EdLoop

EdLoop EAPCET

PHYSICS · EAPCET (EAMCET)

Units, Dimensions & Errors

Previous Year Questions with answers

195 questions · **143** 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 Units, Dimensions & Errors 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/

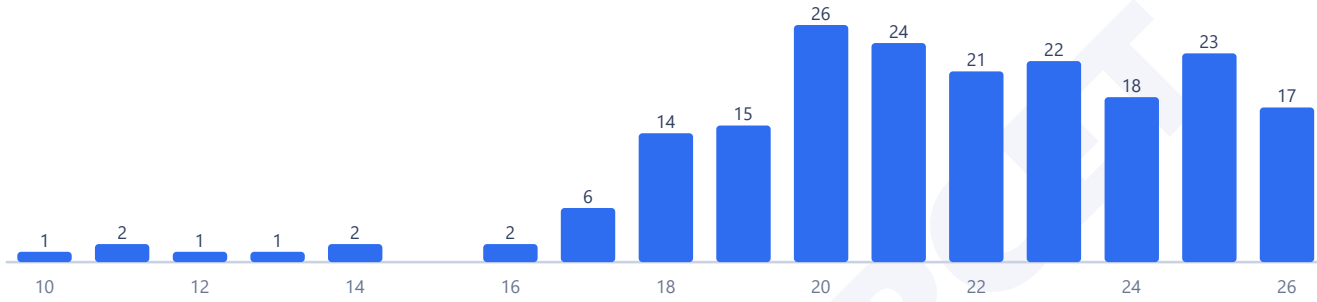
EdLoop EAPCET

Chapter at a glance

3.3%	195	76 of 77	195 / 0
of Physics questions, 2022–2026	questions, 2010–2026	papers asked it, 2022–2026	MCQ / numerical, 2010–2026

Trend. Steady: 1.3 questions per paper in 2024–2026 against 1.4 in 2022–2023.

Questions per year



Counts are the questions we hold: 195 in 143 papers. No question in this chapter was found repeated across papers.

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

Dimensional Analysis	72
Physical World	52
Errors & Significant Figures	50
Units & SI System	18
Measuring Instruments	3

How often it comes up

Units, Dimensions & Errors serves as the starting unit of Class 11 Physics and appears consistently across both regional tests. In the papers we hold from 2022 to 2026, it yielded **101 questions in 77 papers**, delivering an average of **1.3 questions per paper**. The chapter showed up in 76 of those 77 papers, making it an exceptionally reliable feature of the exam paper. By question count, it ranks as the **15th of 28 Physics chapters**, claiming 3.3% of all Physics questions over these five years.

Looking across the complete collection from 2010 to 2026, our archive holds 195 questions from 143 of the 149 papers, maintaining an identical rate of 1.3 questions per paper and 3.3% share of the subject. In the early period from 2010 to 2021, the chapter contributed 94 questions in 72 papers (appearing in 67 papers, 1.3 per paper, 3.3% share). Across the last three exam years from 2024 to 2026, it accounted for 58 questions in 46 papers (appearing in 45 papers, 1.3 per paper, 3.2% share). The chapter's subject share has stayed about the same when comparing the early era to the last three years, and has also stayed about the same when comparing the recent five-year window to the last three years. Every year since 2022 has featured questions from this unit.

Between 2022 and 2026, the state breakdown shows distinct question densities: AP EAPCET featured 49 questions across 48 papers (appearing in 47 papers, 1.0 per paper, 2.6% share), whereas TS EAPCET featured 52 questions across 29 papers (appearing in 29 papers, 1.8 per paper, 4.5% share).

Most-asked topics

During the 2022 to 2026 examination cycle, questions fell into four active areas:

- **Dimensional Analysis**: 37 questions. Across all years from 2010 to 2026, this topic leads with 72 questions.

- **Errors & Significant Figures**: 30 questions recently, and 50 questions across the whole archive.
- **Physical World**: 27 questions in recent papers, with 52 questions overall.
- **Units & SI System**: 7 questions in the recent window, and 18 questions in the broader collection.

Questions from dimensional analysis, error propagation, and physical principles appeared repeatedly in 2026, showing that thorough familiarity with each area is essential.

What the questions look like

Dimensional analysis questions generally present two distinct formats. The first asks you to determine the dimensional formula of an electrodynamic or thermodynamic constant, such as permittivity, permeability, Planck's constant, or coefficient of viscosity. A common variant gives an algebraic combination of constants and asks which familiar quantity shares the same dimensional formula. The second format uses matching lists where four physical quantities must be paired with four bracketed dimensional representations.

Error analysis questions focus heavily on fractional and percentage errors in measured formulas. Standard problems involve computing the percentage uncertainty of a dependent variable given fractional errors in mass, length, radius, or time period. Questions frequently test powers and products, such as the density of a wire or the acceleration due to gravity from a simple pendulum experiment.

Physical World questions are qualitative and brief. They usually test the relative strengths and operational ranges of the four fundamental interactions in nature: gravitational, weak nuclear, electromagnetic, and strong nuclear forces. Other questions test conservation laws or matching celebrated physicists to their core discoveries.

How to practise it

Begin by deriving the dimensions of derived physical quantities from their defining equations rather than trying to memorize them as strings of numbers. Group quantities that share the same dimensions together, such as work, torque, and energy, or impulse and linear momentum.

Next, practise error propagation using the logarithmic differentiation method. Ensure you remember that fractional uncertainties always add up when finding maximum possible error, and that exponents multiply the percentage error of the respective variable. Take special care when problems provide the error in the outcome and require working backward to find the allowable error in an individual measurement.

