6 = 0$
(D) $5x - y - 4 = 0$

Answer: (A) $x - 5y + 6 = 0$ · The council's preliminary key

EdLoop EAPCET

Q130 AP EAPCET 2025 · 21 May · Shift 2 MCQ

If a circle S passes through the origin and makes an intercept of length 4 units on the line $x = 2$, then the equation of the curve on which the centre of S lies is

(A) $y^2 - 4x = 8$
(B) $y^2 + 4x = 8$
(C) $x^2 + 4y = 8$
(D) $x^2 - 4y = 8$

Answer: (B) $y^2 + 4x = 8$ · The council's preliminary key

Q131 AP EAPCET 2025 · 21 May · Shift 2 MCQ

A circle touches the line $2x + y - 10 = 0$ at $(3, 4)$ and passes through the point $(1, -2)$. Then a point that lies on the circle is

(A) $(5, 4)$
(B) $(4, 5)$
(C) $(-5, 4)$
(D) $(4, -5)$

Answer: (C) $(-5, 4)$ · The council's preliminary key

Q132 AP EAPCET 2025 · 21 May · Shift 2 MCQ

If (a, b) is the common point for the circles $x^2 + y^2 - 4x + 4y - 1 = 0$ and $x^2 + y^2 + 2x - 4y + 1 = 0$, then $a^2 + b^2 =$

(A) $\frac{1}{5}$
(B) 5
(C) 25
(D) $\frac{1}{25}$

Answer: (A) $\frac{1}{5}$ · The council's preliminary key

Q133 AP EAPCET 2025 · 21 May · Shift 2 MCQ

The angle between the tangents drawn from the point $(2, 2)$ to the circle $x^2 + y^2 + 4x + 4y + c = 0$ is $\cos^{-1}\left(\frac{7}{16}\right)$. If two such circles exist, then sum of the values of c is

(A) 16
(B) 20
(C) -20
(D) -16

Answer: (D) -16 · The council's preliminary key

Q134 AP EAPCET 2025 · 21 May · Shift 2 MCQ

If the circle $S \equiv x^2 + y^2 + 2gx + 4y + 1 = 0$ bisects the circumference of the circle $x^2 + y^2 - 2x - 3 = 0$, then the radius of circle $S = 0$ is

(A) 5
(B) $\sqrt{12}$
(C) 25
(D) 12

Answer: (B) $\sqrt{12}$ · The council's preliminary key

Q135 TS EAPCET 2025 · 4 May · Shift 1 MCQ

If the length of the chord $2x + 3y + k = 0$ of the circle $x^2 + y^2 - 2x + 4y - 11 = 0$ is $2\sqrt{3}$, then the sum of all possible values of k is

(A) 26
(B) 8
(C) 13
(D) 4

Answer: (B) 8 · The council's preliminary key

Q136 TS EAPCET 2025 · 4 May · Shift 1 MCQ

The power of a point $(2, -1)$ with respect to a circle C of radius 4 is 9. The centre of the circle C lies on the line $x + y = 0$ and in the 2^{nd} quadrant. If (α, β) is the centre of the circle C, then $\beta - \alpha =$

(A) -4
(B) -10
(C) 4
(D) 10

Answer: (C) 4 · The council's preliminary key

Q137 TS EAPCET 2025 · 4 May · Shift 1 MCQ

The angle between the tangents drawn from the point $P(k, 6k)$ to the circle $x^2 + y^2 + 6x - 6y + 2 = 0$ is $2\tan^{-1}\left(\frac{4}{3}\right)$. If the coordinates of P are integers, then $k =$

(A) 1
(B) 2
(C) 3
(D) -2

Answer: (A) 1 · The council's preliminary key

EdLoop EAPCET

Q138 TS EAPCET 2025 · 4 May · Shift 1 MCQ

The tangents drawn from a point $(2, -1)$ touch the circle $x^2 + y^2 + 4x - 2y + 1 = 0$ at the points A and B. If C is the centre of the circle, then the area (in sq. units) of the triangle ABC is

(A) $\frac{4}{5}$
(B) 4
(C) 8
(D) $\frac{8}{5}$

Answer: (D) $\frac{8}{5}$ · The council's preliminary key

Q139 TS EAPCET 2025 · 4 May · Shift 1 MCQ

If θ is the angle between the circles $x^2 + y^2 - 4x + 2y - 4 = 0$ and $x^2 + y^2 - 2x + 4y - 11 = 0$, then $\sin\theta =$

(A) $\frac{\sqrt{47}}{24}$
(B) $\frac{23}{25}$
(C) $\frac{23}{24}$
(D) $\frac{\sqrt{3}}{5}$

Answer: (A) $\frac{\sqrt{47}}{24}$ · The council's preliminary key

Q140 TS EAPCET 2025 · 4 May · Shift 1 MCQ

If the line $x + y = 2$ cuts the circle $x^2 + y^2 + 2x - 4y + 4 = 0$ at two points A and B then the radius of the circle passing through A, B and orthogonal to $x^2 + y^2 - 2x - 4y - 4 = 0$ is

(A) 3
(B) 4
(C) 5
(D) 6

Answer: (C) 5 · The council's preliminary key

Q141 TS EAPCET 2025 · 4 May · Shift 2 MCQ

The radius of the circle having three chords along y-axis, the line $y = x$ and the line $2x + 3y = 10$ is

(A) $\frac{10}{\sqrt{13}}$
(B) $\frac{\sqrt{26}}{3}$
(C) $\frac{5}{\sqrt{13}}$
(D) $\frac{10}{3}$

Answer: (B) $\frac{\sqrt{26}}{3}$ · The council's preliminary key

Q142 TS EAPCET 2025 · 4 May · Shift 2 MCQ

Among the chords of the circle $x^2 + y^2 = 75$, the number of chords having their midpoints on the line $x = 8$ and having their slopes as integers is

(A) 8
(B) 6
(C) 4
(D) 2

Answer: (C) 4 · The council's preliminary key

Q143 TS EAPCET 2025 · 4 May · Shift 2 MCQ

The equation of the circle which touches the circle $S \equiv x^2 + y^2 - 10x - 4y + 19 = 0$ at the point $(2, 3)$ internally and having radius equal to half of the radius of the circle $S = 0$ is

(A) $x^2 + y^2 + 7x + 5y + 64 = 0$
(B) $x^2 + y^2 - 7x - 5y + 16 = 0$
(C) $x^2 + y^2 - 14x - 10y + 16 = 0$
(D) $x^2 + y^2 - 5x - 7y + 16 = 0$

Answer: (B) $x^2 + y^2 - 7x - 5y + 16 = 0$ · The council's preliminary key

Q144 TS EAPCET 2025 · 4 May · Shift 2 MCQ

If P$\left(\frac{7}{5}, \frac{6}{5}\right)$ is the inverse point of A(1, 2) with respect to a circle with centre C(2, 0), then the radius of that circle is

(A) 9
(B) 3
(C) $\sqrt{3}$
(D) 1

Answer: (C) $\sqrt{3}$ · The council's preliminary key

Q145 TS EAPCET 2025 · 4 May · Shift 2 MCQ

If the circle $S = 0$ intersect the three circles $S_1 \equiv x^2 + y^2 + 4x - 7 = 0$, $S_2 \equiv x^2 + y^2 + y = 0$ and $S_3 \equiv x^2 + y^2 + \frac{3}{2}x + \frac{5}{2}y - \frac{9}{2} = 0$ orthogonally, then radical axis of $S = 0$ and $S_1 = 0$ is

(A) $4x - y - 7 = 0$
(B) $x + y - 3 = 0$
(C) $4x + y - 3 = 0$
(D) $x - y - 2 = 0$

Answer: (C) $4x + y - 3 = 0$ · The council's preliminary key

EdLoop EAPCET

Q146 TS EAPCET 2025 · 4 May · Shift 2 MCQ

If a tangent to the circle $x^2+y^2+2x+2y+1=0$ is radical axis of the circles $x^2+y^2+2gx+2fy+c=0$ and $2x^2+2y^2+3x+8y+2c=0$, then

(A) $g=\frac{3}{7}$ or $f=4$

(B) $g=\frac{3}{2}$ or $f=\frac{2}{3}$

(C) $g=\frac{3}{5}$ or $f=1$

(D) $g=\frac{3}{4}$ or $f=2$

Answer: (D) $g=\frac{3}{4}$ or $f=2$ · The council's preliminary key

Q147 TS EAPCET 2025 · 3 May · Shift 1 MCQ

If the equation of the circumcircle of the triangle formed by the lines $L_1\equiv x+y=0$, $L_2\equiv 2x+y-1=0$, $L_3\equiv x-3y+2=0$ is $\lambda_1L_1L_2+\lambda_2L_2L_3+\lambda_3L_3L_1=0$, then $\frac{7\lambda_1}{\lambda_2}+\frac{\lambda_3}{\lambda_1}=$

(A) 1

(B) 2

(C) 3

(D) 4

Answer: (C) 3 · The council's preliminary key

Q148 TS EAPCET 2025 · 3 May · Shift 1 MCQ

A circle C touches X-axis and makes an intercept of length 2 units on Y-axis. If the centre of this circle lies on the line $y=x+1$ then a circle passing through the centre of the circle C is

(A) $x^2+y^2-2x-4y+1=0$

(B) $x^2+y^2-26x-20y+19=0$

(C) $x^2+y^2-20x-26y+19=0$

(D) $x^2+y^2+2x-4y+1=0$

Answer: (B) $x^2+y^2-26x-20y+19=0$ · The council's preliminary key

Q149 TS EAPCET 2025 · 3 May · Shift 1 MCQ

If m_1, m_2 are the slopes of the tangents drawn through the point $(-1,-2)$ to the circle $(x-3)^2+(y-4)^2=4$, then $\sqrt{3}\,|m_1-m_2|=$

EdLoop EAPCET

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (D) 4 · The council's preliminary key

Q150 TS EAPCET 2025 · 3 May · Shift 1 MCQ

A line meets the circle $x^2+y^2-4x-4y-8=0$ in two points A and B. If P(2,−2) is a point on the circle such that PA = PB = 2 then the equation of the line AB is

(A) $2x+3y=0$
(B) $3x+2y=0$
(C) $2x+3=0$
(D) $2y+3=0$

Answer: (D) $2y+3=0$ · The council's preliminary key

Q151 TS EAPCET 2025 · 3 May · Shift 1 MCQ

If the centre (α,β) of a circle cutting the circles $x^2+y^2-2y-3=0$ and $x^2+y^2+4x+3=0$ orthogonally lies on the line $2x-3y+4=0$, then $2\alpha+\beta=$

(A) 3
(B) -3
(C) 0
(D) 1

Answer: (B) -3 · The council's preliminary key

Q152 TS EAPCET 2025 · 3 May · Shift 1 MCQ

The radius of a circle C_1 is thrice the radius of another circle C_2 and the centres of C_1 and C_2 are $(1,2)$ and $(3,-2)$ respectively. If they cut each other orthogonally and the radius of the circle C_1 is $3r$, then the equation of the circle with r as radius and $(1,-2)$ as centre is

(A) $x^2+y^2-2x+4y-3=0$
(B) $x^2+y^2-2x+4y+7=0$
(C) $x^2+y^2-2x+4y-7=0$
(D) $x^2+y^2-2x+4y+3=0$

Answer: (D) $x^2+y^2-2x+4y+3=0$ · The council's preliminary key

Q153 TS EAPCET 2025 · 3 May · Shift 2 MCQ

If $(3,-2)$ is the centre of the circle $S\equiv x^2+y^2+2gx+2fy-23=0$ and A is a point on the circle $S=0$ such that its distance from a point $P(-1,-5)$ is least, then $A=$

(A) $(3, -2)$
(B) $\left(\frac{9}{5}, \frac{28}{5}\right)$
(C) $\left(\frac{3}{5}, -\frac{2}{5}\right)$
(D) $\left(\frac{-9}{5}, \frac{-28}{5}\right)$

Answer: (D) $\left(\frac{-9}{5}, \frac{-28}{5}\right)$ · The council's preliminary key

Q154 TS EAPCET 2025 · 3 May · Shift 2 MCQ

Two circles which touch both the coordinate axes intersect at the points A and B. If $A = (1, 2)$, then $AB =$

(A) 5
(B) 13
(C) $2\sqrt{2}$
(D) $\sqrt{2}$

Answer: (D) $\sqrt{2}$ · The council's preliminary key

Q155 TS EAPCET 2025 · 3 May · Shift 2 MCQ

The line $4x - 3y + 2 = 0$ intersects the circle $x^2 + y^2 - 2x + 6y + c = 0$ at two points A, B and $AB = 8$. If $(1, k)$ is a point on the given circle and $k > 0$, then $k =$

(A) 8
(B) 4
(C) 2
(D) 1

Answer: (C) 2 · The council's preliminary key

Q156 TS EAPCET 2025 · 3 May · Shift 2 MCQ

If $2x - 3y + 5 = 0$ and $4x - 5y + 7 = 0$ are the equations of the normals drawn to a circle and $(2, 5)$ is a point on the given circle, then the radius of the circle is

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (B) 2 · The council's preliminary key

Q157 TS EAPCET 2025 · 3 May · Shift 2 MCQ

If (α, β) is the centre of the circle which passes through the point $(1, -1)$ and cuts the circles $x^2 + y^2 + 2x - 3y - 5 = 0$, $x^2 + y^2 - 3x + 2y + 1 = 0$ orthogonally, then $\alpha - 5\beta =$

EdLoop EAPCET

(A) -10
(B) 5
(C) -11
(D) 10

Answer: (D) 10 · The council's preliminary key

Q158 TS EAPCET 2025 · 3 May · Shift 2 MCQ

The centre of the circle touching the circles $x^2+y^2-4x-6y-12=0$, $x^2+y^2+6x+18y+26=0$ at their point of contact and passing through the point $(1,-1)$ is

(A) $\left(\frac{1}{3},-1\right)$
(B) $\left(\frac{1}{5},\frac{6}{5}\right)$
(C) $\left(\frac{1}{2},1\right)$
(D) $\left(-\frac{1}{4},-\frac{1}{2}\right)$

Answer: (A) $\left(\frac{1}{3},-1\right)$ · The council's preliminary key

Q159 TS EAPCET 2025 · 2 May · Shift 1 MCQ

If the equation of the circle passing through the points $(-1,0)$, $(-1,1)$, $(1,1)$ is $ax^2+ay^2+2gx+2fy-2=0$ then $a=$

(A) 1
(B) -1
(C) 2
(D) -2

Answer: (C) 2 · The council's preliminary key

Q160 TS EAPCET 2025 · 2 May · Shift 1 MCQ

For the circle $x-2=5\cos\theta$, $y+1=5\sin\theta$ where θ is the parameter, the line $x=1+\frac{r}{2}$, $y=-2+\frac{\sqrt{3}}{2}r$ where r is the parameter, is a

(A) Chord of the circle other than diameter
(B) Tangent of the circle
(C) Diameter of the circle
(D) Line that does not meet the circle

Answer: (A) Chord of the circle other than diameter · The council's preliminary key

Q161 TS EAPCET 2025 · 2 May · Shift 1 MCQ

If $x-2y=0$ is a tangent drawn at a point P on the circle $x^2+y^2-6x+2y+c=0$, then the distance of the point $(6,3)$ from P is

(A) $\sqrt{5}$
(B) $2\sqrt{5}$
(C) $4\sqrt{5}$
(D) $5\sqrt{2}$

Answer: (B) $2\sqrt{5}$ · The council's preliminary key

Q162 TS EAPCET 2025 · 2 May · Shift 1 MCQ

If A, B are the points of contact of the tangents drawn from the point $(-3, 1)$ to the circle $x^2 + y^2 - 4x + 2y - 4 = 0$, then the equation of the circumcircle of the triangle PAB is

(A) $x^2 + y^2 - 6x + 2y - 6 = 0$
(B) $x^2 + y^2 - x + 7 = 0$
(C) $x^2 + y^2 + x - 7 = 0$
(D) $x^2 + y^2 + 6x - 2y - 6 = 0$

Answer: (C) $x^2 + y^2 + x - 7 = 0$ · The council's preliminary key

Q163 TS EAPCET 2025 · 2 May · Shift 1 MCQ

If the angle between the circles $x^2 + y^2 - 2x + ky + 1 = 0$ and $x^2 + y^2 - kx - 2y + 1 = 0$ is $\cos^{-1}\left(\frac{1}{4}\right)$ and $k < 0$ then the point which lies on the radical axis of the given circles is

(A) $(1, -3)$
(B) $(-1, 3)$
(C) $(-1, -3)$
(D) $(1, 3)$

Answer: (A) $(1, -3)$ · The council's preliminary key

Q164 TS EAPCET 2025 · 2 May · Shift 1 MCQ

A circle C passing through the point $(1, 1)$ bisects the circumference of the circle $x^2 + y^2 - 2x = 0$. If C is orthogonal to the circle $x^2 + y^2 + 2y - 3 = 0$ then the centre of the circle C is

(A) $\left(-\frac{1}{2}, 0\right)$
(B) $\left(\frac{5}{2}, 0\right)$
(C) $\left(0, \frac{5}{2}\right)$
(D) $\left(0, -\frac{1}{2}\right)$

Answer: (B) $\left(\frac{5}{2}, 0\right)$ · The council's preliminary key

Q165 TS EAPCET 2025 · 2 May · Shift 2 MCQ

The slope of a common tangent to the circles $x^2 + y^2 = 16$ and $(x - 9)^2 + y^2 = 16$ is

EdLoop EAPCET

(A) $\frac{8}{\sqrt{13}}$
(B) $\frac{4}{\sqrt{13}}$
(C) $\frac{\sqrt{17}}{8}$
(D) $\frac{8}{\sqrt{17}}$

Answer: (D) $\frac{8}{\sqrt{17}}$ · The council's preliminary key

Q166 TS EAPCET 2025 · 2 May · Shift 2 MCQ

The equation of the circle whose radius is 3 and which touches the circle $x^2 + y^2 - 4x - 6y - 12 = 0$ internally at $(-1, -1)$ is

(A) $5x^2 + 5y^2 - 8x - 14y - 32 = 0$
(B) $x^2 + y^2 - 12x - 14y - 28 = 0$
(C) $3x^2 + 3y^2 - 8x - 14y - 31 = 0$
(D) $x^2 + y^2 - 5x - 7y - 14 = 0$

Answer: (A) $5x^2 + 5y^2 - 8x - 14y - 32 = 0$ · The council's preliminary key

Q167 TS EAPCET 2025 · 2 May · Shift 2 MCQ

Suppose C1 and C2 are two circles having no common points, then

(A) There will be 3 common tangents to C1 and C2
(B) There will be exactly two common tangents to C1 and C2
(C) There will be no common tangent or there will be exactly two common tangents to C1 and C2
(D) There will be no common tangents or there will be four common tangents to C1 and C2

Answer: (D) There will be no common tangents or there will be four common tangents to C1 and C2 · The council's preliminary key

Q168 TS EAPCET 2025 · 2 May · Shift 2 MCQ

The locus of the centre of the circle touching the x-axis and passing through the point $(-1, 1)$ is

(A) a circle with centre at $\left(-1, \frac{1}{2}\right)$
(B) a pair of lines intersecting at $(-1, 1)$
(C) a parabola with focus at $(-1, 1)$
(D) a hyperbola with centre at $(-1, 1)$

Answer: (C) a parabola with focus at $(-1, 1)$ · The council's preliminary key

Q169 TS EAPCET 2025 · 2 May · Shift 2 MCQ

The centres of all circles passing through the points of intersection of the circles $x^2 + y^2 + 2x - 2y + 1 = 0$ and $x^2 + y^2 - 2x + 2y - 2 = 0$ and having radius $\sqrt{14}$ lie on the curve

(A) $x + y = 0$
(B) $y^2 = 4x - 2$
(C) $3x^2 + 5x = y$
(D) $2x^2 + 3y^2 = 7$

Answer: (A) $x + y = 0$ · The council's preliminary key

Q170 TS EAPCET 2025 · 2 May · Shift 2 MCQ

A circle S given by $x^2 + y^2 - 14x + 6y + 33 = 0$ cuts the X-axis at A and B $(OB > OA)$. C is midpoint of AB. L is a line through C and having slope (-1). If L is the diameter of a circle S' and also the radical axis of the circles S and S', then the equation of the circle S' is

(A) $x^2 + y^2 - 17x + 3y + 54 = 0$
(B) $x^2 + y^2 + 17x - 3y - 54 = 0$
(C) $x^2 + y^2 - 17x + 3y + 51 = 0$
(D) $x^2 + y^2 - 3x + 17y - 51 = 0$

Answer: (A) $x^2 + y^2 - 17x + 3y + 54 = 0$ · The council's preliminary key

Q171 AP EAPCET 2024 · 23 May · Shift 1 MCQ

The circumference of a circle passing through the point $(4, 6)$ with two normals represented by $2x - 3y + 4 = 0$ and $x + y - 3 = 0$ is

(A) 5π
(B) 10π
(C) 25π
(D) 8π

Answer: (B) 10π · The council's preliminary key

Q172 AP EAPCET 2024 · 23 May · Shift 1 MCQ

If the line through the point $P(5, 3)$ meets the circle $x^2 + y^2 - 2x - 4y + \alpha = 0$ at $A(4, 2)$ and $B(x_1, y_1)$, then $PA.PB$ is equal to

(A) 6
(B) 12
(C) 9
(D) 8

Answer: (D) 8 · The council's preliminary key

Q173 AP EAPCET 2024 · 23 May · Shift 1 MCQ

Consider the point $P(\alpha, \beta)$ on the line $2x + y = 1$. If the P and $(3, 2)$ are conjugate points with respect to the circle $x^2 + y^2 = 4$, then $\alpha + \beta =$

(A) 3
(B) -1
(C) -5
(D) 7

Answer: (A) 3 · The council's preliminary key

Q174 AP EAPCET 2024 · 23 May · Shift 1 MCQ

If $(1, 3)$ is the midpoint of a chord of the circle $x^2 + y^2 - 4x - 8y + 16 = 0$, then, the area of the triangle formed by that chord with the coordinate axes is

(A) 16
(B) 8
(C) 4
(D) $8\sqrt{2}$

Answer: (B) 8 · The council's preliminary key

Q175 AP EAPCET 2024 · 23 May · Shift 1 MCQ

If the circles $x^2 + y^2 + 2ax + 2y - 8 = 0$ and $x^2 + y^2 - 2x + ay - 14 = 0$ intersect orthogonally, then the distance between their centres is

(A) $\sqrt{242}$
(B) $\sqrt{970}$
(C) $\sqrt{629}$
(D) $\sqrt{541}$

Answer: (C) $\sqrt{629}$ · The council's preliminary key

Q176 AP EAPCET 2024 · 22 May · Shift 1 MCQ

From a point $(1, 0)$ on the circle $x^2 + y^2 - 2x + 2y + 1 = 0$ if chords are drawn to this circle, then locus of the poles of these chords with respect the circle $x^2 + y^2 = 4$ is

(A) $x = 4$
(B) $x + 2y = 5$
(C) $x^2 + y^2 - x - y = 0$
(D) $2y^2 = (x + 1)$

Answer: (A) $x = 4$ · The council's preliminary key

Q177 AP EAPCET 2024 · 22 May · Shift 1 MCQ

If A and B are the centres of similitude with respect to the circles $x^2 + y^2 - 14x + 6y + 33 = 0$ and $x^2 + y^2 + 30x - 2y + 1 = 0$, then midpoint of AB is

(A) $\left(\frac{7}{3}, \frac{4}{5}\right)$
(B) $\left(\frac{3}{2}, \frac{1}{5}\right)$
(C) $\left(\frac{39}{2}, \frac{-7}{4}\right)$
(D) $\left(\frac{39}{4}, \frac{-7}{2}\right)$

Answer: (D) $\left(\frac{39}{4}, \frac{-7}{2}\right)$ · The council's preliminary key

Q178 AP EAPCET 2024 · 22 May · Shift 1 MCQ

C_1 is the circle with centre at O $(0, 0)$ and radius 4, C_2 is a variable circle with centre at (α, β) and radius 5. If the common chord of C_1 and C_2 has slope $-\frac{3}{4}$ and of maximum length, then one of the possible values of $\alpha + \beta$ is

(A) $\frac{21}{5}$
(B) $\frac{3}{5}$
(C) $\frac{1}{5}$
(D) $\frac{19}{5}$

Options (2) or (1) were accepted. More than one answer was accepted. · The council's preliminary key

Q179 AP EAPCET 2024 · 22 May · Shift 1 MCQ

If the pair of tangents drawn to the circle $x^2 + y^2 = a^2$ from the point $(10, 4)$ are perpendicular, then $a =$

(A) $\sqrt{58}$
(B) 58
(C) $2\sqrt{63}$
(D) $2\sqrt{45}$

Answer: (A) $\sqrt{58}$ · The council's preliminary key

Q180 AP EAPCET 2024 · 22 May · Shift 1 MCQ

If $x - 4 = 0$ is the radical axis of two orthogonal circles out of which one is $x^2 + y^2 = 36$, then the centre of the other circle is

(A) $(8, 0)$
(B) $(9, 0)$
(C) $(6, 0)$
(D) $(12, 0)$

Answer: (B) $(9, 0)$ · The council's preliminary key

Q181 AP EAPCET 2024 · 22 May · Shift 2 MCQ

The triangle PQR is inscribed in the circle $x^2 + y^2 = 25$. If $Q = (3, 4)$ and $R = (-4, 3)$ then $\angle QPR =$

(A) $\frac{\pi}{2}$
(B) $\frac{\pi}{3}$
(C) $\frac{\pi}{4}$
(D) $\frac{\pi}{6}$

Answer: (C) $\frac{\pi}{4}$ · The council's preliminary key

Q182 AP EAPCET 2024 · 22 May · Shift 2 MCQ

The locus of the point of intersection of perpendicular tangents drawn to the circle $x^2 + y^2 = 10$ is

(A) $x^2 + y^2 = 5$
(B) $x^2 + y^2 = 20$
(C) $x^2 + y^2 = 25$
(D) $x^2 + y^2 = 100$

Answer: (B) $x^2 + y^2 = 20$ · The council's preliminary key

Q183 AP EAPCET 2024 · 22 May · Shift 2 MCQ

The normal drawn at $(1, 1)$ to the circle $x^2 + y^2 - 4x + 6y - 4 = 0$ is

(A) $4x + 3y = 7$
(B) $4x + y = 5$
(C) $x + y = 2$
(D) $4x - y = 3$

Answer: (B) $4x + y = 5$ · The council's preliminary key

Q184 AP EAPCET 2024 · 22 May · Shift 2 MCQ

Parametric equations of the circle $2x^2 + 2y^2 = 9$ are

(A) $x = \frac{3}{2}\cos\theta$, $y = \frac{3}{2}\sin\theta$
(B) $x = \frac{3}{\sqrt{2}}\cos\theta$, $y = 3\sin\theta$
(C) $x = \frac{3}{\sqrt{2}}\sin\theta$, $y = \frac{3}{\sqrt{2}}\cos\theta$
(D) $x = 3\sin\theta$, $y = \frac{3}{2}\cos\theta$

Answer: (C) $x = \frac{3}{\sqrt{2}}\sin\theta$, $y = \frac{3}{\sqrt{2}}\cos\theta$ · The council's preliminary key

Q185 AP EAPCET 2024 · 22 May · Shift 2 MCQ

Angle between the circles $x^2 + y^2 - 4x - 6y - 3 = 0$ and $x^2 + y^2 + 8x - 4y + 11 = 0$ is

EdLoop EAPCET

(A) $\frac{\pi}{3}$
(B) $\frac{\pi}{6}$
(C) $\frac{\pi}{2}$
(D) $\frac{\pi}{4}$

Answer: (A) $\frac{\pi}{3}$ · The council's preliminary key

Q186 AP EAPCET 2024 · 21 May · Shift 1 MCQ

$2x - 3y + 1 = 0$ and $4x - 5y - 1 = 0$ are the equations of two diameters of the circle $S \equiv x^2 + y^2 + 2gx + 2fy - 11 = 0$. Q and R are the points of contact of the tangents drawn from the point $P(-2, -2)$ to this circle. If C is the centre of the circle $S = 0$, then the area (in square units) of the quadrilateral PQCR is

(A) 25
(B) 30
(C) 24
(D) 36

Answer: (B) 30 · The council's preliminary key

Q187 AP EAPCET 2024 · 21 May · Shift 1 MCQ

If the inverse point of the point $(-1, 1)$ with respect to the circle $x^2 + y^2 - 2x + 2y - 1 = 0$ is (p, q), then $p^2 + q^2 =$

(A) $\frac{1}{16}$
(B) $\frac{1}{8}$
(C) $\frac{1}{4}$
(D) $\frac{1}{2}$

Answer: (B) $\frac{1}{8}$ · The council's preliminary key

Q188 AP EAPCET 2024 · 21 May · Shift 1 MCQ

If (a, b) is the midpoint of the chord $2x - y + 3 = 0$ of the circle $x^2 + y^2 + 6x - 4y + 4 = 0$, then $2a + 3b =$

(A) -1
(B) 0
(C) 1
(D) 3

Answer: (C) 1 · The council's preliminary key

EdLoop EAPCET

Q189 AP EAPCET 2024 · 21 May · Shift 1 MCQ

If a direct common tangent drawn to the circles $x^2+y^2-6x+4y+9=0$ and $x^2+y^2+2x-2y+1=0$ touches the circles at A and B, then $AB=$

(A) 9
(B) 16
(C) $4\sqrt{6}$
(D) $2\sqrt{6}$

Answer: (D) $2\sqrt{6}$ · The council's preliminary key

Q190 AP EAPCET 2024 · 21 May · Shift 1 MCQ

The radius of the circle which cuts the circles $x^2+y^2-4x-4y+7=0$, $x^2+y^2+4x-4y+6=0$ and $x^2+y^2+4x+4y+5=0$ orthogonally is

(A) $\frac{\sqrt{193}}{4\sqrt{2}}$
(B) $\frac{\sqrt{193}}{8}$
(C) $\frac{\sqrt{193}}{4}$
(D) $\frac{\sqrt{193}}{2\sqrt{2}}$

Answer: (A) $\frac{\sqrt{193}}{4\sqrt{2}}$ · The council's preliminary key

Q191 AP EAPCET 2024 · 21 May · Shift 2 MCQ

If the equation of the circle whose radius is 3 units and which touches internally the circle $x^2+y^2-4x-6y-12=0$ at the point $(-1,-1)$ is $x^2+y^2+px+qy+r=0$, then $p+q-r=$

(A) 2
(B) $5/2$
(C) $26/5$
(D) 3

Answer: (A) 2 · The council's preliminary key

Q192 AP EAPCET 2024 · 21 May · Shift 2 MCQ

The equation of the circle touching the circle $x^2+y^2-6x+6y+17=0$ externally and to which the lines $x^2-3xy-3x+9y=0$ are normal is

(A) $x^2+y^2-3x+2y-2=0$
(B) $x^2+y^2-6x-2y+1=0$
(C) $x^2+y^2+6x-2y-1=0$
(D) $x^2+y^2-9x-3y+2=0$

Answer: (B) $x^2+y^2-6x-2y+1=0$ · The council's preliminary key

EdLoop EAPCET

Q193 AP EAPCET 2024 · 21 May · Shift 2 MCQ

The pole of the straight line $9x + y - 28 = 0$ with respect to the circle $2x^2 + 2y^2 - 3x + 5y - 7 = 0$ is

(A) $(-1, 3)$
(B) $(2, -3)$
(C) $(3, -1)$
(D) $(3, -3)$

Answer: (C) $(3, -1)$ · The council's preliminary key

Q194 AP EAPCET 2024 · 21 May · Shift 2 MCQ

The equation of a circle which touches the straight lines $x + y = 2$, $x - y = 2$ and also touches the circle $x^2 + y^2 = 1$ is

(A) $(x + \sqrt{2})^2 + y^2 = 3 - \sqrt{2}$
(B) $(x + \sqrt{2})^2 + y^2 = 1 - 2\sqrt{2}$
(C) $(x - \sqrt{2})^2 + y^2 = 2(1 - \sqrt{2})$
(D) $(x - \sqrt{2})^2 + y^2 = 3 - 2\sqrt{2}$

Answer: (D) $(x - \sqrt{2})^2 + y^2 = 3 - 2\sqrt{2}$ · The council's preliminary key

Q195 AP EAPCET 2024 · 21 May · Shift 2 MCQ

The radical axis of the circles $x^2 + y^2 + 2gx + 2fy + c = 0$ and $2x^2 + 2y^2 + 3x + 8y + 2c = 0$ touches the circle $x^2 + y^2 + 2x + 2y + 1 = 0$. Then

(A) $g = \frac{3}{8}$ or $f = 1$
(B) $g = \frac{2}{3}$ or $f = 3$
(C) $g = \frac{1}{2}$ or $f = 1$
(D) $g = \frac{3}{4}$ or $f = 2$

Answer: (D) $g = \frac{3}{4}$ or $f = 2$ · The council's preliminary key

Q196 AP EAPCET 2024 · 20 May · Shift 1 MCQ

Equation of the circle having its centre on the line $2x + y + 3 = 0$ and having the lines $3x + 4y - 18 = 0,\ 3x + 4y + 2 = 0$ as tangents is

(A) $x^2 + y^2 + 6x + 8y + 4 = 0$
(B) $x^2 + y^2 - 6x - 8y + 18 = 0$
(C) $x^2 + y^2 - 8x + 10y + 37 = 0$
(D) $x^2 + y^2 + 8x - 10y + 37 = 0$

Answer: (D) $x^2 + y^2 + 8x - 10y + 37 = 0$ · The council's preliminary key

EdLoop EAPCET

Q197 AP EAPCET 2024 · 20 May · Shift 1 MCQ

If power of a point $(4, 2)$ with respect to the circle $x^2 + y^2 - 2\alpha x + 6y + \alpha^2 - 16 = 0$ is 9, then the sum of the lengths of all possible intercepts made by such circles on the coordinate axes is

(A) $16 + 4\sqrt{6}$
(B) $16 + 4\sqrt{6} - 6\sqrt{2}$
(C) $16 + 4\sqrt{6} + 6\sqrt{2}$
(D) $16 + 6\sqrt{2}$

Answer: (A) $16 + 4\sqrt{6}$ · The council's preliminary key

Q198 AP EAPCET 2024 · 20 May · Shift 1 MCQ

Let α be an integer multiple of 8. If S is the set of all possible values of α such that the line $6x + 8y + \alpha = 0$ intersects the circle $x^2 + y^2 - 4x - 6y + 9 = 0$ at two distinct points, then the number of elements in S is

(A) 4
(B) 6
(C) 2
(D) 1

Answer: (A) 4 · The council's preliminary key

Q199 AP EAPCET 2024 · 20 May · Shift 1 MCQ

If the circles $x^2 + y^2 - 8x - 8y + 28 = 0$ and $x^2 + y^2 - 8x - 6y + 25 - \alpha^2 = 0$ have only one common tangent, then $\alpha =$

(A) $\alpha = 4$
(B) $\alpha = 2$
(C) $\alpha = 1$
(D) $\alpha = 5$

Answer: (C) $\alpha = 1$ · The council's preliminary key

Q200 AP EAPCET 2024 · 20 May · Shift 1 MCQ

If the equation of the circle passing through the points of intersection of the circles $x^2 - 2x + y^2 - 4y - 4 = 0, x^2 + 2x + y^2 + 4y - 4 = 0$ and the point $(3, 3)$ is given by $x^2 + y^2 + \alpha x + \beta y + \gamma = 0$, then $3(\alpha + \beta + \gamma) =$

EdLoop EAPCET

(A) 32
(B) -32
(C) -26
(D) 26

Answer: (C) -26 · The council's preliminary key

Q201 AP EAPCET 2024 · 20 May · Shift 2 MCQ

$A(2,3), B(-1,1)$ are two points. If P is a variable point such that $\angle APB = 90^\circ$ then locus of P is

(A) $x^2 + y^2 - x - 4y + 1 = 0$
(B) $x^2 + y^2 + x + 4y - 1 = 0$
(C) $x^2 + y^2 - x + 4y - 1 = 0$
(D) $x^2 + y^2 + x - 4y + 1 = 0$

Answer: (A) $x^2 + y^2 - x - 4y + 1 = 0$ · The council's preliminary key

Q202 AP EAPCET 2024 · 20 May · Shift 2 MCQ

The largest among the distances from the point $P(15, 9)$ to the points on the circle $x^2 + y^2 - 6x - 8y - 11 = 0$ is

(A) 12
(B) 13
(C) 19
(D) 7

Answer: (C) 19 · The council's preliminary key

Q203 AP EAPCET 2024 · 20 May · Shift 2 MCQ

The circle $x^2 + y^2 - 8x - 12y + \alpha = 0$ lies in the first quadrant without touching the coordinate axes. If $(6, 6)$ is an interior point to the circle, then

(A) $4 < \alpha < 6$
(B) $6 < \alpha < 16$
(C) $16 < \alpha < 48$
(D) $36 < \alpha < 48$

Answer: (D) $36 < \alpha < 48$ · The council's preliminary key

Q204 AP EAPCET 2024 · 20 May · Shift 2 MCQ

The equation of the circle whose diameter is the common chord of the circles $x^2 + y^2 - 6x - 7 = 0$ and $x^2 + y^2 - 10x + 16 = 0$, is

EdLoop EAPCET

(A) $8x^2 + 8y^2 - 92x + 197 = 0$
(B) $x^2 + y^2 - 23x + 197 = 0$
(C) $x^2 + y^2 - \frac{23}{2}x + \frac{197}{4} = 0$
(D) $4x^2 + 4y^2 - 46x + 197 = 0$

Answer: (A) $8x^2 + 8y^2 - 92x + 197 = 0$ · The council's preliminary key

Q205 AP EAPCET 2024 · 20 May · Shift 2 MCQ

If the locus of the mid points of the chords of the circle $x^2 + y^2 = 25$, which subtend a right angle at the origin is given by $\frac{x^2}{\alpha^2} + \frac{y^2}{\alpha^2} = 1$, then $|\alpha| =$

(A) $\frac{2}{5}$
(B) $\frac{5}{\sqrt{2}}$
(C) $\frac{2}{25}$
(D) $5\sqrt{2}$

Answer: (B) $\frac{5}{\sqrt{2}}$ · The council's preliminary key

Q206 AP EAPCET 2024 · 20 May · Shift 2 MCQ

The radical centre of the circles $x^2 + y^2 + 2x + 3y + 1 = 0$, $x^2 + y^2 + x - y + 3 = 0$, $x^2 + y^2 - 3x + 2y + 5 = 0$ is

(A) $\left(-\frac{7}{38}, \frac{6}{19}\right)$
(B) $\left(\frac{6}{19}, \frac{14}{19}\right)$
(C) $\left(\frac{14}{19}, \frac{6}{19}\right)$
(D) $\left(\frac{2}{19}, \frac{3}{19}\right)$

Answer: (C) $\left(\frac{14}{19}, \frac{6}{19}\right)$ · The council's preliminary key

Q207 AP EAPCET 2024 · 19 May · Shift 2 MCQ

Let P be any point on the circle $x^2 + y^2 = 25$. Let L be the chord of contact of P with respect to the circle $x^2 + y^2 = 9$. The locus of the poles of the lines L with respect to the circle $x^2 + y^2 = 36$ is

(A) $y^2 = 20x$
(B) $\frac{x^2}{9} + \frac{y^2}{36} = 1$
(C) $x^2 + y^2 = 400$
(D) $\frac{x^2}{25} - \frac{y^2}{16} = 1$

Answer: (C) $x^2 + y^2 = 400$ · The council's preliminary key

Q208 AP EAPCET 2024 · 19 May · Shift 2 MCQ

If the circles $S \equiv x^2 + y^2 - 14x + 6y + 33 = 0$ and $S' \equiv x^2 + y^2 - a^2 = 0$ $(a \in N)$ have 4 common tangents then possible number of values of a is