Finally, review the qualitative summary points in your textbook covering the four fundamental forces and basic scientific contributions. Because these problems require minimal calculation, solving them accurately within thirty seconds saves valuable time for heavier topics.

EdLoop EAPCET

Q1 AP EAPCET 2026 · 18 May · Shift 1 MCQ

If the percentage error in the measurement of radius is 2% then the error in measurement of volume of a sphere is

(A) 6%
(B) 8%
(C) 4%
(D) 10%

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

Q2 AP EAPCET 2026 · 18 May · Shift 2 MCQ

Match the following physical quantities with their dimensional formulae

A) Gravitational potential	I) LT^{-2}
B) Gravitational potential energy	II) $\mathrm{L}^2\mathrm{T}^{-2}$
C) Gravitational constant	III) $\mathrm{ML}^2\mathrm{T}^{-2}$
D) Gravitational intensity	IV) $\mathrm{M}^{-1}\mathrm{L}^3\mathrm{T}^{-2}$

(A) A – II, B – III, C – IV, D – I
(B) A – II, B – III, C – I, D – IV
(C) A – I, B – II, C – IV, D – III
(D) A – I, B – IV, C – III, D – II

Answer: (A) A – II, B – III, C – IV, D – I · The council's preliminary key

Q3 AP EAPCET 2026 · 15 May · Shift 1 MCQ

For a particular wire of mass = (0.6 ± 0.003) gm, radius = (0.50 ± 0.01) cm, and length = (10.00 ± 0.05) cm, the maximum percentage error in the measurement of its density is

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

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

Q4 AP EAPCET 2026 · 14 May · Shift 1 MCQ

If Q, L and T represent the electric charge, inductance and time respectively, the physical quantity having the dimensions of $\frac{QL}{T^2}$ is

EdLoop EAPCET

(A) Magnetic energy
(B) Impedance
(C) Electric potential
(D) Electric field

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

Q5 AP EAPCET 2026 · 14 May · Shift 2 MCQ

If A, B and C represent the work done, distance and electric charge respectively, Then the physical quantity having the dimensions of $\frac{C^2}{AB}$ is

(A) Permittivity
(B) Permeability
(C) Electric potential
(D) Electric energy

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

Q6 AP EAPCET 2026 · 13 May · Shift 1 MCQ

$\beta = \frac{F}{v^2}\cos(\alpha t)$, if F is force, v is velocity, t is time, then the dimensional formulae of α , β are respectively

(A) $\mathrm{M^0L^0T^0}$, $\mathrm{ML^{-1}T^0}$
(B) $\mathrm{M^0L^0T^{-1}}$, $\mathrm{MLT^0}$
(C) $\mathrm{M^0L^0T^{-1}}$, $\mathrm{ML^{-1}T^0}$
(D) $\mathrm{ML^0T^{-1}}$, $\mathrm{ML^{-1}T}$

Answer: (C) $\mathrm{M^0L^0T^{-1}}$, $\mathrm{ML^{-1}T^0}$ · The council's preliminary key

Q7 AP EAPCET 2026 · 13 May · Shift 2 MCQ

If force F, acceleration A and time T are chosen as fundamental quantities, then the dimension formula of energy

(A) $[F][A][T]$
(B) $[F][A][T^2]$
(C) $[F][A][T^{-1}]$
(D) $[F][A^{-1}][T]$

Answer: (B) $[F][A][T^2]$ · The council's preliminary key

Q8 AP EAPCET 2026 · 12 May · Shift 1 MCQ

Match the physical quantities with their Dimensional formulae

List I	List II

a) Coefficient of Viscosity (η)	(i) $M^{-1}L^{3}T^{4}A^{2}$
b) Young's Modulus (Y)	(ii) $ML^{-1}T^{-1}$
c) Permittivity (ε)	(iii) $ML^{-1}T^{-2}$
d) Universal Gravitational constant (G)	(iv) $M^{-1}L^{3}T^{-2}$

(A) a-(ii), b-(iii), c-(iv), d-(i)
(B) a-(ii), b-(iii), c-(i), d-(iv)
(C) a-(iii), b-(ii), c-(i), d-(iv)
(D) a-(iv), b-(ii), c-(i), d-(iii)

Answer: (B) a-(ii), b-(iii), c-(i), d-(iv) · The council's preliminary key

Q9 AP EAPCET 2026 · 12 May · Shift 2 MCQ

Volume of a cylinder is given by $V = \pi r^2 h$, here r is radius and h is height. The volume is measured with an error of 6% and height with an error of 4%, then error in radius is

(A) 3%
(B) 4%
(C) 5%
(D) 8%

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

Q10 TS EAPCET 2026 · 11 May · Shift 1 MCQ

The fundamental force that plays a key role in the large scale phenomena of the universe is

(A) electromagnetic force
(B) strong nuclear force
(C) weak nuclear force
(D) gravitational force

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

Q11 TS EAPCET 2026 · 11 May · Shift 1 MCQ

If the errors in the measurements of diameter, length and electrical resistance of a wire are 1%, 0.5% and 2% respectively, then percentage error in the determination of the resistivity of material of the wire is

(A) 3.5
(B) 4
(C) 4.5
(D) 2.5

Answer: (C) 4.5 · The council's preliminary key

Q12 TS EAPCET 2026 · 11 May · Shift 2 MCQ

The force (F) acting on a particle in terms of its distance (x) from a fixed point is given by $F = \frac{A}{B + x^{1.5}}$. If the dimensional formula of AB is $\left[M^a L^b T^c\right]$, then the value of $a + b + c$ is

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

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

Q13 TS EAPCET 2026 · 10 May · Shift 1 MCQ

The correct statement regarding fundamental forces in nature is

(A) Electromagnetic force acts over large distances
(B) Electromagnetic force needs an intervening medium
(C) Strong nuclear force is a repulsive force
(D) Strong nuclear force is a long-range force

Answer: (A) Electromagnetic force acts over large distances · The council's preliminary key

Q14 TS EAPCET 2026 · 10 May · Shift 1 MCQ

If mass M, pressure P and velocity V are taken as fundamental quantities, then the dimensional formula of surface tension is

(A) $\left[M^{\frac{2}{3}} P^{\frac{2}{3}} V^{\frac{1}{3}}\right]$
(B) $\left[M^{\frac{1}{3}} P^{\frac{1}{3}} V^{\frac{2}{3}}\right]$
(C) $\left[M^{\frac{1}{3}} P^{\frac{2}{3}} V^{\frac{2}{3}}\right]$
(D) $\left[M^{\frac{2}{3}} P^{\frac{1}{3}} V^{\frac{2}{3}}\right]$

Answer: (C) $\left[M^{\frac{1}{3}} P^{\frac{2}{3}} V^{\frac{2}{3}}\right]$ · The council's preliminary key

Q15 TS EAPCET 2026 · 10 May · Shift 2 MCQ

The number of significant figures in 0.020260 is

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

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

EdLoop EAPCET

Q16 TS EAPCET 2026 · 9 May · Shift 1 MCQ

Consider the following statements:

Statement-I: When two quantities are multiplied, the relative error in the result is the sum of the relative errors in the quantities

Statement-II: When two quantities are divided, the relative error in the result is the difference of the relative errors in the quantities

The correct answer among the following is

(A) Both statements I and II are correct
(B) Both statements I and II are not correct
(C) Statement I is correct, but statement II is not correct
(D) Statement I is not correct, but statement II is correct

Answer: (C) Statement I is correct, but statement II is not correct · The council's preliminary key

Q17 TS EAPCET 2026 · 9 May · Shift 2 MCQ

If 'B' is magnetic induction, 'e' is charge of electron, 'm' is mass and 'c' is speed of light in vacuum, then the physical quantity having dimensions of $\frac{4\pi mc}{Be}$ is

(A) Energy
(B) Electric potential
(C) Length
(D) Time

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

Q18 AP EAPCET 2025 · 27 May · Shift 1 MCQ

The physical quantity having the dimensions of the square root of the ratio of the kinetic energy and surface tension is

(A) distance
(B) time
(C) temperature
(D) mass

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

Q19 AP EAPCET 2025 · 26 May · Shift 1 MCQ

The number of significant figures in 0.03240 is

EdLoop EAPCET

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

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

Q20 AP EAPCET 2025 · 26 May · Shift 2 MCQ

If force $= \frac{\alpha}{\text{density} + \beta^3}$, then the dimensional formulae of α and β are respectively

(A) $[\mathrm{M\,L^2\,T^{-2}}]$, $[\mathrm{M\,L^{-1/3}\,T^0}]$
(B) $[\mathrm{M^2\,L^4\,T^{-2}}]$, $[\mathrm{M^{1/3}\,L^{-1}\,T^0}]$
(C) $[\mathrm{M^2\,L^{-2}\,T^{-2}}]$, $[\mathrm{M^{1/3}\,L^{-1}\,T^0}]$
(D) $[\mathrm{M^2\,L^{-2}\,T^{-2}}]$, $[\mathrm{M\,L^{-3}\,T^0}]$

Answer: (C) $[\mathrm{M^2\,L^{-2}\,T^{-2}}]$, $[\mathrm{M^{1/3}\,L^{-1}\,T^0}]$ · The council's preliminary key

Q21 AP EAPCET 2025 · 24 May · Shift 1 MCQ

If the error in the measurement of the surface area of a sphere is 1.2%, then the error in the determination of the volume of the sphere is

(A) 2.4%
(B) 1.8%
(C) 1.2%
(D) 0.6%

Answer: (B) 1.8% · The council's preliminary key

Q22 AP EAPCET 2025 · 23 May · Shift 1 MCQ

Of the following, the pair of physical quantities not having the same dimensional formula is

(A) work and torque
(B) angular momentum and Planck's constant
(C) stress and linear momentum
(D) surface tension and force constant

Answer: (C) stress and linear momentum · The council's preliminary key

Q23 AP EAPCET 2025 · 23 May · Shift 2 MCQ

If the equation for the velocity of a particle at time 't' is $v = at + \frac{b}{t+c}$, then the dimensions of a, b, c are respectively

(A) LT^{-2}, L, T
(B) L^2, L, T
(C) LT^{-2}, LT, L
(D) L, LT, L^2

Answer: (A) LT^{-2}, L, T · The council's preliminary key

Q24 AP EAPCET 2025 · 23 May · Shift 2 MCQ

An artificial satellite is revolving around a planet of radius R in a circular orbit of radius 'a'. If the time period of revolution of the satellite, $T \propto a^{3/2} g^x R^y$, then the values of x and y are respectively

[g - acceleration due to gravity]