EdLoop EAPCET

(A) 13
(B) 5
(C) 14
(D) 2

Answer: (D) 2 · The council's preliminary key

Q209 AP EAPCET 2024 · 19 May · Shift 2 MCQ

If the area of the circum-circle of triangle formed by the line $2x + 5y + \alpha = 0$ and the positive coordinate axes is $\frac{29\pi}{4}$ sq. units, then $|\alpha| =$

(A) 25
(B) 10
(C) 20
(D) 400

Answer: (B) 10 · The council's preliminary key

Q210 AP EAPCET 2024 · 19 May · Shift 2 MCQ

The circle $S \equiv x^2 + y^2 - 2x - 4y + 1 = 0$ cuts the y - axis at A, B (OA>OB). If the radical axis of $S = 0$ and $S' \equiv x^2 + y^2 - 4x - 2y + 4 = 0$ cuts the y - axis at C then the ratio in which C divides AB is

(A) $7 + 2\sqrt{3} : -7 + 2\sqrt{3}$
(B) $\sqrt{3} + 2 : \sqrt{3} - 2$
(C) $6 - 2\sqrt{3} : 2\sqrt{3} - 6$
(D) $-3 : \sqrt{3}$

Answer: (A) $7 + 2\sqrt{3} : -7 + 2\sqrt{3}$ · The council's preliminary key

Q211 AP EAPCET 2024 · 19 May · Shift 2 MCQ

If the circle $S = 0$ cuts the circles $x^2 + y^2 - 2x + 6y = 0$, $x^2 + y^2 - 4x - 2y + 6 = 0$ and $x^2 + y^2 - 12x + 2y + 3 = 0$ orthogonally, then equation of the tangent at $(0, 3)$ on $S = 0$ is

(A) $x + y - 3 = 0$
(B) $y = 3$
(C) $x = 0$
(D) $x - y + 3 = 0$

Answer: (B) $y = 3$ · The council's preliminary key

Q212 AP EAPCET 2024 · 18 May · Shift 1 MCQ

If θ is the angle between the tangents drawn from the point $(2, 3)$ to the circle $x^2 + y^2 - 6x + 4y + 12 = 0$, then $\theta =$

EdLoop EAPCET

(A) $\mathrm{Cos}^{-1}\left(\frac{5}{13}\right)$
(B) $\mathrm{Sin}^{-1}\left(\frac{4}{5}\right)$
(C) $2\,\mathrm{Tan}^{-1}\left(\frac{5}{12}\right)$
(D) $\mathrm{Tan}^{-1}\left(\frac{5}{12}\right)$

Answer: (D) $\mathrm{Tan}^{-1}\left(\frac{5}{12}\right)$ · The council's preliminary key

Q213 AP EAPCET 2024 · 18 May · Shift 1 MCQ

If $2x-3y+3=0$ and $x+2y+k=0$ are conjugate lines with respect to the circle $S\equiv x^2+y^2+8x-6y-24=0$, then the length of the tangent drawn from the point $\left(\frac{k}{4},\frac{k}{3}\right)$ to the circle $S=0$ is

(A) 7
(B) 1
(C) 12
(D) 24

Answer: (B) 1 · The council's preliminary key

Q214 AP EAPCET 2024 · 18 May · Shift 1 MCQ

If $Q(h,k)$ is the inverse point of the point $P(1,2)$ with respect to the circle $x^2+y^2-4x+1=0$, then $2h+k=$

(A) 3
(B) 4
(C) 7
(D) 11

Answer: (B) 4 · The council's preliminary key

Q215 AP EAPCET 2024 · 18 May · Shift 1 MCQ

If (a,b) and (c,d) are the internal and external centres of similitudes of the circles $x^2+y^2+4x-5=0$ and $x^2+y^2-6y+8=0$ respectively, then $(a+d)(b+c)=$

(A) 4
(B) 9
(C) 13
(D) 22

Answer: (C) 13 · The council's preliminary key

Q216 AP EAPCET 2024 · 18 May · Shift 1 MCQ

A Circle S passes through the points of intersection of the circles $x^2+y^2-2x+2y-2=0$ and $x^2+y^2+2x-2y+1=0$. If the centre of this circle S lies on the line $x-y+6=0$, then the radius of the circle S is

EdLoop EAPCET

(A) $\sqrt{5}$
(B) 5
(C) $\sqrt{41}$
(D) $\sqrt{14}$

Answer: (D) $\sqrt{14}$ · The council's preliminary key

Q217 TS EAPCET 2024 · 11 May · Shift 1 MCQ

A circle passing through the points $(1,1)$ and $(2,0)$ touches the line $3x-y-1=0$. If the equation of this circle is $x^2+y^2+2gx+2fy+c=0$, then a possible value of g is

(A) $-\frac{5}{2}$
(B) $-\frac{3}{2}$
(C) 6
(D) -5

Answer: (A) $-\frac{5}{2}$ · The council's preliminary key

Q218 TS EAPCET 2024 · 11 May · Shift 1 MCQ

A circle passes through the points $(2,0)$ and $(1,2)$. If the power of the point $(0,2)$ with respect to this circle is 4, then the radius of the circle is

(A) 2
(B) $\sqrt{\frac{5}{2}}$
(C) $\sqrt{5}$
(D) 4

Answer: (B) $\sqrt{\frac{5}{2}}$ · The council's preliminary key

Q219 TS EAPCET 2024 · 11 May · Shift 1 MCQ

$x-2y-6=0$ is a normal to the circle $x^2+y^2+2gx+2fy-8=0$. If the line $y=2$ touches this circle, then the radius of the circle can be

(A) $\sqrt{32}$
(B) 6
(C) 4
(D) $\sqrt{18}$

Answer: (C) 4 · The council's preliminary key

Q220 TS EAPCET 2024 · 11 May · Shift 1 MCQ

The line $x+y+1=0$ intersects the circle $x^2+y^2-4x+2y-4=0$ at the points A and B. If M(a,b) is the midpoint of AB, then $a-b=$

EdLoop EAPCET

(A) 0
(B) 1
(C) 2
(D) 3

Answer: (D) 3 · The council's preliminary key

Q221 TS EAPCET 2024 · 11 May · Shift 1 MCQ

A circle S passes through the points of intersection of the circles $x^2+y^2-2x-3=0$ and $x^2+y^2-2y=0$. If $x+y+1=0$ is a tangent to the circle S, then equation of S is

(A) $2x^2+2y^2+2x+2y+3=0$
(B) $2x^2+2y^2-2x-2y+3=0$
(C) $x^2+y^2-2x-2y+3=0$
(D) $2x^2+2y^2-2x-2y-3=0$

Answer: (D) $2x^2+2y^2-2x-2y-3=0$ · The council's preliminary key

Q222 TS EAPCET 2024 · 11 May · Shift 1 MCQ

If the common chord of the circles $x^2+y^2-2x+2y+1=0$ and $x^2+y^2-2x-2y-2=0$ is the diameter of a circle S, then the centre of the circle S is

(A) $\left(\frac{1}{2},-\frac{3}{4}\right)$
(B) $\left(1,-\frac{3}{4}\right)$
(C) $\left(1,\frac{3}{4}\right)$
(D) $\left(-\frac{1}{2},-\frac{3}{4}\right)$

Answer: (B) $\left(1,-\frac{3}{4}\right)$ · The council's preliminary key

Q223 TS EAPCET 2024 · 10 May · Shift 1 MCQ

$(1,k)$ is a point on the circle passing through the points $(-1,1)$, $(0,-1)$ and $(1,0)$. If $k\neq 0$, then $k=$

(A) $\frac{1}{2}$
(B) $\frac{1}{3}$
(C) $-\frac{1}{3}$
(D) $-\frac{1}{2}$

Answer: (B) $\frac{1}{3}$ · The council's preliminary key

Q224 TS EAPCET 2024 · 10 May · Shift 1 MCQ

If the tangents $x+y+k=0$ and $x+ay+b=0$ drawn to the circle $S\equiv x^2+y^2+2x-2y+1=0$ are perpendicular to each other and k,b are both greater than 1, then $b-k=$

EdLoop EAPCET

(A) $\sqrt{2}$
(B) 0
(C) 2
(D) $2\sqrt{2}$

Answer: (C) 2 · The council's preliminary key

Q225 TS EAPCET 2024 · 10 May · Shift 1 MCQ

If (h, k) is the internal centre of similitude of the circles $x^2 + y^2 + 2x - 6y + 1 = 0$ and $x^2 + y^2 - 4x + 2y + 4 = 0$, then $4h =$

(A) 0
(B) 3
(C) 1
(D) 5

Answer: (D) 5 · The council's preliminary key

Q226 TS EAPCET 2024 · 10 May · Shift 1 MCQ

The slope of a common tangent to the circles $x^2 + y^2 - 4x - 8y + 16 = 0$ and $x^2 + y^2 - 6x - 16y + 64 = 0$ is

(A) 0
(B) $\frac{15}{8}$
(C) 1
(D) $\frac{17}{4}$

Answer: (B) $\frac{15}{8}$ · The council's preliminary key

Q227 TS EAPCET 2024 · 10 May · Shift 1 MCQ

$x^2 + y^2 + 2x - 6y - 6 = 0$ and $x^2 + y^2 - 6x - 2y + k = 0$ are two intersecting circles and k is not an integer. If θ is the angle between the two circles and $\cos\theta = \frac{-5}{24}$, then $k =$

(A) $\frac{6}{5}$
(B) $\frac{74}{9}$
(C) $\frac{37}{3}$
(D) $\frac{53}{7}$

Answer: (B) $\frac{74}{9}$ · The council's preliminary key

EdLoop EAPCET

Q228 TS EAPCET 2024 · 10 May · Shift 1 MCQ

If (p, q) is the centre of the circle which cuts the three circles $x^2 + y^2 - 2x - 4y + 4 = 0$, $x^2 + y^2 + 2x - 4y + 1 = 0$ and $x^2 + y^2 - 4x - 2y - 11 = 0$ orthogonally, then $p + q =$

(A) 9
(B) $\frac{35}{4}$
(C) $\frac{15}{2}$
(D) 7

Answer: (A) 9 · The council's preliminary key

Q229 TS EAPCET 2024 · 10 May · Shift 2 MCQ

A rhombus is inscribed in the region common to the two circles $x^2 + y^2 - 4x - 12 = 0$ and $x^2 + y^2 + 4x - 12 = 0$. If the line joining the centres of these circles and the common chord of them are the diagonals of this rhombus, then the area (in Sq. units) of the rhombus is

(A) $16\sqrt{3}$
(B) $4\sqrt{3}$
(C) $12\sqrt{3}$
(D) $8\sqrt{3}$

Answer: (D) $8\sqrt{3}$ · The council's preliminary key

Q230 TS EAPCET 2024 · 10 May · Shift 2 MCQ

If m is the slope and $P(8, \beta)$ is the midpoint of a chord of contact of the circle $x^2 + y^2 = 125$, then the number of values of β such that β and m are integers is

(A) 2
(B) 4
(C) 6
(D) 8

Answer: (C) 6 · The council's preliminary key

Q231 TS EAPCET 2024 · 10 May · Shift 2 MCQ

A rectangle is formed by the lines $x = 4$, $x = -2$, $y = 5$, $y = -2$ and a circle is drawn through the vertices of this rectangle. The pole of the line $y + 2 = 0$ with respect to this circle is

(A) $(1, \frac{-85}{14})$
(B) $(1, \frac{-32}{7})$
(C) $(-2, -2)$
(D) $(1, -4)$

Answer: (B) $(1, \frac{-32}{7})$ · The council's preliminary key

Q232 TS EAPCET 2024 · 10 May · Shift 2 MCQ

The equation of a circle which passes through the points of intersection of the circles $2x^2 + 2y^2 - 2x + 6y - 3 = 0$, $x^2 + y^2 + 4x + 2y + 1 = 0$ and whose centre lies on the common chord of these circles is

(A) $2x^2 + 2y^2 - 3x + 4y - 2 = 0$
(B) $x^2 + y^2 + 2x + 5y - 2 = 0$
(C) $3x^2 + 3y^2 - 2x + 4y - 3 = 0$
(D) $4x^2 + 4y^2 + 6x + 10y - 1 = 0$

Answer: (D) $4x^2 + 4y^2 + 6x + 10y - 1 = 0$ · The council's preliminary key

Q233 TS EAPCET 2024 · 10 May · Shift 2 MCQ

If the equation of the circle which cuts each of the circles $x^2 + y^2 = 4$, $x^2 + y^2 - 6x - 8y + 10 = 0$ and $x^2 + y^2 + 2x - 4y - 2 = 0$ at the extremities of a diameter of these circles is $x^2 + y^2 + 2gx + 2fy + c = 0$, then $g + f + c =$

(A) 9
(B) -9
(C) 12
(D) -12

Answer: (B) -9 · The council's preliminary key

Q234 TS EAPCET 2024 · 10 May · Shift 2 MCQ

The equation of the circle passing through the origin and cutting the circles $x^2 + y^2 + 6x - 15 = 0$ and $x^2 + y^2 - 8y - 10 = 0$ orthogonally is

(A) $2x^2 + 2y^2 - 5x + 10y = 0$
(B) $2x^2 + 2y^2 - 10x + 5y = 0$
(C) $x^2 + y^2 - 2x + 5y = 0$
(D) $x^2 + y^2 - 5x + 2y = 0$

Answer: (B) $2x^2 + 2y^2 - 10x + 5y = 0$ · Checked by our team

Q235 TS EAPCET 2024 · 9 May · Shift 1 MCQ

If $(1,1),(-2,2),(2,-2)$ are 3 points on a circle S, then the perpendicular distance from the centre of the circle S to the line $3x-4y+1=0$ is

(A) $\frac{1}{2}$
(B) 1
(C) $\frac{23}{10}$
(D) 2

Answer: (A) $\frac{1}{2}$ · The council's preliminary key

Q236 TS EAPCET 2024 · 9 May · Shift 1 MCQ

If the line $4x-3y+\mathrm{p}=0\ (\mathrm{p}+3>0)$ touches the circle $x^2+y^2-4x+6y+4=0$ at the point (h,k), then $h-2k=$

(A) $-\frac{8}{5}$
(B) 2
(C) $\frac{6}{5}$
(D) 3

Answer: (B) 2 · The council's preliminary key

Q237 TS EAPCET 2024 · 9 May · Shift 1 MCQ

If the inverse point of the point $P(3,3)$ with respect to the circle $x^2+y^2-4x+4y+4=0$ is $Q(a,b)$, then $a+5b=$

(A) 4
(B) 0
(C) -4
(D) 1

Answer: (C) -4 · The council's preliminary key

Q238 TS EAPCET 2024 · 9 May · Shift 1 MCQ

If the equation of the transverse common tangent of the circles $x^2+y^2-4x+6y+4=0$ and $x^2+y^2+2x-2y-2=0$ is $ax+by+c=0$, then $\frac{a}{c}=$

EdLoop EAPCET

(A) $-\frac{3}{4}$
(B) $\frac{4}{3}$
(C) 1
(D) -1

Answer: (D) -1 · The council's preliminary key

Q239 TS EAPCET 2024 · 9 May · Shift 1 MCQ

A circle $S \equiv x^2 + y^2 + 2gx + 2fy + 6 = 0$ cuts another circle $x^2 + y^2 - 6x - 6y - 6 = 0$ orthogonally. If the angle between the circles $S = 0$ and $x^2 + y^2 + 6x + 6y + 2 = 0$ is 60°, then the radius of the circle $S = 0$ is

(A) 2
(B) 1
(C) 4
(D) 5

Answer: (A) 2 · The council's preliminary key

Q240 TS EAPCET 2024 · 9 May · Shift 1 MCQ

If m_1 and m_2 are the slopes of the direct common tangents drawn to the circles $x^2 + y^2 - 2x - 8y + 8 = 0$ and $x^2 + y^2 - 8x + 15 = 0$, then $m_1 + m_2 =$

(A) $-\frac{24}{5}$
(B) $\frac{12}{5}$
(C) $\frac{24}{5}$
(D) $-\frac{12}{5}$

Answer: (A) $-\frac{24}{5}$ · The council's preliminary key

Q241 TS EAPCET 2024 · 9 May · Shift 2 MCQ

If $P\left(\frac{\pi}{4}\right), Q\left(\frac{\pi}{3}\right)$ are two points on the circle $x^2 + y^2 - 2x - 2y - 1 = 0$, then the slope of the tangent to this circle which is parallel to the chord PQ is

(A) $2 + \sqrt{2} - \sqrt{3} - \sqrt{6}$
(B) $2 + \sqrt{2} + \sqrt{3} + \sqrt{6}$
(C) $\sqrt{2} + \sqrt{3}$
(D) $2 + \sqrt{2}$

Answer: (A) $2 + \sqrt{2} - \sqrt{3} - \sqrt{6}$ · The council's preliminary key

EdLoop EAPCET

Q242 TS EAPCET 2024 · 9 May · Shift 2 MCQ

The power of a point $(2, 0)$ with respect to a circle S is -4 and the length of the tangent drawn from the point $(1, 1)$ to S is 2. If the circle S passes through the point $(-1, -1)$, then the radius of the circle S is

(A) 2
(B) $\sqrt{13}$
(C) 3
(D) $\sqrt{10}$

Answer: (B) $\sqrt{13}$ · The council's preliminary key

Q243 TS EAPCET 2024 · 9 May · Shift 2 MCQ

The pole of the line $x - 5y - 7 = 0$ with respect to the circle $S \equiv x^2 + y^2 - 2x + 4y + 1 = 0$ is $P(a, b)$. If C is the centre of the circle $S = 0$ then PC =

(A) $\sqrt{a + b - 1}$
(B) $\sqrt{a^2 + b^2 - 1}$
(C) $\sqrt{a^3 + b^3 - 1}$
(D) $3ab$

Answer: (C) $\sqrt{a^3 + b^3 - 1}$ · The council's preliminary key

Q244 TS EAPCET 2024 · 9 May · Shift 2 MCQ

The equation of the pair of transverse common tangents drawn to the circles $x^2 + y^2 + 2x + 2y + 1 = 0$ and $x^2 + y^2 - 2x - 2y + 1 = 0$ is

(A) $x^2 - y^2 = 0$
(B) $xy = 0$
(C) $x^2 - y^2 + 2x + 1 = 0$
(D) $x^2 - y^2 - 2y - 1 = 0$

Answer: (B) $xy = 0$ · The council's preliminary key

Q245 TS EAPCET 2024 · 9 May · Shift 2 MCQ

If a circle passing through the point $(1, 1)$ cuts the circles $x^2 + y^2 + 4x - 5 = 0$ and $x^2 + y^2 - 4y + 3 = 0$ orthogonally then the center of that circle is

(A) $\left(\frac{3}{4}, \frac{5}{4}\right)$
(B) $\left(\frac{3}{2}, \frac{5}{2}\right)$
(C) $\left(-\frac{3}{2}, -\frac{5}{2}\right)$
(D) $\left(-\frac{3}{4}, -\frac{5}{2}\right)$

Answer: (A) $\left(\frac{3}{4}, \frac{5}{4}\right)$ · The council's preliminary key

Q246 TS EAPCET 2024 · 9 May · Shift 2 MCQ

Length of the common chord of the circles $x^2 + y^2 - 6x + 5 = 0$ and $x^2 + y^2 + 4y - 5 = 0$ is

(A) $\sqrt{13}$
(B) $\frac{12}{\sqrt{13}}$
(C) $\frac{6}{\sqrt{13}}$
(D) $2\sqrt{13}$

Answer: (B) $\frac{12}{\sqrt{13}}$ · The council's preliminary key

Q247 AP EAPCET 2023 · 19 May · Shift 1 MCQ

Let M $\left(\frac{-7}{2}, \frac{-5}{2}\right)$ be the midpoint of the chord AB of the circle $x^2 + y^2 + 10x + 8y - 23 = 0$. If $ax + by + 1 = 0$ is the equation of AB, then $3a + 3b =$

(A) 6
(B) 1
(C) 36
(D) -1

Answer: (B) 1 · The council's preliminary key

Q248 AP EAPCET 2023 · 19 May · Shift 1 MCQ

If the inverse point of the point $(3, 2)$ with respect to the circle $x^2 + y^2 - 2x + 4y - 4 = 0$ is (ℓ, m) then $2\ell + 19m =$

(A) 3
(B) 1
(C) 0
(D) -1

Answer: (C) 0 · The council's preliminary key

Q249 AP EAPCET 2023 · 19 May · Shift 1 MCQ

Let S be a circle concentric with the circle $3x^2 + 3y^2 + x + y - 1 = 0$. If the length of the tangent drawn from a point $(2, -2)$ to the given circle is the radius of the circle S, then the power of the point $(2, 1)$ with respect to the circle S is

(A) $\frac{-137}{18}$
(B) $\frac{1}{18}$
(C) $\frac{-29}{18}$
(D) $\frac{23}{18}$

Answer: (C) $\frac{-29}{18}$ · The council's preliminary key

Q250 AP EAPCET 2023 · 19 May · Shift 1 MCQ

If P(2, 3) and Q$(-1, 2)$ are conjugate points with respect to the circle $x^2 + y^2 + 2gx + 3y - 2 = 0$, then the radius of the circle is

(A) $\frac{19}{6}$
(B) $\frac{3\sqrt{21}}{\sqrt{2}}$
(C) $\frac{3\sqrt{3}}{\sqrt{2}}$
(D) $\frac{35}{2}$

Answer: (B) $\frac{3\sqrt{21}}{\sqrt{2}}$ · The council's preliminary key

Q251 AP EAPCET 2023 · 19 May · Shift 1 MCQ

The line $x + y + 2 = 0$ intersects the circle $x^2 + y^2 + 4x - 4y - 4 = 0$ in two points A and B. Let $S \equiv x^2 + y^2 + 2gx + 2fy + c = 0$ be a different circle passing through the points A and B. If the distance of the centre of $S = 0$ from AB is $\sqrt{2}$, then $g + f + c =$

(A) 12
(B) 8
(C) 6
(D) 0

Answer: (B) 8 · The council's preliminary key

Q252 AP EAPCET 2023 · 18 May · Shift 1 MCQ

The line $3x + y - 5 = 0$ touches a circle S at $(1, 2)$. If (h, k) is the centre of the circle S such that $h^2 + hk + k^2 = 37$ and the radius of the circle S is $\sqrt{10}$, then $k =$

(A) 4
(B) 3
(C) 2
(D) 1

Answer: (B) 3 · The council's preliminary key

EdLoop EAPCET

Q253 AP EAPCET 2023 · 18 May · Shift 1 MCQ

If $x+y-1=0$ and $2x-y+1=0$ are conjugate lines with respect to a circle $x^2+y^2-4x+2fy-1=0$, then $f=$

(A) -1 or 3
(B) 1 or 2
(C) -2 or 0
(D) -1 or 2

Answer: (C) -2 or 0 · The council's preliminary key

Q254 AP EAPCET 2023 · 18 May · Shift 1 MCQ

The product of the slopes of the common tangents drawn to the circles $x^2+y^2+2x-2y-2=0$ and $x^2+y^2-2x+2y+1=0$ is

(A) -1
(B) 3
(C) $\frac{-8}{3}$
(D) 1

Answer: (D) 1 · The council's preliminary key

Q255 AP EAPCET 2023 · 18 May · Shift 1 MCQ

The length of the chord of contact of the point $(2,1)$ with respect to the circle $x^2+y^2+4x+2y+1=0$ is

(A) $\frac{8}{\sqrt{5}}$
(B) $\frac{4}{\sqrt{5}}$
(C) $\frac{4\sqrt{6}}{\sqrt{5}}$
(D) $\frac{2\sqrt{6}}{\sqrt{5}}$

Answer: (A) $\frac{8}{\sqrt{5}}$ · The council's preliminary key

Q256 AP EAPCET 2023 · 18 May · Shift 1 MCQ

If the circles $x^2+y^2-4x+2fy+1=0$ and $x^2+y^2+2gx-4y-1=0$ cut orthogonally, then $r_1^2+r_2^2-8=$

(A) g^2
(B) $-f^2$
(C) $2g^2$
(D) $-2f^2$

Answer: (C) $2g^2$ · The council's preliminary key

EdLoop EAPCET

Q257 AP EAPCET 2023 · 18 May · Shift 2 MCQ

Let $S = 0$ be the circle passing through the points $(2, 0)$, $(1, -2)$, $(-1, 1)$. Then the point $(1, 2)$

(A) lies inside the circle $S = 0$
(B) lies outside the circle $S = 0$
(C) lies on the circle $S = 0$
(D) is the centre of the circle $S = 0$

Answer: (B) lies outside the circle $S = 0$ · The council's preliminary key

Q258 AP EAPCET 2023 · 18 May · Shift 2 MCQ

If the acute angle between the pair of tangents drawn from the origin to the circle $x^2 + y^2 - 4x - 8y + 4 = 0$ is α, then $\tan\alpha =$

(A) $3/5$
(B) $3/4$
(C) $4/3$
(D) $4/5$

Answer: (C) $4/3$ · The council's preliminary key

Q259 AP EAPCET 2023 · 18 May · Shift 2 MCQ

If the chord of contact of the point P(1, 1) with respect to the circle $S \equiv x^2 + y^2 + 4x + 6y - 3 = 0$ meet the circle $S = 0$ at A and B, then the area of ΔPAB is

(A) $\frac{216}{25}$
(B) $\frac{108}{25}$
(C) $\frac{27}{25}$
(D) $\frac{54}{5}$

Answer: (B) $\frac{108}{25}$ · The council's preliminary key

Q260 AP EAPCET 2023 · 18 May · Shift 2 MCQ

If A and B are the points of intersection of the circles $x^2 + y^2 - 4x + 6y - 3 = 0$ and $x^2 + y^2 + 2x - 2y - 2 = 0$, then the distance between A and B is

(A) $\frac{13}{10}$
(B) $\frac{\sqrt{41}}{3}$
(C) $\frac{\sqrt{231}}{5}$
(D) $\frac{26}{5}$

Answer: (C) $\frac{\sqrt{231}}{5}$ · The council's preliminary key

EdLoop EAPCET

Q261 AP EAPCET 2023 · 17 May · Shift 1 MCQ

A circle S touches Y-axis at $(0, 3)$ and makes an intercept of length 8 units on X-axis. If the centre C of the circle S lies in the second quadrant, then the distance of C from the point $(-2, -1)$ is

(A) 13
(B) 10
(C) 5
(D) $\sqrt{2}$

Answer: (C) 5 · The council's preliminary key

Q262 AP EAPCET 2023 · 17 May · Shift 1 MCQ

If the equation of the circle of radius 3 units which touches the circle $x^2 + y^2 + 6x - 8y - 11 = 0$ externally at $(3, 0)$ is $x^2 + y^2 + 2gx + 2fy + c = 0$, then $3g - 4f + c =$

(A) 0
(B) 5
(C) 1
(D) -1

Answer: (B) 5 · The council's preliminary key

Q263 AP EAPCET 2023 · 17 May · Shift 1 MCQ

Tangent $L_1 \equiv 3x - 4y - 8 = 0$ and the chord $L_2 \equiv x + y - 1 = 0$ are at a distance of 2 and $\sqrt{2}$ units respectively from the centre of a circle S. (h, k) is the centre of S such that $h^2 + k^2 = 13$. If the midpoint of the chord $L_2 = 0$ is (α, β) and the radius of the circle is r, then $\alpha + \beta + r =$

(A) 4
(B) -1
(C) 7
(D) 3

Answer: (D) 3 · The council's preliminary key

Q264 AP EAPCET 2023 · 17 May · Shift 1 MCQ

The polar of a point with respect to the circle $x^2 + y^2 - 10x + 12y - 3 = 0$ which is not a tangent and not a chord of contact is

(A) $2x + 3y + 8 = 0$
(B) $3x + 4y + 5 = 0$
(C) $5x - 12y + 7 = 0$
(D) $6x - 8y + 15 = 0$

Answer: (D) $6x - 8y + 15 = 0$ · The council's preliminary key

Q265 AP EAPCET 2023 · 17 May · Shift 1 MCQ

If the angle between the circles $x^2 + y^2 + 2x - 4y + 1 = 0$ and $x^2 + y^2 - 4x - 2y + c = 0$ is $\frac{\pi}{4}$, then $c =$

(A) 3
(B) -13
(C) -3 or 13
(D) -31 or -3

Answer: (A) 3 · The council's preliminary key

Q266 AP EAPCET 2023 · 17 May · Shift 2 MCQ

Let the locus of the point of intersection of the perpendicular tangents drawn to the circle $x^2 + y^2 + 6x - 4y - 12 = 0$ be the circle S. Then the equation of the tangent drawn to S which is perpendicular to the line $6x - 4y + k = 0$ is

(A) $4x + 6y \pm \sqrt{26} = 0$
(B) $2x + 3y \pm \sqrt{26} = 0$
(C) $2x + 3y \pm 5\sqrt{26} = 0$
(D) $4x + 6y \pm 5\sqrt{26} = 0$

Answer: (C) $2x + 3y \pm 5\sqrt{26} = 0$ · The council's preliminary key

Q267 AP EAPCET 2023 · 17 May · Shift 2 MCQ

The distance of the origin from the external centre of similitude for the circles $x^2 + y^2 - 8x - 10y - 8 = 0$ and $x^2 + y^2 + 2x - 2y - 2 = 0$ is

(A) $\frac{3\sqrt{26}}{5}$
(B) $\frac{\sqrt{290}}{9}$
(C) $\frac{\sqrt{290}}{5}$
(D) $\frac{\sqrt{26}}{3}$

Answer: (A) $\frac{3\sqrt{26}}{5}$ · The council's preliminary key

Q268 AP EAPCET 2023 · 17 May · Shift 2 MCQ

Let the equation $ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$ represent a point circle other than the origin. Then which one of the following conditions must hold?

EdLoop EAPCET

(A) $bc > 0$
(B) $b > 0$ and $c < 0$
(C) $b < 0$ and $c > 0$
(D) $b \leq 0$ and $c < 0$

Answer: (A) $bc > 0$ · The council's preliminary key

Q269 AP EAPCET 2023 · 17 May · Shift 2 MCQ

The point of intersection of the tangents drawn at the points where the line $2x - y + 3 = 0$ meets the circle $x^2 + y^2 - 4x - 6y + 4 = 0$ is

(A) $\left(-8, \frac{15}{2}\right)$
(B) $\left(\frac{-5}{2}, \frac{21}{4}\right)$
(C) $\left(\frac{5}{2}, \frac{-21}{4}\right)$
(D) $\left(8, \frac{-15}{2}\right)$

Answer: (B) $\left(\frac{-5}{2}, \frac{21}{4}\right)$ · The council's preliminary key

Q270 AP EAPCET 2023 · 17 May · Shift 2 MCQ

If $S \equiv 2x^2 + 2y^2 - 8x + 8y - 7 = 0$ is the circle passing through the points of intersection of the circles $x^2 + y^2 + kx - ky + 1 = 0$ and $x^2 + y^2 - kx + ky - 2 = 0$, then the length of the tangent drawn from the point (k, k) to the circle S is

(A) $\frac{3}{\sqrt{2}}$
(B) 3
(C) $\sqrt{\frac{23}{2}}$
(D) $\sqrt{23}$

Answer: (A) $\frac{3}{\sqrt{2}}$ · The council's preliminary key

Q271 AP EAPCET 2023 · 16 May · Shift 1 MCQ

The line $x + y = k$ meets the curve $x^2 + y^2 - 2x - 4y + 2 = 0$ at two points A and B. If O is the origin and $\angle AOB = 90^\circ$, then the value of k $(k > 1)$ is

(A) 5
(B) 4
(C) 3
(D) 2

Answer: (D) 2 · The council's preliminary key

EdLoop EAPCET

Q272 AP EAPCET 2023 · 16 May · Shift 1 MCQ

If the circles $x^2+y^2-2x+4y+c=0$ and $x^2+y^2+2x-4y+c=0$ have four common tangents, then

(A) $c<0$
(B) $-2<c<2$
(C) $0<c<5$
(D) $c>0$

Answer: (C) $0<c<5$ · The council's preliminary key

Q273 AP EAPCET 2023 · 16 May · Shift 1 MCQ

The locus of the poles of the tangents to the circle $x^2+y^2-2x+2y-2=0$ with respect to the circle $x^2+y^2=4$, is

(A) $3x^2+2xy+3y^2+8x-8y-16=0$
(B) $x^2-2xy+y^2-4x+4y+8=0$
(C) $3x^2-2xy-3y^2+4x+4y+16=0$
(D) $x^2+y^2-4x+4y-8=0$

Answer: (A) $3x^2+2xy+3y^2+8x-8y-16=0$ · The council's preliminary key

Q274 AP EAPCET 2023 · 16 May · Shift 1 MCQ

Let the circle S which is concentric with the circle $x^2+y^2-2x+ky+4=0$ pass through the point $(3,-2)$. If one of the diameters of S lies along the line $3x-2y+4=0$, then the radius of the circle S is

(A) $\frac{\sqrt{149}}{2}$
(B) $\sqrt{31}$
(C) $\sqrt{38}$
(D) $\frac{1}{2}\sqrt{137}$

Answer: (D) $\frac{1}{2}\sqrt{137}$ · The council's preliminary key

Q275 AP EAPCET 2023 · 16 May · Shift 1 MCQ

If the length of the chord $2x+3y+k=0$ of the circle $x^2+y^2-6x-8y+9=0$ is $2\sqrt{3}$, then one of the values of k is

EdLoop EAPCET

(A) 31
(B) 5
(C) -5
(D) -13

Answer: (C) -5 · The council's preliminary key

Q276 AP EAPCET 2023 · 16 May · Shift 1 MCQ

If Q is the inverse point of the point P(2,3) with respect to the circle $x^2+y^2-2x-2y+1=0$, then the circle with PQ as diameter is

(A) $3x^2+3y^2-14x-16y+37=0$
(B) $x^2+y^2-4x-6y+13=0$
(C) $5x^2+5y^2-16x-22y+33=0$
(D) $2x^2+2y^2-3x-3y-11=0$

Answer: (C) $5x^2+5y^2-16x-22y+33=0$ · The council's preliminary key

Q277 AP EAPCET 2023 · 16 May · Shift 2 MCQ

The lengths of the intercepts made by a circle S on X and Y- axes are $\frac{2\sqrt{13}}{3}$ and $\frac{2\sqrt{22}}{3}$ respectively. If the radius of the circle S is $\frac{\sqrt{38}}{3}$ and its centre C lies in the second quadrant, then C =

(A) $\left(\frac{-5}{3},\frac{4}{3}\right)$
(B) $\left(\frac{-4}{3},\frac{5}{3}\right)$
(C) $\left(\frac{-6}{5},\frac{7}{5}\right)$
(D) $\left(\frac{-7}{5},\frac{6}{5}\right)$

Answer: (B) $\left(\frac{-4}{3},\frac{5}{3}\right)$ · The council's preliminary key

Q278 AP EAPCET 2023 · 16 May · Shift 2 MCQ

If the mid point of the chord intercepted by the circle $x^2+y^2-8x+10y+5=0$ on the line $2x+y+2=0$ is (h,k), then $k+4h=$

(A) 2
(B) 0
(C) 1
(D) -1

Answer: (A) 2 · The council's preliminary key

Q279 AP EAPCET 2023 · 16 May · Shift 2 MCQ

If a circle S passing through the points $A(1,2)$ and $B(2,1)$ has its centre C located in the third quadrant at a distance of $\frac{7}{\sqrt{2}}$ units from AB, then the point $P(1,-2)$

(A) lies inside the circle S
(B) lies outside the circle S
(C) lies on the circle S
(D) lies on the line AB

Answer: (A) lies inside the circle S · The council's preliminary key

Q280 AP EAPCET 2023 · 16 May · Shift 2 MCQ

The equation of a tangent to the circle $x^2 + y^2 + 2x - 12y - 132 = 0$ which is perpendicular to the line $12x + 5y + k = 0$ is

(A) $5x - 12y + 92 = 0$
(B) $5x - 12y - 246 = 0$
(C) $5x - 12y - 169 = 0$
(D) $5x - 12y + 246 = 0$

Answer: (D) $5x - 12y + 246 = 0$ · The council's preliminary key

Q281 AP EAPCET 2023 · 16 May · Shift 2 MCQ

P is a point of intersection of the circles $S \equiv x^2 + y^2 - 6x + 2ky + 1 = 0$ and $S^1 \equiv x^2 + y^2 + 2kx - 6y - 7 = 0$. If the tangent at P to $S = 0$ pass through the centre of $S^1 = 0$ and the tangent at P to $S^1 = 0$ pass through the centre of $S = 0$, then the radius of $S^1 = 0$ is

(A) $\frac{\sqrt{33}}{2}$
(B) 33
(C) $\sqrt{17}$
(D) $\frac{\sqrt{65}}{2}$

Answer: (D) $\frac{\sqrt{65}}{2}$ · The council's preliminary key

Q282 AP EAPCET 2023 · 15 May · Shift 1 MCQ

Let S be the circumcircle of the triangle formed by the line $x - 2y - 4 = 0$ with the coordinate axes. If P $(-2, -4)$ is a point in the plane of the circle S and Q is a point on S such that the distance between P and Q is the least, then PQ $=$

(A) $5 - \sqrt{5}$
(B) $5 + \sqrt{5}$
(C) $13 + \sqrt{5}$
(D) $13 - \sqrt{5}$

Answer: (A) $5 - \sqrt{5}$ · The council's preliminary key

EdLoop EAPCET

Q283 AP EAPCET 2023 · 15 May · Shift 1 MCQ

If the coordinates of point of contact of the circles $x^2+y^2-4x+8y+4=0$ and $x^2+y^2+2x=0$ is (a,b), then $a+2b=$

(A) -1
(B) -2
(C) 0
(D) 1

Answer: (B) -2 · The council's preliminary key

Q284 AP EAPCET 2023 · 15 May · Shift 1 MCQ

If the chord of contact of the point P(h, k) with respect to the circle $x^2+y^2-4x-4y+8=0$ meets the circle in two distinct points and it also makes an angle 45° with the positive X-axis in the positive direction, then (h, k) cannot be

(A) $\left(\frac{5}{2},\frac{3}{2}\right)$
(B) $\left(\frac{5}{3},\frac{7}{3}\right)$
(C) $(3,1)$
(D) $(2,2)$

Answer: (D) $(2,2)$ · The council's preliminary key

Q285 AP EAPCET 2023 · 15 May · Shift 1 MCQ

The equation of the pair of tangents drawn from the point $(1,1)$ to the circle $x^2+y^2+2x+2y+1=0$ is

(A) $3x^2-8xy+3y^2-2x-2y+6=0$
(B) $11x^2-8xy+11y^2-4x-4y-6=0$
(C) $3x^2-8xy+3y^2+2x+2y-2=0$
(D) $x^2-4xy+y^2+x+y=0$

Answer: (C) $3x^2-8xy+3y^2+2x+2y-2=0$ · The council's preliminary key

Q286 AP EAPCET 2023 · 15 May · Shift 1 MCQ

Let the circle $S\equiv x^2+y^2+2gx+2fy+c=0$ cut the circles $x^2+y^2-2x+2y-2=0$ and $x^2+y^2+4x-6y+9=0$ orthogonally. If the centre of the circle $S=0$ lies on the line $2x+3y-2=0$, then $2g+f=$

EdLoop EAPCET

(A) c
(B) $c+f$
(C) $2g-c$
(D) $c-f$

Answer: (D) $c-f$ · The council's preliminary key

Q287 AP EAPCET 2023 · 15 May · Shift 2 MCQ

The distance between the centres of similitude of the circles $x^2+y^2+6x-8y+16=0$ and $x^2+y^2-2x-2y+1=0$ is