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

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

Q25 AP EAPCET 2025 · 22 May · Shift 1 MCQ

The dimensional formula of Planck's constant is

(A) $[ML^2T^{-3}]$
(B) $[ML^2T^0]$
(C) $[ML^2T^{-1}]$
(D) $[M^0L^0T^0]$

Answer: (C) $[ML^2T^{-1}]$ · The council's preliminary key

Q26 AP EAPCET 2025 · 22 May · Shift 2 MCQ

The number of significant figures in the simplification of $\frac{0.501}{0.05}(0.312 - 0.03)$ is

(A) 1
(B) 3
(C) 2
(D) 5

Answer: (A) 1 · Checked by our team

Q27 AP EAPCET 2025 · 21 May · Shift 1 MCQ

Among the following, the physical quantity having the dimensions of Young's modulus is

(A) strain
(B) gravitational potential
(C) surface energy
(D) energy density

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

Q28 AP EAPCET 2025 · 21 May · Shift 2 MCQ

If the maximum and minimum temperatures at a place on a day are measured as $44^{\circ}\mathrm{C} \pm 0.5^{\circ}\mathrm{C}$ and $22^{\circ}\mathrm{C} \pm 0.5^{\circ}\mathrm{C}$ respectively, then the temperature difference is

(A) $22\,^{\circ}\mathrm{C} \pm 1\,^{\circ}\mathrm{C}$
(B) $22\,^{\circ}\mathrm{C} \pm 0.5\,^{\circ}\mathrm{C}$
(C) $22\,^{\circ}\mathrm{C} \pm 0.25\,^{\circ}\mathrm{C}$
(D) $22\,^{\circ}\mathrm{C} \pm 1.5\,^{\circ}\mathrm{C}$

Answer: (A) $22\,^{\circ}\mathrm{C} \pm 1\,^{\circ}\mathrm{C}$ · The council's preliminary key

Q29 TS EAPCET 2025 · 4 May · Shift 1 MCQ

Match the "Technology" given in List-1 with the "Principle of Physics" given in List-2.

List – 1 (Technology)	List – 2 (Principle of Physics)
A Steam engine	I Magnetic confinement of plasma
B Electron microscope	II Laws of thermodynamics
C Non-reflecting coatings	III Wave nature of electrons
D Tokamak	IV Interference of light

(A) A – I, B – II, C – III, D – IV
(B) A – II, B – III, C – IV, D – I
(C) A – II, B – IV, C – III, D – I
(D) A – II, B – I, C – III, D – IV

Answer: (B) A – II, B – III, C – IV, D – I · The council's preliminary key

Q30 TS EAPCET 2025 · 4 May · Shift 1 MCQ

In an experiment, the coefficient of viscosity (in mPa s) of a liquid was determined as 2.62, 2.68, 2.58, 2.57, 2.54 and 2.55. The mean absolute error in the determination of the coefficient of viscosity of the liquid is

EdLoop EAPCET

(A) 0.08 mPa s
(B) 0.12 mPa s
(C) 0.06 mPa s
(D) 0.04 mPa s

Answer: (D) 0.04 mPa s · The council's preliminary key

Q31 TS EAPCET 2025 · 4 May · Shift 2 MCQ

The force of mutual attraction between any two objects by virtue of their masses is

(A) Gravitational force
(B) Electromagnetic force
(C) Strong nuclear force
(D) Weak nuclear force

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

Q32 TS EAPCET 2025 · 4 May · Shift 2 MCQ

The error in the measurement of force acting normally on a square plate is 3%. If the error in the measurement of the side of the plate is 1%, then the error in the determination of the pressure acting on the plate is

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

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

Q33 TS EAPCET 2025 · 3 May · Shift 1 MCQ

The phenomenon of physics that deals with the constitution and structure of matter at the minute scales of atoms and nuclei is

(A) Microscopic domain
(B) Macroscopic domain
(C) Classical physics
(D) Thermodynamics

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

Q34 TS EAPCET 2025 · 3 May · Shift 1 MCQ

If the length of a rod is measured as 830600 mm, then the number of significant figures in the measurement is

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

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

Q35 TS EAPCET 2025 · 3 May · Shift 2 MCQ

The range of weak nuclear force is of the order of

(A) 10^{16} m
(B) 10^{-10} m
(C) 10^{10} m
(D) 10^{-16} m

Answer: (D) 10^{-16} m · The council's preliminary key

Q36 TS EAPCET 2025 · 3 May · Shift 2 MCQ

A piece of length 3.532 m is cut from a rod of length 43.4 m. The length of the remaining rod in metre is (up to correct significant figures)

(A) 39.9
(B) 39.8
(C) 39.868
(D) 39.87

Answer: (A) 39.9 · The council's preliminary key

Q37 TS EAPCET 2025 · 2 May · Shift 1 MCQ

For any fixed distance, the electromagnetic force between two protons is 10^n times of the gravitational force between them. Then $n =$

(A) 26
(B) 13
(C) 39
(D) 36

Answer: (D) 36 · The council's preliminary key

Q38 TS EAPCET 2025 · 2 May · Shift 1 MCQ

If A, B and C are three different physical quantities with different dimensional formulae, then the combination which can never give a proper physical quantity is

EdLoop EAPCET

(A) $\frac{A}{BC}$
(B) $\frac{AB-C^2}{BC}$
(C) $\frac{A-C}{B}$
(D) $AC-B$

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

Q39 TS EAPCET 2025 · 2 May · Shift 2 MCQ

Bose-Einstein statistics is applicable to particles with

(A) Even integral spin particles only
(B) Integral spin particles
(C) Half odd integral spin particles
(D) Odd integral spin particles only