(A) $\frac{15}{4}$
(B) $\frac{5}{4}$
(C) $\frac{5}{2}$
(D) $\frac{15}{2}$

Answer: (A) $\frac{15}{4}$ · The council's preliminary key

Q288 AP EAPCET 2023 · 15 May · Shift 2 MCQ

Let P and Q be the inverse points with respect to the circle $S\equiv x^2+y^2-4x-6y+k=0$ and C be the centre of the circle $S=0$ such that $CP\cdot CQ=4$. If $P=(1,2)$ and $Q=(a,b)$, then $2a=$

(A) b
(B) -1
(C) $3b$
(D) 0

Answer: (D) 0 · The council's preliminary key

Q289 AP EAPCET 2023 · 15 May · Shift 2 MCQ

Let A $(2,3)$, B $(3,-1)$ and C$(-3,2)$ be three points. If the centre of the circle passing through A, B and C is (h,k), then $2k-4h=$

(A) 0
(B) 2
(C) -1
(D) 1

Answer: (D) 1 · The council's preliminary key

Q290 AP EAPCET 2023 · 15 May · Shift 2 MCQ

If $P\left(\frac{\pi}{3}\right)$ and $Q\left(\frac{2\pi}{3}\right)$ represent two points on the circle $x^2+y^2-4x+6y-12=0$ in parametric form, then the length of the chord PQ is

(A) $4\sqrt{3}$
(B) 5
(C) $5\sqrt{2}$
(D) 13

Answer: (B) 5 · The council's preliminary key

Q291 AP EAPCET 2023 · 15 May · Shift 2 MCQ

Let A(1,2) be the centre and 3 be the radius of a circle S. Let B $(-1,-1)$ be the centre and r be the radius of another circle S^1. If $\frac{\pi}{3}$ is the angle between the circles S and S^1, then the number of possible values of r is

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (B) 2 · The council's preliminary key

Q292 TS EAMCET 2023 · 14 May · Shift 1 MCQ

If the parametric equations of the circle passing through the points $(3,4)$, $(3,2)$ and $(1,4)$ is $x = a + r\cos\theta$, $y = b + r\sin\theta$ then $b^a r^a =$

(A) 9
(B) 18
(C) 27
(D) 54

Answer: (B) 18 · The council's preliminary key

Q293 TS EAMCET 2023 · 14 May · Shift 1 MCQ

A tangent PT is drawn to the circle $x^2 + y^2 = 4$ at the point $P(\sqrt{3}, 1)$. If a straight line L which is perpendicular to PT is a tangent to the circle $(x-3)^2 + y^2 = 1$, then a possible equation of L is

(A) $x - \sqrt{3}y = 1$
(B) $x - \sqrt{3}y = 4$
(C) $x - \sqrt{3}y = -1$
(D) $x - \sqrt{3}y = 7$

Answer: (A) $x - \sqrt{3}y = 1$ · The council's preliminary key

Q294 TS EAMCET 2023 · 14 May · Shift 1 MCQ

If the angle between the pair of tangents drawn to the circle $x^2 + y^2 - 2x + 4y + 3 = 0$ from the point $(6,-5)$ is θ, then $\cot\theta =$

(A) $\frac{8}{15}$
(B) $\frac{1}{4}$
(C) 4
(D) $\frac{15}{8}$

Answer: (D) $\frac{15}{8}$ · The council's preliminary key

Q295 TS EAMCET 2023 · 14 May · Shift 1 MCQ

If the angle between the circles $x^2+y^2-4x-6y+k=0$ and $x^2+y^2+8x-4y+11=0$ is $\frac{\pi}{2}$, then the value of k is

(A) -3
(B) 3
(C) -15
(D) 15

Answer: (C) -15 · The council's preliminary key

Q296 TS EAMCET 2023 · 14 May · Shift 1 MCQ

The radius of a circle touching all the four circles $(x\pm\lambda)^2+(y\pm\lambda)^2=\lambda^2$ is

(A) $2\sqrt{2}\lambda$
(B) $(\sqrt{2}-1)\lambda$
(C) $(2+\sqrt{2})\lambda$
(D) $(2-\sqrt{2})\lambda$

Answer: (B) $(\sqrt{2}-1)\lambda$ · The council's preliminary key

Q297 TS EAMCET 2023 · 14 May · Shift 1 MCQ

If the radical centre of the given three circles $x^2+y^2=1$, $x^2+y^2-2x-3=0$ and $x^2+y^2-2y-3=0$ is C(α, β) and r is the sum of the radii of the given circles, then the circle with C(α, β) as centre and r as radius is

(A) $(x-1)^2+(y-1)^2=2$
(B) $(x-1)^2+(y+1)^2=4$
(C) $(x-2)^2+(y-2)^2=25$
(D) $(x+1)^2+(y+1)^2=25$

Answer: (D) $(x+1)^2+(y+1)^2=25$ · The council's preliminary key

Q298 TS EAMCET 2023 · 14 May · Shift 2 MCQ

The equation of a circle passing through $(-6,3)$ and touching both the coordinate axes is

(A) $x^2 + y^2 + 20x - 20y + 100 = 0$
(B) $x^2 + y^2 + 10x - 10y + 25 = 0$
(C) $x^2 + y^2 + 6x - 6y + 9 = 0$
(D) $x^2 + y^2 - 30x + 30y + 225 = 0$

Answer: (C) $x^2 + y^2 + 6x - 6y + 9 = 0$ · The council's preliminary key

Q299 TS EAMCET 2023 · 14 May · Shift 2 MCQ

The area (in sq. units) of the triangle formed by the X-axis, the tangent and the normal drawn to the circle $x^2 + y^2 = 10x$ at the point $(9, 3)$ is

(A) $\frac{75}{4}$
(B) $\frac{75}{8}$
(C) 75
(D) 25

Answer: (B) $\frac{75}{8}$ · The council's preliminary key

Q300 TS EAMCET 2023 · 14 May · Shift 2 MCQ

The number of common tangents of the circles $x^2 + y^2 - 4 = 0$ and $x^2 + y^2 - 6x - 8y - 24 = 0$ is

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (A) 1 · The council's preliminary key

Q301 TS EAMCET 2023 · 14 May · Shift 2 MCQ

If the equation of the circle whose radius is $\sqrt{10}$ and which touches the circle $x^2 + y^2 + 2x + 8y - 23 = 0$ externally at the point $(1, 2)$ is $x^2 + y^2 + ax + by + c = 0$, then $|a + b + c| =$

(A) 5
(B) 13
(C) 33
(D) 23

Answer: (A) 5 · The council's preliminary key

Q302 TS EAMCET 2023 · 14 May · Shift 2 MCQ

If a circle 'S' passing through the origin and having its centre on the line $x - y = 0$ cuts the circle $x^2 + y^2 - 4x - 6y + 10 = 0$ orthogonally, then the diameter of 'S' is

EdLoop EAPCET

(A) $\sqrt{2}$
(B) 2
(C) $2\sqrt{2}$
(D) 4

Answer: (C) $2\sqrt{2}$ · The council's preliminary key

Q303 TS EAMCET 2023 · 14 May · Shift 2 MCQ

The equation of the circle passing through the points of intersection of the circles $x^2+y^2+6x+4y-12=0$, $x^2+y^2-4x-6y-12=0$ and having radius $\sqrt{13}$ is

(A) $x^2+y^2-2x-12=0$
(B) $x^2+y^2-4x-6y=0$
(C) $x^2+y^2-2y-12=0$
(D) $x^2+y^2+6x-4y=0$

Answer: (C) $x^2+y^2-2y-12=0$ · The council's preliminary key

Q304 TS EAMCET 2023 · 13 May · Shift 1 MCQ

Let a chord AB subtend an angle of 60° at the centre C(2, 3) of a circle S. If the equation of AB is $x+y+1=0$, then the equation of the circle S is

(A) $x^2+y^2-4x-6y+11=0$
(B) $x^2+y^2-4x-6y+37=0$
(C) $x^2+y^2-4x-6y-11=0$
(D) $x^2+y^2-4x-6y-37=0$

Answer: (C) $x^2+y^2-4x-6y-11=0$ · The council's preliminary key

Q305 TS EAMCET 2023 · 13 May · Shift 1 MCQ

Let 6, 8 be the X and Y – intercepts made by the circle $S\equiv x^2+y^2+2gx+2fy+c=0$ respectively. If $gx+fy+1=0$ is a line passing through the point (1, -1), then the radius of the circle $S=0$ is

(A) $\sqrt{41}$
(B) 13
(C) $\sqrt{26}$
(D) 5

Answer: (D) 5 · The council's preliminary key

Q306 TS EAMCET 2023 · 13 May · Shift 1 MCQ

If $(3,1)$ and $(-2,4)$ are points on a circle S whose centre lies on the line $x-y+1=0$ then the parametric equations of S are

(A) $x = -1 + \sqrt{17}\cos\theta,\ y = \sqrt{17}\sin\theta$
(B) $x = 2 + \sqrt{13}\cos\theta,\ y = 1 + \sqrt{13}\sin\theta$
(C) $x = \sqrt{26}\cos\theta,\ y = -1 + \sqrt{26}\sin\theta$
(D) $x = -1 + \sqrt{19}\cos\theta,\ y = 2 + \sqrt{19}\sin\theta$

Answer: (A) $x = -1 + \sqrt{17}\cos\theta,\ y = \sqrt{17}\sin\theta$ · The council's preliminary key

Q307 TS EAMCET 2023 · 13 May · Shift 1 MCQ

Let $S \equiv x^2 + y^2 - 8x + 10y + 5 = 0$ be a circle. Let P(1, 1) and Q(1, -1) be two points. Then the point of intersection of the polar of P with respect to $S = 0$ and the chord with Q as mid-point to $S = 0$ is

(A) $(2, 2)$
(B) $(11, 13/2)$
(C) $(-4, -1)$
(D) $(5, 7/2)$

Answer: (B) $(11, 13/2)$ · The council's preliminary key

Q308 TS EAMCET 2023 · 13 May · Shift 1 MCQ

If the angle between the circles $x^2 + y^2 - 2x + 2y + 1 = 0$ and $x^2 + y^2 + 2x - 2y + k = 0$ is $\frac{\pi}{3}$, then

(A) k is a rational number but not an integer
(B) k is an irrational number
(C) there is no real number k satisfying the given condition
(D) k is an integer

Answer: (B) k is an irrational number · The council's preliminary key

Q309 TS EAMCET 2023 · 13 May · Shift 1 MCQ

Let the line $x - y + 1 = 0$ intersect the circle $x^2 + y^2 + 2x + 2y + 1 = 0$ in two points A and B. If AB is the diameter of the circle $x^2 + y^2 + 2gx + 2fy + c = 0$ then $g + f =$

(A) $3c$
(B) $2c$
(C) c
(D) 0

Answer: (C) c · The council's preliminary key

Q310 TS EAMCET 2023 · 13 May · Shift 2 MCQ

The equation of the circle inscribed in a square formed by the lines $x + y - 2 = 0$, $x + y - 6 = 0$, $x - y + 1 = 0$ and $x - y + 5 = 0$ is

(A) $2x^2 + 2y^2 - 2x - 14y + 21 = 0$
(B) $x^2 + y^2 - x - 7y + 10 = 0$
(C) $2x^2 + 2y^2 - x - 7y + 21 = 0$
(D) $x^2 + y^2 - 2x - 14y + 10 = 0$

Answer: (A) $2x^2 + 2y^2 - 2x - 14y + 21 = 0$ · The council's preliminary key

Q311 TS EAMCET 2023 · 13 May · Shift 2 MCQ

Let the circle $S \equiv x^2 + y^2 + 2gx + 2fy + c = 0$ touch the positive X-axis and the positive Y-axis. Let (2,4) be a point on the circle $S = 0$. If two such circles exist, then the difference of their areas is

(A) 104π
(B) 96π
(C) 9π
(D) 41π

Answer: (B) 96π · The council's preliminary key

Q312 TS EAMCET 2023 · 13 May · Shift 2 MCQ

If the equations $2x - 3y + 3 = 0$, $2x + y + 1 = 0$ and $6x + 4y + 1 = 0$ represent the sides of a triangle, then the equation of the circle passing through the vertices of this triangle is

(A) $4x^2 + 4y^2 + 9x - 10y + 7 = 0$
(B) $2x^2 + 2y^2 - 7x - 5y + 9 = 0$
(C) $8x^2 + 8y^2 + 18x - 20y + 17 = 0$
(D) $x^2 + y^2 + 3x - y + 13 = 0$

Answer: (C) $8x^2 + 8y^2 + 18x - 20y + 17 = 0$ · The council's preliminary key

Q313 TS EAMCET 2023 · 13 May · Shift 2 MCQ

If T_1T_1' and T_2T_2' are the common tangents of the circles $S \equiv x^2 + y^2 - 2x - 4y - 4 = 0$ and $S' \equiv x^2 + y^2 + 4x + 4y + 4 = 0$ where T_1, T_1', T_2, T_2' are the points of contact, then the distance between T_1 and T_1' is

(A) $6\sqrt{6}$
(B) $5\sqrt{6}$
(C) $10\sqrt{6}$
(D) $2\sqrt{6}$

Answer: (D) $2\sqrt{6}$ · The council's preliminary key

Q314 TS EAMCET 2023 · 13 May · Shift 2 MCQ

A circle $S \equiv x^2 + y^2 + 2gx + 2fy + 4 = 0$ cuts the circle $x^2 + y^2 - 4x - 4y - 4 = 0$ orthogonally and makes an angle of 60° with the circle $x^2 + y^2 + 4x + 4y + 4 = 0$. Then the radius of the circle $S = 0$ is

(A) 4
(B) 3
(C) 5
(D) 1

Answer: (A) 4 · The council's preliminary key

Q315 TS EAMCET 2023 · 13 May · Shift 2 MCQ

If the circle $S \equiv x^2 + y^2 + 2gx + 2fy + c = 0$ cuts each of the three circles $x^2 + y^2 + 4x + 4y + 7 = 0$, $x^2 + y^2 - 4x + 4y + 7 = 0$ and $x^2 + y^2 - 4x - 4y + 7 = 0$ orthogonally, then the equation of the tangent drawn at the point $(\sqrt{3}, 2)$ to the circle $S = 0$ is

(A) $(\sqrt{3} - 1)x + 4y + (\sqrt{3} - 1) = 0$
(B) $\sqrt{3}x + 2y - 7 = 0$
(C) $(\sqrt{3} + 2)x + 3y + (\sqrt{3} + 1) = 0$
(D) $\sqrt{3}x - 2y + 7 = 0$

Answer: (B) $\sqrt{3}x + 2y - 7 = 0$ · The council's preliminary key

Q316 TS EAMCET 2023 · 12 May · Shift 1 MCQ

If a diameter of the circle $x^2 + y^2 - 4x + 6y - 12 = 0$ is a chord of a circle S whose centre is at (-3, 2), then the radius of S is

(A) $5\sqrt{3}$
(B) $4\sqrt{3}$
(C) $2\sqrt{3}$
(D) 5

Answer: (A) $5\sqrt{3}$ · The council's preliminary key

Q317 TS EAMCET 2023 · 12 May · Shift 1 MCQ

If a circle passing through A(1, 1) touches the X-axis, then the locus of the other end of the diameter through A is

(A) $(x + 1)^2 = 4y$
(B) $(y - 1)^2 = 4x$
(C) $(x - 1)^2 = 4y$
(D) $(y + 1)^2 = 4x$

Answer: (C) $(x - 1)^2 = 4y$ · The council's preliminary key

Q318 TS EAMCET 2023 · 12 May · Shift 1 MCQ

If $C(\alpha, \beta)$ $(\alpha < 0)$ is the centre of the circle that touches the Y-axis at $(0, 3)$ and makes an intercept of length 2 units on positive X-axis, then $(\alpha, \beta) =$

EdLoop EAPCET

(A) $(-3, \sqrt{10})$
(B) $(-3, -\sqrt{10})$
(C) $(-\sqrt{10}, 3)$
(D) $(-\sqrt{10}, -3)$

Answer: (C) $(-\sqrt{10}, 3)$ · The council's preliminary key

Q319 TS EAMCET 2023 · 12 May · Shift 1 MCQ

The equations of the tangents to the circle $x^2 + y^2 = 4$ drawn from the point $(4, 0)$ are

(A) $\sqrt{3}y = \pm(x - 4)$
(B) $\sqrt{3}y = \pm 2(x - 4)$
(C) $\sqrt{3}x = \pm(y - 4)$
(D) $\sqrt{3}x = \pm 2(y - 4)$

Answer: (A) $\sqrt{3}y = \pm(x - 4)$ · The council's preliminary key

Q320 TS EAMCET 2023 · 12 May · Shift 1 MCQ

If the inverse of $P(-3, 5)$ with respect to a circle is $(1, 3)$, then polar of P with respect to that circle is

(A) $x + 2y = 7$
(B) $2x - 2y + 4 = 0$
(C) $2x - y + 1 = 0$
(D) $2x + y - 5 = 0$

Answer: (C) $2x - y + 1 = 0$ · The council's preliminary key

Q321 TS EAMCET 2023 · 12 May · Shift 1 MCQ

If the tangent drawn at the point P on the circle $x^2 + y^2 + 6x + 6y = 2$ meets the straight line $5x - 2y + 6 = 0$ at a point Q on the Y-axis, then the length of PQ is

(A) 5
(B) 4
(C) 2
(D) 1

Answer: (A) 5 · The council's preliminary key

Q322 TS EAMCET 2023 · 12 May · Shift 2 MCQ

If a circle passing through $(1, -2)$ has $x - y = 2$ and $2x + 3y = 14$ as its diameters, then the radius of the circle is

(A) 2
(B) 3
(C) 4
(D) 5

Answer: (D) 5 · The council's preliminary key

Q323 TS EAMCET 2023 · 12 May · Shift 2 MCQ

The equation of the circle whose diameter is the common chord of the circles $x^2+y^2+2x+3y+1=0$ and $x^2+y^2+4x+3y+2=0$ is

(A) $2x^2+2y^2+2x+6y+1=0$
(B) $x^2+y^2-2x+3y-1=0$
(C) $x^2+y^2+2x+3y-4=0$
(D) $2x^2+2y^2-x+2y+1=0$

Answer: (A) $2x^2+2y^2+2x+6y+1=0$ · The council's preliminary key

Q324 TS EAMCET 2023 · 12 May · Shift 2 MCQ

The number of common tangents to the circles $x^2+y^2-2x-6y+9=0$ and $x^2+y^2+6x-2y+1=0$ is

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (D) 4 · The council's preliminary key

Q325 TS EAMCET 2023 · 12 May · Shift 2 MCQ

The pole of the straight line $9x+y-28=0$ with respect to the circle $2x^2+2y^2-3x+5y-7=0$ is

(A) $(3,1)$
(B) $(-3,1)$
(C) $(-2,1)$
(D) $(3,-1)$

Answer: (D) $(3,-1)$ · The council's preliminary key

Q326 TS EAMCET 2023 · 12 May · Shift 2 MCQ

The equation of the line perpendicular to the radical axis of two circles $x^2+y^2-5x+6y+12=0$, $x^2+y^2+6x-4y-14=0$ and passing through $(1,1)$ is

EdLoop EAPCET

(A) $2x + 3y - 5 = 0$
(B) $x + y - 2 = 0$
(C) $10x + 11y - 21 = 0$
(D) $11x + 10y - 21 = 0$

Answer: (C) $10x + 11y - 21 = 0$ · The council's preliminary key

Q327 TS EAMCET 2023 · 12 May · Shift 2 MCQ

If the angle between the circles $x^2 + y^2 - 2x - 4y + c = 0$ and $x^2 + y^2 - 4x - 2y + 4 = 0$ is 60°, then $c =$

(A) $\frac{3 \pm \sqrt{5}}{2}$
(B) $\frac{6 \pm \sqrt{5}}{2}$
(C) $\frac{7 \pm \sqrt{5}}{2}$
(D) $\frac{9 \pm \sqrt{5}}{2}$

Answer: (C) $\frac{7 \pm \sqrt{5}}{2}$ · The council's preliminary key

Q328 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

Let the centre of the circle $S = 0$ lie on the line $x + y - 5 = 0$ and also lie in the first quadrant. If this circle touches both the lines $x - 2 = 0$ and $y - 5 = 0$, then the area of the circle is

(A) π sq. units
(B) 2π sq. units
(C) 4π sq. units
(D) $\frac{1}{4}\pi$ sq. units

Answer: (A) π **sq. units** · The council's preliminary key

Q329 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

The straight line $x + 2y = 1$ cuts the X-axis at A and Y-axis at B. A circle is drawn through A, B and the origin. The sum of the perpendicular distances from A, B on to the tangent drawn at origin to the circle S is

(A) equal to the radius of the circle S
(B) equal to the diameter of the circle S
(C) equal to twice the diameter of the circle S
(D) equal to $\sqrt{5}$ times the radius of the circle S

Answer: (B) equal to the diameter of the circle S · The council's preliminary key

EdLoop EAPCET

Q330 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

Let P and Q be two external points of the circle $S \equiv x^2 + y^2 - a^2 = 0$. Let the chord of contact of the point P with respect to the circle $S = 0$ pass through Q. If l_1 and l_2 are the lengths of the tangents drawn from P and Q to the circle $S = 0$, then PQ =

(A) $\sqrt{l_1 + l_2}$
(B) $\dfrac{l_1 + l_2}{2}$
(C) $\sqrt{l_1^2 + l_2^2}$
(D) $\sqrt{l_1^2 - 2l_1 + l_2^2 - 2l_2}$

Answer: (C) $\sqrt{l_1^2 + l_2^2}$ · The council's preliminary key

Q331 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

$A(x_1, y_1)$ is the internal centre of similitude and $B(x_2, y_2)$ is the external centre of similitude of two circles C_1 and C_2 whose centres are $P(\alpha, \beta)$ and $Q(\gamma, \delta)$ respectively. If PA = 3, AB = 5, QB = 2, then ratio of the radii of the two circles is

(A) 2 : 3
(B) 3 : 2
(C) 1 : 1
(D) 5 : 2

Answer: (C) 1 : 1 · The council's preliminary key

Q332 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

The equation of the direct common tangent of the circles $x^2 + y^2 - 6x - 4y - 23 = 0$ and $x^2 + y^2 + 2x + 2y + 1 = 0$ is

(A) $6x - 4y + 1 = 0$
(B) $3x - 4y + 6 = 0$
(C) $4x + 3y + 12 = 0$
(D) $2x - 4y + 3 = 0$

Answer: (C) $4x + 3y + 12 = 0$ · The council's preliminary key

Q333 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

The length of the common chord of the two circles $x^2 + y^2 - 4x - 8y + 4 = 0$ and $x^2 + y^2 - 8x - 12y + 16 = 0$ is

EdLoop EAPCET

(A) $\sqrt{46}$
(B) $\sqrt{15}$
(C) $\sqrt{55}$
(D) 3

Answer: (A) $\sqrt{46}$ · The council's preliminary key

Q334 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

The line $4x + 3y - 4 = 0$ divides the circumference of a circle in the ratio 1 : 2. If C(5, 3) is the centre of that circle, then equation of the circle is

(A) $(x-5)^2 + (y-3)^2 = 10^2$
(B) $(x-5)^2 + (y-3)^2 = 12^2$
(C) $(x-5)^2 + (y-3)^2 = 7^2$
(D) $(x-5)^2 + (y-3)^2 = 8^2$

Answer: (A) $(x-5)^2 + (y-3)^2 = 10^2$ · The council's preliminary key

Q335 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

Two sides of a square are along the lines $x = -5$ and $y = 4$. The point of intersection of the diagonals is $(3, -4)$. The point of intersection of the tangents drawn to the circumcircle of the square at the two consecutive vertices lying on $x = -5$ is

(A) $(-4, -4)$
(B) $(-13, -4)$
(C) $(-4, -13)$
(D) $(-4, -10)$

Answer: (B) $(-13, -4)$ · The council's preliminary key

Q336 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

If L_1, L_2 and L_3 are the chords of contact of the three points $(2, 0), (1, -2)$ and $(4, 4)$ respectively with respect to the circle $x^2 + y^2 = 3$, then L_1, L_2, L_3 are

(A) concurrent lines
(B) sides of a right-angled triangle
(C) sides of an equilateral triangle
(D) parallel lines

Answer: (A) concurrent lines · The council's preliminary key

Q337 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

The combined equation of the direct common tangents of the circles $x^2 + y^2 + 2x = 0$ and $x^2 + y^2 - 2y - 3 = 0$ is

(A) $xy + x + 2y + 2 = 0$
(B) $x^2 - xy - 2y^2 + 3x - 6y = 0$
(C) $2x^2 + 5xy + 2y^2 + 13x + 14y + 20 = 0$
(D) $2x^2 - 9xy + 9y^2 + 3x - 6y + 1 = 0$

Answer: (A) $xy + x + 2y + 2 = 0$ · The council's preliminary key

Q338 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

If (h, k) is the centre of the circle which passes through the origin and cuts the circles $x^2 + y^2 + 4x + 6y + 12 = 0$ and $x^2 + y^2 + 4x - 6y + 9 = 0$ orthogonally, then $k - 2h =$

(A) 0
(B) 1
(C) -1
(D) 5

Answer: (D) 5 · The council's preliminary key

Q339 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

If $(-1, -1)$ is the radical centre of the circles $x^2 + y^2 + 2gx - 4y + 4 = 0$, $x^2 + y^2 + 6x + 2fy + 12 = 0$ and $x^2 + y^2 + 10y + 20 = 0$ then $g - f =$

(A) 0
(B) -1
(C) 1
(D) 2

Answer: (C) 1 · The council's preliminary key

Q340 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

The equation of the incircle of the triangle formed by the lines $x = 0$, $y = 0$ and $3x + 4y - 24 = 0$ is

(A) $x^2 + y^2 - 24x - 24y + 144 = 0$
(B) $x^2 + y^2 - 6x - 6y + 9 = 0$
(C) $x^2 + y^2 - 4x - 4y + 4 = 0$
(D) $x^2 + y^2 - 8x - 8y + 16 = 0$

Answer: (C) $x^2 + y^2 - 4x - 4y + 4 = 0$ · The council's preliminary key

Q341 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

If two tangents are drawn from the point $\mathrm{P}\left(\frac{\pi}{4}\right)$ on the circle $x^2 + y^2 = 4$ to the circle $x^2 + y^2 = 1$ then the slopes of the tangents are

EdLoop EAPCET

(A) $2 \pm \sqrt{2}$
(B) $1 \pm \sqrt{2}$
(C) $2 \pm \sqrt{3}$
(D) $1 \pm \sqrt{3}$

Answer: (C) $2 \pm \sqrt{3}$ · The council's preliminary key

Q342 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

If $5x + 6y - 34 = 0$ and $2x + y + c = 0$ are conjugate lines with respect to the circle $x^2 + y^2 - 8x - 10y + 25 = 0$ then the point on the line $2x + y + c = 0$ is

(A) $(3, 3)$
(B) $(2, 4)$
(C) $(1, -5)$
(D) $(-2, -2)$

Answer: (C) $(1, -5)$ · The council's preliminary key

Q343 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

If C_1 and C_2 are the centres of similitude with respect to the circles $x^2 + y^2 + 6x + 8y + 24 = 0$ and $x^2 + y^2 - 6x - 8y + 9 = 0$ then $C_1C_2 =$

(A) 10
(B) 5
(C) $\frac{16}{3}$
(D) $\frac{19}{3}$

Answer: (C) $\frac{16}{3}$ · The council's preliminary key

Q344 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

Let $x + y = 0$ be the radical axis of the circles $S \equiv x^2 + y^2 + 2gx + 2fy + c = 0$ and $S' \equiv x^2 + y^2 - 6x - 4y + 4 = 0$ and the radius of the circle $S = 0$ be 1. The $g + f =$

(A) ± 5
(B) ± 3
(C) ± 2
(D) ± 1

Answer: (B) ± 3 · The council's preliminary key

Q345 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

The radius of the circle which cuts all the three circles $x^2 + y^2 - 4x - 4y + 3 = 0$, $x^2 + y^2 + 4x - 4y + 3 = 0$ and $x^2 + y^2 + 4x + 4y + 3 = 0$ orthogonally is

(A) 1
(B) $\sqrt{3}$
(C) $\sqrt{5}$
(D) $\sqrt{7}$

Answer: (B) $\sqrt{3}$ · The council's preliminary key

Q346 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

The radius of the circle passing through the points $(-1, 1), (2, -1)$ and $(1, 0)$ is

(A) 5
(B) $\frac{\sqrt{130}}{2}$
(C) 6
(D) $\frac{\sqrt{145}}{2}$

Answer: (B) $\frac{\sqrt{130}}{2}$ · The council's preliminary key

Q347 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

If $A = (0, -2)$ and B is any point on the circle $x^2 + y^2 - 2x - 2y + 1 = 0$, then the maximum value of $\left(\overline{AB}\right)^2$ is

(A) 51
(B) $11 + 2\sqrt{10}$
(C) $9 + 3\sqrt{5}$
(D) $\frac{5+2\sqrt{3}}{2}$

Answer: (B) $11 + 2\sqrt{10}$ · The council's preliminary key

Q348 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

If (α, β) is the pole of the line $3x - 5y + 6 = 0$ with respect to the circle $x^2 + y^2 - 10x + 14y + 46 = 0$ then $\alpha + \beta =$

(A) -1
(B) 8
(C) 3
(D) -4

Answer: (A) -1 · The council's preliminary key

Q349 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

O(0, 0) and A(1, 0) are centres of two unit circles C_1 and C_2 respectively. C_3 is also a unit circle having its centre above X-axis and passing through O and A. The equation of the common tangent to C_1 and C_3 which does not intersect the circle C_2 is

EdLoop EAPCET

(A) $\sqrt{3}x - y + 2 = 0$
(B) $x + \sqrt{3}y + 2 = 0$
(C) $\sqrt{3}x - y - 2 = 0$
(D) $x + \sqrt{3}y - 2 = 0$

Answer: (A) $\sqrt{3}x - y + 2 = 0$ · The council's preliminary key

Q350 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

If the circles $x^2 + y^2 - 16x - 20y + 164 = r^2$ $(r > 0)$ and $x^2 + y^2 - 8x - 14y + 29 = 0$ intersect in two distinct points, then the maximum possible integral value of r is

(A) 1
(B) 10
(C) -2
(D) 2

Answer: (B) 10 · The council's preliminary key

Q351 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

If the circle $x^2 + y^2 - 6x - 12y + 1 = 0$ cuts another circle C orthogonally and the centre of the circle C is $(-4, 2)$, then its radius is

(A) $\sqrt{21}$
(B) 5
(C) $\frac{3}{4}$
(D) $\sqrt{15}$

Answer: (A) $\sqrt{21}$ · The council's preliminary key

Q352 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

A circle passes through the points $(1, 2), (3, 4)$. If its centre lies on the line $x - y + 3 = 0$, then its radius is equal to

(A) 4
(B) 3
(C) 1
(D) 2

Answer: (D) 2 · The council's preliminary key

Q353 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

A line drawn through the point $A(5, 7)$ cuts the circle $x^2 + y^2 - 36 = 0$ at the points P and Q. Then, $AP \cdot AQ =$

EdLoop EAPCET

(A) 110
(B) 60
(C) 38
(D) 12

Answer: (C) 38 · The council's preliminary key

Q354 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

Let P be any point on the circle $x^2+y^2-2x-1=0$ and C be its centre. Let AB be the chord of contact of P with respect to the circle $x^2+y^2-2x=0$. Then the locus of the circumcentre of the triangle CAB is

(A) $2x^2+2y^2-4x+1=0$
(B) $x^2+y^2-4x+2=0$
(C) $x^2+y^2-4x+1=0$
(D) $2x^2+2y^2-4x+3=0$

Answer: (A) $2x^2+2y^2-4x+1=0$ · The council's preliminary key

Q355 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

If a circle C passing through $(4,0)$ touches the circle $x^2+y^2+4x-6y-12=0$ externally at the point $(1,-1)$, then the radius of C is

(A) $\sqrt{12}$
(B) 4
(C) $\sqrt{3}$
(D) 5

Answer: (D) 5 · The council's preliminary key

Q356 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

If the circles $C_1: x^2+y^2+2x+4y-20=0,\ C_2: x^2+y^2+6x-8y+9=0$ have n common tangents and the length of the tangent drawn from the centre of similitude to the circle C_2 is l then $\frac{l}{n^2}=$

(A) $4\sqrt{39}$
(B) $\sqrt{39}$
(C) $\frac{\sqrt{39}}{4}$
(D) $2\sqrt{39}$

Answer: (B) $\sqrt{39}$ · The council's preliminary key

Q357 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

If the common chord of the circles $x^2+y^2+4y=0$ and $x^2+y^2-4x-5=0$ is the diameter of the circle $S=0$ then the abscissa of the centre of the circle $S=0$ is

(A) $\frac{-13}{8}$
(B) $\frac{3}{8}$
(C) $\frac{3}{4}$
(D) $\frac{-13}{4}$

Answer: (B) $\frac{3}{8}$ · The council's preliminary key

Q358 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

From a point $A(0,3)$ on the circle $(x+2)^2+(y-3)^2=4$, a chord AB is drawn and it is extended to a point Q such that $AQ=2AB$. Then the locus of Q is

(A) $(x+4)^2+(y-3)^2=16$
(B) $(x+1)^2+(y-3)^2=32$
(C) $(x+1)^2+(y-3)^2=4$
(D) $(x+1)^2+(y-3)^2=1$

Answer: (A) $(x+4)^2+(y-3)^2=16$ · The council's preliminary key

Q359 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

If m_1, m_2 are the slopes of the tangents drawn from a point $(1,-3)$ to the circle $x^2+y^2-6x+4y+12=0$ then $9\left(m_1^2+m_2^2\right)=$

(A) 16
(B) 25
(C) 4
(D) 1

Answer: (A) 16 · The council's preliminary key

Q360 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

If A, B are the points of contact of the tangents drawn from the point $P(-2,-3)$ to the circle $x^2+y^2-8x-10y+5=0$ and the chord AB subtends an angle θ at P then $\tan\theta=$

EdLoop EAPCET

(A) $\frac{3}{4}$
(B) $\frac{24}{7}$
(C) $\frac{7}{24}$
(D) $\frac{4}{3}$

Answer: (B) $\frac{24}{7}$ · The council's preliminary key

Q361 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

The equation of the transverse common tangent of the circles $x^2+y^2-6x-8y+9=0$ and $x^2+y^2+2x-2y+1=0$ is

(A) $4x+3y-4=0$
(B) $3x+y-1=0$
(C) $2x-y+2=0$
(D) $x+2y-3=0$

Answer: (A) $4x+3y-4=0$ · The council's preliminary key

Q362 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

If θ is the angle between the circles $x^2+y^2-2x-4y-4=0$ and $x^2+y^2-8x-12y+43=0$ then $|7\sec\theta-18\cos\theta|=$

(A) 11
(B) 9
(C) 0
(D) 1

Answer: (A) 11 · The council's preliminary key

Q363 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

If $\left(0,\frac{3}{4}\right)$ is the radical centre of the circles $S\equiv x^2+y^2+\alpha x+6y=0$, $S'\equiv x^2+y^2+2\alpha x+\alpha y+6=0$ and $S''\equiv x^2+y^2+6\alpha x-\alpha y+3=0$ then the distance between the radical centre and the centre of the circle $S'=0$ is

(A) 8
(B) 15
(C) $\frac{\sqrt{65}}{4}$
(D) $\frac{\sqrt{5}}{4}$

Answer: (C) $\frac{\sqrt{65}}{4}$ · The council's preliminary key

Q364 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

If a point $P(\alpha,\beta)$ on the line $y=1$ is such that the two distinct chords drawn on $x^2+y^2-\alpha x-y=0$ from P are bisected by the x-axis, then

(A) $\alpha^2 < 8$
(B) $\alpha = 2\sqrt{2}$
(C) $\alpha^2 > 8$
(D) $\alpha = -2\sqrt{2}$

Answer: (C) $\alpha^2 > 8$ · The council's preliminary key

Q365 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

The ratio of the areas of the concentric circles $x^2 + y^2 - 6x + 12y + 15 = 0$ and $x^2 + y^2 - 6x + 12y - 15 = 0$ is

(A) $1 : \sqrt{2}$
(B) $1 : \sqrt{3}$
(C) $1 : 2$
(D) $1 : 4$

Answer: (C) $1 : 2$ · The council's preliminary key

Q366 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

For any real number $\lambda \neq 1$, the centre of the circle that passes through $A(1, \lambda)$, $B(\lambda, 1)$ and $C(\lambda, \lambda)$ is

(A) $\left(\frac{1+\lambda}{2}, \frac{1+\lambda}{2}\right)$
(B) $\left(\frac{1+2\lambda}{3}, \frac{1+2\lambda}{3}\right)$
(C) $(1 + 2\lambda, 1 + 2\lambda)$
(D) $\left(\frac{\lambda}{2}, \frac{\lambda}{2}\right)$

Answer: (A) $\left(\frac{1+\lambda}{2}, \frac{1+\lambda}{2}\right)$ · The council's preliminary key

Q367 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

The shortest distance from the line $3x + 4y = 25$ to the circle $x^2 + y^2 - 6x + 8y = 0$ is

(A) $\frac{9}{5}$
(B) $\frac{7}{5}$
(C) $\frac{8}{5}$
(D) $\frac{13}{5}$

Answer: (B) $\frac{7}{5}$ · The council's preliminary key

Q368 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

The straight line $x \cos\alpha + y \sin\alpha = p$ cuts the circle $x^2 + y^2 - a^2 = 0$ at A and B. Then the equation of circle having AB as diameter is

(A) $x^2+y^2-a^2+p(x\cos\alpha+y\sin\alpha-p)=0$
(B) $x^2+y^2-a^2-p(x\cos\alpha+y\sin\alpha+p)=0$
(C) $x^2+y^2-a^2+2p(x\cos\alpha+y\sin\alpha-p)=0$
(D) $x^2+y^2-a^2-2p(x\cos\alpha+y\sin\alpha-p)=0$

Answer: (D) $x^2+y^2-a^2-2p(x\cos\alpha+y\sin\alpha-p)=0$ · The council's preliminary key

Q369 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

If a circle of radius 3 passes through the point $(7,3)$ and has its centre on the line $x-y-1=0$, then its equation among the following is

(A) $x^2+y^2+14x-12y+76=0$
(B) $x^2+y^2+14x-12y+76=0$
(C) $x^2+y^2+8x-6y+16=0$
(D) $x^2+y^2-14x-12y+76=0$

Answer: (D) $x^2+y^2-14x-12y+76=0$ · The council's preliminary key

Q370 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

Number of circles intersecting $x^2+y^2=4$, $x^2+y^2-2x-3=0$ and $x^2+y^2-2y-3=0$ orthogonally is

(A) 0
(B) 1
(C) 2
(D) ∞

Answer: (A) 0 · The council's preliminary key

Q371 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

If the segments of the straight lines $x+y=6$ and $x+2y=4$ are two diameters of a circle passing through $(6,2)$, then the equation of that circle is

(A) $x^2+y^2-2x-4y-20=0$
(B) $x^2+y^2+6x-4y-68=0$
(C) $x^2+y^2-16x+4y+48=0$
(D) $x^2+y^2+2x-10y-32=0$

Answer: (C) $x^2+y^2-16x+4y+48=0$ · The council's preliminary key

Q372 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

The circle $x^2+y^2-4x-8y+16=0$ rolls up along the tangent drawn to it at $(2+\sqrt{3},3)$ by 2 units. The equation of the circle in the new position is

EdLoop EAPCET

(A) $x^2+y^2-6x-2(4+\sqrt{3})\,y+(24+8\sqrt{3})=0$
(B) $x^2+y^2-6x+2(4+\sqrt{3})\,y+(24+8\sqrt{3})=0$
(C) $x^2+y^2+6x-2(4+\sqrt{3})\,y+(24+8\sqrt{3})=0$
(D) $x^2+y^2+6x+2(4+\sqrt{3})\,y+(24+8\sqrt{3})=0$

Answer: (A) $x^2+y^2-6x-2(4+\sqrt{3})\,y+(24+8\sqrt{3})=0$ · The council's preliminary key

Q373 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

Suppose the angle between the tangents drawn from $(0,0)$ to the circle $(x+\lambda)^2+(y+1)^2=\lambda^2$ is $\frac{\pi}{2}$. Then λ satisfies

(A) $\lambda^2=1$
(B) $\lambda=0$
(C) $\lambda^2=4$
(D) $\lambda^2=9$

Answer: (A) $\lambda^2=1$ · The council's preliminary key

Q374 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

Suppose d_1 and d_2 are respectively the lengths of intercepts of the circle $x^2+y^2=4$ and $x^2+y^2-10x-14y+65=0$ on the line $2x-2y-3=0$. Then which of the following is true?