Answer: (B) Integral spin particles · The council's preliminary key

Q40 TS EAPCET 2025 · 2 May · Shift 2 MCQ

If L and C are inductance and capacitance respectively, then the dimensional formula of $(LC)^{-\frac{1}{2}}$ is

(A) $[\mathrm{M}^0\mathrm{L}^0\mathrm{T}^{-1}]$
(B) $[\mathrm{M}^1\mathrm{L}^1\mathrm{T}^{-1}]$
(C) $[\mathrm{M}^0\mathrm{L}^1\mathrm{T}^1]$
(D) $[\mathrm{M}^0\mathrm{L}^0\mathrm{T}^{-2}]$

Answer: (A) $[\mathrm{M}^0\mathrm{L}^0\mathrm{T}^{-1}]$ · The council's preliminary key

Q41 AP EAPCET 2024 · 23 May · Shift 1 MCQ

Which of the following is not a unit of permeability

(A) Henry meter^{-1}
(B) Weber ampere^{-1} meter^{-1}
(C) Ohm second meter^{-1}
(D) Volt second meter^{-1}

Answer: (D) Volt second meter^{-1} · The council's preliminary key

Q42 AP EAPCET 2024 · 22 May · Shift 1 MCQ

The potential difference across the ends of conductor is $(30 \pm 0.3)\mathrm{V}$ and the current through the conductor is $(5 \pm 0.1)\mathrm{A}$. The error in the determination of the resistance of the conductor is

EdLoop EAPCET

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

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

Q43 AP EAPCET 2024 · 22 May · Shift 2 MCQ

In the equation $\left(P+\frac{a}{V^2}\right)(V-b)=RT$, where P is pressure, V is volume, T is temperature, R is universal gas constant, a and b are constants. The dimensions of a are

(A) $\mathrm{ML^{-1}T^{-2}}$
(B) $\mathrm{ML^{5}T^{-2}}$
(C) $\mathrm{M^{0}L^{3}T^{0}}$
(D) $\mathrm{ML^{3}T^{-2}}$

Answer: (B) $\mathrm{ML^{5}T^{-2}}$ · The council's preliminary key

Q44 AP EAPCET 2024 · 21 May · Shift 1 MCQ

The time period of revolution of a satellite (T) around the earth depends on the radius of the circular orbit (R), mass of the earth (M) and universal gravitational constant (G). The expression for T, using dimensional analysis is (K is constant of proportionality)

(A) $K\sqrt{\frac{R^2}{GM}}$
(B) $K\sqrt{\frac{R}{GM}}$
(C) $K\sqrt{\frac{R^3}{GM}}$
(D) $K\sqrt{\frac{R^3}{GM^2}}$

Answer: (C) $K\sqrt{\frac{R^3}{GM}}$ · The council's preliminary key

Q45 AP EAPCET 2024 · 21 May · Shift 2 MCQ

The length of the side of a cube is 1.2×10^{-2} m. Its volume up to correct significant figures is

(A) $1.732\times10^{-6}\ \mathrm{m^3}$
(B) $1.73\times10^{-6}\ \mathrm{m^3}$
(C) $1.70\times10^{-6}\ \mathrm{m^3}$
(D) $1.7\times10^{-6}\ \mathrm{m^3}$

Answer: (D) $1.7\times10^{-6}\ \mathrm{m^3}$ · The council's preliminary key

Q46 AP EAPCET 2024 · 20 May · Shift 1 MCQ

E, m, L, G represent energy, mass, angular momentum and gravitational constant respectively. The dimensions of $\frac{EL^2}{m^5G^2}$ will be that of

(A) Angle
(B) Length
(C) Mass
(D) Time

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

Q47 AP EAPCET 2024 · 20 May · Shift 2 MCQ

Find the dimension formula of $\frac{a}{b}$ in the equation $F = a\sqrt{x} + bt^2$, where F is a force, x is distance and t is time.

(A) $[M^0L^{-1/2}T^2]$
(B) $[M^0L^0T^{3/2}]$
(C) $[M^0L^1T^{-4}]$
(D) $[M^0L^{3/2}T^4]$

Answer: (A) $[M^0L^{-1/2}T^2]$ · The council's preliminary key

Q48 AP EAPCET 2024 · 19 May · Shift 2 MCQ

The percentage error in the measurement of mass and velocity are 3% and 4% respectively. The percentage error in the measurement of kinetic energy is

(A) 11%
(B) 12%
(C) 14%
(D) 8%

Answer: (A) 11% · The council's preliminary key

Q49 AP EAPCET 2024 · 18 May · Shift 1 MCQ

Match the following

a) Thermal conductivity	i) $MLT^{-3}K^{-1}$
b) Boltzman constant	ii) $M^oL^2T^{-2}K^{-1}$
c) Latent heat	iii) $ML^2T^{-2}K^{-1}$
d) Specific heat	iv) $M^oL^2T^{-2}$

(A) a – i, b – iii, c – iv, d – ii
(B) a – i, b – ii, c – iv, d – iii
(C) a – iii, b – ii, c – i, d – iv
(D) a – ii, b – i, c – iii, d – iv

Answer: (A) a – i, b – iii, c – iv, d – ii · The council's preliminary key

Q50 TS EAPCET 2024 · 11 May · Shift 1 MCQ

The range of gravitational forces is

(A) 10^{-15} m
(B) 10^{-39} m
(C) infinity
(D) 10^{-2} m

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

Q51 TS EAPCET 2024 · 11 May · Shift 1 MCQ

In a simple pendulum experiment for the determination of acceleration due to gravity, the error in the measurement of the length of the pendulum is 1% and the error in the measurement of the time period is 2%. The error in the estimation of acceleration due to gravity is

(A) 1%
(B) 3%
(C) 4%
(D) 5%

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

Q52 TS EAPCET 2024 · 10 May · Shift 1 MCQ

Which of the following statements regarding nature of physical laws is NOT correct?

(A) All conserved quantities are necessarily scalars
(B) The laws of nature do not change with time
(C) The laws of nature are same everywhere in the universe
(D) The law of gravitation is the same both on the moon and the earth

Answer: (A) All conserved quantities are necessarily scalars · The council's preliminary key

Q53 TS EAPCET 2024 · 10 May · Shift 1 MCQ

The internal and external diameters of a hollow cylinder measured with vernier calipers are (5.73 ± 0.01) cm and (6.01 ± 0.01) cm respectively. Then the thickness of the cylinder wall is

(A) (0.28 ± 0.01) cm
(B) (0.28 ± 0.02) cm
(C) (0.14 ± 0.02) cm
(D) (0.14 ± 0.01) cm

Answer: (D) (0.14 ± 0.01) **cm** · Checked by our team

Q54 TS EAPCET 2024 · 10 May · Shift 2 MCQ

A capacitor of capacitance $(4.0 \pm 0.2)\ \mu\text{F}$ is charged to a potential of $(10.0 \pm 0.1)\ \text{V}$. The charge on the capacitor is

(A) $2.5\ \mu\text{C} \pm 3\%$
(B) $2.5\ \mu\text{C} \pm 6\%$
(C) $40\ \mu\text{C} \pm 3\%$
(D) $40\ \mu\text{C} \pm 6\%$

Answer: (D) $40\ \mu\text{C} \pm 6\%$ · The council's preliminary key

Q55 TS EAPCET 2024 · 9 May · Shift 1 MCQ

Regarding fundamental forces in nature, the correct statement is

(A) electromagnetic forces are always attractive
(B) electromagnetic forces are always repulsive
(C) gravitational forces are always attractive
(D) strong nuclear forces are always repulsive

Answer: (C) gravitational forces are always attractive · The council's preliminary key

Q56 TS EAPCET 2024 · 9 May · Shift 1 MCQ

The equation of motion of a damped oscillator is given by $m\frac{d^2x}{dt^2} + b\frac{dx}{dt} + kx = 0$. The dimensional formula of $\frac{b}{\sqrt{km}}$ is

(A) $[\text{M}^0\text{L}^0\text{T}^0]$
(B) $[\text{M}^0\text{L}^1\text{T}^{-2}]$
(C) $[\text{M}^1\text{L}^1\text{T}^{-2}]$
(D) $[\text{M}^1\text{L}^2\text{T}^{-2}]$

Answer: (A) $[\text{M}^0\text{L}^0\text{T}^0]$ · The council's preliminary key

Q57 TS EAPCET 2024 · 9 May · Shift 2 MCQ

The related effort to derive the properties of a bigger, more complex system from the properties and interactions of its constituent simpler parts is

(A) Unification
(B) Reductionism
(C) Classical approach
(D) Quantum approach

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

Q58 TS EAPCET 2024 · 9 May · Shift 2 MCQ

The error in the measurement of resistance, when (10 ± 0.5) A current passing through it produces a potential difference of (100 ± 6) V across it is

(A) $1\ \%$
(B) $5.5\ \%$
(C) $6.5\ \%$
(D) $11\ \%$

Answer: (D) $11\ \%$ · The council's preliminary key

Q59 AP EAPCET 2023 · 19 May · Shift 1 MCQ

The potential difference across the ends of a conductor is $(50 \pm 3)\mathrm{V}$ and the current through it is $(5 \pm 0.1)\mathrm{A}$. The percentage error in the measurement of resistance of the conductor is

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

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

Q60 AP EAPCET 2023 · 18 May · Shift 1 MCQ

A certain physical quantity is calculated from the formula $\frac{\pi}{3}(a^2 - b^2)hd$, where a, b and h are all lengths and d is density. The physical quantity being calculated is

(A) velocity
(B) volume
(C) mass
(D) acceleration

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

Q61 AP EAPCET 2023 · 18 May · Shift 2 MCQ

The density of a substance is 4 g/cc in a system in which unit of length is 5 cm and unit of mass is 20 g. The density of the substance in CGS system is

(A) 16 units
(B) 40 units
(C) 25 units
(D) 50 units

Answer: (C) 25 units · The council's preliminary key

Q62 AP EAPCET 2023 · 17 May · Shift 1 MCQ

The number of significant figures in 4.870 m is

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

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

Q63 AP EAPCET 2023 · 17 May · Shift 2 MCQ

The dimensional formula of a physical quantity represented by $\frac{e^2}{4\varepsilon_o h}$ is

[e is the charge of electron, ε_o is the permittivity of free space, and h is the Planck's constant]

(A) $[M^1L^1T^{-1}]$
(B) $[L^1T^{-1}]$
(C) $[M^1L^0T^{-1}]$
(D) $[M^1L^1T^{-2}]$

Answer: (B) $[L^1T^{-1}]$ · The council's preliminary key

Q64 AP EAPCET 2023 · 16 May · Shift 1 MCQ

Wrongly matched pair among the following

(A) Galileo Galile – Law of inertia
(B) Michael Faraday – Law of electromagnetic induction
(C) Rudolf Hertz – Generation of electromagnetic waves
(D) C. V. Raman – Wave theory of light