(A) $d_1=2\,d_2$
(B) $d_2=2\,d_1$
(C) $d_1=3\,d_2$
(D) $d_1=d_2$

Answer: (D) $d_1=d_2$ · The council's preliminary key

Q375 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

If the point $(2,\lambda)$ lies inside the circles $x^2+y^2=13$ and $x^2+y^2+x-2y=14$, λ lies in the set

(A) $(-\infty,-3)\cup(4,\infty)$
(B) $(-\infty,-1)\cup(3,\infty)$
(C) $[-3,4]$
(D) $[-2,3]$

Answer: (D) $[-2,3]$ · The council's preliminary key

Q376 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

For different real non zero numbers x_1,x_2,x_3 and x_4, suppose the points $\left(x_1,\frac{1}{x_1}\right),\left(x_2,\frac{1}{x_2}\right),\left(x_3,\frac{1}{x_3}\right)$ and $\left(x_4,\frac{1}{x_4}\right)$ lie on the boundary of a circle of radius 4. Then the value of $x_1x_2x_3x_4$ is

(A) 1
(B) 2
(C) 4
(D) $\frac{1}{4}$

Answer: (A) 1 · The council's preliminary key

Q377 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

The equation of the tangent to the circle $x^2 + y^2 - 9 = 0$ making an angle 60^0 with the x-axis is

(A) $\frac{1}{\sqrt{3}}x - y \pm 6 = 0$
(B) $\sqrt{3}x - y \pm 6 = 0$
(C) $\sqrt{3}x + y \pm 6 = 0$
(D) $\frac{1}{\sqrt{3}}x + y \pm 6 = 0$

Answer: (B) $\sqrt{3}x - y \pm 6 = 0$ · The council's preliminary key

Q378 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

The equation of circle passing through $(0, 0)$ and cutting orthogonally the circles $x^2 + y^2 + 6x - 15 = 0$ and $x^2 + y^2 - 8y - 10 = 0$ is

(A) $2(x^2 + y^2) - 10x + 5y = 0$
(B) $2(x^2 + y^2) + 10x - 5y = 0$
(C) $2(x^2 - y^2) + 10x + 5y = 0$
(D) $2(x^2 - y^2) - 10x - 5y = 0$

Answer: (A) $2(x^2 + y^2) - 10x + 5y = 0$ · The council's preliminary key

Q379 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

The straight line touching the circle $x^2 + y^2 - 2x - 3 = 0$ and remaining normal to the circle $x^2 + y^2 - 4y - 6 = 0$ is

(A) $4x - 3y + 6 = 0$
(B) $y + 2 = 0$
(C) $4x + 3y - 6 = 0$
(D) $2x + 3 = 0$

Answer: (A) $4x - 3y + 6 = 0$ · The council's preliminary key

Q380 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

The ratio of the areas of the greatest and the smallest circles touching $(x \pm 1)^2 + (y \pm 1)^2 = 1$ is

EdLoop EAPCET

(A) $\frac{\sqrt{3}+1}{\sqrt{3}-1}$
(B) $\frac{3+\sqrt{2}}{3-\sqrt{2}}$
(C) $\frac{3+2\sqrt{2}}{3-2\sqrt{2}}$
(D) 4

Answer: (C) $\frac{3+2\sqrt{2}}{3-2\sqrt{2}}$ · The council's preliminary key

Q381 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

The equation of circle with centre (2, -3) and touching x-axis is

(A) $x^2+y^2-4x-6y+4=0$
(B) $x^2+y^2-4x-6y-8=0$
(C) $x^2+y^2-4x+6y+4=0$
(D) $x^2+y^2+4x-6y+8=0$

Answer: (C) $x^2+y^2-4x+6y+4=0$ · The council's preliminary key

Q382 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

In a square ABCD of side length a, suppose AB and AD are along the coordinate axes. Then the circle that circumscribes the square is

(A) $x^2+y^2+a(x+y)=0$
(B) $x^2+y^2-a(x+y)=0$
(C) $x^2+y^2+2a(x+y)=0$
(D) $x^2+y^2-2a(x+y)=0$

Answer: (B) $x^2+y^2-a(x+y)=0$ · The council's preliminary key

Q383 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

Suppose A (2, 3) and B are the points of intersections of two circles. The points P lying on one circle and Q lying on the other circle are such that BP and BQ constitute the diameters of the circles. If the slopes of the radical axis and PQ are 3/4 and a/b respectively, then the value of 3a + 4b is

(A) 1
(B) 0
(C) 2
(D) -1

Answer: (B) 0 · The council's preliminary key

Q384 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

Suppose two tangents PA and PB are drawn to the circle centered at $C(1,2)$ from the point $P(16,7)$. If the area of the quadrilateral PACB is 75 square units, then the radius of the circle is

(A) 5
(B) 25
(C) 225
(D) $\sqrt{5}$

Answer: (A) 5 · The council's preliminary key

Q385 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

The centre of the circle that passes through the point $(0,1)$ and touches the curve $y=x^2$ at $(2,4)$ is

(A) $\left(\frac{-16}{5},\frac{27}{10}\right)$
(B) $\left(\frac{-16}{7},\frac{53}{10}\right)$
(C) $\left(\frac{-16}{5},\frac{53}{10}\right)$
(D) $\left(\frac{-16}{5},\frac{-53}{10}\right)$

Answer: (C) $\left(\frac{-16}{5},\frac{53}{10}\right)$ · The council's preliminary key

Q386 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

The slope of the normal to the circle $x^2+y^2+2gx+2fy+c=0$ at (x_1,y_1) is

(A) $-\left(\frac{x_1+g}{y_1+f}\right)$
(B) $-\left(\frac{y_1+f}{x_1+g}\right)$
(C) $\frac{x_1+g}{y_1+f}$
(D) $\frac{y_1+f}{x_1+g}$

Answer: (D) $\frac{y_1+f}{x_1+g}$ · The council's preliminary key

Q387 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

The circle possessing y-axis as its tangent at $(0,2)$ and passing through $(-1,0)$, also passes through

(A) $\left(\frac{-3}{2},0\right)$
(B) $\left(\frac{-5}{2},2\right)$
(C) $\left(\frac{-3}{2},\frac{5}{2}\right)$
(D) $(-4,0)$

Answer: (D) $(-4,0)$ · The council's preliminary key

Q388 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

Suppose the tangents drawn to the circle $x^2+y^2-6x-4y-11=0$ from $P(1,8)$ touch the circle at A and B. Then the centre of the circle passing through P, A and B is

(A) $(2, 5)$
(B) $(-2, -5)$
(C) $(-2, 5)$
(D) $(2, -5)$

Answer: (A) $(2, 5)$ · The council's preliminary key

Q389 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

If the circle $x^2 + y^2 + 2\alpha x + c = 0$ lies completely inside the circle $x^2 + y^2 + 2\beta x + c = 0$, then which of the following holds ?

(A) $\alpha\beta < 0$
(B) $c < 0$
(C) $c = 0$
(D) $\alpha\beta > 0$

Answer: (D) $\alpha\beta > 0$ · The council's preliminary key

Q390 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

If the line $3x - 4y = 1$ touches the circle $(x - 1)^2 + (y + 2)^2 = 4$ at (α, β), the values of α and β are

(A) $\alpha = \frac{1}{5}, \beta = \frac{-1}{10}$
(B) $\alpha = \frac{-1}{5}, \beta = \frac{-2}{5}$
(C) $\alpha = \frac{-2}{5}, \beta = \frac{-11}{20}$
(D) $\alpha = \frac{2}{5}, \beta = \frac{1}{20}$

Answer: (B) $\alpha = \frac{-1}{5}, \beta = \frac{-2}{5}$ · The council's preliminary key

Q391 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

The equation of a tangent to the circle $x^2 + y^2 = 1$, which is perpendicular to the line $y = mx + 1$, is

(A) $x + my - \sqrt{1 + m^2} = 0$
(B) $mx + y - \sqrt{1 + m^2} = 0$
(C) $x + my + \sqrt{1 + m^2} = 0$
(D) $mx + y + \sqrt{1 + m^2} = 0$

Options (1) or (3) were accepted. More than one answer was accepted. · The council's preliminary key

Q392 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

If the equation $ax^2 + by^2 + 2hxy + 2gx + 2fy + c = 0$ represents a circle passing through the origin, then

(A) $a = b, c = 0$
(B) $|a| = |b|, h = 0 = c$
(C) $a = b, h = c = 0$
(D) $a = b, h = 0$

Answer: (C) $a = b, h = c = 0$ · The council's preliminary key

Q393 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

The radical centre of the circles $x^2 + y^2 + 3x + 2y + 1 = 0$, $x^2 + y^2 - x + 6y + 5 = 0$ and $x^2 + y^2 + 5x - 8y + 15 = 0$ is

(A) $(3, 2)$
(B) $(-3, -2)$
(C) $(2, 3)$
(D) $(-2, -3)$

Answer: (A) $(3, 2)$ · The council's preliminary key

Q394 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

The radius of the circle having $3x - 4y + 4 = 0$ and $6x - 8y - 7 = 0$ as its tangents is

(A) $\frac{3}{2}$
(B) 3
(C) 6
(D) $\frac{3}{4}$

Answer: (D) $\frac{3}{4}$ · The council's preliminary key

Q395 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

A circle is such that $(x - 2)\cos\theta + (y - 2)\sin\theta = 1$ touches it for all values of θ. Then the circle is

(A) $x^2 + y^2 - 4x - 4y + 7 = 0$
(B) $x^2 + y^2 + 4x + 4y + 7 = 0$
(C) $x^2 + y^2 - 4x - 4y - 7 = 0$
(D) $x^2 + y^2 + 4x + 4y - 7 = 0$

Answer: (A) $x^2 + y^2 - 4x - 4y + 7 = 0$ · The council's preliminary key

Q396 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

The least distance of the point $(10, 7)$ from the circle $x^2 + y^2 - 4x - 2y - 20 = 0$ is

EdLoop EAPCET

(A) 6
(B) 7
(C) 4
(D) 5

Answer: (D) 5 · The council's preliminary key

Q397 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

Suppose that the x-coordinates of the points A and B satisfy $x^2 + 2x - a^2 = 0$ and their y-coordinates satisfy $y^2 + 4y - b^2 = 0$. Then the equation of the circle with AB as its diameter is

(A) $x^2 + y^2 + 2x + 4y - a^2 - b^2 = 0$
(B) $x^2 + y^2 + 2x + 4y + a^2 + b^2 = 0$
(C) $x^2 + y^2 - 2x - 4y - a^2 - b^2 = 0$
(D) $x^2 + y^2 - 2x - 4y + a^2 + b^2 = 0$

Answer: (A) $x^2 + y^2 + 2x + 4y - a^2 - b^2 = 0$ · The council's preliminary key

Q398 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

The radical centre of the three circles $x^2 + y^2 - 1 = 0$, $x^2 + y^2 - 8x + 15 = 0$ and $x^2 + y^2 + 10y + 24 = 0$ is

(A) $\left(2, \frac{-5}{2}\right)$
(B) $\left(2, \frac{5}{2}\right)$
(C) $\left(-2, \frac{5}{2}\right)$
(D) $\left(-2, \frac{-5}{2}\right)$

Answer: (A) $\left(2, \frac{-5}{2}\right)$ · The council's preliminary key

Q399 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

The circle touching the y-axis at a distance 4 units from the origin and cutting off an intercept 6 from x-axis is

(A) $x^2 + y^2 \pm 10x - 8y + 16 = 0$
(B) $x^2 + y^2 \pm 5x - 8y + 16 = 0$
(C) $x^2 + y^2 \pm 5x - 2y - 8 = 0$
(D) $x^2 + y^2 \pm 2x - y - 12 = 0$

Answer: (A) $x^2 + y^2 \pm 10x - 8y + 16 = 0$ · The council's preliminary key

Q400 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

The set of all points that are at a distance of at least 2 units from $(-3, 0)$ is

EdLoop EAPCET

(A) $\{(x,y)|x^2+y^2+6x-7>0\}$
(B) $\{(x,y)|x^2+y^2+6x+5\geq 0\}$
(C) $\{(x,y)|x^2+y^2+6x+5<0\}$
(D) $\{(x,y)|x^2+y^2+6x+7\leq 0\}$

Answer: (B) $\{(x,y)|x^2+y^2+6x+5\geq 0\}$ · The council's preliminary key

Q401 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

The circle touching the coordinate axes with its centre lying on $x-2y-3=0$ is

(A) $x^2+y^2-2x+2y+1=0$
(B) $x^2+y^2+2x-2y+1=0$
(C) $x^2+y^2+6x+6y-9=0$
(D) $x^2+y^2-6x-6y+9=0$

Answer: (A) $x^2+y^2-2x+2y+1=0$ · The council's preliminary key

Q402 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

Suppose a circle passes through $(0,a)$ and (b,h) having its centre at $(c,0)$. Then the value of c is

(A) $\frac{b^2-a^2+h^2}{2b}$
(B) $\frac{b^2+a^2-h^2}{2b}$
(C) $\frac{b^2-a^2+h^2}{2a}$
(D) $\frac{b^2+a^2-h^2}{2a}$

Answer: (A) $\frac{b^2-a^2+h^2}{2b}$ · The council's preliminary key

Q403 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

For a circle of diameter R, touching $x^2+y^2-4y=0$ and passing through $(4,5)$, which of the following is correct?

(A) $3\leq R\leq 7$
(B) $0<R<3$
(C) $R>7$
(D) $\frac{3}{2}\leq R\leq\frac{7}{2}$

Answer: (A) $3\leq R\leq 7$ · The council's preliminary key

Q404 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

For any two nonzero real numbers a and b if this line $\frac{x}{a}+\frac{y}{b}=1$ is a tangent to the circle $x^2+y^2=1$, then which of the following is true?

(A) $\left(\frac{1}{a}, \frac{1}{b}\right)$ lies inside the circle

(B) (a, b) lies inside the circle

(C) $\left(\frac{1}{a}, \frac{1}{b}\right)$ lies on the circle

(D) (a, b) lies on the circle

Answer: (C) $\left(\frac{1}{a}, \frac{1}{b}\right)$ **lies on the circle** · The council's preliminary key

Q405 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

The length of the intercept on the line 4x - 3y - 10 = 0 by the circle $x^2 + y^2 - 2x + 4y - 20 = 0$ is

(A) 5

(B) 2

(C) 10

(D) 6

Answer: (C) 10 · The council's preliminary key

Q406 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

The pole of the line $\frac{x}{a} + \frac{y}{b} = 1$ with respect of the circle $x^2 + y^2 = c^2$ is

(A) $\left(\frac{c^2}{a}, \frac{c^2}{b}\right)$

(B) $\left(\frac{c^2}{b}, \frac{c^2}{a}\right)$

(C) $\left(\frac{c}{a}, \frac{c}{b}\right)$

(D) $\left(\frac{c}{b}, \frac{c}{a}\right)$

Answer: (A) $\left(\frac{c^2}{a}, \frac{c^2}{b}\right)$ · The council's preliminary key

Q407 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

If the tangent at the point P on the circle $x^2 + y^2 + 6x + 6y = 2$ meets the straight line 5x - 2y + 6 = 0 at a point Q on the y-axis, then the length of PQ is

(A) 5

(B) 6

(C) 4

(D) 3

Answer: (A) 5 · The council's preliminary key

Q408 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

For any real number t, the point $\left(\frac{8t}{1+t^2}, \frac{4(1-t^2)}{1+t^2}\right)$ lies on a/an

(A) Circle of radius 2
(B) Circle of radius 4
(C) Ellipse with 4 as its major axis length
(D) Ellipse with 4 as its minor axis length

Answer: (B) Circle of radius 4 · The council's preliminary key

Q409 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

The area of the circle passing through the points $(5, \pm 2)$, (1,2) is

(A) 8π
(B) 4π
(C) 2π
(D) 16π

Answer: (A) 8π · The council's preliminary key

Q410 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

The ratio of the largest and shortest distances from the point (2, -7) to the circle $x^2 + y^2 - 14x - 10y - 151 = 0$ is

(A) $15 : 13$
(B) $7 : 1$
(C) $3 : 2$
(D) $14 : 1$

Answer: (D) $14 : 1$ · The council's preliminary key

Q411 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

A circle has its centre in the first quadrant and passes through (2, 3). If this circle makes intercepts of length 3 and 4 respectively on x = 2 and y = 3, its equation is

(A) $x^2 + y^2 + 3x - 5y + 8 = 0$
(B) $x^2 + y^2 - 4x - 6y + 13 = 0$
(C) $x^2 + y^2 - 6x - 8y + 23 = 0$
(D) $x^2 + y^2 - 8x - 9y + 30 = 0$

Answer: (D) $x^2 + y^2 - 8x - 9y + 30 = 0$ · The council's preliminary key

EdLoop EAPCET

Q412 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

The image of the point (3, 4) with respect to the radical axis of the circles $x^2 + y^2 + 8x + 2y + 10 = 0$ and $x^2 + y^2 + 7x + 3y + 10 = 0$ is

(A) $(3, 4)$
(B) $(-4, -3)$
(C) $(4, 3)$
(D) $(-3, -4)$

Answer: (C) $(4, 3)$ · The council's preliminary key

Q413 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

Find the pole of $2x + 3y - 4 = 0$ with respect to the circle $x^2 + y^2 = 16$.

(A) $(-8, 12)$
(B) $(8, -12)$
(C) $(-8, -12)$
(D) $(8, 12)$

Answer: (D) $(8, 12)$ · The council's preliminary key

Q414 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

Find the slope of a diameter, which passes through the point $(5, 6)$, for the circle $x^2 + y^2 + 10x + 12y + 1 = 0$ is _____

(A) $\frac{6}{5}$
(B) $\frac{5}{6}$
(C) $\frac{-6}{5}$
(D) $\frac{-5}{6}$

Answer: (A) $\frac{6}{5}$ · The council's preliminary key

Q415 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

The equation of the chord of the circle $x^2 + y^2 = 81$ which is bisected at the point $(-2, 3)$ is _____

(A) $3x - y = 13$
(B) $3y - x = 13$
(C) $2x - 3y = 13$
(D) $2x - 3y = -13$

Answer: (D) $2x - 3y = -13$ · The council's preliminary key

Q416 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

The radius of the circle with center at $(2, 1)$ and touching the line $3x + 4y = 5$ is _____ units

(A) 1
(B) 2
(C) $2\sqrt{2}$
(D) 5

Answer: (A) 1 · The council's preliminary key

Q417 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

The equation of the circle cutting the circle $x^2 + y^2 + 2x - 4y + 8 = 0$ orthogonally and coaxial with the circles $x^2 + y^2 + 6x + 4y - 12 = 0$ and $x^2 + y^2 - 4x - 6y - 12 = 0$

(A) $x^2 + y^2 + 8x + 6y - 12 = 0$
(B) $x^2 + y^2 + 8x - 6y - 12 = 0$
(C) $x^2 + y^2 - 8x + 6y - 12 = 0$
(D) $x^2 + y^2 - 8x - 6y - 12 = 0$

Answer: (A) $x^2 + y^2 + 8x + 6y - 12 = 0$ · The council's preliminary key

Q418 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

If $(-3, 2)$ lies on the circle $x^2 + y^2 + 2gx + 2fy + c = 0$ which is concentric with the circle $x^2 + y^2 + 6x + 8y - 5 = 0$ then c _____

(A) 11
(B) -11
(C) 24
(D) -24

Answer: (B) -11 · The council's preliminary key

Q419 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

If $(6, -k)$ and $(-3, 2)$ are conjugate points with respect to circle $x^2 + y^2 + 6x + 4y + 12 = 0$, then '$k$' equals _____

(A) $\frac{-7}{4}$
(B) $\frac{7}{4}$
(C) $\frac{4}{7}$
(D) $\frac{-4}{7}$

Answer: (B) $\frac{7}{4}$ · The council's preliminary key

EdLoop EAPCET

Q420 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

If the parametric values of two points A, B on the circle $x^2 + y^2 - 6x + 4y - 12 = 0$ are 30° and 90° respectively, then the equation of chord $\overline{AB}$ is _____

(A) $x + \sqrt{3}y = 0$
(B) $x - \sqrt{3}y = 0$
(C) $x + \sqrt{3}y - 3(1 + \sqrt{3}) = 0$
(D) $\sqrt{3}x + \sqrt{3}y + 61 = 0$

Answer: (C) $x + \sqrt{3}y - 3(1 + \sqrt{3}) = 0$ · The council's preliminary key

Q421 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

The length of the chord intercepted by the circle $x^2 + y^2 - 8x - 2y - 8 = 0$ on the line $x + y + 1 = 0$ is _____ units.

(A) 14
(B) 7
(C) $2\sqrt{7}$
(D) $\sqrt{7}$

Answer: (C) $2\sqrt{7}$ · The council's preliminary key

Q422 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

The length of the chord joining points $(4\cos\theta, 4\sin\theta)$ and $[4\cos(\theta + 60^\circ), 4\sin(\theta + 60^\circ)]$ on the circle $x^2 + y^2 = 16$ is

(A) 4
(B) 8
(C) 16
(D) 2

Answer: (A) 4 · The council's preliminary key

Q423 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

If the lines $x + 2y - 5 = 0$ and $3x - y - 1 = 0$ denote two diameters of a circle of radius 5 units, then the equation of the circle is _____

(A) $x^2 + y^2 - 2x + 4y - 20 = 0$
(B) $x^2 + y^2 - 2x - 4y - 20 = 0$
(C) $x^2 + y^2 + 2x - 4y + 20 = 0$
(D) $x^2 + y^2 + 2x + 4y + 20 = 0$

Answer: (B) $x^2 + y^2 - 2x - 4y - 20 = 0$ · The council's preliminary key

Q424 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

The equation of polar of $(1,1)$ with respect to the circle $x^2+y^2+4x+6y-3=0$ is _____

(A) $2x+3y-1=0$
(B) $3x+4y+8=0$
(C) $4x+3y+2=0$
(D) $3x+4y+2=0$

Answer: (D) $3x+4y+2=0$ · The council's preliminary key

Q425 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

The equation of the circle which touches the x-axis and y-axis at the points $(1,0)$ and $(0,1)$ respectively is _____

(A) $x^2+y^2-4y+3=0$
(B) $x^2+y^2-2y+2=0$
(C) $x^2+y^2-2x-2y+2=0$
(D) $x^2+y^2-2x-2y+1=0$

Answer: (D) $x^2+y^2-2x-2y+1=0$ · The council's preliminary key

Q426 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

The equations of the tangent to the circle $5x^2+5y^2=1$ parallel to the line $3x+4y=1$ are

(A) $3x+4y=\pm 2\sqrt{5}$
(B) $3x+4y=\pm\sqrt{5}$
(C) $6x+8y=\pm\sqrt{5}$
(D) $3x+4y=\pm 3\sqrt{5}$

Answer: (B) $3x+4y=\pm\sqrt{5}$ · The council's preliminary key

Q427 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

The angle between circles $x^2+y^2+2x+4y+1=0$ and $x^2+y^2-2x+6y-3=0$ is:

(A) $\mathrm{Cos}^{-1}\left(\frac{3}{\sqrt{13}}\right)$
(B) $\mathrm{Cos}^{-1}\left(\frac{3}{\sqrt{31}}\right)$
(C) $\mathrm{Cos}^{-1}\left(\sqrt{\frac{3}{31}}\right)$
(D) $2\,\mathrm{Cos}^{-1}\left(\frac{3}{\sqrt{13}}\right)$

Answer: (A) $\mathrm{Cos}^{-1}\left(\frac{3}{\sqrt{13}}\right)$ · The council's preliminary key

EdLoop EAPCET

Q428 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

The locus of the centers of the circles that are passing through the intersection of the circles $x^2 + y^2 = 1$ and $x^2 + y^2 - 2x + y = 0$ is _____

(A) a line whose equation is $x + 2y = 0$
(B) a circle
(C) a parabola
(D) a line whose equation is $2x - y = 0$

Answer: (A) a line whose equation is $x + 2y = 0$ · The council's preliminary key

Q429 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

If the lengths of the tangents drawn from the point $(1, 2)$ to the circles $x^2 + y^2 + x + y - 4 = 0$ and $3x^2 + 3y^2 - x - y - \lambda = 0$ are in the ratio $3 : 4$, then $\lambda =$ _____

(A) $\frac{23}{4}$
(B) $\frac{17}{4}$
(C) $\frac{-28}{3}$
(D) $\frac{19}{4}$

Answer: (C) $\frac{-28}{3}$ · The council's preliminary key

Q430 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

If the length of the tangent drawn from the point from $(-2, 3)$ to the circle $x^2 + y^2 + 8x - 6y + k = 0$ is 4 units, then $k =$ _____

(A) 34
(B) 36
(C) 38
(D) 37

Answer: (D) 37 · The council's preliminary key

Q431 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

If two diameters of a circle of circumference 10π lie along the lines $2x + 3y + 1 = 0$ and $3x - y - 4 = 0$, then the equation of circle is _____

EdLoop EAPCET

(A) $x^2 + y^2 + 2x - 2y - 23 = 0$
(B) $x^2 + y^2 - 2x + 2y - 23 = 0$
(C) $x^2 + y^2 + 2x + 2y - 23 = 0$
(D) $x^2 + y^2 - 2x - 2y - 23 = 0$

Answer: (B) $x^2 + y^2 - 2x + 2y - 23 = 0$ · The council's preliminary key

Q432 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

The lengths of the tangents from the point $(1, 2)$ to the circle $x^2 + y^2 + x + y - 4 = 0$ and $3x^2 + 3y^2 - x - y - k = 0$ are in the ratio $4 : 3$, then the value of k is _____

(A) $\frac{9}{4}$
(B) $\frac{13}{4}$
(C) $\frac{17}{4}$
(D) $\frac{21}{4}$

Answer: (D) $\frac{21}{4}$ · The council's preliminary key

Q433 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

If the circles $x^2 + y^2 - 6x - 8y - 12 = 0$ and $x^2 + y^2 - 4x + 6y + k = 0$ are perpendicular to each other, then 'k' equals _____

(A) 4
(B) 0
(C) -2
(D) 12

Answer: (B) 0 · The council's preliminary key

Q434 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

Find the equation of a circle which passes through the point $(1, 2)$ and the points of intersection of the circles $x^2 + y^2 - 8x - 6y + 21 = 0$ and $x^2 + y^2 - 2x - 15 = 0$.

(A) $x^2 + y^2 - 6x - 4y + 9 = 0$
(B) $x^2 + y^2 - 18x - 12y + 27 = 0$
(C) $2(x^2 + y^2) - 18x + 12y + 27 = 0$
(D) $4(x^2 + y^2) - 3x + 12y + 16 = 0$

Answer: (A) $x^2 + y^2 - 6x - 4y + 9 = 0$ · The council's preliminary key

Q435 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

The equation of a circle with center at $(-2, 3)$ and circumference of 4π units is _____

(A) $x^2+y^2+4x-6y-9=0$
(B) $x^2+y^2+4x-6y+9=0$
(C) $x^2+y^2+4x-6y-3=0$
(D) $x^2+y^2-4x+6y-9=0$

Answer: (B) $x^2+y^2+4x-6y+9=0$ · The council's preliminary key

Q436 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

If a circle of a constant radius 6 passes through origin O and meets the coordinate axes at A and B, then find the locus of centroid of triangle OAB.

(A) $x^2+y^2=4$
(B) $x^2+y^2=36$
(C) $x^2+y^2=16$
(D) $x^2+y^2=6$

Answer: (C) $x^2+y^2=16$ · The council's preliminary key

Q437 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

If the point $(\lambda, 1+\lambda)$ lies inside the circle $x^2+y^2=1$, then _____

(A) $\lambda>0$
(B) $\lambda<0$
(C) $-1<\lambda<0$
(D) $0<\lambda<1$

Answer: (C) $-1<\lambda<0$ · The council's preliminary key

Q438 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

The perpendicular distance from the point $(1,2)$ to common chord of the circles $x^2+y^2-2x+4y-4=0$ and $x^2+y^2+4x-6y-3=0$ is _____ units.

(A) $\frac{13}{\sqrt{123}}$
(B) $\frac{13}{\sqrt{136}}$
(C) $\frac{13}{\sqrt{63}}$
(D) $\frac{13}{\sqrt{132}}$

Answer: (B) $\frac{13}{\sqrt{136}}$ · The council's preliminary key

EdLoop EAPCET

Q439 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

If $S = x^2 + y^2 + 2x + 17y + 4 = 0$, $S' = x^2 + y^2 + 7x + 6y + 11 = 0$ and $S'' = x^2 + y^2 - x + 22y + 3 = 0$ are three circles, then the length of tangent from their radical center to $S = 0$ is _____ units

(A) $\sqrt{53}$
(B) $\sqrt{57}$
(C) $\sqrt{15}$
(D) $\sqrt{17}$

Answer: (B) $\sqrt{57}$ · The council's preliminary key

Q440 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

The line $ax + by + c = 0$ is normal to the circle $x^2 + y^2 + 2gx + 2fy + d = 0$ if _____

(A) $ag + bf + c = 0$
(B) $ag + bf - c = 0$
(C) $ag - bf + c = 0$
(D) $ag - bf - c = 0$

Answer: (B) $ag + bf - c = 0$ · The council's preliminary key

Q441 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

The radius of a circle whose center is $(2, 1)$ and one of the chords is a diameter of the circle $x^2 + y^2 - 2x - 6y + 6 = 0$, is _____ units.

(A) 3
(B) 4
(C) 2
(D) 1

Answer: (A) 3 · The council's preliminary key

Q442 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

The angle between the two tangents drawn from origin to the circle $x^2 + y^2 - 14x + 2y + 25 = 0$ is _____

(A) 0°
(B) 45°
(C) 90°
(D) 60°

Answer: (C) 90° · The council's preliminary key

EdLoop EAPCET

Q443 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

If $(4, 7)$ and $(-2, -1)$ are ends of a diameter of a circle which intersects X-axis at A and B, then AB is equal to _____

(A) 5
(B) 6
(C) 7
(D) 8

Answer: (D) 8 · The council's preliminary key

Q444 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

If L_1 represents the radical axis of circles $x^2 + y^2 - 4x - 6y + 5 = 0$ and $x^2 + y^2 - 2x - 4y - 1 = 0$, and L_2 represents the radical axis of $x^2 + y^2 + 2x + 2y - 7 = 0$ and $x^2 + y^2 + x + y + 9 = 0$, then _____

(A) L_1 is parallel to L_2
(B) L_1 is perpendicular to L_2
(C) L_1 and L_2 intersect at an angle 30°
(D) L_1 and L_2 intersect at $(1, 7)$

Answer: (A) L_1 is parallel to L_2 · The council's preliminary key

Q445 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

Which circle among the following bisects the circumference of the circle $x^2 + y^2 - 8x - 6y + 23 = 0$?

(A) $x^2 + y^2 - 6x - 4y + 9 = 0$
(B) $x^2 + y^2 + 6x + 4y - 9 = 0$
(C) $x^2 + y^2 - 6x + 4y - 9 = 0$
(D) $x^2 + y^2 + 6x - 4y + 9 = 0$

Answer: (A) $x^2 + y^2 - 6x - 4y + 9 = 0$ · The council's preliminary key

Q446 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

The circle $x^2 + y^2 + 4x - 4y + 4 = 0$ touches _____

(A) x-axis only
(B) y-axis only
(C) x-axis and y-axis
(D) the line $x = y$ only

Answer: (C) x-axis and y-axis · The council's preliminary key

EdLoop EAPCET

Q447 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

Given three collinear points $A(3,1)$, $B(7,-1)$ and $C(5,0)$. The length of a tangent drawn from A to any circle that passes through B and C is _____ units.

(A) $2\sqrt{10}$
(B) $3\sqrt{10}$
(C) $\sqrt{10}$
(D) $\sqrt{20}$

Answer: (C) $\sqrt{10}$ · The council's preliminary key

Q448 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

Suppose a circle passes through $(2,2)$ and $(9,9)$ and touches the x-axis at P. If O is the origin, then OP is equal to _____

(A) 4
(B) 5
(C) 6
(D) 9

Answer: (C) 6 · The council's preliminary key

Q449 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

The radius of a circle whose center lies in the fourth quadrant and touches each of the three lines $x=0$, $y=0$ and $3x+4y-12=0$, is _____ units.

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (C) 3 · The council's preliminary key

Q450 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

Choose the correct option regarding the following statements:
Statement-1 : The length of common chord of the circles $x^2+y^2+ax+by+c=0$ and $x^2+y^2+bx+ay+c=0$ equals $\frac{\sqrt{(a+b)^2-8c}}{2}$
Statement-2 : If two circles intersect at two distinct points, then their radical axis is their common chord.

(A) Both statements are true and Statement-2 is a correct explanation for Statement-1.
(B) Both statements are true but Statement-2 is not a correct explanation for Statement-1.
(C) Statement-1 is true, Statement-2 is false.
(D) Statement-1 is false, Statement-2 is true.

Answer: (D) Statement-1 is false, Statement-2 is true. · The council's preliminary key

---

Q451 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

Find the equation of a circle which cuts the circle $x^2 + y^2 - 6x + 4y - 3 = 0$ orthogonally, while passing through $(3, 0)$ and touching the y-axis.

(A) $x^2 + y^2 + 6x + 6y + 9 = 0$
(B) $x^2 + y^2 - 6x - 6y + 9 = 0$
(C) $x^2 + y^2 - 6x + 6y - 9 = 0$
(D) $x^2 + y^2 + 6x - 6y - 9 = 0$

Answer: (B) $x^2 + y^2 - 6x - 6y + 9 = 0$ · The council's preliminary key

---

Q452 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

Find the equation of the circle which passes through origin and cuts off the intercepts -2 and 3 over the x and y axes respectively.

(A) $x^2 + y^2 - 2x + 8y = 0$
(B) $2(x^2 + y^2) + 2x - 3y = 0$
(C) $x^2 + y^2 - 2x - 8y = 0$
(D) $x^2 + y^2 + 2x - 3y = 0$

Answer: (D) $x^2 + y^2 + 2x - 3y = 0$ · The council's preliminary key

---

Q453 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

The angle between the pair of tangents drawn from $(1, 1)$ to the circle $x^2 + y^2 + 4x + 4y - 1 = 0$ is

(A) $\frac{\pi}{2}$
(B) $\frac{\pi}{4}$
(C) $\frac{\pi}{3}$
(D) $\frac{\pi}{6}$

Answer: (A) $\frac{\pi}{2}$ · The council's preliminary key

EdLoop EAPCET

Q454 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

If the circle $x^2 + y^2 - 4x - 8y - 5 = 0$ intersects the line $3x - 4y - m = 0$ in two distinct points, then the number of integral values of 'm' is _____

(A) 52
(B) 51
(C) 50
(D) 49

Answer: (D) 49 · The council's preliminary key

Q455 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

Let C be the circle with center $(0, 0)$ and radius 3 units. The equation of the locus of the mid points of the chords of the circle c that subtends an angle of $\frac{2\pi}{3}$ at its center is _____

(A) $x^2 + y^2 = \frac{1}{4}$
(B) $x^2 + y^2 = \frac{27}{4}$
(C) $x^2 + y^2 = \frac{9}{4}$
(D) $x^2 + y^2 = \frac{5}{4}$

Answer: (C) $x^2 + y^2 = \frac{9}{4}$ · The council's preliminary key

Q456 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

The length of the common chord of the circles $x^2 + y^2 + 3x + 5y + 4 = 0$ and $x^2 + y^2 + 5x + 3y + 4 = 0$ is _____ units

(A) 3
(B) 2
(C) 6
(D) 4

Answer: (D) 4 · The council's preliminary key

Q457 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

Find the equation of the circle which passes through the point $(1, 2)$ and the points of intersection of the circles $x^2 + y^2 - 8x - 6y + 21 = 0$ and $x^2 + y^2 - 2x - 15 = 0$.

EdLoop EAPCET

(A) $x^2 + y^2 - 18x - 12y + 27 = 0$
(B) $2(x^2 + y^2) - 18x - 12y + 27 = 0$
(C) $3(x^2 + y^2) - 18x - 12y + 27 = 0$
(D) $4(x^2 + y^2) - 18x - 12y + 27 = 0$

Answer: (C) $3(x^2 + y^2) - 18x - 12y + 27 = 0$ · The council's preliminary key

Q458 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

The equation of the pair of straight lines parallel to x-axis and touching the circle $x^2 + y^2 - 6x - 4y - 12 = 0$ is _____

(A) $y^2 - 4y - 21 = 0$
(B) $y^2 + 4y - 21 = 0$
(C) $y^2 - 4y + 21 = 0$
(D) $y^2 + 4y + 21 = 0$

Answer: (A) $y^2 - 4y - 21 = 0$ · The council's preliminary key

Q459 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

The points where the circle $x^2 + y^2 - 3x - 4y + 2 = 0$ cuts the x-axis are _____

(A) $(1, 2)$ & $(2, 0)$
(B) $(2, 0)$ & $(3, 0)$
(C) $(0, 2)$ & $(0, 1)$
(D) $(1, 0)$ & $(2, 0)$

Answer: (D) $(1, 0)$ & $(2, 0)$ · The council's preliminary key

Q460 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

The center and radius of the circle $x^2 + y^2 + 8x + 10y - 8 = 0$ respectively are _____ and _____ units

(A) $(-4, -5),\ 7$
(B) $(4, 5),\ 49$
(C) $(-8, -10),\ 8$
(D) $(-4, 5),\ 7$

Answer: (A) $(-4, -5),\ 7$ · The council's preliminary key

Q461 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

The poles of the tangents to the circle $x^2 + y^2 = 4$ with respect to the circle $(x + 2)^2 + y^2 = 8$, lie on _____

EdLoop EAPCET

(A) $y^2 + 8x = 0$
(B) $x^2 + 8y = 0$
(C) $y^2 - 8x = 0$
(D) $x^2 - 8y = 0$

Answer: (A) $y^2 + 8x = 0$ · The council's preliminary key

Q462 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

If the power of the point $(1, 6)$ with respect to the circle $x^2 + y^2 + 4x - 6y - a = 0$ is '-16' then 'a' equals _____

(A) 5
(B) 11
(C) 21
(D) 6

Answer: (C) 21 · The council's preliminary key

Q463 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

The equation of radical axis of the circles $x^2 + y^2 + 4x + 6y + 7 = 0$ and $4x^2 + 4y^2 + 8x + 12y - 9 = 0$ is _____

(A) $x + y + 1 = 0$
(B) $8x + 12y = 0$
(C) $8x + 12y + 37 = 0$
(D) $2x + 3y + 7 = 0$

Answer: (C) $8x + 12y + 37 = 0$ · The council's preliminary key

Q464 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

The radical axis of the circles $S_1 : x^2 + y^2 - 4x + 6y - 10 = 0$ and $S_2 : x^2 + y^2 + 2x - 6y + 2 = 0$ cut the circle S_1 in _____

(A) two real and distinct points
(B) one real point
(C) imaginary points
(D) can't be determined

Answer: (A) two real and distinct points · The council's preliminary key

Q465 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

Find the equations of the tangents drawn to the circle $x^2 + y^2 = 50$ at the points where the line $x + 7 = 0$ meets it.