Answer: (D) C. V. Raman – Wave theory of light · The council's preliminary key

Q65 AP EAPCET 2023 · 16 May · Shift 1 MCQ

The strongest force in nature is

(A) nuclear force
(B) gravitational force
(C) coulomb force
(D) frictional force

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

Q66 AP EAPCET 2023 · 16 May · Shift 2 MCQ

If speed of light in vacuum $(3 \times 10^8\ \mathrm{ms}^{-1})$, acceleration due to gravity $(10\ \mathrm{ms}^{-2})$ and mass of electron $(9.1 \times 10^{-31}\ \mathrm{kg})$ are taken as fundamental physical quantities, then the unit of time in this system is

(A) $3 \times 10^3\ \mathrm{s}$
(B) $5 \times 10^{-19}\ \mathrm{s}$
(C) $5 \times 10^{19}\ \mathrm{s}$
(D) $3 \times 10^7\ \mathrm{s}$

Answer: (D) $3 \times 10^7\ \mathrm{s}$ · The council's preliminary key

Q67 AP EAPCET 2023 · 15 May · Shift 1 MCQ

Among the following the least unit for length is

(A) parsec
(B) nanometer
(C) fermi
(D) angstrom

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

Q68 AP EAPCET 2023 · 15 May · Shift 2 MCQ

Among the following, the unit of permeability is NOT represented by

(A) henry/metre
(B) weber/ampere
(C) ohm-second/metre
(D) volt-second/metre^2

Answer: (D) volt-second/metre^2 · The council's preliminary key

Q69 TS EAMCET 2023 · 14 May · Shift 1 MCQ

The ratio of the relative strengths of strong and weak nuclear forces is

EdLoop EAPCET

(A) 10^{13}
(B) 10^{26}
(C) 10^{39}
(D) 10^{11}

Answer: (A) 10^{13} · The council's preliminary key

Q70 TS EAMCET 2023 · 14 May · Shift 1 MCQ

The number of significant figures in the measurement of a length 0.079000 m is

(A) 7
(B) 2
(C) 5
(D) 4

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

Q71 TS EAMCET 2023 · 14 May · Shift 2 MCQ

Match the following.

(Take the relative strength of the strongest fundamental forces in nature as one)

I: Fundamental forces in nature	II: Relative strength
A) Strong nuclear force	e) 10^{-2}
B) Weak nuclear force	f) 1
C) Electromagnetic force	g) 10^{10}
D) Gravitational force	h) 10^{-13}
	i) 10^{-39}

(A) A-f, B-i, C-e, D-h
(B) A-f, B-h, C-e, D-g
(C) A-f, B-h, C-e, D-i
(D) A-f, B-e, C-h, D-i

Answer: (C) A-f, B-h, C-e, D-i · The council's preliminary key

Q72 TS EAMCET 2023 · 14 May · Shift 2 MCQ

A physical quantity X is given by $X = \frac{2k^3l^2}{m\sqrt{n}}$. The percentage errors in the measurements of k, l, m and n are 1%, 2%, 3% and 4% respectively. The value of X is uncertain by

EdLoop EAPCET

(A) 8%
(B) 10%
(C) 12%
(D) 14%

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

Q73 TS EAMCET 2023 · 13 May · Shift 1 MCQ

Gravitational forces operate among which of the following?

(A) All objects in the universe
(B) Some elementary particles only
(C) Charged particles only
(D) Nucleons only

Answer: (A) All objects in the universe · The council's preliminary key

Q74 TS EAMCET 2023 · 13 May · Shift 1 MCQ

Velocities (V) and accelerations (a) in two systems of units 1 and 2 are related as $V_2 = \frac{n}{m^2}V_1$ and $a_2 = \frac{a_1}{mn}$ respectively. Here m and n are constants. Dimensionally relations between distances (S_1 and S_2) and times (t_1 and t_2) in the two systems are respectively

(A) $S_2 = \left(\frac{n}{m}\right)^3 S_1$ & $t_2 = \frac{n^2}{m}t_1$
(B) $S_2 = \left(\frac{n}{m}\right)^3 S_1$ & $t_2 = \frac{m}{n^2}t_1$
(C) $S_2 = \frac{m}{n^2}S_1$ & $t_2 = \frac{m^2}{n^4}t_1$
(D) $S_2 = \frac{n^2}{m}S_1$ & $t_2 = \frac{m^2}{n^4}t_1$

Answer: (A) $S_2 = \left(\frac{n}{m}\right)^3 S_1$ & $t_2 = \frac{n^2}{m}t_1$ · The council's preliminary key

Q75 TS EAMCET 2023 · 13 May · Shift 2 MCQ

The ratio of relative strengths of the gravitational force and the electromagnetic force between two charged particles is

(A) 10^{-11}
(B) 10^{-39}
(C) 10^{-37}
(D) 10^{-41}

Answer: (C) 10^{-37} · The council's preliminary key

Q76 TS EAMCET 2023 · 13 May · Shift 2 MCQ

The efficiency of an engine is given by $\eta = \frac{\alpha\beta}{\sin\theta} \cdot \log_e \frac{\beta x}{kT}$, where α and β are constants. If T is the absolute temperature, k - Boltzmann constant, θ-angular displacement and x is distance, then the incorrect statement is

(A) Dimensions of β are same as that of force
(B) Dimensions of $\alpha^{-1}x$ are same as that of energy
(C) Dimensions of $\eta^{-1}\sin\theta$ are same as that of $\alpha\beta$
(D) Dimensions of α are same as that of β

Answer: (D) Dimensions of α are same as that of β · The council's preliminary key

Q77 TS EAMCET 2023 · 12 May · Shift 1 MCQ

If F_1, F_2 and F_3 are the relative strengths of the gravitational, the weak nuclear and the electromagnetic forces respectively, then

(A) $F_1 > F_2 > F_3$
(B) $F_1 < F_2 < F_3$
(C) $F_1 = F_2 = F_3$
(D) $F_2 > F_3 > F_1$

Answer: (B) $F_1 < F_2 < F_3$ · The council's preliminary key

Q78 TS EAMCET 2023 · 12 May · Shift 1 MCQ

Which of the following pairs has same dimensions?