EdLoop EAPCET

(A) $7x + y + 50 = 0$ & $7x - y + 50 = 0$
(B) $x + y = 0$ & $x - y = 0$
(C) $x + 7y + 5 = 0$ & $y - 7x + 5 = 0$
(D) $x + 7y + 50 = 0$ & $x - 7y + 50 = 0$

Answer: (A) $7x + y + 50 = 0$ & $7x - y + 50 = 0$ · The council's preliminary key

Q466 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

If the chord of contact of tangents from a point on the circle $x^2 + y^2 = r_1^2$ to the circle $x^2 + y^2 = r_2^2$ touches the circle $x^2 + y^2 = r_3^2$ then r_1, r_2, r_3 are in _____

(A) AP
(B) HP
(C) GP
(D) AGP

Answer: (C) GP · The council's preliminary key

Q467 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

Find the equation of the circle passing through $(1, -2)$ and touching the x-axis at $(3, 0)$.

(A) $x^2 + y^2 + 6x - 4y - 9 = 0$
(B) $x^2 + y^2 - 6x - 4y + 9 = 0$
(C) $x^2 + y^2 - 6x - 4y - 9 = 0$
(D) $x^2 + y^2 - 6x + 4y + 9 = 0$

Answer: (D) $x^2 + y^2 - 6x + 4y + 9 = 0$ · The council's preliminary key

Q468 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

Let L_1 be a straight line passing through the origin and L_2 be the straight line $x + y = 1$. If the intercepts made by the circle $x^2 + y^2 - x + 3y = 0$ on L_1 and L_2 are equal, then which of the following equations represent L_1 _____

(A) $x + y = 0$ & $x + 7y = 0$
(B) $x - y = 0$ & $x + 7y = 0$
(C) $x - 7y = 0$ & $x + y = 0$
(D) $x - 7y = 0$ & $x - y = 0$

Answer: (B) $x - y = 0$ & $x + 7y = 0$ · The council's preliminary key

Q469 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

The radius of the circle whose center lies at $(1, 2)$, while cutting the circle $x^2 + y^2 + 4x + 16y - 30 = 0$ orthogonally, is _____ units.

(A) $\sqrt{41}$
(B) $\sqrt{31}$
(C) $\sqrt{21}$
(D) $\sqrt{11}$

Answer: (D) $\sqrt{11}$ · The council's preliminary key

Q470 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

The point which has the same power with respect to each of the circles $x^2+y^2-8x+40=0$, $x^2+y^2-5x+16=0$ and $x^2+y^2-8x+16y+160=0$ is _____

(A) $\left(-8, \frac{-15}{2}\right)$
(B) $\left(8, \frac{-15}{2}\right)$
(C) $\left(8, \frac{15}{2}\right)$
(D) $\left(-8, \frac{15}{2}\right)$

Answer: (B) $\left(8, \frac{-15}{2}\right)$ · The council's preliminary key

Q471 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

The equations of the tangents to the circle $x^2+y^2=4$ drawn from the point $(4,0)$ are

(A) $y=\pm\frac{1}{\sqrt{3}}(x-4)$
(B) $y=\pm\frac{2}{\sqrt{3}}(x-4)$
(C) $x=\pm\frac{1}{\sqrt{3}}(y-4)$
(D) $x=\pm\frac{2}{\sqrt{3}}(y-4)$

Answer: (A) $y=\pm\frac{1}{\sqrt{3}}(x-4)$ · The council's preliminary key

Q472 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

If $P(-9,-1)$ is a point on the circle $x^2+y^2+4x+8y-38=0$, then find equation of the tangent drawn at the other end of the diameter drawn through P.

(A) $7x-3y=60$
(B) $7x-3y=56$
(C) $7x+3y=56$
(D) $7x+3y=60$

Answer: (B) $7x-3y=56$ · The council's preliminary key

Q473 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

Find the equation of a circle whose radius is 5 units and passes through two points on the x-axis which are at a distance of 4 units from the origin.

(A) $x^2 + y^2 - 6x - 25 = 0$
(B) $x^2 + y^2 - 6y - 25 = 0$
(C) $x^2 + y^2 + 6y - 16 = 0$
(D) $x^2 + y^2 + 6x - 16 = 0$

Answer: (C) $x^2 + y^2 + 6y - 16 = 0$ · The council's preliminary key

Q474 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

If a foot of the normal from the point $(4, 3)$ to a circle is $(2, 1)$ and $2x - y - 2 = 0$ is a diameter of the circle, then the equation of circle is _____

(A) $x^2 + y^2 + 2x + 1 = 0$
(B) $x^2 + y^2 + 2x - 1 = 0$
(C) $x^2 + y^2 - 2x - 1 = 0$
(D) $2(x^2 + y^2) - 2x - 1 = 0$

Answer: (C) $x^2 + y^2 - 2x - 1 = 0$ · The council's preliminary key

Q475 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

The length of the tangent from any point on the circle $(x - 3)^2 + (y + 2)^2 = 5r^2$ to the circle $(x - 3)^2 + (y + 2)^2 = r^2$ is 16 units, then the area between the two circles in sq. units is _____

(A) 32π
(B) 4π
(C) 8π
(D) 256π

Answer: (D) 256π · The council's preliminary key

Q476 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

The equation of the circle, which cuts orthogonally each of the three circles $x^2 + y^2 - 2x + 3y - 7 = 0$, $x^2 + y^2 + 5x - 5y + 9 = 0$ and $x^2 + y^2 + 7x - 9y + 29 = 0$ _____

(A) $x^2 + y^2 - 16x - 18y - 4 = 0$
(B) $x^2 + y^2 = a^2$
(C) $x^2 + y^2 - 16x = 0$
(D) $y^2 - x^2 + 2x = 0$

Answer: (A) $x^2 + y^2 - 16x - 18y - 4 = 0$ · The council's preliminary key

Q477 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

The circle $x = 5\cos\theta,\ y = 5\sin\theta$ is bounded by the rectangle formed by the lines $x \pm 6 = 0$ and $y \pm 6 = 0$. The area of the triangle that lies inside the rectangle which is formed by the tangent at $P\left(\frac{2\pi}{3}\right)$ to the circle with two of the above given lines is

(A) $\frac{62 - 24\sqrt{3}}{\sqrt{3}}$

(B) $\frac{1}{2}\left(6\sqrt{3} - 4\right)^2$

(C) $48 + \sqrt{3}$

(D) $\frac{1}{2}\left(\frac{6\sqrt{3} - 4}{\sqrt{3}}\right)^2$

Answer: (A) $\frac{62 - 24\sqrt{3}}{\sqrt{3}}$ · The council's preliminary key

Q478 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

If the two circles $x^2 + y^2 - 2x - 6y + 10 - r^2 = 0$ and $x^2 + y^2 - 8x + 2y + 8 = 0$ have a common chord of non-zero length, then

(A) $2 < r < 8$

(B) $0 < r < 2$

(C) $r = 2, 8$

(D) $8 < r < 13$

Answer: (A) $2 < r < 8$ · The council's preliminary key

Q479 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

The angle between the circles $x^2 + y^2 - 2x - 9 = 0$ and $x^2 + y^2 - 4y - 1 = 0$ at their point of intersection is

(A) $\frac{\pi}{6}$

(B) $\frac{\pi}{4}$

(C) $\frac{\pi}{3}$

(D) $\frac{\pi}{2}$

Answer: (B) $\frac{\pi}{4}$ · The council's preliminary key

Q480 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

If two circles touch at $(0, 0)$ externally, then their radical axis is

(A) $x = y$ or $x = -y$
(B) does not exist
(C) any line passing through $(0, 0)$
(D) their common tangent at $(0, 0)$

Answer: (D) their common tangent at $(0, 0)$ · The council's preliminary key

Q481 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

If the straight line $x\cos\alpha + y\sin\alpha = P$ intersects the circle $x^2 + y^2 = a^2$ at A and B then the equation of the circle with diameter $\overline{AB}$ is

(A) $x^2 + y^2 - 2Px\cos\alpha - 2Py\sin\alpha + 2P^2 - a^2 = 0$
(B) $x^2 + y^2 + 2Px\cos\alpha - 2Py\sin\alpha + 2P^2 + a^2 = 0$
(C) $x^2 + y^2 - 2Px\cos\alpha + 2Py\sin\alpha - 2P^2 - a^2 = 0$
(D) $x^2 + y^2 - 2Px\cos\alpha - 2Py\sin\alpha - 2P^2 + a^2 = 0$

Answer: (A) $x^2 + y^2 - 2Px\cos\alpha - 2Py\sin\alpha + 2P^2 - a^2 = 0$ · The council's preliminary key

Q482 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

If α, β are the roots of $x^2 + 2x - 3 = 0$ and γ, δ are the roots of $y^2 - y + 4 = 0$, then the equation of the circle having (α, γ) and (β, δ) as ends of a diameter is

(A) $x^2 + y^2 + 4x - 3y + 2 = 0$
(B) $x^2 + y^2 + 2x - y + 1 = 0$
(C) $x^2 + y^2 - 3x + 4y + 1 = 0$
(D) $x^2 + y^2 - 2x + y - 1 = 0$

Answer: (B) $x^2 + y^2 + 2x - y + 1 = 0$ · The council's preliminary key

Q483 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

If the inverse point of $(1, 1)$ with respect to the circle $x^2 + y^2 - 4x - 6y + 12 = 0$ is (h, k) then $h + k =$

(A) $\frac{22}{5}$
(B) $\frac{8}{5}$
(C) 2
(D) $\frac{-6}{5}$

Answer: (A) $\frac{22}{5}$ · The council's preliminary key

Q484 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

If $hkpq \neq 0$ and the circles $x^2 + y^2 + 2hx + 2ky = 0$ and $x^2 + y^2 + 2px + 2qy = 0$ touch each other at the origin, then $hq - pk - \frac{hq}{pk} =$

(A) -1
(B) 0
(C) 1
(D) 2

Answer: (A) -1 · The council's preliminary key

Q485 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

The locus of the centre of circles passing through (a, b) and cut the circle $x^2 + y^2 - 2x + 4y - 4 = 0$ orthogonally is

(A) $(a+1)x + (b+2)y = \frac{a^2+b^2+4}{2}$
(B) $(a+1)x + (b-2)y = \frac{a^2+b^2+4}{2}$
(C) $(a-1)x + (b+2)y = \frac{a^2+b^2+4}{2}$
(D) $(a-1)x + (b-2)y = \frac{a^2+b^2+4}{2}$

Answer: (C) $(a-1)x + (b+2)y = \frac{a^2+b^2+4}{2}$ · Checked by our team

Q486 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

Consider the system of circles $x^2 + y^2 + 2fy + \lambda\left(x^2 + y^2 + 2gx + k\right) = 0$, where $g \neq 0,\ f \neq 0$ and λ a parameter. If A, B are the point circles of this system such that $\angle AOB = \frac{\pi}{2}$, then $g^2 =$

(A) $-k$
(B) $\frac{k}{2}$
(C) 0
(D) f^2

Answer: (B) $\frac{k}{2}$ · The council's preliminary key

Q487 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

If $(2, \alpha)$ does not lie outside the circles $x^2 + y^2 = 13$ and $x^2 + y^2 + x - 2y = 14$, then α lies in

(A) $(-\infty, -3) \cup (4, \infty)$
(B) $[-3, 4]$
(C) $(-\infty, -1) \cup (3, \infty)$
(D) $[-2, 3]$

Answer: (D) $[-2, 3]$ · The council's preliminary key

Q488 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

The locus of the centre of the circles passing through the origin and cutting off a chord of length 2 units on the line $x = 1$ is

(A) a straight line
(B) a circle
(C) a parabola
(D) on ellipse (sic)

Answer: (C) a parabola · The council's preliminary key

Q489 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

The number of common tangents that can be drawn to the circles $x^2 + y^2 = 1$ and $x^2 + y^2 - 2x - 6y + 6 = 0$ is

(A) 4
(B) 0
(C) 2
(D) 1

Answer: (A) 4 · The council's preliminary key

Q490 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

The equation of the circle passing through the points of intersection of two circles $x^2 + y^2 + 2x + 3y + 1 = 0$, $x^2 + y^2 + 4x + 3y + 2 = 0$ and the point $(-1, 1)$ is

(A) $x^2 + y^2 + 10x + 3y + 5 = 0$
(B) $x^2 + y^2 + 10x - 3y + 11 = 0$
(C) $x^2 + y^2 + 20x - 3y + 21 = 0$
(D) $x^2 + y^2 + 20x + 3y + 15 = 0$

Answer: (A) $x^2 + y^2 + 10x + 3y + 5 = 0$ · The council's preliminary key

Q491 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

If the circle $x^2 + y^2 + 2kx + 4y - 4 = 0$ has it's centre in 4^{th} quadrant and touches the circle $x^2 + y^2 + 6x - 2y + 6 = 0$ then, $k =$

(A) -5
(B) $\frac{-15}{7}$
(C) $\frac{-23}{5}$
(D) -1

Answer: (D) -1 · The council's preliminary key

Q492 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

If the line $y = mx + C$ is a tangent to the circle $x^2 + y^2 = 16$ then $m =$

EdLoop EAPCET

(A) $\pm\frac{1}{4}\sqrt{C-16}$
(B) $\pm\frac{1}{4}\sqrt{C^2-16}$
(C) $\pm\frac{1}{C}\sqrt{C^2+16}$
(D) $\pm\frac{1}{16}(C^2-16)$

Answer: (B) $\pm\frac{1}{4}\sqrt{C^2-16}$ · The council's preliminary key

Q493 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

If the points $(2,3)$ and $(K,-2)$ are conjugate with respect to the circle $x^2+y^2-2x+4y-2=0$ then $K=$

(A) 8
(B) 6
(C) 4
(D) 3

Answer: (A) 8 · The council's preliminary key

Q494 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

The number of common tangents that can be drawn to the circles $x^2+y^2-2x-2y-23=0$ and $x^2+y^2-4x-4y-1=0$ is

(A) 0
(B) 1
(C) 2
(D) 3

Answer: (A) 0 · The council's preliminary key

Q495 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

A point that lies on the common tangent to the circles $x^2+y^2-2x+18y+78=0$ and $x^2+y^2+8x-6y-200=0$ among the following options is

(A) $\left(0,\frac{139}{12}\right)$
(B) $\left(\frac{-137}{5},\frac{-1}{6}\right)$
(C) $\left(31,\frac{-4}{3}\right)$
(D) $\left(\frac{-2}{5},\frac{-47}{4}\right)$

Answer: (D) $\left(\frac{-2}{5},\frac{-47}{4}\right)$ · The council's preliminary key

Q496 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

The length of the common chord of the circles $x^2+y^2+2x+3y+1=0$ and $x^2+y^2+4x+3y+2=0$ is

EdLoop EAPCET

(A) $\sqrt{2}$
(B) $2\sqrt{2}$
(C) 2
(D) 4

Answer: (B) $2\sqrt{2}$ · The council's preliminary key

Q497 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

Given the ellipse (E) $4x^2 + 9y^2 - 36 = 0$, the circle (C) $x^2 + y^2 - 9 = 0$ and two points A(1, 2), B(2, 1), which of the following is correct?

(A) B lies inside C but outside E
(B) B lies outside both C and E
(C) A lies inside both C and E
(D) A lies inside C, but outside E

Answer: (D) A lies inside C, but outside E · The council's preliminary key

Q498 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

If (a, b) is the centre of the circle passing through the vertices of the triangle formed by $x + y = 6$, $2x + y = 4$ and $x + 2y = 5$, then (a, b) is

(A) $(-17, -16)$
(B) $\left(\frac{17}{2}, \frac{19}{2}\right)$
(C) $(17, 18)$
(D) $\left(\frac{-17}{2}, \frac{-19}{2}\right)$

Answer: (B) $\left(\frac{17}{2}, \frac{19}{2}\right)$ · The council's preliminary key

Q499 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

The locus of the mid points of the chords of the circle $x^2 - 2x + y^2 = 0$ drawn from a point $(0, 0)$ on it is

(A) $x^2 + y^2 - x = 0$
(B) $2x^2 + y - 2 = 0$
(C) $y^2 + x - 1 = 0$
(D) $y + x^2 + 2x - 3 = 0$

Answer: (A) $x^2 + y^2 - x = 0$ · The council's preliminary key

Q500 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

The number of possible common tangents that can be drawn to the circles $x^2 + y^2 + 4x - 6y - 3 = 0$ and $x^2 + y^2 + 4x - 2y + 1 = 0$ is

EdLoop EAPCET

(A) 4
(B) 3
(C) 1
(D) 0

Answer: (C) 1 · The council's preliminary key

Q501 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

The equation of the circle passing through $(1,1)$ and through the points of intersection of the circles $x^2+y^2+13x-3y=0$ and $2x^2+2y^2+4x-7y-25=0$ is

(A) $4x^2+4y^2+30x-13y-25=0$
(B) $2x^2+2y^2+15x-19y=0$
(C) $4x^2+4y^2+25x+12y-45=0$
(D) $4x^2+4y^2+13x-30y+9=0$

Answer: (A) $4x^2+4y^2+30x-13y-25=0$ · The council's preliminary key

Q502 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

If the circles $(x-2)^2+(y-3)^2=25$ and $25x^2+25y^2-40x-70y-160=0$ touch internally at (α,β) then $\alpha+\beta=$

(A) 0
(B) -2
(C) -1
(D) 1

Answer: (B) -2 · The council's preliminary key

Q503 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

The area of a circle having the lines $3x-4y+4=0$ and $6x-8y-7=0$ as two of its tangents, is

(A) $\frac{9\pi}{4}$
(B) $\frac{9\pi}{16}$
(C) $\frac{3\pi}{4}$
(D) $\frac{3\pi}{16}$

Answer: (B) $\frac{9\pi}{16}$ · The council's preliminary key

Q504 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

The polars of $(-1,2)$ with respect to the two circles $S_1\equiv x^2+y^2+6y+7=0$ and $S_2\equiv x^2+y^2+6x+1=0$ are

EdLoop EAPCET

(A) Parallel
(B) coincident
(C) Perpendicular
(D) Intersecting at a non zero point

Answer: (D) Intersecting at a non zero point · The council's preliminary key

Q505 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

The internal centre of similitude of the two circles $x^2+y^2-4x-6y+12=0,\ x^2+y^2+4x-2y-4=0$ is

(A) $(4,4)$
(B) $\left(4,\frac{5}{2}\right)$
(C) $\left(1,\frac{5}{2}\right)$
(D) $\left(2,\frac{3}{2}\right)$

Answer: (C) $\left(1,\frac{5}{2}\right)$ · The council's preliminary key

Q506 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

If a circle has its centre on the line $x-y-1=0$ and passes through the points of intersection of the two circles $x^2+y^2+2x-2y-2=0$ and $x^2+y^2-2x+2y-7=0$, then the centre of that circle is

(A) $\left(\frac{-1}{2},\frac{-3}{2}\right)$
(B) $\left(\frac{1}{2},\frac{-1}{2}\right)$
(C) $\left(\frac{1}{3},\frac{-2}{3}\right)$
(D) $(-2,-3)$

Answer: (B) $\left(\frac{1}{2},\frac{-1}{2}\right)$ · The council's preliminary key

Q507 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

If the radical centre of the circles $x^2+y^2-8x-2y+8=0,\ x^2+y^2+6x+8y-24=0$, and $x^2+y^2-2x+2y+2=0$ is (a,b), then $a+b=$

EdLoop EAPCET

(A) 34
(B) 10
(C) -15
(D) -24

Answer: (B) 10 · The council's preliminary key

Q508 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

If $x^2+y^2-6x-8y+12=0$ and $x^2+y^2-4x+6y+k=0$ cut orthogonally, then $k=$

(A) -24
(B) 24
(C) -48
(D) -42

Answer: (A) -24 · The council's preliminary key

Q509 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

If $(1,a)$, $(b,2)$ are conjugate points with respect to the circle $x^2+y^2=25$, then $4a+2b=$

(A) 25
(B) 50
(C) 75
(D) 100

Answer: (B) 50 · The council's preliminary key

Q510 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

A circle cuts off positive intercepts 5 and 6 on the x and y axes respectively, and passes through the origin. Then the equation of the circle is

(A) $x^2+y^2+5x+6y=0$
(B) $x^2+y^2-5x+6y=0$
(C) $x^2+y^2-5x-6y=0$
(D) $x^2+y^2+5x-6y=0$

Answer: (C) $x^2+y^2-5x-6y=0$ · The council's preliminary key

Q511 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

The length of the chord intercepted by the circle $x^2+y^2-4x+4y+3=0$ on the line $x=3y+13$ is _____ units

(A) $\sqrt{10}$
(B) $\sqrt{20}$
(C) $5\sqrt{2}$
(D) $2\sqrt{5}$

Answer: (A) $\sqrt{10}$ · The council's preliminary key

Q512 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

The equation of the common chord of the circles $x^2+y^2+2x+3y+1=0$ and $x^2+y^2-5x-6y+4=0$ is _____

(A) $3x-3y+5=0$
(B) $7y+9x-3=0$
(C) $7x-9y+3=0$
(D) $7x+9y-3=0$

Answer: (D) $7x+9y-3=0$ · The council's preliminary key

Q513 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

The equation of the tangent to the circle $x^2+y^2=25$ at $(-3,4)$ is _____

(A) $4x-3y+25=0$
(B) $x+y-1=0$
(C) $3x+4y=0$
(D) $3x-4y+25=0$

Answer: (D) $3x-4y+25=0$ · The council's preliminary key

Q514 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

The equation of a normal to the circle $x^2+y^2-2x=0$ that is parallel to the line $x+2y-3=0$ is _____

(A) $x-2y=1$
(B) $x+2y=1$
(C) $x+2y+1=0$
(D) $x-2y-2=0$

Answer: (B) $x+2y=1$ · The council's preliminary key

Q515 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

The equation of a circle which touches the x-axis and whose centre is $(1,2)$ is _____

EdLoop EAPCET

(A) $(x-2)^2+(y-1)^2=4$
(B) $(x-1)^2+(y-2)^2=4$
(C) $(x-1)^2+(y+2)^2=4$
(D) $(x+2)^2+(y-1)^2=4$

Answer: (B) $(x-1)^2+(y-2)^2=4$ · The council's preliminary key

Q516 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

If a line drawn from a fixed point $M(a,b)$ cuts the circle $x^2+y^2=k^2$ at C and D, then $MC \times MD$ is equal to _____

(A) $a^2+b^2+k^2$
(B) $a^2+b^2-k^2$
(C) $a^2-b^2-k^2$
(D) k^2

Answer: (B) $a^2+b^2-k^2$ · The council's preliminary key

Q517 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

The radius of the circle $2x^2+2y^2-3x+2y-1=0$ is _____ units.

(A) $\frac{\sqrt{21}}{2}$
(B) $\frac{\sqrt{21}}{4}$
(C) $\frac{21}{4}$
(D) $\frac{\sqrt{5}}{4}$

Answer: (B) $\frac{\sqrt{21}}{4}$ · The council's preliminary key

Q518 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

If one end of the diameter of $x^2+y^2-2x-6y-15=0$ is $(4,1)$, then the co-ordinates of the other end is

(A) $(5,-2)$
(B) $(-2,5)$
(C) $(1,3)$
(D) $(-2,-5)$

Answer: (B) $(-2,5)$ · The council's preliminary key

Q519 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

The angle between the pair of tangents drawn from $(1,3)$ to the circle $x^2+y^2-2x+4y-11=0$ is _____

EdLoop EAPCET

(A) $\text{Sin}^{-1}\left(\frac{24}{25}\right)$
(B) $\text{Sin}^{-1}\left(\frac{7}{25}\right)$
(C) $\text{Cos}^{-1}\left(\frac{24}{25}\right)$
(D) $\text{Tan}^{-1}\left(\frac{7}{24}\right)$

Answer: (A) $\text{Sin}^{-1}\left(\frac{24}{25}\right)$ · The council's preliminary key

Q520 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

The length of the tangent drawn from the mid-point of the line joining the origin and the point $(4, -4)$, to the circle $2x^2 + 2y^2 - y = 0$ is _____ units

(A) $3\sqrt{2}$
(B) $\sqrt{2}$
(C) $\sqrt{10}$
(D) 3

Answer: (D) 3 · The council's preliminary key

Q521 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

If the circles $x^2 + y^2 - 2x - 2y - 7 = 0$ and $x^2 + y^2 + 4x + 2y + k = 0$ cut orthogonally, then the length of their common chord is _____ units

(A) 2
(B) 5
(C) $\frac{6}{\sqrt{13}}$
(D) $\frac{12}{\sqrt{13}}$

Answer: (D) $\frac{12}{\sqrt{13}}$ · The council's preliminary key

Q522 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

For the circle $x^2 + y^2 - 9 = 0$, find the equation of the chord having $(1, 2)$ as its mid-point.

(A) $x + 2y + 5 = 0$
(B) $x - 3y - 5 = 0$
(C) $x - 3y + 5 = 0$
(D) $x + 2y - 5 = 0$

Answer: (D) $x + 2y - 5 = 0$ · The council's preliminary key

Q523 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

The area of the quadrilateral formed by the tangents from the point $(4, 5)$ to the circle $x^2 + y^2 - 4x - 2y - 11 = 0$, with a pair of radii joining the points of contact of these tangents is

(A) 4
(B) 6
(C) 8
(D) 10

Answer: (C) 8 · The council's preliminary key

Q524 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

A Square is inscribed in the circle $x^2 + y^2 - 2x + 4y - 93 = 0$ with its sides parallel to the co-ordinate axes. Then which among the following can be one of the vertices of the square?

(A) $(5, 8)$
(B) $(8, 5)$
(C) $(8, -5)$
(D) $(-8, 5)$

Answer: (B) $(8, 5)$ · The council's preliminary key

Q525 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

Find the equation of a circle with radius 5 $units$ and touching the circle $x^2 + y^2 - 2x - 4y - 20 = 0$ at the point $(5, 5)$.

(A) $x^2 + y^2 - 18x - 16y + 120 = 0$
(B) $x^2 + y^2 + 18x + 16y - 120 = 0$
(C) $x^2 + y^2 - 18x + 16y - 120 = 0$
(D) $x^2 + y^2 + 18x + 16y + 120 = 0$

Answer: (A) $x^2 + y^2 - 18x - 16y + 120 = 0$ · The council's preliminary key

Q526 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

If the circle $x^2 + y^2 + 6x - 2y + k = 0$ bisects the circumference of the circle $x^2 + y^2 + 2x - 6y - 15 = 0$, then 'k' is equal to

(A) 21
(B) -21
(C) 23
(D) -23

Answer: (D) -23 · The council's preliminary key

Q527 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

The length of the tangent from $(6, 8)$ to the circle $x^2 + y^2 = 4$ is

EdLoop EAPCET

(A) $\sqrt{6}$
(B) $2\sqrt{6}$
(C) $4\sqrt{6}$
(D) $5\sqrt{6}$

Answer: (C) $4\sqrt{6}$ · The council's preliminary key

Q528 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

If the length of the tangent from (f, g) to the circle $x^2 + y^2 = 6$ be twice the length of the tangent from the same point to the circle $x^2 + y^2 + 3x + 3y = 0$, then $f^2 + g^2 + 4f + 4g + 2$ is equal to

(A) -1
(B) 1
(C) 0
(D) -2

Answer: (C) 0 · The council's preliminary key

Q529 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

The equation of pair of straight lines parallel to x-axis and touching the circle $x^2 + y^2 - 6x - 4y - 12 = 0$ is _____

(A) $y^2 - 4y - 21 = 0$
(B) $y^2 + 4y - 21 = 0$
(C) $y^2 - 4y + 21 = 0$
(D) $y^2 + 4y + 21 = 0$

Answer: (A) $y^2 - 4y - 21 = 0$ · The council's preliminary key

Q530 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

Find the area of the circle $(x + 1)(x + 2) + (y - 1)(y + 3) = 0$ _____

(A) $\frac{17\pi}{4}$
(B) $\frac{17\pi}{2}$
(C) $\frac{2\pi}{17}$
(D) $\frac{\pi}{3}$

Answer: (A) $\frac{17\pi}{4}$ · The council's preliminary key

Q531 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

Find the maximum distance of the point $K(10, 7)$ from the circle $x^2 + y^2 - 4x - 2y - 20 = 0$

EdLoop EAPCET

(A) 25
(B) 10
(C) 15
(D) 5

Answer: (C) 15 · The council's preliminary key

Q532 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

The centre of a circle is $(2, -3)$ and the circumference is 10π. Then its equation is

(A) $x^2 + y^2 + 4x + 6y + 12 = 0$
(B) $x^2 + y^2 - 4x + 6y + 12 = 0$
(C) $x^2 + y^2 - 4x + 6y - 12 = 0$
(D) $x^2 + y^2 - 4x - 6y - 12 = 0$

Answer: (C) $x^2 + y^2 - 4x + 6y - 12 = 0$ · The council's preliminary key

Q533 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

If $y = \sqrt{3}x + k_1$ and $y = \sqrt{3}x + k_2$ are two parallel tangents of a circle of radius 2 units, then $|k_1 - k_2|$ is equal to

(A) 1
(B) 8
(C) 4
(D) 2

Answer: (B) 8 · The council's preliminary key

Q534 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

Find the equation of circle having normals $(x - 1)(y - 2) = 0$ and a tangent $3x + 4y = 6$?

(A) $(x - 1)^2 + (y - 2)^2 = 1$
(B) $(x - 2)^2 + (y - 1)^2 = 1$
(C) $(x + 1)^2 + (y + 2)^2 = 1$
(D) $(x + 2)^2 + (y + 1)^2 = 1$

Answer: (A) $(x - 1)^2 + (y - 2)^2 = 1$ · The council's preliminary key

Q535 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

A circle passes through the centre of another circle $x^2 + y^2 - 3x - 4y - 1 = 0$ and whose centre is $(5, 2)$. Then the equation of this circle is _____

EdLoop EAPCET

(A) $4x^2 + 4y^2 - 40x - 16y + 67 = 0$
(B) $3x^2 + 3y^2 - 40x - 16y + 67 = 0$
(C) $2x^2 + 2y^2 - 40x - 16y + 67 = 0$
(D) $x^2 + y^2 - 10x - 4y + 67 = 0$

Answer: (A) $4x^2 + 4y^2 - 40x - 16y + 67 = 0$ · The council's preliminary key

Q536 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

If the chord of contact of tangents from a point A to a given circle passes through B, then the circle with AB as a diameter will _____

(A) Touch the given circle internally
(B) Cut the given circle orthogonally
(C) Touch the given circle externally
(D) Neither intersect nor touch the given circle

Answer: (B) Cut the given circle orthogonally · The council's preliminary key

Q537 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

In ΔABC, $\angle A = 90^\circ$ and co-ordinates of points B and C are $(2, -4)$ and $(1, 5)$. Then the equation of the circumcircle of ΔABC is

(A) $x^2 + y^2 + 3x + y + 18 = 0$
(B) $x^2 + y^2 - 3x + y - 18 = 0$
(C) $x^2 + y^2 - 3x - y - 18 = 0$
(D) $x^2 + y^2 + 3x - y + 18 = 0$

Answer: (C) $x^2 + y^2 - 3x - y - 18 = 0$ · The council's preliminary key

Q538 AP EAMCET 2020 · 21 Sep · Shift 2 MCQ

The equation of the circle circumscribing the triangle formed by the straight lines $x + y = 6$, $2x + y = 4$ and $x + 2y = 5$ is given by

(A) $x^2 + y^2 + 17x + 19y + 50 = 0$
(B) $x^2 + y^2 - 17x - 19y + 50 = 0$
(C) $x^2 + y^2 + 17x - 19y - 50 = 0$
(D) $x^2 + y^2 - 17x + 19y - 50 = 0$

Answer: (B) $x^2 + y^2 - 17x - 19y + 50 = 0$ · The council's preliminary key

Q539 AP EAMCET 2020 · 21 Sep · Shift 2 MCQ

If the point $(1, 4)$ lies inside the circle $x^2 + y^2 - 6x - 10y + p = 0$ and the circle does not touch or intersect the coordinates axes, then

(A) $0 < p < 34$
(B) $25 < p < 29$
(C) $9 < p < 25$
(D) $7 < p < 29$

Answer: (B) $25 < p < 29$ · The council's preliminary key

Q540 AP EAMCET 2020 · 21 Sep · Shift 2 MCQ

The radical axis of the co-axial system of circles with limiting points $(1, 2)$ and $(-2, 1)$ is

(A) $x + 3y = 0$
(B) $2x + 3y = 0$
(C) $3x + 2y = 0$
(D) $3x + y = 0$

Answer: (D) $3x + y = 0$ · The council's preliminary key

Q541 AP EAMCET 2020 · 21 Sep · Shift 2 MCQ

The radical axis of any two circles is _____ to the line joining their centres

(A) Parallel
(B) Perpendicular
(C) Intersecting but not perpendicular
(D) Can't be determined

Answer: (B) Perpendicular · The council's preliminary key

Q542 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

The equation of the smallest circle passing through the intersection of the line $x + y = 1$ and the circle $x^2 + y^2 = 9$ is _____

(A) $x^2 + y^2 - 9 - (x + y + 1) = 0$
(B) $x^2 + y^2 - 9 - (x + y - 1) = 0$
(C) $x^2 + y^2 - 9 - x + y - 1 = 0$
(D) $x^2 + y^2 - 9 + x + y - 1 = 0$

Answer: (B) $x^2 + y^2 - 9 - (x + y - 1) = 0$ · The council's preliminary key

Q543 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

A circle is drawn touching the x-axis, with its centre at the point of reflection of (m, n) on the line $y - x = 0$. Then the equation of the circle is

(A) $x^2+y^2-2mx-2ny+m^2=0$
(B) $x^2+y^2-2mx+2ny+m^2=0$
(C) $x^2+y^2+2nx-2my-n^2=0$
(D) $x^2+y^2-2nx-2my+n^2=0$

Answer: (D) $x^2+y^2-2nx-2my+n^2=0$ · The council's preliminary key

Q544 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

The radical centre of the circles $x^2+y^2-4x-6y+5=0$, $x^2+y^2-2x-4y-1=0$ and $x^2+y^2-6x-2y=0$ is equal to

(A) $\left(\frac{33}{4},\frac{20}{3}\right)$
(B) $\left(\frac{33}{4},\frac{10}{3}\right)$
(C) $\left(\frac{33}{4},\frac{-20}{3}\right)$
(D) $\left(\frac{33}{4},\frac{-10}{3}\right)$

Answer: (A) $\left(\frac{33}{4},\frac{20}{3}\right)$ · The council's preliminary key

Q545 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

Let PQ and RS be tangents at the extremities of a diameter PR of a circle of radius r such that PS and RQ intersect at a point X on the circumference of the circle, then $2r$ equals

(A) $\sqrt{PQ\cdot RS}$
(B) $\frac{PQ+RS}{2}$
(C) $\frac{2\,PQ\cdot RS}{PQ+RS}$
(D) $\sqrt{\frac{(PQ)^2+(RS)^2}{2}}$

Answer: (A) $\sqrt{PQ\cdot RS}$ · The council's preliminary key

Q546 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

The area of an equilateral triangle inscribed in the circle $x^2+y^2-6x+2y-28=0$ is _____ square units

EdLoop EAPCET

(A) $\frac{27\sqrt{3}}{2}$
(B) $\frac{37\sqrt{3}}{2}$
(C) $\frac{31\sqrt{3}}{2}$
(D) $\frac{57\sqrt{3}}{2}$

Answer: (D) $\frac{57\sqrt{3}}{2}$ · The council's preliminary key

Q547 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

The equation of the circle with Centre $(2, 3)$ and touching the line $3x - 4y + 1 = 0$ is

(A) $x^2 + y^2 + 4x + 4y + 12 = 0$
(B) $x^2 + y^2 - 4x - 6y - 14 = 0$
(C) $x^2 + y^2 - 4x - 6y + 14 = 0$
(D) $x^2 + y^2 - 4x - 6y + 12 = 0$

Answer: (D) $x^2 + y^2 - 4x - 6y + 12 = 0$ · The council's preliminary key

Q548 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

Consider the family of circles $x^2 + y^2 - 2x - 2\lambda y - 8 = 0$ which passes through two fixed points A & B distance between them is

(A) 4
(B) $4\sqrt{2}$
(C) 6
(D) 8

Answer: (C) 6 · The council's preliminary key

Q549 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

The length of the chord intercepted by the circle $x^2 + y^2 - 6x + 8y - 5 = 0$ on the line $2x - y = 5$ is equal to _____ units

(A) 10
(B) 12
(C) 7
(D) 8

Answer: (A) 10 · The council's preliminary key

EdLoop EAPCET

Q550 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

If one of the two circle $x^2+y^2+\alpha_1(x-y)+c=0$ and $x^2+y^2+\alpha_2(x-y)+c=0$, lies within the other, then _____ (where $\alpha_1,\alpha_2 \in R, \alpha_1 \neq \alpha_2$)

(A) $c<0$
(B) $c=0$
(C) $c>0$
(D) $c\geq 0$

Answer: (C) $c>0$ · The council's preliminary key

Q551 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

The circle $x^2+y^2-6x-10y+p=0$ neither intersects nor touch the coordinate axes and the point $(1,4)$ lies inside the circle. Then the range of possible values of 'p' is

(A) $23<p<25$
(B) $25<p<29$
(C) $21<p<23$
(D) $12<p<21$

Answer: (B) $25<p<29$ · The council's preliminary key

Q552 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

The equation of the normal to the circle $x^2+y^2=16$ at the point $\left(\frac{1}{\sqrt{3}},\frac{1}{\sqrt{3}}\right)$ is _____

(A) $x+y=0$
(B) $x-y=\frac{\sqrt{3}}{4}$
(C) $x-y=0$
(D) $x+y=\frac{\sqrt{3}}{4}$

Answer: (C) $x-y=0$ · The council's preliminary key

Q553 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

Find the minimum radius of the circle which is orthogonal to both the circles $x^2+y^2+4x+3=0$ and $x^2+y^2-12x+35=0$

(A) 1
(B) 4
(C) $\sqrt{17}$
(D) $\sqrt{15}$

Answer: (D) $\sqrt{15}$ · The council's preliminary key

Q554 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

If one end of diameter of the circle $x^2 + y^2 - 4x - 6y + 11 = 0$ is $(3, 4)$, then the other end of the diameter is

(A) $(0, 1)$
(B) $(1, 1)$
(C) $(1, 2)$
(D) $(1, 0)$

Answer: (C) $(1, 2)$ · The council's preliminary key

Q555 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

The equation of a circle with centre $(5, 4)$ and touch the y-axis is

(A) $x^2 + y^2 - 10x - 8y - 16 = 0$
(B) $x^2 + y^2 - 10x - 8y - 61 = 0$
(C) $x^2 + y^2 + 10x + 8y + 16 = 0$
(D) $x^2 + y^2 - 10x - 8y + 16 = 0$

Answer: (D) $x^2 + y^2 - 10x - 8y + 16 = 0$ · The council's preliminary key

Q556 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

If $x^2 + y^2 + 6x + 2ky + 25 = 0$ to touch y-axis, then $k =$

(A) ± 20
(B) $-1, -5$
(C) ± 5
(D) 4

Answer: (C) ± 5 · The council's preliminary key

Q557 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

The point on the circle $x^2 + y^2 = 4$ whose distance from the line $4x + 3y - 12 = 0$ is $4/5$ units is equal to

(A) $\left(\frac{12}{25}, \frac{36}{25}\right)$
(B) $(4, 0)$
(C) $(2, 0)$
(D) $\left(\frac{-14}{25}, \frac{48}{25}\right)$

Answer: (C) $(2, 0)$ · The council's preliminary key

EdLoop EAPCET

Q558 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

The equation of the circle passing through $(0, 0)$ and which makes intercepts a and b on the co-ordinate axes is

(A) $x^2 + y^2 + ax + by = 0$
(B) $x^2 + y^2 + ax - by = 0$
(C) $x^2 + y^2 - ax + by = 0$
(D) $x^2 + y^2 - ax - by = 0$

Answer: (D) $x^2 + y^2 - ax - by = 0$ · The council's preliminary key

Q559 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

Find the value of $m + n$ if the circumference of the circle $x^2 + y^2 + 8x + 8y - m = 0$ is bisected by the circle $x^2 + y^2 - 2x + 4y + n = 0$

(A) -56
(B) 56
(C) 50
(D) -34

Answer: (A) -56 · The council's preliminary key

Q560 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

The equation of normal at $(1, 1)$ to the circle $x^2 + y^2 - x - 3y - 4 = 0$ is _____

(A) $x + y - 2 = 0$
(B) $2x - y - 1 = 0$
(C) $x - y + 2 = 0$
(D) $x - y - 2 = 0$

Answer: (A) $x + y - 2 = 0$ · The council's preliminary key

Q561 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

The length of the diameter of the circle $x^2 + y^2 - 6x - 8y = 0$ is _____ units

(A) 5
(B) 10
(C) 15
(D) 20

Answer: (B) 10 · The council's preliminary key

EdLoop EAPCET

Q562 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

The length of the tangent drawn from any point on the circle $x^2 + y^2 + 2gx + 2fy + c_1 = 0$ to the circle $x^2 + y^2 + 2gx + 2fy + c_2 = 0$ is _____

(A) $\sqrt{c_2 - c_1}$
(B) $\sqrt{c_1^2 + c_2^2}$
(C) $c_1 + c_2$
(D) $c_1 - c_2$

Answer: (A) $\sqrt{c_2 - c_1}$ · The council's preliminary key

Q563 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

If $3x + y + k = 0$ is a tangent to the circle $x^2 + y^2 = 10$, then $k =$ _____

(A) ± 7
(B) ± 5
(C) ± 9
(D) ± 10

Answer: (D) ± 10 · The council's preliminary key

Q564 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

The equations of tangents to the circle $x^2 + y^2 = 10$ from the point $(4, -2)$ are

(A) $x + y = 2,\ 3x + 2y = 16$
(B) $5x + y = 18,\ 3x - y = 4$
(C) $3x + y = 10,\ x - 3y = 10$
(D) $5x - y = 4,\ x + y = 0$

Answer: (C) $3x + y = 10,\ x - 3y = 10$ · The council's preliminary key

Q565 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

If the two circles $(x - 1)^2 + (y - 3)^2 = r^2$ and $x^2 + y^2 - 8x + 2y + 8 = 0$ intersect in two different points, then what can we conclude about r?

(A) $r < 2$
(B) $r = 2$
(C) $r > 2$
(D) $2 < r < 8$

Answer: (D) $2 < r < 8$ · The council's preliminary key

Q566 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

The polar of $(1, -2)$ with respect to $x^2 + y^2 - 10x - 10y + 25 = 0$ is

(A) $4x + 7y + 30 = 0$
(B) $4x + 7y - 30 = 0$
(C) $4x - 7y + 30 = 0$
(D) $x + y = 0$

Answer: (B) $4x + 7y - 30 = 0$ · The council's preliminary key

Q567 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

The centre and radius of the circumcircle of the triangle formed by the lines $2x + 3y = 10$, $y = x$ and the X- axis are respectively.

(A) $\left(\frac{-5}{2}, \frac{3}{2}\right), \frac{\sqrt{34}}{2}$
(B) $\left(\frac{5}{2}, 2\right), \frac{\sqrt{41}}{2}$
(C) $\left(\frac{5}{2}, \frac{-1}{2}\right), \sqrt{\frac{13}{2}}$
(D) $\left(\frac{1}{2}, \frac{-5}{2}\right), \sqrt{\frac{13}{2}}$

Answer: (C) $\left(\frac{5}{2}, \frac{-1}{2}\right), \sqrt{\frac{13}{2}}$ · Official TGCHE final key

Q568 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

If the straight lines $3x - 4y + 4 = 0$ and $6x - 8y - 7 = 0$ are the tangents to the same circle, then the area of that circle (in square units) is

(A) $\frac{9\pi}{4}$
(B) $\frac{9\pi}{16}$
(C) $\frac{25\pi}{9}$
(D) $\frac{121\pi}{25}$

Answer: (B) $\frac{9\pi}{16}$ · Official TGCHE final key

Q569 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

In the list-I each item contains equations of two circles, List-II contains the number of common tangents for each pair of circles given in List-I. Match the items of List – I with those of the items of List – II

A) $x^2 + y^2 + 2x + 8y - 23 = 0$, $x^2 + y^2 - 4x - 10y + 19 = 0$
B) $x^2 + y^2 = 1$, $x^2 + y^2 - 2x - 6y + 6 = 0$
C) $x^2 + y^2 - 8x + 2y = 0$, $x^2 + y^2 - 2x - 16y + 25 = 0$
D) $x^2 + y^2 = 4$, $x^2 + y^2 - 2x = 0$
I) 0

II) 1
III) 2
IV) 3
V) 4
The correct match is

(A) A-V, B-I, C-III, D-II
(B) A-IV, B-I, C-III, D-II
(C) A-IV, B-V, C-III, D-II
(D) A-III, B-IV, C-I, D-V

Answer: (C) A-IV, B-V, C-III, D-II · Official TGCHE final key

Q570 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

$\left(0, \frac{3}{4}\right)$ is the radical centre of the circles $S_1 : x^2 + y^2 - 2x + 6y = 0$, $S_2 : x^2 + y^2 + 2gx - 2y + 6 = 0$ and $S_3 : x^2 + y^2 - 12x + 2fy + 3 = 0$. If S_2 and S_3 intersect orthogonally, then $(g, f) =$

(A) $\left(\frac{-11}{12}, 1\right)$
(B) $\left(1, \frac{-21}{2}\right)$
(C) $\left(0, \frac{-9}{2}\right)$
(D) $\left(-1, \frac{-7}{12}\right)$

Answer: (A) $\left(\frac{-11}{12}, 1\right)$ · Official TGCHE final key

Q571 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

For the circles $(x - a)^2 + y^2 = a^2$ and $x^2 + (y - a)^2 = a^2$, where $a > 0$, which one of the following is not true?

(A) mid point of the common chord is $\left(\frac{a}{2}, \frac{a}{2}\right)$
(B) length of the common chord is $(\sqrt{2}\, a)$
(C) the circles intersect at $(0, 0)$ and (a, a)
(D) common chord is at a distance of $(\sqrt{2}\, a)$ units from the centres of given circles

Answer: (D) common chord is at a distance of $(\sqrt{2}\, a)$ units from the centres of given circles · Official TGCHE final key

Q572 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

If the parametric equations of the circle passing through the points $(3, 4)$, $(3, 2)$ and $(1, 4)$ is $x = a + r\cos\theta$, $y = b + r\sin\theta$, then $b^a r^a =$

(A) 27
(B) 18
(C) 9
(D) 54

Answer: (B) 18 · Official TGCHE final key

Q573 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

From a point P on the circle $x^2+y^2-4x-6y+9=0$, a pair of tangents PQ and PR are drawn touching the circle $x^2+y^2-4x-6y+12=0$ at Q and R. If C is the centre of the concentric circles, then the area of the ΔCQR (in sq. units) is

(A) $\frac{1}{2}$
(B) $\frac{\sqrt{3}}{2}$
(C) $\frac{\sqrt{3}}{4}$
(D) $\frac{3}{4}$

Answer: (C) $\frac{\sqrt{3}}{4}$ · Official TGCHE final key

Q574 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

The equations of the tangents drawn from the origin to the circle $x^2+y^2+2gx+2fy+g^2=0$ are

(A) $x=0,\ (g^2+f^2)x-2gfy=0$
(B) $x=0,\ (g^2-f^2)x-2gfy=0$
(C) $y=0,\ (g^2-f^2)y-2gfx=0$
(D) $y=0,\ (g^2+f^2)y-2gfx=0$

Answer: (C) $y=0,\ (g^2-f^2)y-2gfx=0$ · Official TGCHE final key

Q575 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

If $2x+y=0$ is the equation of a chord of the circle $x^2+y^2-2x-6y+3=0$, then the circle with this chord as diameter passes through the point

(A) $(-3,2)$
(B) $(5,-2)$
(C) $(-5,3)$
(D) $(-2,1)$

Answer: (D) $(-2,1)$ · Official TGCHE final key

Q576 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

If the radical axis of the circles $x^2+y^2+2\alpha x+2\beta y+c=0$ and $x^2+y^2+\frac{3}{2}x+4y+c=0$ touches the circle $x^2+y^2+2x+2y+1=0$, then $4\alpha\beta-8\alpha-3\beta+10=$

EdLoop EAPCET

(A) 2
(B) -2
(C) 4
(D) -4

Answer: (C) 4 · Official TGCHE final key

Q577 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

Suppose $O(0,0)$ is the origin and the line $L = x + y - \lambda = 0$ meets the curve $x^2 + y^2 - 2x - 4y + 2 = 0$ at A and B. If $\angle AOB = 90^\circ$, then the distance between such lines $L = 0$ is

(A) $\frac{1}{\sqrt{2}}$
(B) $\frac{3}{\sqrt{2}}$
(C) $\sqrt{2}$
(D) $\sqrt{2} + 1$

Answer: (A) $\frac{1}{\sqrt{2}}$ · Official TGCHE final key

Q578 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

If the poles of the line $x - y = 0$ with respect to the circles $x^2 + y^2 - 2g_i x + c_i^2 = 0$ $(i = 1, 2, 3)$ are (α_i, β_i), then $\sum_{i=1}^{3} \frac{\alpha_i + \beta_i}{g_i} =$

(A) 3
(B) 6
(C) $\frac{3}{2}$
(D) $\frac{3}{4}$

Answer: (A) 3 · Official TGCHE final key

Q579 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

If the circles $x^2 + y^2 - 4x + 6y + 13 - a^2 = 0$ and $x^2 + y^2 - 10x - 2y + 17 = 0$ intersect in two distinct points, then 'a' is

(A) $-8 < a < -2$
(B) $a > 8$
(C) $2 < a < 8$
(D) $a < -8$

Options (1) or (3) were accepted. More than one answer was accepted. · Official TGCHE final key

EdLoop EAPCET

Q580 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

If a circle of radius r touches the positive coordinate axes and also the circle $x^2 + y^2 - 12x - 10y + 52 = 0$ externally, then the distance between the centres of the two circles is

(A) 7
(B) 5
(C) 6
(D) 8

Answer: (B) 5 · Official TGCHE final key

Q581 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

If the circles $x^2 + y^2 - 2x - 2y + k = 0$ and $x^2 + y^2 + 4x + 6y + 4 = 0$ touch each other externally, then the point of contact of the two circles is

(A) $\left(\frac{-1}{5}, \frac{-3}{5}\right)$
(B) $\left(\frac{-1}{3}, \frac{-1}{3}\right)$
(C) $(-1, -3)$
(D) $(-1, -1)$

Answer: (A) $\left(\frac{-1}{5}, \frac{-3}{5}\right)$ · Official TGCHE final key

Q582 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

The centre of the circle passing through the points of intersection of the circles $(x + 3)^2 + (y + 2)^2 = 25$ and $(x - 2)^2 + (y - 3)^2 = 25$ and cutting the circle $(x + 1)^2 + (y - 2)^2 = 16$ orthogonally is

(A) $\left(\frac{-27}{2}, \frac{-25}{2}\right)$
(B) $(0, 0)$
(C) $\left(\frac{16}{3}, \frac{-25}{4}\right)$
(D) $\left(\frac{4}{7}, \frac{3}{7}\right)$

Answer: (A) $\left(\frac{-27}{2}, \frac{-25}{2}\right)$ · Official TGCHE final key

Q583 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

If $x^2 + y^2 - a^2 + \lambda(x\cos\alpha + y\sin\alpha - p) = 0$ is the smallest circle through the points of intersection of $x^2 + y^2 = a^2$ and $x\cos\alpha + y\sin\alpha = p$, $0 < p < a$, then $\lambda =$

EdLoop EAPCET

(A) 1
(B) $-p$
(C) $-2p$
(D) $-3p$

Answer: (C) $-2p$ · Official TGCHE final key

Q584 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

If PA and PB are the tangents drawn from the point P (1, 1) to the circle $x^2 + y^2 + gx + gy - 2 = 0$ with C as the centre, then the area (in sq. units) of the quadrilateral PACB is

(A) $2\sqrt{g}$
(B) $\sqrt{g^3 - 4g}$
(C) $\sqrt{g^3 + 4g}$
(D) $\sqrt{\frac{g^3}{2} + 4g}$

Answer: (C) $\sqrt{g^3 + 4g}$ · Official TGCHE final key

Q585 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

The point / points of intersection of the common tangents of the two circles $x^2 + y^2 - 8x - 6y + 21 = 0$ and $x^2 + y^2 - 2y - 15 = 0$ is / are

(A) (5, 8), (–4, 3)
(B) (8, 5)
(C) (3, 1)
(D) (2, 1), (4, 3)

Answer: (B) (8, 5) · Official TGCHE final key

Q586 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

L_1 and L_2 are two common tangents to two circles. If L_1 touches the two circles at A(1, 1) and B(0, 1) and L_2 touches the two circles at $C\left(\frac{3}{5}, \frac{4}{5}\right)$, $D\left(\frac{-1}{5}, \frac{7}{5}\right)$, then the equation of the radical axis of the two circles is

(A) $2x - 6y = 7$
(B) $2x + y + 7 = 0$
(C) $2x + 6y = 7$
(D) $x = y$

Answer: (C) $2x + 6y = 7$ · Official TGCHE final key

EdLoop EAPCET

Q587 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

The centre of the smallest circle which cuts the circles $x^2+y^2-2x-4y-4=0$ and $x^2+y^2-10x+12y+52=0$ orthogonally is

(A) (1, 2)
(B) (–3, 2)
(C) (3, –2)
(D) (3, 4)

Answer: (C) (3, –2) · Official TGCHE final key

Q588 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

Two points from the set of Concyclic points of the circle passing through $(1,1)$, $(2,-1)$, $(3,2)$ is

(A) $\left(\frac{5}{2}+\sqrt{\frac{5}{2}},\frac{1}{2}+\sqrt{\frac{5}{2}}\right),\left(\frac{5}{2},\frac{1}{2}+\sqrt{\frac{5}{2}}\right)$
(B) $\left(\frac{5}{2}+\sqrt{\frac{5}{2}},\frac{1}{2}\right),\left(\frac{5+\sqrt{5}}{2},\frac{1+\sqrt{5}}{2}\right)$
(C) $\left(\frac{5+\sqrt{5}}{2},\frac{1+\sqrt{5}}{\sqrt{2}}\right),\left(\frac{5}{2}+\sqrt{\frac{5}{2}},\frac{1+\sqrt{5}}{4}\right)$
(D) $\left(\frac{5}{2}-\frac{\sqrt{5}}{2},\frac{1}{2}-\frac{\sqrt{5}}{2}\right),\left(\frac{5}{2}-\frac{\sqrt{5}}{2},\frac{1}{2}+\frac{\sqrt{5}}{2}\right)$

Options (2) or (4) were accepted. More than one answer was accepted. · Official TGCHE final key

Q589 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

If the polar of a point P with respect to a circle of radius r which touches the coordinate axes and lies in the first quadrant is $x+2y=4r$, then the point P is

(A) $(r,2r)$
(B) $(2r,r)$
(C) $(2r,3r)$
(D) $(-r,4r)$

Answer: (C) $(2r,3r)$ · Official TGCHE final key

Q590 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

If the circles $x^2+y^2-2x-2(3+\sqrt{7})y+8+6\sqrt{7}=0$ and $x^2+y^2-8x-6y+k^2=0$, $k\in\mathbb{Z}$, have exactly two common tangents, then the number of possible values for k is

EdLoop EAPCET

(A) 8
(B) 5
(C) 9
(D) 11

Answer: (C) 9 · Official TGCHE final key

Q591 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

The circle $S = 0$ cuts the circles $C_1 = x^2 + y^2 - 8x - 2y + 16 = 0$ and $C_2 = x^2 + y^2 - 4x - 4y - 1 = 0$ orthogonally. If the common chord of $S = 0$ and $C_1 = 0$ is $2x + 13y - 15 = 0$, then the centre of $S = 0$ is

(A) $\left(\frac{-11}{3}, \frac{7}{6}\right)$
(B) $\left(\frac{11}{3}, \frac{-7}{6}\right)$
(C) $\left(\frac{2}{13}, \frac{11}{15}\right)$
(D) $\left(\frac{11}{15}, \frac{-2}{13}\right)$

Answer: (B) $\left(\frac{11}{3}, \frac{-7}{6}\right)$ · Official TGCHE final key

Q592 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

The equation of the circle passing through the points of intersection of the two orthogonal circles $S_1 = x^2 + y^2 + kx - 4y - 1 = 0$, $S_2 = 3x^2 + 3y^2 - 14x + 23y - 15 = 0$ and passing through the point $(-1, -1)$ is

(A) $x^2 + y^2 - 8x - 2y - 12 = 0$
(B) $3x^2 + 3y^2 + 18x - 12y = 0$
(C) $5x^2 + 5y^2 - 22x + 15y - 17 = 0$
(D) $x^2 + y^2 - 5x + 14y + 7 = 0$

Answer: (C) $5x^2 + 5y^2 - 22x + 15y - 17 = 0$ · Official TGCHE final key

Q593 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

If the origin lies on a diameter of the circle $x^2 + y^2 - 4x - 2y - 4 = 0$, then the equation of the circle passing through the end points of that diameter and the point $(1, 2)$ is

(A) $x^2 + y^2 - 2x - 4y = 0$
(B) $3x^2 + 3y^2 - 19x + 8y - 12 = 0$
(C) $7x^2 + 7y^2 - 31x - 28y + 17 = 0$
(D) $x^2 + y^2 = 5$

Answer: (B) $3x^2 + 3y^2 - 19x + 8y - 12 = 0$ · Official TGCHE final key

Q594 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

If $\alpha \neq -4$ and $(2, \alpha)$ is the mid point of a chord of the circle $x^2 + y^2 - 4x + 8y + 6 = 0$, then the values of the y-intercept of the chord lie in the interval

(A) $(-4 - \sqrt{14}, -4 + \sqrt{14})$
(B) $(-4, 4)$
(C) $(4 - \sqrt{14}, 4 + \sqrt{14})$
(D) $(-2, 2)$

Answer: (A) $(-4 - \sqrt{14}, -4 + \sqrt{14})$ · Official TGCHE final key

Q595 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

C_1 and C_2 are the external and internal centres of similitude of the circles $x^2 + y^2 - 2x + 4y + 1 = 0$ and $x^2 + y^2 + 4x - 6y + 12 = 0$. If the radius of the circle having C_1C_2 as its diameters is r then $\frac{9}{2}r =$

(A) $\sqrt{15}$
(B) $3\sqrt{15}$
(C) $2\sqrt{34}$
(D) $3\sqrt{34}$

Answer: (D) $3\sqrt{34}$ · Official TGCHE final key

Q596 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

Suppose the circle $S : x^2 + y^2 + 2gx + 2fy + c = 0$ cuts orthogonally the two circles $S' : x^2 + y^2 - 4x - 6y + 11 = 0$ and $S'' : x^2 + y^2 - 10x - 4y + 21 = 0$. If the centre of $S = 0$ lies on the bisector of the angle between the positive coordinate axes, then $2g + 2f + c =$

(A) 12
(B) 8
(C) 4
(D) 0

Answer: (C) 4 · Official TGCHE final key

Q597 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

If the circle $S_1 : x^2 + y^2 = 16$ intersects another circle S_2 of radius 5 units such that the common chord is of maximum length and slope $\frac{3}{4}$, then the centre of the circle S_2 is

(A) $\left(\frac{-9}{5}, \frac{12}{5}\right)$ or $\left(\frac{9}{5}, \frac{-12}{5}\right)$
(B) $\left(\frac{7}{5}, \frac{-12}{5}\right)$ or $\left(\frac{-7}{5}, \frac{12}{5}\right)$
(C) $\left(\frac{-9}{5}, \frac{-12}{5}\right)$ or $\left(\frac{9}{5}, \frac{12}{5}\right)$
(D) $\left(\frac{12}{5}, \frac{9}{5}\right)$ or $\left(\frac{-12}{5}, \frac{-9}{5}\right)$

Answer: (A) $\left(\frac{-9}{5}, \frac{12}{5}\right)$ or $\left(\frac{9}{5}, \frac{-12}{5}\right)$ · Official TGCHE final key

Q598 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

The area (in sq. units) of the triangle formed by the two tangents drawn from the external point $O(0,0)$ to the circle $x^2+y^2-2gx-2hy+h^2=0$ and their chord of contact is

(A) $\frac{gh}{h^3+g^2}$
(B) $\frac{gh}{h^2+g^3}$
(C) $\frac{hg^3}{h^2+g^2}$
(D) $\frac{gh^3}{h^2+g^2}$

Answer: (D) $\frac{gh^3}{h^2+g^2}$ · Official TGCHE final key

Q599 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

If the circle $x^2+y^2-6x+2y=28$ cuts off a chord of length λ units on the line $2x-5y+18=0$, then the value of λ is

(A) 3
(B) 6
(C) 12
(D) 9

Answer: (B) 6 · Official TGCHE final key

Q600 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

Consider the circles $S_1: x^2+y^2+2x+8y-23=0$ and $S_2: x^2+y^2-4x+10y+19=0$. If the polars of the centre of a circle with respect to the another circle are L_1 and L_2, then L_1, L_2 are

(A) Parallel and separated by a distance of $4\sqrt{10}$ units
(B) Perpendicular and intersect at $(1,3)$
(C) Perpendicular and intersect at $(1,-5)$
(D) Parallel and separated by a distance of $2\sqrt{10}$ units

Answer: (A) Parallel and separated by a distance of $4\sqrt{10}$ units · Official TGCHE final key

Q601 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

If the circle $S\equiv x^2+y^2-4=0$ intersects another circle $S'=0$ of radius $\frac{5\sqrt{2}}{2}$ in such a manner that the common chord is of maximum length with slope equal to $\frac{1}{4}$, then the centre of $S'=0$ is

(A) $(-1, 4)$ or $(1, -4)$
(B) $\left(-\frac{\sqrt{2}}{2}, 2\sqrt{2}\right)$ or $\left(\frac{\sqrt{2}}{2}, -2\sqrt{2}\right)$
(C) $\left(-2\sqrt{2}, \frac{\sqrt{2}}{2}\right)$ or $\left(2\sqrt{2}, \frac{-\sqrt{2}}{2}\right)$
(D) $(4, -1)$ or $(-4, 1)$

Answer: (B) $\left(-\frac{\sqrt{2}}{2}, 2\sqrt{2}\right)$ or $\left(\frac{\sqrt{2}}{2}, -2\sqrt{2}\right)$ · Official TGCHE final key

Q602 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

If the angle between the circles $x^2 + y^2 - 4x - 6y + k = 0$ and $x^2 + y^2 + 8x - 4y + 11 = 0$ is $\frac{\pi}{3}$, then a value of k is

(A) -3
(B) 36
(C) 3
(D) 2

Answer: (A) -3 · Official TGCHE final key

Q603 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

If A$(-1, 3)$ and B$(5, 3)$ are points on a circle C and the chord AB subtends an angle $\frac{\pi}{4}$ at a point P on C, then the equation of such a circle C is

(A) $x^2 + y^2 - 4x + 12y + 22 = 0$
(B) $x^2 + y^2 - 4x - 12y + 22 = 0$
(C) $x^2 + y^2 - 4x - 12y - 22 = 0$
(D) $3x^2 + 3y^2 - 12x - 36y - 66 = 0$

Answer: (B) $x^2 + y^2 - 4x - 12y + 22 = 0$ · Official TGCHE final key

Q604 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

The mid point of the chord of the circle $x^2 + y^2 - 6x + 4y - 12 = 0$ drawn parallel to the tangent at $(-1, 1)$ and at a distance of one unit from the tangent is

(A) $\left(\frac{3}{4}, \frac{1}{4}\right)$
(B) $\left(\frac{1}{4}, \frac{3}{4}\right)$
(C) $\left(\frac{-1}{5}, \frac{2}{5}\right)$
(D) $\left(\frac{3}{5}, \frac{2}{5}\right)$

Answer: (C) $\left(\frac{-1}{5}, \frac{2}{5}\right)$ · Official TGCHE final key

EdLoop EAPCET

Q605 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

If the angle between the pair of tangents drawn to the circle $x^2+y^2-2x+4y+3=0$ from $(6,-5)$ is θ, then $\tan\theta=$

(A) $\frac{5}{8}$
(B) $\frac{15}{8}$
(C) $\frac{8}{15}$
(D) $\frac{19}{8}$

Answer: (C) $\frac{8}{15}$ · Official TGCHE final key

Q606 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

$r_1, r_2 > 0$ and if C_1, C_2 are centres of the two circles having only two common tangents and $C_1C_2 = r_1 + r_2$, then which of the following is correct

(A) r_1, r_2 are the radii of the two circles
(B) The common chord may divide the line joining the centres in the ratio $r_1 : r_2$
(C) r_1, r_2 are always the distances of the centres from the common tangent of the two circles
(D) external centre of similitude divides C_1C_2 in the ratio $r_1 : r_2$

Answer: (B) The common chord may divide the line joining the centres in the ratio $r_1 : r_2$ · Official TGCHE final key

Q607 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

Let $S \equiv x^2+y^2-6x-6y+4=0$ and $S' \equiv x^2+y^2-2x-4y+3=0$ be two circles. The centre of a circle of radius $\sqrt{14}$ and having same radical axis with either of $S=0$ or $S'=0$ is

(A) $(3,3)$
(B) $\left(\frac{-19}{5}, \frac{-2}{5}\right)$
(C) $(1,2)$
(D) $\left(\frac{2}{5}, \frac{3}{5}\right)$

Answer: (B) $\left(\frac{-19}{5}, \frac{-2}{5}\right)$ · Official TGCHE final key

Q608 TS EAMCET 2019 · 6 May · Shift 1 MCQ

If the angle between a pair of tangents drawn from a point P to the circle $x^2+y^2-4x+2y+3=0$ is $\pi/2$ then, the locus of P is

(A) $x^2 + y^2 - 2x + 2y + 3 = 0$
(B) $x^2 + y^2 - 8x + 4y + 2 = 0$
(C) $x^2 + y^2 + 4x + 2y + 1 = 0$
(D) $x^2 + y^2 - 4x + 2y + 1 = 0$

Answer: (D) $x^2 + y^2 - 4x + 2y + 1 = 0$ · Official TGCHE final key

Q609 TS EAMCET 2019 · 6 May · Shift 1 MCQ

If a variable circle $S = 0$ touches the line $y = x$ and passes through the point (0, 0), then the fixed point that lies on the common chord of the circles $x^2 + y^2 + 6x + 8y - 7 = 0$ and $S = 0$ is

(A) $\left(\frac{1}{2}, \frac{1}{2}\right)$
(B) $\left(-\frac{1}{2}, -\frac{1}{2}\right)$
(C) $\left(\frac{1}{2}, -\frac{1}{2}\right)$
(D) $\left(-\frac{1}{2}, \frac{1}{2}\right)$

Answer: (A) $\left(\frac{1}{2}, \frac{1}{2}\right)$ · Official TGCHE final key

Q610 TS EAMCET 2019 · 6 May · Shift 1 MCQ

Two chords of the circle $x^2 + y^2 - 2gx - 2hy + g^2 + h^2 - c^2 = 0$ are passing through the point $(g, h + c)$ and the line $y = x$ bisects these two chords. Then

(A) $4g^2 - 4h^2 - 8gh + 4hc - 4gc - c^2 = 0$
(B) $4g^2 + 4h^2 - 8gh + 4hc - 4gc - c^2 < 0$
(C) $4g^2 + 4h^2 + 8gh + 4hc + 4gc + c^2 = 0$
(D) $4g^2 + 4h^2 - 8gh + 4hc - 4gc - c^2 > 0$

Answer: (B) $4g^2 + 4h^2 - 8gh + 4hc - 4gc - c^2 < 0$ · Official TGCHE final key

Q611 TS EAMCET 2019 · 6 May · Shift 1 MCQ

The centre of the circle passing through the point (1, 1) and orthogonal to the circles $x^2 + y^2 + 3x - 5y + 7 = 0$ and $x^2 + y^2 - 6x - 10y + 9 = 0$ is

(A) $\left(-\frac{19}{52}, \frac{71}{52}\right)$
(B) $\left(\frac{19}{52}, -\frac{55}{52}\right)$
(C) $\left(-\frac{55}{52}, \frac{19}{52}\right)$
(D) $\left(-\frac{19}{52}, \frac{55}{52}\right)$

Answer: (D) $\left(-\frac{19}{52}, \frac{55}{52}\right)$ · Official TGCHE final key

Q612 TS EAMCET 2019 · 6 May · Shift 1 MCQ

The length of the common chord of the circles $x^2 + y^2 - 6x - 4y + 9 = 0$ and $x^2 + y^2 - 8x - 6y + 23 = 0$ is

(A) $\sqrt{2}$
(B) 2
(C) $2\sqrt{2}$
(D) 4

Answer: (C) $2\sqrt{2}$ · Official TGCHE final key

Q613 TS EAMCET 2019 · 4 May · Shift 1 MCQ

A line meets the coordinate axes at A and B. If the perpendicular distances from A and B to the tangent drawn at the origin to the circumcircle of ΔOAB are m and n respectively, then the diameter of that circle is

(A) $\frac{m+n}{2}$
(B) $\frac{3(m+n)}{4}$
(C) $m + n$
(D) $2(m + n)$

Answer: (C) $m + n$ · Official TGCHE final key

Q614 TS EAMCET 2019 · 4 May · Shift 1 MCQ

The centre of the circle passing through the point $(0, 1)$ and touching the curve $y = x^2$ at $(2, 4)$ is

(A) $\left(\frac{16}{5}, \frac{53}{10}\right)$
(B) $\left(\frac{-2}{3}, \frac{-4}{3}\right)$
(C) $\left(\frac{-4}{3}, \frac{2}{3}\right)$
(D) $\left(\frac{-16}{5}, \frac{53}{10}\right)$

Answer: (D) $\left(\frac{-16}{5}, \frac{53}{10}\right)$ · Official TGCHE final key

EdLoop EAPCET

Q615 TS EAMCET 2019 · 4 May · Shift 1 MCQ

If the number of common tangents to the pair of circles $x^2+y^2-2x+4y-4=0$ and $x^2+y^2+4x-4y+\alpha=0$ is 4 then the least integral value of α is

(A) 4
(B) 5
(C) 6
(D) 7

Answer: (B) 5 · Official TGCHE final key

Q616 TS EAMCET 2019 · 4 May · Shift 1 MCQ

The equation of a circle of radius 5 units touching another circle $x^2+y^2-2x-4y-20=0$ at $(5,5)$ is

(A) $x^2+y^2+18x+16y-220=0$
(B) $x^2+y^2-x-y-40=0$
(C) $x^2+y^2+2x-3y-45=0$
(D) $x^2+y^2-18x-16y+120=0$

Answer: (D) $x^2+y^2-18x-16y+120=0$ · Official TGCHE final key

Q617 TS EAMCET 2019 · 4 May · Shift 1 MCQ

The equation of a circle concentric with the circle $x^2+y^2-6x+12y+15=0$ and having area that is twice the area of the given circle is

(A) $x^2+y^2-6x+12y-15=0$
(B) $x^2+y^2-6x+12y-30=0$
(C) $x^2+y^2-6x+12y-60=0$
(D) $x^2+y^2-6x+12y+15=0$

Answer: (A) $x^2+y^2-6x+12y-15=0$ · Official TGCHE final key

Q618 TS EAMCET 2019 · 4 May · Shift 2 MCQ

If $x=\dfrac{2at}{1+t^2}$, $y=\dfrac{a(1-t^2)}{1+t^2}$, where t is a parameter, then a is

(A) the length of the latus rectum of a parabola
(B) the radius of a circle
(C) the length of the transverse axis of a hyperbola
(D) the length of the semi-major axis of an ellipse

Answer: (B) the radius of a circle · Official TGCHE final key

EdLoop EAPCET

Q619 TS EAMCET 2019 · 4 May · Shift 2 MCQ

Consider the following statements:
I. $P(x_1, y_1)$ and $Q(x_2, y_2)$ are conjugate points with respect to the circle $x^2 + y^2 + 2gx + 2fy + c = 0$, then $x_1x_2 + y_1y_2 + g(x_1 + x_2) + f(y_1 + y_2) + c = 0$.
II. The pole of the line $x + y + 1 = 0$ with respect to the circle $x^2 + y^2 = 9$ is $(9, 9)$.
Then, which one of the following is true?

(A) Both I and II are true
(B) Neither I nor II is true
(C) I is false and II is true
(D) I is true and II is false

Answer: (D) I is true and II is false · Official TGCHE final key

Q620 TS EAMCET 2019 · 4 May · Shift 2 MCQ

If P is the point of contact of the circles $x^2 + y^2 + 4x + 4y - 10 = 0$ and $x^2 + y^2 - 6x - 6y + 10 = 0$ and Q is their external centre of similitude, then the equation of the circle with P and Q as the extremities of its diameter is

(A) $x^2 + y^2 + 14x + 14y - 26 = 0$
(B) $x^2 + y^2 + 5x + 5y - 8 = 0$
(C) $x^2 + y^2 - 5x - 5y + 8 = 0$
(D) $x^2 + y^2 - 14x - 14y + 26 = 0$

Answer: (D) $x^2 + y^2 - 14x - 14y + 26 = 0$ · Official TGCHE final key

Q621 TS EAMCET 2019 · 4 May · Shift 2 MCQ

Let $k > 0$, $s_\alpha \equiv x^2 + y^2 + 2\alpha x + k = 0$ and $s_\beta \equiv x^2 + y^2 + 2\beta y - k = 0$. Then match the items of List - I with those of List - II.
List - I
A) Point circles of $s_\alpha = 0$
B) Point circles of $s_\beta = 0$
C) The circles in $s_\alpha = 0$ are
D) The circles in $s_\beta = 0$ are
List - II
i) do not exist
ii) intersecting
iii) non-intersecting
iv) $(\pm\sqrt{k}, 0)$
v) $(0, \pm\sqrt{k})$
The correct match is

EdLoop EAPCET

(A) A-iii, B-iv, C-ii, D-i
(B) A-ii, B-iv, C-i, D-iii
(C) A-iv, B-i, C-iii, D-ii
(D) A-iv, B-iii, C-i, D-ii

Answer: (C) A-iv, B-i, C-iii, D-ii · Official TGCHE final key

Q622 TS EAMCET 2019 · 4 May · Shift 2 MCQ

The equation of the circle touching the line $2x + 3y + 1 = 0$ at the point $(1, -1)$ and orthogonal to the circle which has the line segment having end points $(0, -1)$ and $(-2, 3)$ as diameter, is

(A) $x^2 + y^2 - 10x + 5y + 1 = 0$
(B) $x^2 + y^2 + 5x - 10y - 1 = 0$
(C) $2x^2 + 2y^2 + 10x - 5y - 1 = 0$
(D) $2x^2 + 2y^2 - 10x - 5y + 1 = 0$

Answer: (D) $2x^2 + 2y^2 - 10x - 5y + 1 = 0$ · Official TGCHE final key

Q623 TS EAMCET 2019 · 3 May · Shift 1 MCQ

If one of the diameters of the circle $x^2 + y^2 - 2x - 6y + 6 = 0$ is a chord to the circle with centre $(2, 1)$, then the radius of the bigger circle is

(A) 6
(B) 4
(C) 2
(D) 3

Answer: (D) 3 · Official TGCHE final key

Q624 TS EAMCET 2019 · 3 May · Shift 1 MCQ

The line $3x - y + k = 0$ touches the circle $x^2 + y^2 + 4x - 6y + 3 = 0$. If k_1, k_2 $(k_1 < k_2)$ are the two values of k, then the equation of the chord of contact of the point (k_1, k_2) with respect to the given circle is

(A) $19x + y - 18 = 0$
(B) $x + 19y - 3 = 0$
(C) $x + 16y - 56 = 0$
(D) $20x + 18y - 7 = 0$

Answer: (C) $x + 16y - 56 = 0$ · Official TGCHE final key

Q625 TS EAMCET 2019 · 3 May · Shift 1 MCQ

If the line $ax + by = 1$ is a tangent to the circle $S_r \equiv x^2 + y^2 - r^2 = 0$, then which one of the following is true?

(A) (a, b) lies on the circle $S_{1/r} = 0$
(B) (a, b) lies inside the circle $S_{1/2} = 0$
(C) (a, b) lies outside the circle $S_2 = 0$
(D) (a, b) lies on the circle $S_3 = 0$

Answer: (A) (a, b) **lies on the circle** $S_{1/r} = 0$ · Official TGCHE final key

Q626 TS EAMCET 2019 · 3 May · Shift 1 MCQ

Each of the two orthogonal circles C_1 and C_2 passes through both the points $(2, 0)$ and $(-2, 0)$. If $y = mx + c$ is a common tangent to these circles, then

(A) $c^2 = 4(1 + 2m^2)$
(B) $c^2 = 2(1 + 2m^2)$
(C) $c^2 = 1 + m^2$
(D) $c^2m^2 = 4(1 + m^2)$

Answer: (A) $c^2 = 4(1 + 2m^2)$ · Official TGCHE final key

Q627 TS EAMCET 2019 · 3 May · Shift 1 MCQ

The equation of the circle whose diameter is the common chord of the circles $x^2 + y^2 - 3x + y - 10 = 0$ and $x^2 + y^2 - x + 2y - 20 = 0$ is

(A) $x^2 + y^2 - 3x + 6y + 15 = 0$
(B) $x^2 + y^2 - 6x + 4y + 10 = 0$
(C) $x^2 + y^2 - 9x + 2y + 20 = 0$
(D) $x^2 + y^2 - 9x - 2y + 20 = 0$

Answer: (D) $x^2 + y^2 - 9x - 2y + 20 = 0$ · Official TGCHE final key

Q628 TS EAMCET 2019 · 3 May · Shift 2 MCQ

The lines represented by $5x^2 - xy - 5x + y = 0$ are normals to a circle $S = 0$. If this circle touches the circle $S' \equiv x^2 + y^2 - 2x + 2y - 7 = 0$ externally, then the equation of the chord of contact of centre of $S' = 0$ with respect to $S = 0$ is

(A) $2y - 7 = 0$
(B) $x - 1 = 0$
(C) $3x + 4y - 7 = 0$
(D) $x + y = 5$

Answer: (A) $2y - 7 = 0$ · Official TGCHE final key

Q629 TS EAMCET 2019 · 3 May · Shift 2 MCQ

The equation of the circle that touches the Y-axis at a distance of 4 units from the origin and cuts off an intercept of 6 units on the X-axis is

(A) $x^2 + y^2 \pm 5x - 8y + 16 = 0$
(B) $x^2 + y^2 \pm 2x - 4y = 0$
(C) $x^2 + y^2 \pm 3x - 2y - 8 = 0$
(D) $x^2 + y^2 \pm 10x - 8y + 16 = 0$

Answer: (D) $x^2 + y^2 \pm 10x - 8y + 16 = 0$ · Official TGCHE final key

Q630 TS EAMCET 2019 · 3 May · Shift 2 MCQ

The condition for the circles $x^2 + y^2 + ax + 4 = 0$ and $x^2 + y^2 + by + 4 = 0$ to touch each other is

(A) $\frac{1}{a^2} - \frac{1}{b^2} = \frac{1}{16}$
(B) $a^2 + b^2 = 16$
(C) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{16}$
(D) $\frac{1}{a^2} + \frac{1}{b^2} = 4$

Answer: (C) $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{16}$ · Official TGCHE final key

Q631 TS EAMCET 2019 · 3 May · Shift 2 MCQ

If the equation of the circle which passes through the point $(1, 1)$ and cuts both the circles $x^2 + y^2 - 4x - 6y + 4 = 0$ and $x^2 + y^2 + 6x - 4y + 15 = 0$ orthogonally is $x^2 + y^2 + 2gx + 2fy + c = 0$, then $5g + 2f + c =$

(A) 0
(B) 1
(C) 3
(D) 2

Answer: (D) 2 · Official TGCHE final key

Q632 TS EAMCET 2019 · 3 May · Shift 2 MCQ

If the line $x + y + 1 = 0$ intersects the circle $x^2 + y^2 + x + 3y = 0$ at two points A and B, then the centre of the circle which passes through the points A, B and the point of intersection of the tangents drawn at A and B to the given circle is

(A) $\left(\frac{5}{8}, \frac{5}{8}\right)$
(B) $(1, -1)$
(C) $\left(\frac{3}{4}, -\frac{1}{4}\right)$
(D) $(3, -4)$

Answer: (C) $\left(\frac{3}{4}, -\frac{1}{4}\right)$ · Official TGCHE final key

EdLoop EAPCET

Q633 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

The centre of the circle which passes through the vertices of the triangle formed by the lines $y = 0$, $y = x$ and $2x + 3y = 10$, is

(A) $\left(-\frac{5}{2}, -\frac{1}{2}\right)$
(B) $\left(\frac{5}{2}, -\frac{1}{2}\right)$
(C) $\left(-\frac{1}{2}, -\frac{1}{2}\right)$
(D) $\left(\frac{5}{2}, \frac{1}{2}\right)$

Answer: (B) $\left(\frac{5}{2}, -\frac{1}{2}\right)$ · Official APSCHE final key

Q634 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

The distance between the polar of P(2, 3) with respect to the circle $x^2 + y^2 - 2x - 2y + 1 = 0$ and the polar of the inverse point of P with respect to the same circle is

(A) 0
(B) $\frac{4}{\sqrt{5}}$
(C) $\frac{12}{\sqrt{5}}$
(D) 1

Answer: (B) $\frac{4}{\sqrt{5}}$ · Official APSCHE final key

Q635 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

A circle S of radius 2 units lies in the first quadrant and touches both the coordinate axes. The equation of the circle with centre at (6, 5) and touching the circle S externally is

(A) $x^2 + y^2 - 12x - 10y + 12 = 0$
(B) $x^2 + y^2 - 12x - 10y - 20 = 0$
(C) $x^2 + y^2 - 12x - 10y + 25 = 0$
(D) $x^2 + y^2 - 12x - 10y + 52 = 0$

Answer: (D) $x^2 + y^2 - 12x - 10y + 52 = 0$ · Official APSCHE final key

Q636 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

If the circles $(x + a)^2 + (y + b)^2 = a^2$ and $(x + c)^2 + (y + d)^2 = d^2$ cut orthogonally, then $b(b - 2d) =$

(A) $c(c-2a)$
(B) $c(2a-c)$
(C) $d(2c-a)$
(D) $a(a-2c)$

Answer: (B) $c(2a-c)$ · Official APSCHE final key

Q637 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

The equation of the circle having the common chord of the circles $x^2+y^2-8x=0$ and $x^2+y^2-9=0$ as its diameter is

(A) $x^2+y^2-72x-207=0$
(B) $x^2+y^2+72x+207=0$
(C) $32x^2+32y^2-72x-207=0$
(D) $32x^2+32y^2+72x-207=0$

Answer: (C) $32x^2+32y^2-72x-207=0$ · Official APSCHE final key

Q638 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

If the equation of the circle having its centre in the second quadrant touches the coordinate axes and also the line $\frac{x}{5}+\frac{y}{12}=1$ is $x^2+y^2+2\lambda x-2\lambda y+\lambda^2=0$, then $\lambda=$

(A) 3
(B) 10
(C) 15
(D) -2

Answer: (B) 10 · Official APSCHE final key

Q639 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

The equation of a circle passing through the point $(2,8)$, touching the lines $4x-3y-24=0$ and $4x+3y-42=0$ and having the x coordinate of its centre less than or equal to 8 is

(A) $x^2+y^2+2x-8y-8=0$
(B) $x^2+y^2-4x-6y-12=0$
(C) $x^2+y^2+4x-10y+4=0$
(D) $x^2+y^2-6x-4y-24=0$

Answer: (B) $x^2+y^2-4x-6y-12=0$ · Official APSCHE final key

Q640 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

The point of intersection of the common tangents drawn to the circles $x^2+y^2-4x-2y+1=0$ and $x^2+y^2-6x-4y+4=0$ is

(A) $\left(\frac{5}{2}, \frac{3}{2}\right)$
(B) $\left(\frac{6}{5}, \frac{1}{5}\right)$
(C) $(0, -1)$
(D) $\left(\frac{12}{5}, \frac{7}{5}\right)$

Answer: (C) $(0, -1)$ · Official APSCHE final key

Q641 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

The circle S = 0 cuts the circle $x^2 + y^2 - 4x + 2y - 7 = 0$ orthogonally. If $(2, 3)$ is the centre of the circle S = 0, then its radius is

(A) 2
(B) 1
(C) 3
(D) 4

Answer: (A) 2 · Official APSCHE final key

Q642 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

The equation of the circle which cuts the circles $S_1 \equiv x^2 + y^2 - 4 = 0$, $S_2 \equiv x^2 + y^2 - 6x - 8y + 10 = 0$, $S_3 \equiv x^2 + y^2 + 2x - 4y - 2 = 0$ at the extremities of diameters of these circles is

(A) $x^2 + y^2 - 4x - 6y - 4 = 0$
(B) $x^2 + y^2 + 4x - 4 = 0$
(C) $x^2 + y^2 = 25$
(D) $x^2 + y^2 + x + y + 1 = 0$

Answer: (A) $x^2 + y^2 - 4x - 6y - 4 = 0$ · Official APSCHE final key

Q643 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

The number of integers α, for which a chord of the circle $x^2 + y^2 = 75$ is bisected at $(8, \alpha)$ and that the slope of the chord is an integer, is

(A) 10
(B) 8
(C) 4
(D) 3

Answer: (C) 4 · Official APSCHE final key

Q644 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

If the line $x - 6y - 12 = 0$ meets the circle $S \equiv x^2 + y^2 - 4x + 8y + 6 = 0$ at A and B, then the point of intersection of the tangents at A and B to $S = 0$ is

(A) $(1, 2)$
(B) $(2, 1)$
(C) $(-1, 2)$
(D) $(2, -1)$

Answer: (A) $(1, 2)$ · Official APSCHE final key

Q645 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

A circle of radius 5 units passes through $A(-5, 0)$ and $B(5, 0)$. If $P(5\cos\alpha, 5\sin\alpha)$, $Q(5\cos\beta, 5\sin\beta)$ are two points on this circle such that $\alpha - \beta = \frac{\pi}{2}$, then the locus of the point of intersection of the lines AP and BQ is

(A) $x^2 + y^2 - 10x - 25 = 0$
(B) $x^2 + y^2 + 10x - 25 = 0$
(C) $x^2 + y^2 + 10y - 25 = 0$
(D) $x^2 + y^2 - 10y - 25 = 0$

Answer: (D) $x^2 + y^2 - 10y - 25 = 0$ · Official APSCHE final key

Q646 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

Two circles which cut each other orthogonally, pass through the points $(a, 0)$ and $(-a, 0)$. If both of them touch the line $y = mx + c$, then $c^2 =$

(A) $a^2 + m^2$
(B) $a^2(1 + m)^2$
(C) $a^2(1 + m^2)$
(D) $a^2(1 + 2m^2)$

Answer: (D) $a^2(1 + 2m^2)$ · Official APSCHE final key

Q647 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

For the system of circles given by $(x^2 + y^2 + 2gx) + \lambda(x^2 + y^2 + 2fy + k) = 0$, where $g \neq 0, f \neq 0$ and λ is a parameter, if the line joining the point circles of the system subtends a right angle at the origin, then $\frac{k}{f^2} =$

(A) -1
(B) 1
(C) 2
(D) $\frac{1}{2}$

Answer: (C) 2 · Official APSCHE final key

EdLoop EAPCET

Q648 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

The power of the point $B(-1,1)$ with respect to the circle $S \equiv x^2+y^2-2x-4y+3=0$ is p. If the length of the tangent drawn from B to the circle $S=0$ is t, then the point $(2,3)$ with respect to the circle $S'=0$ having centre at (p,t^2) and passing through the origin

(A) lies inside the circle $S'=0$
(B) lies outside the circle $S'=0$
(C) lies on the circle $S'=0$
(D) is the centre of the circle $S'=0$

Answer: (A) lies inside the circle $S'=0$ · Official APSCHE final key

Q649 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

If tangents are drawn to the circle $x^2+y^2=12$ at the points where it intersects the circle $x^2+y^2-5x+3y-2=0$, then the coordinates of the point of intersection of those tangents are

(A) $\left(-6,\frac{18}{5}\right)$
(B) $\left(6,\frac{18}{5}\right)$
(C) $\left(-6,\frac{-18}{5}\right)$
(D) $\left(6,\frac{-18}{5}\right)$

Answer: (D) $\left(6,\frac{-18}{5}\right)$ · Official APSCHE final key

Q650 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

If the point of intersection of the pair of the transverse common tangents and that of the pair of direct common tangents drawn to the circles $x^2+y^2-14x+6y+33=0$ and $x^2+y^2+30x-2y+1=0$ are T and D respectively, then the centre of the circle having $\overline{TD}$ as diameter is

(A) $\left(\frac{39}{2},\frac{-7}{4}\right)$
(B) $\left(\frac{39}{4},\frac{7}{2}\right)$
(C) $\left(\frac{39}{4},\frac{-7}{2}\right)$
(D) $\left(\frac{39}{2},\frac{-7}{2}\right)$

Answer: (C) $\left(\frac{39}{4},\frac{-7}{2}\right)$ · Official APSCHE final key

Q651 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

If the circles $x^2+y^2+2\lambda x+2=0$ and $x^2+y^2+4y+2=0$ touch each other, then $\lambda=$

(A) ± 1
(B) ± 2
(C) ± 3
(D) ± 4

Answer: (B) ± 2 · Official APSCHE final key

Q652 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

The equation of the circle whose diameter is the common chord of the circles $x^2 + y^2 + 2x + 3y + 1 = 0$ and $x^2 + y^2 + 4x + 3y + 2 = 0$ is

(A) $2x^2 + 2y^2 + x + 3y + 2 = 0$
(B) $2x^2 + 2y^2 + 2x + 6y + 1 = 0$
(C) $2x^2 + 2y^2 + 4x - 3y - 1 = 0$
(D) $x^2 + y^2 + 2x + 6y - 2 = 0$

Answer: (B) $2x^2 + 2y^2 + 2x + 6y + 1 = 0$ · Official APSCHE final key

Q653 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

If the lines $x + 2y - 5 = 0$ and $2x - 3y + 4 = 0$ lie along diameters of a circle of area 9π, then the equation of the circle is

(A) $x^2 + y^2 - 2x - 4y - 4 = 0$
(B) $x^2 + y^2 + 2x - 4y - 4 = 0$
(C) $x^2 + y^2 + 2x + 4y - 4 = 0$
(D) $x^2 + y^2 - 2x + 4y - 4 = 0$

Answer: (A) $x^2 + y^2 - 2x - 4y - 4 = 0$ · Official APSCHE final key

Q654 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

Given that $a > 2b > 0$ and that the line $y = mx - b\sqrt{1 + m^2}$ is a common tangent to the circles $x^2 + y^2 = b^2$ and $(x - a)^2 + y^2 = b^2$. Then the positive value of m is

(A) $\frac{2b}{a-2b}$
(B) $\frac{b}{a-2b}$
(C) $\frac{\sqrt{a^2-4b^2}}{2b}$
(D) $\frac{2b}{\sqrt{a^2-4b^2}}$

Answer: (D) $\frac{2b}{\sqrt{a^2-4b^2}}$ · Official APSCHE final key

Q655 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

Two circles each of radius 5 units touch each other at $(1, 2)$ and $4x + 3y = 10$ is their common tangent. The equation of that circle among the two given circles, such that some portion of it lies in

every quadrant is

(A) $x^2+y^2+6x+2y+15=0$
(B) $x^2+y^2+2x+6y-15=0$
(C) $x^2+y^2+6x+2y-15=0$
(D) $x^2+y^2-6x+2y-15=0$

Answer: (C) $x^2+y^2+6x+2y-15=0$ · Official APSCHE final key

Q656 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

If the angle between the circles $x^2+y^2+4x-5=0$ and $x^2+y^2+2\lambda y-4=0$ is $\frac{\pi}{3}$ then $\lambda=$

(A) $\pm\sqrt{5}$
(B) ± 2
(C) $\pm\sqrt{3}$
(D) $\pm\sqrt{6}$

Answer: (A) $\pm\sqrt{5}$ · Official APSCHE final key

Q657 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

The equation of a circle passing through the points of intersection of the circles $x^2+y^2-4x-6y-12=0$, $x^2+y^2+6x+4y-12=0$ and having radius $\sqrt{13}$ is

(A) $x^2+y^2-2x-12=0$
(B) $x^2+y^2+2y-12=0$
(C) $x^2+y^2-2y-13=0$
(D) $x^2+y^2+2x-12=0$

Answer: (D) $x^2+y^2+2x-12=0$ · Official APSCHE final key

Q658 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

The abscissae of two points P, Q are the roots of the equation $2x^2+4x-7=0$ and their ordinates are the roots of the equation $3x^2-12x-1=0$. Then the centre of the circle with PQ as a diameter is

(A) $(-1,2)$
(B) $(-2,6)$
(C) $(1,-2)$
(D) $(2,-6)$

Answer: (A) $(-1,2)$ · Official APSCHE final key

Q659 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

If the angle between a pair of tangents drawn from a point P to the circle $x^2+y^2+4x-6y+9\sin^2\alpha+13\cos^2\alpha=0$ is 2α, then the equation of the locus of P is

(A) $x^2+y^2+4x-6y+4=0$
(B) $x^2+y^2+4x-6y-9=0$
(C) $x^2+y^2-4x+6y-4=0$
(D) $x^2+y^2+4x-6y+9=0$

Answer: (D) $x^2+y^2+4x-6y+9=0$ · Official APSCHE final key

Q660 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

The equation of the circle whose radius is 3 and which touches internally the circle $x^2+y^2-4x-6y-12=0$ at the point $(-1,-1)$ is

(A) $5x^2+5y^2+9x-6y-7=0$
(B) $5x^2+5y^2-8x-14y-32=0$
(C) $5x^2+5y^2-6x+8y-8=0$
(D) $5x^2+5y^2+6x-8y-12=0$

Answer: (B) $5x^2+5y^2-8x-14y-32=0$ · Official APSCHE final key

Q661 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

Suppose that the circle $x^2+y^2+2gx+2fy+c=0$ has its centre on $2x+3y-7=0$ and cuts the circles $x^2+y^2-4x-6y+11=0$ and $x^2+y^2-10x-4y+21=0$ orthogonally. Then $5g-10f+3c=$

(A) 0
(B) 1
(C) 3
(D) 9

Answer: (D) 9 · Official APSCHE final key

Q662 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

If the radical axis of the circles $x^2+y^2+2gx+2fy+c=0$ and $2x^2+2y^2+3x+8y+2c=0$ touches the circle $x^2+y^2+2x+2y+1=0$, then $(4g-3)(f-2)=$

(A) 0
(B) -1
(C) 1
(D) 2

Answer: (A) 0 · Official APSCHE final key

Q663 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

A is the centre of the circle $x^2+y^2-2x-4y-20=0$. If the tangents drawn at the points $B(1,7)$ and $D(4,-2)$ on the circle meet at the point C, then area of the quadrilateral $ABCD$ (in square

units) is

(A) 75

(B) 64

(C) 56

(D) 45

Answer: (A) 75 · Official APSCHE final key

Q664 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

The point of concurrence of all conjugate lines of the line $5x + 7y - 78 = 0$ with respect to the circle $x^2 + y^2 + 6x + 8y - 96 = 0$ is

(A) $(-2, 3)$

(B) $(3, -2)$

(C) $(3, 2)$

(D) $(2, 3)$

Answer: (D) $(2, 3)$ · Official APSCHE final key

Q665 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

The number of common tangents to the circles $x^2 + y^2 + 4x - 6y - 12 = 0$ and $x^2 + y^2 - 8x + 10y + 5 = 0$ is

(A) 4

(B) 3

(C) 2

(D) 1

Answer: (C) 2 · Official APSCHE final key

Q666 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

If the two circles $(x - 1)^2 + (y - 3)^2 = r^2$ and $x^2 + y^2 - 8x + 2y + 8 = 0$ intersect at two distinct points, then

(A) $2 < r < 8$

(B) $1 < r < 9$

(C) $r = 2$

(D) $r = 8$

Answer: (A) $2 < r < 8$ · Official APSCHE final key

EdLoop EAPCET

Q667 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

If the circle $x^2+y^2+6x-2y+k=0$ bisects the circumference of the circle $x^2+y^2+2x-6y-15=0$, then $k=$

(A) 21
(B) -21
(C) -23
(D) 23

Answer: (C) -23 · Official APSCHE final key

Q668 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

The equation of the circle which cuts the circles $x^2+y^2+4x-7=0$, $2x^2+2y^2+3x+5y-9=0$, $x^2+y^2+y=0$ orthogonally is

(A) $x^2+y^2-4x-2y-1=0$
(B) $x^2+y^2-4x-6y-3=0$
(C) $x^2+y^2-4x-2y-3=0$
(D) $x^2+y^2-2x-4y-1=0$

Answer: (A) $x^2+y^2-4x-2y-1=0$ · Official APSCHE final key

Q669 TS EAMCET 2018 · 7 May · Shift 1 MCQ

The normal to a circle $S=0$ at $P(1,3)$ is $x+2y=7$ and it has another normal at $Q(3,5)$ which is the polar of the point $A\left(7,-\frac{1}{2}\right)$ with respect to the circle $x^2+y^2-4x+6y-12=0$. Then the equation of the circle $S=0$ is

(A) $x^2+y^2-10x-2y+6=0$
(B) $x^2+y^2-5x-2y+1=0$
(C) $x^2+y^2-8x+2y-8=0$
(D) $x^2+y^2-7x+3y-12=0$

Answer: (A) $x^2+y^2-10x-2y+6=0$ · The council's preliminary key

Q670 TS EAMCET 2018 · 7 May · Shift 1 MCQ

If $x+ky-4=0$ and $x+y-5=0$ are conjugate lines with respect to the circle $(x-1)^2+(y-1)^2=3$, then $k=$

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (A) 1 · The council's preliminary key

Q671 TS EAMCET 2018 · 7 May · Shift 1 MCQ

The length of the chord intercepted by the circle $x^2 + y^2 + 2x + 4y - 20 = 0$ on the line $3x + 4y - 6 = 0$ is

(A) $5\sqrt{21}$
(B) $\frac{4}{5}\sqrt{21}$
(C) $\frac{8}{5}\sqrt{21}$
(D) $5\sqrt{2}$

Answer: (C) $\frac{8}{5}\sqrt{21}$ · The council's preliminary key

Q672 TS EAMCET 2018 · 7 May · Shift 1 MCQ

Let Q be a point on the circle $B : x^2 + y^2 = a^2$ and $P(h, k)$ be a fixed point. If the locus of the point which divides the join of P and Q in the ratio $p : q$ is a circle C, then the centre of C is

(A) $\left(\frac{p+q}{p}, \frac{p+q}{q}\right)$
(B) $\left(\frac{hp+kq}{p}, \frac{hp+kq}{q}\right)$
(C) $\left(\frac{hq}{p}, \frac{kq}{q}\right)$
(D) $\left(\frac{hq}{p+q}, \frac{kq}{p+q}\right)$

Answer: (D) $\left(\frac{hq}{p+q}, \frac{kq}{p+q}\right)$ · The council's preliminary key

Q673 TS EAMCET 2018 · 7 May · Shift 1 MCQ

A circle C passes through $(2a, 0)$ and the line $2x = a$ is the radical axis of the circle C and the circle $x^2 + y^2 = a^2$, then

(A) centre of C is $(-a, 0)$ and C passes through $(0, 0)$ and $(-a, -a)$
(B) circle C is $x^2 + y^2 - 2ax - 2ay = 0$
(C) centre of C is $(a, 0)$ and C passes through $(0, 0)$ and (a, a)
(D) centre of C is $(0, -a)$ and C passes through $(-a, -a)$ and $(0, 0)$

Answer: (C) centre of C is $(a, 0)$ and C passes through $(0, 0)$ and (a, a) · The council's preliminary key

EdLoop EAPCET

Q674 TS EAMCET 2018 · 5 May · Shift 1 MCQ

If a circle $C_1 : x^2 + y^2 = 16$ intersects another circle C_2 with radius 5 such that the common chord is of maximum length and has a slope equal to $\frac{3}{4}$ then the centre of the circle C_2 is

(A) $\left(-\frac{9}{5}, \frac{12}{5}\right)$
(B) $\left(\frac{9}{5}, \frac{12}{5}\right)$
(C) $\left(-\frac{5}{9}, \frac{6}{5}\right)$
(D) $\left(\frac{7}{5}, -\frac{12}{5}\right)$

Answer: (A) $\left(-\frac{9}{5}, \frac{12}{5}\right)$ · The council's preliminary key

Q675 TS EAMCET 2018 · 5 May · Shift 1 MCQ

The equation of the circle which touches the circle $x^2 + y^2 - 6x + 6y + 17 = 0$ externally and having the lines $x^2 - 3xy - 3x + 9y = 0$ as two normals, is

(A) $x^2 + y^2 - 2x + 5y - 1 = 0$
(B) $x^2 + y^2 + 2x + 3y + 1 = 0$
(C) $x^2 + y^2 - 6x - 2y + 1 = 0$
(D) $x^2 + y^2 + 4x - 3y + 3 = 0$

Answer: (C) $x^2 + y^2 - 6x - 2y + 1 = 0$ · The council's preliminary key

Q676 TS EAMCET 2018 · 5 May · Shift 1 MCQ

Let A be the centre of the circle $x^2 + y^2 - 2x - 4y - 20 = 0$. If the tangents drawn at the points B (1, 7) and D (4, -2) on the given circle meet at the point C, then the area of the quadrilateral ABCD is

(A) 60
(B) 65
(C) 70
(D) 75

Answer: (D) 75 · The council's preliminary key

Q677 TS EAMCET 2018 · 5 May · Shift 1 MCQ

Let $x - 4 = 0$ be the radical axis of two circles which are intersecting orthogonally. If $x^2 + y^2 = 36$ is one of those circles, then the other circle is

(A) $x^2 + y^2 - 16x + 36 = 0$
(B) $x^2 + y^2 - 18x + 36 = 0$
(C) $x^2 + y^2 - 18x + 24 = 0$
(D) $x^2 + y^2 - 6x + 8y + 36 = 0$

Answer: (B) $x^2 + y^2 - 18x + 36 = 0$ · The council's preliminary key

Q678 TS EAMCET 2018 · 5 May · Shift 1 MCQ

The length of common chord of the circles $x^2+y^2-6x-4y+13-c^2=0,\ x^2+y^2-4x-6y+13-c^2=0$ is

(A) $\sqrt{4c^2-2}$
(B) $\frac{1}{2}\sqrt{4c^2-2}$
(C) $\sqrt{c^2-2}$
(D) $\sqrt{4c^2-1}$

Answer: (A) $\sqrt{4c^2-2}$ · The council's preliminary key

Q679 TS EAMCET 2018 · 5 May · Shift 2 MCQ

From a point $A(1,0)$ on the circle $x^2+y^2-2x+2y+1=0$, a chord AB is drawn and it extended to a point P such that $AP=3AB$. The equation of the locus of P is

(A) $x^2+y^2-2x+6y+1=0$
(B) $x^2+y^2-2x+4y+1=0$
(C) $x^2+y^2-2x+8y-8=0$
(D) $x^2+y^2-2x+3y+1=0$

Answer: (A) $x^2+y^2-2x+6y+1=0$ · The council's preliminary key

Q680 TS EAMCET 2018 · 5 May · Shift 2 MCQ

The tangent at $A(-1,2)$ on the circle $x^2+y^2-4x-8y+7=0$ touches the circle $x^2+y^2+4x+6y=0$ at B. Then a point of trisection of AB is

(A) $\left(0,\frac{1}{3}\right)$
(B) $\left(-\frac{1}{3},1\right)$
(C) $\left(\frac{2}{3},\frac{1}{3}\right)$
(D) $(-1,-1)$

Answer: (B) $\left(-\frac{1}{3},1\right)$ · The council's preliminary key

Q681 TS EAMCET 2018 · 5 May · Shift 2 MCQ

If C_1 and C_2 are the centres of similitude with respect to the circles $x^2+y^2-14x+6y+33=0$ and $x^2+y^2+30x-2y+1=0$ then the equation of the circle with C_1C_2 as diameter is

EdLoop EAPCET

(A) $2x^2 + 2y^2 + 30x - 33y - 17 = 0$
(B) $2x^2 + 2y^2 - 14x + 9y - 13 = 0$
(C) $2x^2 + 2y^2 - 39x + 14y + 74 = 0$
(D) $2x^2 + 2y^2 - 24x + 8y - 5 = 0$

Answer: (C) $2x^2 + 2y^2 - 39x + 14y + 74 = 0$ · The council's preliminary key

Q682 TS EAMCET 2018 · 5 May · Shift 2 MCQ

If tangents are drawn to the circle $x^2 + y^2 = 12$ at the points of intersection with the circle $x^2 + y^2 - 5x + 3y - 2 = 0$ then the ordinate of the point of intersection of these tangents is

(A) $-\frac{18}{5}$
(B) $-\frac{12}{5}$
(C) $-\frac{9}{5}$
(D) $-\frac{3}{5}$

Answer: (A) $-\frac{18}{5}$ · The council's preliminary key

Q683 TS EAMCET 2018 · 5 May · Shift 2 MCQ

From a point P on the line $4x - 3y = 6$ two tangents are drawn to the circle $x^2 + y^2 - 6x - 4y + 4 = 0$. If the angle between these tangents is $\mathrm{Tan}^{-1}\left(\frac{24}{7}\right)$, then $P =$

(A) $\left(1, \frac{-2}{3}\right)$
(B) $\left(2, \frac{2}{3}\right)$
(C) $\left(-1, \frac{-10}{3}\right)$
(D) $(6, 6)$

Answer: (D) $(6, 6)$ · The council's preliminary key

Q684 TS EAMCET 2018 · 4 May · Shift 1 MCQ

If the chord $L \equiv y - mx - 1 = 0$ of the circle $S \equiv x^2 + y^2 - 1 = 0$ touches the circl[e] $S_1 \equiv x^2 + y^2 - 4x + 1 = 0$ then the possible points for which $L = 0$ is a chord of contact o[f] $S = 0$ are

(A) $(2 \pm \sqrt{6}, 0)$
(B) $(2 \pm \sqrt{6}, 1)$
(C) $(2, 0)$
(D) $(\sqrt{6}, 1)$

Answer: (B) $(2 \pm \sqrt{6}, 1)$ · The council's preliminary key

EdLoop EAPCET

Q685 TS EAMCET 2018 · 4 May · Shift 1 MCQ

If $y + c = 0$ is a tangent to the circle $x^2 + y^2 - 6x - 2y + 1 = 0$ at $(a, 4)$ then

(A) $ac = 360$

(B) $ac = -12$

(C) $a + c = 0$

(D) $4a = c$

Answer: (B) $ac = -12$ · The council's preliminary key

Q686 TS EAMCET 2018 · 4 May · Shift 1 MCQ

If the circles given by $S \equiv x^2 + y^2 - 14x + 6y + 33 = 0$ and $S' \equiv x^2 + y^2 - a^2 = 0$ $(a \in N)$ have 4 common tangents, then the possible number of circles $S' = 0$ is

(A) 1

(B) 2

(C) 0

(D) infinite

Answer: (B) 2 · The council's preliminary key

Q687 TS EAMCET 2018 · 4 May · Shift 1 MCQ

The center of the circle passing through the point $(1, 0)$ and cutting the circles $x^2 + y^2 - 2x + 4y + 1 = 0$ and $x^2 + y^2 + 6x - 2y + 1 = 0$ orthogonally is

(A) $\left(-\frac{2}{3}, \frac{2}{3}\right)$

(B) $\left(\frac{1}{2}, \frac{1}{2}\right)$

(C) $(0, 1)$

(D) $(0, 0)$

Answer: (D) $(0, 0)$ · The council's preliminary key

Q688 TS EAMCET 2018 · 4 May · Shift 1 MCQ

The equation of the tangent at the point $(0, 3)$ on the circle which cuts the circles $x^2 + y^2 - 2x + 6y = 0$, $x^2 + y^2 - 4x - 2y + 6 = 0$ and $x^2 + y^2 - 12x + 2y + 3 = 0$ orthogonally is

(A) $y = 3$

(B) $x = 0$

(C) $3x + y - 3 = 0$

(D) $x + 3y - 9 = 0$

Answer: (A) $y = 3$ · The council's preliminary key

EdLoop EAPCET

Q689 TS EAMCET 2018 · 4 May · Shift 2 MCQ

Consider the following statements
I The intercept made by the circle $x^2+y^2-2x-4y+1=0$ on Y-axis is $2\sqrt{3}$
II The intercept made by the circle $x^2+y^2-4x-2y+6=0$ on X-axis is $2\sqrt{2}$
III The straight line $y=2x+1$ cuts the circle $x^2+y^2=9$ at two distinct points
Then which one of the following options is correct?

(A) I True, II True, III True
(B) I True, II True, III False
(C) I True, II False, III True
(D) I False, II False, III True

Answer: (C) I True, II False, III True · The council's preliminary key

Q690 TS EAMCET 2018 · 4 May · Shift 2 MCQ

If the circles $x^2+y^2+2kx-4y+1=0$ and $x^2+y^2-8x-12y+43=0$ touch each other then $k=$

(A) 2
(B) 1
(C) -1
(D) -2

Answer: (C) -1 · The council's preliminary key

Q691 TS EAMCET 2018 · 4 May · Shift 2 MCQ

For all real values of k, the point which lies on the polar of $(k,k+1)$ with respect to the circle $x^2+y^2+4x-8y-5=0$ is

(A) $(3,-1)$
(B) $(3,1)$
(C) $(2,-2)$
(D) $(2,3)$

Answer: (A) $(3,-1)$ · The council's preliminary key

Q692 TS EAMCET 2018 · 4 May · Shift 2 MCQ

The number of common tangents to the circles $x^2+y^2+4x=0$ and $x^2+y^2-2x=0$ is

EdLoop EAPCET

(A) 4
(B) 3
(C) 2
(D) 1

Answer: (B) 3 · The council's preliminary key

Q693 TS EAMCET 2018 · 4 May · Shift 2 MCQ

If $\frac{2}{\sqrt{5}}$ is the length of the common chord of the circles $x^2+y^2+2x+2y+1=0$ and $x^2+y^2+\alpha x+3y+2=0,\ \alpha\neq 0$, then $\alpha=$

(A) 4
(B) 3
(C) 2
(D) 1

Answer: (A) 4 · The council's preliminary key

Q694 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

If the circle $x^2+y^2+2gx+2fy+c=0\ (c>0)$ touches both the coordinate axes and lies in the third quadrant, then the length of the chord intercepted by the circle on the line $x+y+\sqrt{c}=0$ is

(A) $\sqrt{2c}$
(B) c
(C) $\sqrt{c}$
(D) $\sqrt{\frac{c}{2}}$

Answer: (A) $\sqrt{2c}$ · The council's preliminary key

Q695 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

If the shortest distance from $(2,-14)$ to the circle $x^2+y^2+6x+4y-12=0$ is d and the length of the tangent drawn from the same point to the circle is l, then $\sqrt{d+l}=$

(A) 13
(B) $2\sqrt{5}$
(C) 12
(D) 5

Answer: (B) $2\sqrt{5}$ · The council's preliminary key

Q696 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

The number of common tangents to the circles $x^2+y^2-4x-2y+k=0$ and $x^2+y^2-6x-4y+l=0$ having radii 2 and 3 respectively, is

EdLoop EAPCET

(A) 4
(B) 2
(C) 3
(D) 1

Answer: (B) 2 · The council's preliminary key

Q697 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

The centre of the circle which intersects the circle $x^2 + y^2 - 2x - 2y - 2 = 0$ orthogonally and passes through the point $(2, 0)$ and touches the X-axis is

(A) $(4, 1)$
(B) $(-1, 2)$
(C) $(1, 4)$
(D) $(2, -1)$

Answer: (D) $(2, -1)$ · The council's preliminary key

Q698 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

If from any point on the circle $x^2 + y^2 + 2gx + 2fy + c = 0$, tangents are drawn to the circle $x^2 + y^2 + 2gx + 2fy + c\sin^2\alpha + (g^2 + f^2)\cos^2\alpha = 0$, $\left(0 < \alpha < \frac{\pi}{2}\right)$ then the angle between those tangents is

(A) $\frac{\pi}{4}$
(B) $\frac{\pi}{3}$
(C) 2α
(D) α

Answer: (C) 2α · The council's preliminary key

Q699 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

The sum of the minimum and maximum distances of the point (4, -3) to the circle $x^2 + y^2 + 4x - 10y - 7 = 0$ is

(A) 20
(B) 16
(C) 12
(D) 64

Answer: (A) 20 · The council's preliminary key

Q700 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

If the tangent to the circle $x^2 + y^2 - 4x + 2y - 5 = 0$ at (3, -4) cuts the circle $x^2 + y^2 + 16x + 2y + 10 = 0$ at A and B, then the mid point of AB is:

(A) $(-6, -9)$
(B) $(-9, -6)$
(C) $(-6, -7)$
(D) $(-7, -6)$

Answer: (C) $(-6, -7)$ · The council's preliminary key

Q701 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

If the circle $x^2 + y^2 + 8x - 4y + c = 0$ touches the circle $x^2 + y^2 + 2x + 4y - 11 = 0$ externally and cuts the circle $x^2 + y^2 - 6x + 8y + k = 0$ orthogonally, then k =

(A) -59
(B) -19
(C) 19
(D) 59

Answer: (A) -59 · The council's preliminary key

Q702 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

If a system of circles pass through (2, 3) and cuts the circle $x^2 + y^2 = 12$ orthogonally, then the equation of the locus of the centres of that system of circles, is

(A) $4x + 6y - 13 = 0$
(B) $4x + 6y - 25 = 0$
(C) $6x + 4y - 25 = 0$
(D) $6x + 4y - 13 = 0$

Answer: (B) $4x + 6y - 25 = 0$ · The council's preliminary key

Q703 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

The radius of the circle whose diameter is the common chord of the circles $x^2 + y^2 + 2x + 2y + 1 = 0$ and $x^2 + y^2 + 4x + 3y + 2 = 0$ is

(A) $\frac{2}{\sqrt{5}}$
(B) $\frac{1}{\sqrt{5}}$
(C) 1
(D) $\frac{\sqrt{17}}{2}$

Answer: (B) $\frac{1}{\sqrt{5}}$ · The council's preliminary key

Q704 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

ABCD is a square with side 16 units and A is the origin. If the equation of the circle circumscribing the square ABCD is $x^2 + y^2 = 4k(x + y)$, then $k =$

(A) 2
(B) 4
(C) 16
(D) 64

Answer: (B) 4 · The council's preliminary key

Q705 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

If $P(x_1, y_1)$ is a point such that the squares of the lengths of the tangents from it to the circles $x^2 + y^2 - 4x - 6y - 12 = 0$ and $x^2 + y^2 + 6x + 18y + 26 = 0$ are in the ratio $2 : 3$, then the locus of P is

(A) $x^2 + y^2 + 24x - 36y + 62 = 0$
(B) $x^2 + y^2 - 24x + 36y + 62 = 0$
(C) $x^2 + y^2 - 24x - 54y - 88 = 0$
(D) $x^2 + y^2 + 24x + 36y + 62 = 0$

Answer: (C) $x^2 + y^2 - 24x - 54y - 88 = 0$ · Checked by our team

Q706 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

If the lines $2x + y + 12 = 0$, $kx - 3y - 10 = 0$ are conjugate with respect to the circle $x^2 + y^2 - 4x + 3y - 1 = 0$, then $k =$

(A) 4
(B) -9
(C) -3
(D) -5

Answer: (A) 4 · The council's preliminary key

Q707 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

The length of the transverse common tangent of the circles $x^2 + y^2 - 2x + 4y + 4 = 0$ and $x^2 + y^2 + 4x - 2y + 1 = 0$ is

(A) $\sqrt{3}$
(B) $\sqrt{17}$
(C) $\sqrt{15}$
(D) 3

Answer: (D) 3 · The council's preliminary key

Q708 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

If the angle between the circles $x^2 + y^2 - 12x - 6y + 41 = 0$ and $x^2 + y^2 + kx + 6y - 59 = 0$ is 45°, then a value of k is

EdLoop EAPCET

(A) 0
(B) -4
(C) -3
(D) -1

Answer: (B) -4 · The council's preliminary key

Q709 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

If the lengths of the tangents drawn from a point P to the three circles $x^2+y^2-4=0$, $x^2+y^2-2x+3y=0$ and $x^2+y^2+7y-18=0$ are equal, then the coordinates of P are

(A) $(2,5)$
(B) $(3,4)$
(C) $(4,3)$
(D) $(5,2)$

Answer: (D) $(5,2)$ · The council's preliminary key

Q710 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

If a circle touches the lines $3x-4y-10=0$ and $3x-4y+30=0$ and its centre lies on the line $x+2y=0$ then the equation of the circle is

(A) $x^2+y^2+4x-2y-11=0$
(B) $x^2+y^2+2x-4y-11=0$
(C) $x^2+y^2-4x+2y-11=0$
(D) $x^2+y^2+2x-y-11=0$

Answer: (A) $x^2+y^2+4x-2y-11=0$ · The council's preliminary key

Q711 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

If the line $4x+4y-11=0$ intersects the circle $x^2+y^2-4x-6y+4=0$ at A and B, then the point of intersection of the tangents drawn at A, B is

(A) $(-1,2)$
(B) $(-1,-2)$
(C) $(2,1)$
(D) $(-2,-1)$

Answer: (D) $(-2,-1)$ · The council's preliminary key

Q712 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

The equation of the circle which passes through the point $(3,2)$ bisects the circumference of the circle $x^2+y^2=15$ and cuts the circle $x^2+y^2+4x+6y+3=0$ orthogonally is

EdLoop EAPCET

(A) $x^2 + y^2 + 6x + 8y - 43 = 0$
(B) $x^2 + y^2 + 6x - 8y - 15 = 0$
(C) $x^2 + y^2 - 6x + 8y - 11 = 0$
(D) $x^2 + y^2 - 6x - 8y + 21 = 0$

Answer: (B) $x^2 + y^2 + 6x - 8y - 15 = 0$ · The council's preliminary key

Q713 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

$x^2 + y^2 + 2x + 4y - 20 = 0$ and $x^2 + y^2 + 6x - 8y + 10 = 0$ are the given circles. Which one of the following is correct?

(A) They intersect orthogonally and will have two common tangents. The length of their common chord is $\frac{5\sqrt{3}}{\sqrt{2}}$
(B) They intersect at right angles and will have two common tangents. The length of their common chord is 2.
(C) They do not intersect orthogonally and will have three common tangents. The length of their direct common tangent is 5.
(D) They touch each other internally and will have only one common tangent.

Answer: (A) They intersect orthogonally and will have two common tangents. The length of their common chord is $\frac{5\sqrt{3}}{\sqrt{2}}$ · The council's preliminary key

Q714 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

The equation of the circle passing through the points of intersection of the circles $x^2 + y^2 + 4x + 6y - 12 = 0$ and $x^2 + y^2 - 6x - 4y - 12 = 0$ and cutting the circle $x^2 + y^2 - 4x + 2y + 8 = 0$ orthogonally is

(A) $x^2 + y^2 + 6x + 8y + 12 = 0$
(B) $x^2 + y^2 + 8x + 6y - 12 = 0$
(C) $x^2 + y^2 + 6x + 8y - 12 = 0$
(D) $x^2 + y^2 - 6x - 8y - 12 = 0$

Answer: (C) $x^2 + y^2 + 6x + 8y - 12 = 0$ · The council's preliminary key

Q715 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

If the lengths of the tangents drawn from P to the circles $x^2 + y^2 - 2x + 4y - 20 = 0$ and $x^2 + y^2 - 2x - 8y + 1 = 0$ are in the ratio 2:1, then the locus of P is

(A) $x^2 + y^2 + 2x + 12y + 8 = 0$
(B) $x^2 + y^2 - 2x + 12y + 8 = 0$
(C) $x^2 + y^2 + 2x - 12y + 8 = 0$
(D) $x^2 + y^2 - 2x - 12y + 8 = 0$

Answer: (D) $x^2 + y^2 - 2x - 12y + 8 = 0$ · The council's preliminary key

Q716 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

The equation of a circle touching the coordinate axes and the line $3x - 4y = 12$ is

(A) $x^2 + y^2 + 6x + 6y + 9 = 0$
(B) $x^2 + y^2 + 6x + 6y - 9 = 0$
(C) $x^2 + y^2 - 6x - 6y + 9 = 0$
(D) $x^2 + y^2 - 6x - 6y - 9 = 0$

Answer: (C) $x^2 + y^2 - 6x - 6y + 9 = 0$ · The council's preliminary key

Q717 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

The pole of the straight line $9x + y - 28 = 0$ with respect to the circle $2x^2 + 2y^2 - 3x + 5y - 7 = 0$ is

(A) $(3, 1)$
(B) $(3, -1)$
(C) $(-3, 1)$
(D) $(4, -8)$

Answer: (B) $(3, -1)$ · The council's preliminary key

Q718 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

The point of intersection of the direct common tangents drawn to the circles $(x + 11)^2 + (y - 2)^2 = 225$ and $(x - 11)^2 + (y + 2)^2 = 25$ is

(A) $\left(\frac{-11}{2}, 1\right)$
(B) $(-22, 4)$
(C) $\left(\frac{11}{2}, -1\right)$
(D) $(22, -4)$

Answer: (D) $(22, -4)$ · The council's preliminary key

Q719 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

In List-I, a pair of circles is given in A, B, C and in List-II, angle between those pair of circles is given. Match the items from List-I to List-II.

List-I

A) $(x - 2)^2 + y^2 = 2$, $(x - 2)^2 + (y - 1)^2 = 1$

B) $x^2 + y^2 - 6x - 6y + 9 = 0$, $x^2 + y^2 - 4x + 4y - 9 = 0$

EdLoop EAPCET

C) $x^2+y^2+4x-14y+28=0$, $x^2+y^2+4x-5=0$

List-II

I) 90°

II) 135°

III) 60°

IV) 30°

The correct matching is

(A) A-I, B-II, C-III

(B) A-II, B-I, C-III

(C) A-III, B-I, C-IV

(D) A-IV, B-III, C-I

Answer: (B) A-II, B-I, C-III · The council's preliminary key

Q720 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

If the radical axis of the circles $x^2+y^2+2gx+2fy+c=0$ and $2x^2+2y^2+3x+8y+2c=0$ touches the circle $x^2+y^2+2x+2y+1=0$, then

(A) $g=\frac{3}{4}$ or $f=2$

(B) $g\neq\frac{3}{4}, f=2$

(C) $g=\frac{3}{4}, f\neq 2$

(D) $g=\frac{2}{5}$ or $f=1$

Answer: (A) $g=\frac{3}{4}$ or $f=2$ · The council's preliminary key

---

Q721 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

From a point P $(0,b)$ two tangents are drawn to the circle $x^2+y^2=16$ and these two tangents intersect x-axis at two points A and B. If the area of triangle ΔPAB is minimum, then the equation of its circumcircle is

(A) $x^2+y^2=16\sqrt{2}$

(B) $x^2+y^2=64$

(C) $x^2+y^2=32$

(D) $x^2+y^2=4\sqrt{2}$

Answer: (C) $x^2+y^2=32$ · The council's preliminary key

Q722 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

If the angle between the tangents drawn to the circle $x^2+y^2-12x-16y=0$ at the points where the line $5y=5x+k$ cut the circle is 60°, then the value of k is

(A) $5+\sqrt{2}$
(B) $5(2\pm5\sqrt{2})$
(C) $2\pm5\sqrt{2}$
(D) $5\pm5\sqrt{2}$

Answer: (B) $5(2\pm5\sqrt{2})$ · The council's preliminary key

Q723 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

If a circle S with radius 5 touches the circle $x^2+y^2-6x-4y-12=0$ at $(-1,-1)$ then the length of the tangent from the centre of the circle S to the given circle is

(A) $5\sqrt{3}$
(B) $\sqrt{65}$
(C) 10
(D) $3\sqrt{11}$

Answer: (A) $5\sqrt{3}$ · The council's preliminary key

Q724 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

If a circle S passing through the point $(3,4)$ cuts the circle $x^2+y^2=36$ orthogonally, then the locus of the centre of S is

(A) $x^2+y^2-6x-8y+11=0$
(B) $6x+8y-61=0$
(C) $x^2+y^2-8x-6y+11=0$
(D) $6x+8y+11=0$

Answer: (B) $6x+8y-61=0$ · The council's preliminary key

Q725 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

The line $x-2=0$ cuts the circle $x^2+y^2-8x-2y+8=0$ at A and B. The equation of the circle passing through the points A and B and having least radius is

(A) $x^2+y^2-4x+2y-1=0$
(B) $x^2+y^2-4x-2y=0$
(C) $x^2+y^2-4x-2y+1=0$
(D) $x^2+y^2-4x+4y=0$

Answer: (B) $x^2+y^2-4x-2y=0$ · The council's preliminary key

Q726 TS EAMCET 2017 · 12 May · Offline MCQ

Consider the circle $x^2+y^2-6x+4y=12$. The equation of a tangent to this circle that is parallel to the line $4x+3y+5=0$ is

(A) $4x + 3y + 10 = 0$
(B) $4x + 3y - 9 = 0$
(C) $4x + 3y + 9 = 0$
(D) $4x + 3y - 31 = 0$

Answer: (D) $4x + 3y - 31 = 0$ · The council's preliminary key

Q727 TS EAMCET 2017 · 12 May · Offline MCQ

The radical centre of the circles $x^2 + y^2 - 4x - 6y + 5 = 0$, $x^2 + y^2 - 2x - 4y - 1 = 0$, $x^2 + y^2 - 6x - 2y = 0$ lies on the line

(A) $x + y - 5 = 0$
(B) $2x - 4y + 7 = 0$
(C) $4x - 6y + 5 = 0$
(D) $18x - 12y + 1 = 0$

Answer: (D) $18x - 12y + 1 = 0$ · The council's preliminary key

Q728 TS EAMCET 2017 · 12 May · Offline MCQ

If the slope of the tangent to the circle $S \equiv x^2 + y^2 - 13 = 0$ at $(2, 3)$ is m, then the point $\left(m, \frac{-1}{m}\right)$ is

(A) an external point with respect to the circle $S = 0$
(B) an internal point with respect to the circle $S = 0$
(C) the centre of the circle $S = 0$
(D) a point on the circle $S = 0$

Answer: (B) an internal point with respect to the circle $S = 0$ · The council's preliminary key

Q729 TS EAMCET 2017 · 12 May · Offline MCQ

Two circles of equal radius 'a' cut orthogonally. If their centres are $(2, 3)$ and $(5, 6)$, then radical axis of these circles passes through the point

(A) $(3a, 5a)$
(B) $(2a, a)$
(C) $\left(a, \frac{5a}{3}\right)$
(D) (a, a)

Answer: (C) $\left(a, \frac{5a}{3}\right)$ · The council's preliminary key

Q730 TS EAMCET 2017 · 12 May · Offline MCQ

If $A\left(\frac{\pi}{3}\right), B\left(\frac{\pi}{6}\right)$ are the points on the circle represented in parametric form with centre $(0,0)$ and radius 12 then the length of the chord AB is

(A) $6(\sqrt{6}-\sqrt{2})$
(B) $6(\sqrt{6}-\sqrt{3})$
(C) $\sqrt{2}(\sqrt{3}-1)$
(D) $6(\sqrt{3}-1)$

Answer: (A) $6(\sqrt{6}-\sqrt{2})$ · The council's preliminary key

Q731 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

A circle having centre at the origin passes through the three vertices of an equilateral triangle the length of its median being 9 units. Then the equation of that circle is

(A) $x^2+y^2=18$
(B) $x^2+y^2=81$
(C) $x^2+y^2=36$
(D) $x^2+y^2=9$

Answer: (C) $x^2+y^2=36$ · The council's preliminary key

Q732 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

If a circle with radius 2.5 units, passes through the points $(2,3)$ and $(5,7)$, then its centre is

(A) $(7,10)$
(B) $(1.5,2)$
(C) $(3.5,5)$
(D) $(3,4)$

Answer: (C) $(3.5,5)$ · The council's preliminary key

Q733 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

If $2kx+3y-1=0,\ 2x+y+5=0$ are conjugate lines with respect to the circle $x^2+y^2-2x-4y-4=0$, then $k=$

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (A) 1 · The council's preliminary key

Q734 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

If the point of intersection of the tangents drawn at the points where the line $5x + y + 1 = 0$ cuts the circle $x^2 + y^2 - 2x - 6y - 8 = 0$ is (a, b), then $5a + b =$

(A) 3
(B) 4
(C) -1
(D) -44

Answer: (D) -44 · The council's preliminary key

Q735 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

The angle between the two circles, each passing through the centre of the other, is

(A) $\frac{\pi}{6}$
(B) $\frac{\pi}{2}$
(C) $\frac{2\pi}{3}$
(D) π

Answer: (C) $\frac{2\pi}{3}$ · The council's preliminary key

Q736 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

The equation of the circle whose diameter is the common chord of the circle $x^2 + y^2 + 2x + 2y + 1 = 0$ and $x^2 + y^2 + 4x + 6y + 4 = 0$ is

(A) $2x^2 + 2y^2 - 2x + 4y + 1 = 0$
(B) $x^2 + y^2 - x + 2y + 4 = 0$
(C) $3x^2 + 3y^2 - 3x + 6y - 8 = 0$
(D) $10x^2 + 10y^2 + 14x + 8y + 1 = 0$

Answer: (D) $10x^2 + 10y^2 + 14x + 8y + 1 = 0$ · The council's preliminary key

Q737 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

The angle between the tangents drawn from a point $(4, 3)$ to the circle $x^2 + y^2 - 2x - 4y = 0$ is

(A) $\frac{\pi}{6}$
(B) $\frac{\pi}{4}$
(C) $\frac{\pi}{3}$
(D) $\frac{\pi}{2}$

Answer: (D) $\frac{\pi}{2}$ · The council's preliminary key

EdLoop EAPCET

Q738 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

The equation of circle whose diameter is the diagonal of the rectangle with sides $x = 4$, $x = -2$, $y = 5$, $y = -2$, is

(A) $x^2 + y^2 - 2x - 3y - 18 = 0$
(B) $x^2 + y^2 + 2x + 3y - 18 = 0$
(C) $x^2 + y^2 - 2x + 3y - 18 = 0$
(D) $x^2 + y^2 - 2x + 3y + 18 = 0$

Answer: (A) $x^2 + y^2 - 2x - 3y - 18 = 0$ · The council's preliminary key

Q739 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

If $(3, -1)$ is one end of a diameter of the circle $x^2 + y^2 - 2x + 4y = 0$, then the equation of the tangent at the other end of that diameter is

(A) $2x + y - 5 = 0$
(B) $2x + y + 5 = 0$
(C) $x + 2y + 5 = 0$
(D) $x + 2y - 5 = 0$

Answer: (B) $2x + y + 5 = 0$ · The council's preliminary key

Q740 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

The equation of a circle which touches the straight lines $x + y = 2$, $x - y = 2$ and also touches the circle $x^2 + y^2 = 1$, is

(A) $(x + \sqrt{2})^2 + y^2 = 2$
(B) $(x - \sqrt{2})^2 + (y - \sqrt{3})^2 = 2$
(C) $(x - \sqrt{2})^2 + y^2 = (\sqrt{2} - 1)^2$
(D) $x^2 + (y - \sqrt{2})^2 = (\sqrt{2} + 1)^2$

Answer: (C) $(x - \sqrt{2})^2 + y^2 = (\sqrt{2} - 1)^2$ · The council's preliminary key

Q741 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

The locus of centres of all circles which touch the line $x = 2a$ and cut the circle $x^2 + y^2 = a^2$ orthogonally is

(A) $y^2 + 4ax - 5a^2 = 0$
(B) $y^2 + 4ax + 5a^2 = 0$
(C) $y^2 = 4ax - 5a^2$
(D) $y^2 = 4ax + 5a^2$

Answer: (A) $y^2 + 4ax - 5a^2 = 0$ · The council's preliminary key

EdLoop EAPCET

Q742 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

The circles $x^2+y^2+2x+3y-7=0$ and $x^2+y^2+4x-7y+5=0$ intersect at the points A and B. The equation of the circle, having $\overline{AB}$ as a diameter is

(A) $26x^2+26y^2+77x-47y+32=0$
(B) $26x^2+26y^2+77x+47y-32=0$
(C) $26x^2+26y^2+77x-47y-32=0$
(D) $26x^2+26y^2+77x+47y+32=0$

Answer: (C) $26x^2+26y^2+77x-47y-32=0$ · The council's preliminary key

Q743 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

The locus of the point of intersection of the tangents to the circle $x^2+y^2=a^2$ which make complimentary angles with the X-axis is

(A) $x^2-y^2=0$
(B) $x^2+y^2=0$
(C) $xy=0$
(D) $x^2+y^2=2a^2$

Answer: (A) $x^2-y^2=0$ · The council's preliminary key

Q744 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

The length of the chord intercepted by the circle $x^2+y^2-4x+6y-12=0$ on the line $4x+3y+1=0$ is

(A) 3
(B) 4
(C) 10
(D) 8

Answer: (C) 10 · The council's preliminary key

Q745 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

The inverse point of $(1,3)$ with respect to the circle $x^2+y^2-4x-6y+9=0$ is

(A) $(2,3)$
(B) $(2,-3)$
(C) $(-2,3)$
(D) $(-2,-3)$

Answer: (C) $(-2,3)$ · The council's preliminary key

EdLoop EAPCET

Q746 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

The combined equation of the direct common tangents of the circles $x^2+y^2-2x-2y-2=0$ and $x^2+y^2+4x+6y+12=0$, is

(A) $3x^2+10xy+3y^2-4x+4y-4=0$
(B) $75x^2-9y^2-80xy+200x+500y-2900=0$
(C) $9x^2-16y^2-18x+96y-135=0$
(D) $15x^2-24xy+8y^2-18x-8y-73=0$

Answer: (D) $15x^2-24xy+8y^2-18x-8y-73=0$ · The council's preliminary key

Q747 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

If the circles $x^2+y^2=9$ and $x^2+y^2-8x-6y+n^2=0$, $n\in\mathbb{Z}$ have exactly two common tangents, then the number of values for n is

(A) 8
(B) 7
(C) 9
(D) 4

Answer: (C) 9 · Checked by our team

Q748 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

If the angle between the circles $x^2+y^2-4x-6y-3=0$, $x^2+y^2+8x-4y+\lambda=0$ is 60°, then value of λ is

(A) -11
(B) 29
(C) 18
(D) -29

Answer: (D) -29 · The council's preliminary key

Q749 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

Let α,β be the roots of $x^2+5x+6=0$ and γ,δ be the roots of $y^2+6y+7=0$. Then the equation of the circle with (α,γ) and (β,δ) as the extremities of a diameter is

(A) $x^2+y^2+5x+6y+10=0$
(B) $x^2+y^2+5x+6y+11=0$
(C) $x^2+y^2+5x+6y+13=0$
(D) $x^2+y^2+5x+6y+12=0$

Answer: (C) $x^2+y^2+5x+6y+13=0$ · The council's preliminary key

Q750 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

If $A(2, c)$ and $B(d, 2)$ are two points such that the polar of one point with respect to the circle $x^2 + y^2 = 16$ passes through the other, then $c + d =$

(A) 4
(B) 6
(C) 8
(D) 10

Answer: (C) 8 · The council's preliminary key

Q751 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

The number of common tangents to the circles $x^2 + y^2 + 2x + 8y - 23 = 0$ and $x^2 + y^2 - 4x - 10y + 19 = 0$, is

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (C) 3 · The council's preliminary key

Q752 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

If the circles $x^2 + y^2 + 2hx + 2ky = 0$ and $x^2 + y^2 + 2h'x + 2k'y = 0$ touch each other, then $\frac{h'k}{hk'} =$

(A) 0
(B) 1
(C) 2
(D) -1

Answer: (B) 1 · The council's preliminary key

Q753 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

If the circles $x^2 + y^2 + kx + 4y + 2 = 0$ and $2(x^2 + y^2) - 4x - 3y + k = 0$ cut orthogonally, then $k =$

(A) $\frac{-10}{3}$
(B) $\frac{10}{3}$
(C) $\frac{5}{3}$
(D) $\frac{-5}{3}$

Answer: (A) $\frac{-10}{3}$ · The council's preliminary key

EdLoop EAPCET

Q754 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

The equation of the circle passing through the points of intersection of the circles $x^2+y^2-2px=0$ and $x^2+y^2-2qy=0$ and having its centre on $\frac{x}{p}-\frac{y}{q}=2$, is

(A) $x^2+y^2+3px+qy=0$
(B) $x^2+y^2+px-qy=0$
(C) $x^2+y^2-3px+qy=0$
(D) $x^2+y^2-4px+2qy=0$

Answer: (C) $x^2+y^2-3px+qy=0$ · The council's preliminary key

Q755 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

A point which lies on the circle passing through the points (1, 1), $(-6, 0)$, $(-2, 2)$ is

(A) $(1,-6)$
(B) $(9,1)$
(C) $(-2,-8)$
(D) $(1,2)$

Answer: (C) $(-2,-8)$ · The council's preliminary key

Q756 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

Let the tangents drawn from P$(-1, -1)$ to the circle $x^2+y^2-2x-4y-4=0$ touch the circle at the points A and B. Then the area of the triangle PAB (in square units) is

(A) $\frac{24}{13}$
(B) $\frac{24}{7}$
(C) $\frac{8}{13}$
(D) $\frac{3}{13}$ [stray mark "4 2/3" printed beside it] (sic)

Answer: (A) $\frac{24}{13}$ · The council's preliminary key

Q757 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

If the chord of contact of P(x_1, y_1) with respect to the circle $x^2+y^2=a^2$ meets the circle at A and B; and if $\angle AOB=90^\circ$, then $x_1^2+y_1^2=$

(A) a^2
(B) $2a^2$
(C) $3a^2$
(D) $4a^2$

Answer: (B) $2a^2$ · The council's preliminary key

Q758 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

The point of concurrence of the polars of the variable point $(2t, t-4)$, $t \in \mathbb{R}$ with respect to the circle $x^2+y^2-4x-6y+1=0$ is

(A) $(1,3)$
(B) $(1,-3)$
(C) $(-3,1)$
(D) $(3,1)$

Answer: (D) $(3,1)$ · The council's preliminary key

Q759 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

ABC is a triangle and the radical centre of the circles with AB, BC, CA as the diameters is $(-6,5)$. Now if A = (3, 2), B = (2, 1) then C =

(A) $(1,1)$
(B) $(1,2)$
(C) $(2,3)$
(D) $(1,-2)$

Answer: (D) $(1,-2)$ · The council's preliminary key

Q760 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

If the cosine of the angle between the two circles $x^2+y^2+2x+4y-3=0$ and $x^2+y^2+2kx-2y-1=0$ is $\frac{1}{2\sqrt{3}}$ then $k^2=$

(A) 2
(B) 4
(C) 16
(D) 8

Answer: (B) 4 · The council's preliminary key

Q761 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

The power of the point $(-3,7)$ with respect to a circle, with centre $(3,7)$ and radius 2, is

(A) 49
(B) $\sqrt{32}$
(C) 32
(D) 7

Answer: (C) 32 · The council's preliminary key

Q762 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

The equation of the circle with $(1, 1)$ as centre and which cuts a chord of length $4\sqrt{2}$ units on the line $x + y + 1 = 0$ is

(A) $x^2 + y^2 - 2x - 2y - 21 = 0$
(B) $2x^2 + 2y^2 - 4x - 4y - 21 = 0$
(C) $x^2 + y^2 - 2x - 2y - 10 = 0$
(D) $2x^2 + 2y^2 - 4x - 4y - 25 = 0$

Answer: (B) $2x^2 + 2y^2 - 4x - 4y - 21 = 0$ · The council's preliminary key

Q763 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

The area of the triangle (in sq. units) formed by the tangents drawn from $P(4, 4)$ to the circle $S \equiv x^2 + y^2 - 2x - 2y - 7 = 0$ and the chord of contact of P with respect to $S = 0$ is

(A) 4.5
(B) 8.1
(C) 6.75
(D) 1.5

Answer: (A) 4.5 · The council's preliminary key

Q764 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

The pole of the line $x + y + 2 = 0$ with respect to the circle $x^2 + y^2 - 4x + 6y - 12 = 0$ is

(A) $(23, 28)$
(B) $(-23, 28)$
(C) $(23, -28)$
(D) $(-23, -28)$

Answer: (D) $(-23, -28)$ · The council's preliminary key

Q765 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

The angle between the circles $x^2 + y^2 + 4x - 14y + 28 = 0$ and $x^2 + y^2 - 12x - 6y - 4 = 0$ is

(A) 60°
(B) $\text{Cos}^{-1}\frac{3}{35}$
(C) 45°
(D) $\text{Cos}^{-1}\left(\frac{2}{\sqrt{5}}\right)$

Answer: (B) $\text{Cos}^{-1}\frac{3}{35}$ · The council's preliminary key

Q766 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

The length of the common chord of the circles $x^2+y^2+3x+5y+4=0$ and $x^2+y^2+5x+3y+4=0$ is

(A) 1
(B) 2
(C) 3
(D) 4

Answer: (D) 4 · The council's preliminary key

Q767 TS EAMCET 2016 · 15 May · Offline MCQ

The point where the line $4x-3y+7=0$ touches the circle $x^2+y^2-6x+4y-12=0$ is

(A) $(1,1)$
(B) $(1,-1)$
(C) $(-1,1)$
(D) $(-1,-1)$

Answer: (C) $(-1,1)$ · Official TGCHE final key

Q768 TS EAMCET 2016 · 15 May · Offline MCQ

The normal to the circle given by $x^2+y^2-6x+8y-144=0$ at $(8,8)$ meets the circle again at the point

(A) $(2,-16)$
(B) $(2,16)$
(C) $(-2,16)$
(D) $(-2,-16)$

Answer: (D) $(-2,-16)$ · Official TGCHE final key

Q769 TS EAMCET 2016 · 15 May · Offline MCQ

For all real values of k, the polar of the point $(2k,k-4)$ with respect to $x^2+y^2-4x-6y+1=0$ passes through the point

(A) $(1,1)$
(B) $(1,-1)$
(C) $(-3,1)$
(D) $(3,1)$

Answer: (D) $(3,1)$ · Official TGCHE final key

EdLoop EAPCET

Q770 TS EAMCET 2016 · 15 May · Offline MCQ

If the circles $x^2+y^2-2\lambda x-2y-7=0$ and $3(x^2+y^2)-8x+29y=0$ are orthogonal then $\lambda=$

(A) 4
(B) 3
(C) 2
(D) 1

Answer: (D) 1 · Official TGCHE final key

Q771 TS EAMCET 2016 · 15 May · Offline MCQ

The radical centre of the circles $x^2+y^2=1$, $x^2+y^2-2x-3=0$ and $x^2+y^2-2y-3=0$ is

(A) $(1,1)$
(B) $(1,-1)$
(C) $(-1,1)$
(D) $(-1,-1)$

Answer: (D) $(-1,-1)$ · Official TGCHE final key

Q772 AP EAMCET 2016 · 29 Apr · Offline MCQ

A circle $S=0$ with radius $\sqrt{2}$ touches the line $x+y-2=0$ at $(1,1)$. Then the length of the tangent drawn from the point $(1,2)$ to $S=0$ is

(A) 1
(B) $\sqrt{2}$
(C) $\sqrt{3}$
(D) 2

Answer: (C) $\sqrt{3}$ · The council's preliminary key

Q773 AP EAMCET 2016 · 29 Apr · Offline MCQ

The normal drawn at $P(-1,2)$ on the circle $x^2+y^2-2x-2y-3=0$ meets the circle at another point Q. Then the coordinates of Q are

(A) $(3,0)$
(B) $(-3,0)$
(C) $(2,0)$
(D) $(-2,0)$

Answer: (A) $(3,0)$ · The council's preliminary key

EdLoop EAPCET

Q774 AP EAMCET 2016 · 29 Apr · Offline MCQ

If the lines $kx + 2y - 4 = 0$ and $5x - 2y - 4 = 0$ are conjugate with respect to the circle $x^2 + y^2 - 2x - 2y + 1 = 0$, then $k =$

(A) 0
(B) 1
(C) 2
(D) 3

Answer: (B) 1 · The council's preliminary key

Q775 AP EAMCET 2016 · 29 Apr · Offline MCQ

The angle between the tangents drawn from the origin to the circle $x^2 + y^2 + 4x - 6y + 4 = 0$ is

(A) $\tan^{-1}\left(\frac{5}{13}\right)$
(B) $\tan^{-1}\left(\frac{5}{12}\right)$
(C) $\tan^{-1}\left(\frac{12}{5}\right)$
(D) $\tan^{-1}\left(\frac{13}{5}\right)$

Answer: (C) $\tan^{-1}\left(\frac{12}{5}\right)$ · The council's preliminary key

Q776 AP EAMCET 2016 · 29 Apr · Offline MCQ

If the angle between the circles $x^2 + y^2 - 2x - 4y + c = 0$ and $x^2 + y^2 - 4x - 2y + 4 = 0$ is 60°, then c is equal to

(A) $\frac{3\pm\sqrt{5}}{2}$
(B) $\frac{6\pm\sqrt{5}}{2}$
(C) $\frac{9\pm\sqrt{5}}{2}$
(D) $\frac{7\pm\sqrt{5}}{2}$

Answer: (D) $\frac{7\pm\sqrt{5}}{2}$ · The council's preliminary key

Q777 AP EAMCET 2016 · 29 Apr · Offline MCQ

A circle S cuts three circles
$x^2 + y^2 - 4x - 2y + 4 = 0$,
$x^2 + y^2 - 2x - 4y + 1 = 0$,
and $x^2 + y^2 + 4x + 2y + 1 = 0$ orthogonally. Then the radius of S is

EdLoop EAPCET

(A) $\sqrt{\frac{29}{8}}$
(B) $\sqrt{\frac{28}{11}}$
(C) $\sqrt{\frac{29}{7}}$
(D) $\sqrt{\frac{29}{5}}$

Answer: (A) $\sqrt{\frac{29}{8}}$ · The council's preliminary key

---

Q778 AP EAMCET 2014 · 22 May · Offline MCQ

A circle with centre at $(2, 4)$ is such that the line $x + y + 2 = 0$ cuts a chord of length 6. The radius of the circle is

(A) $\sqrt{41}$
(B) $\sqrt{11}$
(C) $\sqrt{21}$
(D) $\sqrt{31}$

Answer: (A) $\sqrt{41}$ · The council's preliminary key

Q779 AP EAMCET 2014 · 22 May · Offline MCQ

The point at which the circles $x^2 + y^2 - 4x - 4y + 7 = 0$ and $x^2 + y^2 - 12x - 10y + 45 = 0$ touch each other is

(A) $\left(\frac{13}{5}, \frac{14}{5}\right)$
(B) $\left(\frac{2}{5}, \frac{5}{6}\right)$
(C) $\left(\frac{14}{5}, \frac{13}{5}\right)$
(D) $\left(\frac{12}{5}, 2 + \frac{\sqrt{21}}{5}\right)$

Answer: (C) $\left(\frac{14}{5}, \frac{13}{5}\right)$ · The council's preliminary key

---

Q780 AP EAMCET 2014 · 22 May · Offline MCQ

The condition for the lines $lx + my + n = 0$ and $l_1x + m_1y + n_1 = 0$ to be conjugate with respect to the circle $x^2 + y^2 = r^2$ is

(A) $r^2(ll_1 + mm_1) = nn_1$
(B) $r^2(ll_1 - mm_1) = nn_1$
(C) $r^2(ll_1 + mm_1) + nn_1 = 0$
(D) $r^2(lm_1 + l_1m) = nn_1$

Answer: (A) $r^2(ll_1 + mm_1) = nn_1$ · The council's preliminary key

EdLoop EAPCET

Q781 AP EAMCET 2014 · 22 May · Offline MCQ

The length of the common chord of the two circles $x^2+y^2-4y=0$ and $x^2+y^2-8x-4y+11=0$ is

(A) $\frac{\sqrt{145}}{4}$
(B) $\frac{\sqrt{11}}{2}$
(C) $\sqrt{135}$
(D) $\frac{\sqrt{135}}{4}$

Answer: (D) $\frac{\sqrt{135}}{4}$ · The council's preliminary key

Q782 AP EAMCET 2014 · 22 May · Offline MCQ

The locus of the centre of the circle which cuts the circle $x^2+y^2-20x+4=0$ orthogonally and touches the line $x=2$ is

(A) $x^2=16y$
(B) $y^2=4x$
(C) $y^2=16x$
(D) $x^2=4y$

Answer: (C) $y^2=16x$ · The council's preliminary key

Q783 AP EAMCET 2013 · 10 May · Offline MCQ

The circle $4x^2+4y^2-12x-12y+9=0$

(A) touches both the axes
(B) touches the x-axis only
(C) touches the y-axis only
(D) does not touch the axes

Answer: (A) touches both the axes · The council's preliminary key

Q784 AP EAMCET 2013 · 10 May · Offline MCQ

For the circle C with the equation $x^2+y^2-16x-12y+64=0$ match the list-I with the list-II given below :

List-I

i) The equation of the polar of $(-5,1)$ with respect to C

ii) The equation of the tangent at $(8,0)$ to C

iii) The equation of the normal at $(2,6)$ to C

iv) The equation of the diameter of C through $(8,12)$

List-II

a) $y=0$

b) $y=6$

c) $x + y = 7$
d) $13x + 5y = 98$
e) $x = 8$
The correct match is :

(A) i-d, ii-b, iii-a, iv-e
(B) i-d, ii-a, iii-b, iv-e
(C) i-c, ii-d, iii-a, iv-b
(D) i-c, ii-e, iii-b, iv-a

Answer: (B) i-d, ii-a, iii-b, iv-e · The council's preliminary key

Q785 AP EAMCET 2013 · 10 May · Offline MCQ

If the length of the tangent from (h, k) to the circle $x^2 + y^2 = 16$ is twice the length of the tangent from the same point to the circle $x^2 + y^2 + 2x + 2y = 0$, then

(A) $h^2 + k^2 + 4h + 4k + 16 = 0$
(B) $h^2 + k^2 + 3h + 3k = 0$
(C) $3h^2 + 3k^2 + 8h + 8k + 16 = 0$
(D) $3h^2 + 3k^2 + 4h + 4k + 16 = 0$

Answer: (C) $3h^2 + 3k^2 + 8h + 8k + 16 = 0$ · The council's preliminary key

Q786 AP EAMCET 2013 · 10 May · Offline MCQ

$(a, 0)$ and $(b, 0)$ are centres of two circles belonging to a co-axial system of which y-axis is the radical axis. If radius of one of the circles is r, then the radius of the other circle is

(A) $(r^2 + b^2 + a^2)^{1/2}$
(B) $(r^2 + b^2 - a^2)^{1/2}$
(C) $(r^2 + b^2 - a^2)^{1/3}$
(D) $(r^2 + b^2 + a^2)^{1/3}$

Answer: (B) $(r^2 + b^2 - a^2)^{1/2}$ · The council's preliminary key

Q787 AP EAMCET 2013 · 10 May · Offline MCQ

If the circle $x^2 + y^2 + 4x - 6y + c = 0$ bisects the circumference of the circle $x^2 + y^2 - 6x + 4y - 12 = 0$, then $c =$

(A) 16
(B) 24
(C) -42
(D) -62

Answer: (D) -62 · The council's preliminary key

Q788 AP EAMCET 2012 · 12 May · Offline MCQ

Given the circle C with the equation $x^2 + y^2 - 2x + 10y - 38 = 0$. Match the List-I with the List-II given below concerning C :

List-I

i) The equation of the polar of (4, 3) with respect to C

ii) The equation of the tangent at (9, -5) on C

iii) The equation of the normal at (-7, -5) on C

iv) The equation of the diameter of C passing through (1, 3)

List-II

a) $y + 5 = 0$

b) $x = 1$

c) $3x + 8y = 27$

d) $x + y = 3$

e) $x = 9$

The correct answer is (i) (ii) (iii) (iv)

(A) (i)-c, (ii)-a, (iii)-e, (iv)-b

(B) (i)-d, (ii)-e, (iii)-a, (iv)-b

(C) (i)-c, (ii)-e, (iii)-a, (iv)-b

(D) (i)-d, (ii)-b, (iii)-a, (iv)-e

Answer: (C) (i)-c, (ii)-e, (iii)-a, (iv)-b · Official APSCHE final key

Q789 AP EAMCET 2012 · 12 May · Offline MCQ

Consider the circle $x^2 + y^2 - 4x - 2y + c = 0$ whose centre is A(2, 1). If the point P(10, 7) is such that the line segment PA meets the circle in Q with PQ = 5, then c =

(A) -15

(B) 20

(C) 30

(D) -20

Answer: (D) -20 · Official APSCHE final key

Q790 AP EAMCET 2012 · 12 May · Offline MCQ

If the line $x + 3y = 0$ is the tangent at (0, 0) to circle of radius 1, then the centre of one such circle is

(A) $(3, 0)$
(B) $\left(\frac{-1}{\sqrt{10}}, \frac{3}{\sqrt{10}}\right)$
(C) $\left(\frac{3}{\sqrt{10}}, \frac{-3}{\sqrt{10}}\right)$
(D) $\left(\frac{1}{\sqrt{10}}, \frac{3}{\sqrt{10}}\right)$

Answer: (D) $\left(\frac{1}{\sqrt{10}}, \frac{3}{\sqrt{10}}\right)$ · Official APSCHE final key

Q791 AP EAMCET 2012 · 12 May · Offline MCQ

A circle passes through the point (3, 4) and cuts the circle $x^2 + y^2 = a^2$ orthogonally; the locus of its centre is a straight line. If the distance of this straight line from the origin is 25, then $a^2 =$

(A) 250
(B) 225
(C) 100
(D) 25

Answer: (B) 225 · Official APSCHE final key

Q792 AP EAMCET 2012 · 12 May · Offline MCQ

The equation to the line joining the centres of the circles belonging to the coaxial system of circles $4x^2 + 4y^2 - 12x + 6y - 3 + \lambda(x + 2y - 6) = 0$ is

(A) $8x - 4y - 15 = 0$
(B) $8x - 4y + 15 = 0$
(C) $3x - 4y - 5 = 0$
(D) $3x - 4y + 5 = 0$

Answer: (A) $8x - 4y - 15 = 0$ · Official APSCHE final key

Q793 AP EAMCET 2011 · 8 May · Offline MCQ

If the line $y = 2x + c$ is a tangent to the circle $x^2 + y^2 = 5$, then a value of c is

(A) 2
(B) 3
(C) 4
(D) 5

Answer: (D) 5 · The council's preliminary key

Q794 AP EAMCET 2011 · 8 May · Offline MCQ

If the lines $3x + 4y - 14 = 0$ and $6x + 8y + 7 = 0$ are both tangents to a circle, then its radius is

(A) 7
(B) $\frac{7}{2}$
(C) $\frac{7}{4}$
(D) $\frac{7}{6}$

Answer: (C) $\frac{7}{4}$ · The council's preliminary key

Q795 AP EAMCET 2011 · 8 May · Offline MCQ

If the circle $x^2+y^2+8x-4y+c=0$ touches the circle $x^2+y^2+2x+4y-11=0$ externally and cuts the circle $x^2+y^2-6x+8y+k=0$ orthogonally then $k=$

(A) 59
(B) -59
(C) 19
(D) -19

Answer: (B) -59 · The council's preliminary key

Q796 AP EAMCET 2011 · 8 May · Offline MCQ

The point of contact of the circles $x^2+y^2+2x+2y+1=0$ and $x^2+y^2-2x+2y+1=0$ is

(A) $(0,1)$
(B) $(0,-1)$
(C) $(1,0)$
(D) $(-1,0)$

Answer: (B) $(0,-1)$ · The council's preliminary key

Q797 AP EAMCET 2010 · 30 May · Offline MCQ

The equation of the radical axis of the pair of circles $7x^2+7y^2-7x+14y+18=0$ and $4x^2+4y^2-7x+8y+20=0$ is :

(A) $x-2y-5=0$
(B) $2x-y+5=0$
(C) $21x-68=0$
(D) $23x-68=0$

Answer: (C) $21x-68=0$ · Official APSCHE final key

Q798 AP EAMCET 2010 · 30 May · Offline MCQ

If the lengths of tangents drawn to the circles :
$x^2+y^2-8x+40=0$
$5x^2+5y^2-25x+80=0$

EdLoop EAPCET

$x^2 + y^2 - 8x + 16y + 160 = 0$
from the point P are equal, then $\mathrm{P} =$

(A) $\left(8, \frac{15}{2}\right)$
(B) $\left(-8, \frac{15}{2}\right)$
(C) $\left(8, \frac{-15}{2}\right)$
(D) $\left(-8, \frac{-15}{2}\right)$

Answer: (C) $\left(8, \frac{-15}{2}\right)$ · Official APSCHE final key

---

Q799 AP EAMCET 2010 · 30 May · Offline MCQ

The equation of the circle concentric with the circle $x^2 + y^2 - 6x + 12y + 15 = 0$ and of double its area is :

(A) $x^2 + y^2 - 6x + 12y - 15 = 0$
(B) $x^2 + y^2 - 6x + 12y - 30 = 0$
(C) $x^2 + y^2 - 6x + 12y - 25 = 0$
(D) $x^2 + y^2 - 6x + 12y - 20 = 0$

Answer: (A) $x^2 + y^2 - 6x + 12y - 15 = 0$ · Official APSCHE final key

---

Q800 AP EAMCET 2010 · 30 May · Offline MCQ

If the circle $x^2 + y^2 + 2x + 3y + 1 = 0$ cuts another circle $x^2 + y^2 + 4x + 3y + 2 = 0$ in A and B, then the equation of the circle with AB as a diameter is :

(A) $x^2 + y^2 + x + 3y + 3 = 0$
(B) $2x^2 + 2y^2 + 2x + 6y + 1 = 0$
(C) $x^2 + y^2 + x + 6y + 1 = 0$
(D) $2x^2 + 2y^2 + x + 3y + 1 = 0$

Answer: (B) $2x^2 + 2y^2 + 2x + 6y + 1 = 0$ · Official APSCHE final key

---

Q801 AP EAMCET 2010 · 30 May · Offline MCQ

The length of the common chord of the circles of radii 15 and 20 whose centres are 25 units of distance apart, is :

(A) 12
(B) 16
(C) 24
(D) 25

Answer: (C) 24 · Official APSCHE final key

EdLoop EAPCET