(A) Current density and charge density
(B) Angular momentum and linear momentum
(C) Spring constant and surface energy
(D) Force and torque

Answer: (C) Spring constant and surface energy · The council's preliminary key

Q79 TS EAMCET 2023 · 12 May · Shift 2 MCQ

If F_1 and F_2 are the relative strengths of the gravitational and weak nuclear forces respectively, then $\frac{F_2}{F_1}$ is nearly

(A) 100
(B) 10^{39}
(C) 10^{13}
(D) 10^{26}

Answer: (D) 10^{26} · The council's preliminary key

Q80 TS EAMCET 2023 · 12 May · Shift 2 MCQ

The number of significant figures in 3.78×10^{22} kg is

EdLoop EAPCET

(A) 19
(B) 25
(C) 3
(D) 22

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

Q81 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

Which of the following statements is true?

(A) The range for weak nuclear force is shortest among all four forces
(B) The range for electromagnetic force is smaller than that for gravitation force
(C) The relative strength of gravitational force is higher than that for weak nuclear force
(D) The relative strength for weak nuclear force is larger than that for strong nuclear force

Answer: (A) The range for weak nuclear force is shortest among all four forces · The council's preliminary key

Q82 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

If the velocity of light C, the gravitational constant G and Planck's constant h are chosen as the fundamental units, the dimension of density in the new system is

(A) $C^3G^{-2}h^1$
(B) $C^5G^{-2}h^{-1}$
(C) $C^{-3/2}G^{-1/2}h^{1/2}$
(D) $C^{9/2}G^{-1/2}h^{-1/2}$

Answer: (B) $C^5G^{-2}h^{-1}$ · The council's preliminary key

Q83 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

Among the fundamental forces, which one of the following is the strongest force

(A) Electromagnetic force
(B) Strong Nuclear force
(C) Gravitational force
(D) Weak nuclear force

Answer: (B) Strong Nuclear force · The council's preliminary key

Q84 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

Two charged particles of mass 1gm each are placed 1m apart. If each of these possesses 1 femto coulomb of charge, then the dominant force of interaction between them is

(A) Gravitational
(B) Electrostatic
(C) Weak
(D) Strong

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

Q85 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

A physical quantity S is related to four observables a, b, c, d as $S = \frac{\sqrt{a}\,b}{c^3 d^4}$. If the percentage errors of measurement in a, b, c, d are 2%, 1%, 1% and 1% respectively, then percentage error in the quantity S is

(A) 6%
(B) 8%
(C) 9%
(D) 10%

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

Q86 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

An aircraft is flying at a height of 'H' above the ground and at a speed of 'V'. The maximum angle subtended at a ground observation point by the aircraft after time T is

(A) $\tan^{-1}\left(\frac{VT}{H}\right)$
(B) $\tan^{-1}\left(\frac{VT}{2H}\right)$
(C) $2\tan^{-1}\left(\frac{2VT}{H}\right)$
(D) $2\tan^{-1}\left(\frac{VT}{2H}\right)$

Answer: (D) $2\tan^{-1}\left(\frac{VT}{2H}\right)$ · Checked by our team

Q87 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

Select the physical quantities in Column-I and Column-II having same dimensions.
Column-I
A) Entropy
B) Young's modulus of elasticity
C) Angular momentum
D) Decay constant
Column-II
I) Angular velocity
II) Boltzmann constant

III) Energy density
IV) Planck's Constant
The correct match is

(A) A-III, B-IV, C-I, D-II
(B) A-IV, B-I, C-III, D-II
(C) A-II, B-III, C-IV, D-I
(D) A-II, B-IV, C-III, D-II

Answer: (C) A-II, B-III, C-IV, D-I · The council's preliminary key

---

Q88 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

Choose the correct statement from following.

(A) Not all basic laws of physics are universal
(B) Conservation laws have a deep connection with symmetries of nature
(C) There are four to six fundamental forces in nature that govern the diverse phenomena of the world
(D) Physics can generate new technology but new physics cannot come out from technology

Answer: (B) Conservation laws have a deep connection with symmetries of nature · The council's preliminary key

---

Q89 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

If E and E_0 denote energies at time t and t_0 respectively, and L and L_0 distance from some point at t and t_0 respectively, then which of the following equations can be declared to be incorrect on dimensional grounds

A) $E = \dfrac{2E_0L}{L_0}$
B) $E = E_0e^{-2L/L_0}$
C) $E = 2Le^{-L/E_0}$
D) $E = 2(E_0/L_0) \times e^{-L/L_0}$

(A) A, B only
(B) A, C only
(C) A, C, D only
(D) C, D only

Answer: (D) C, D only · The council's preliminary key

Q90 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

Which of the following interaction is responsible for beta decay?

(A) Gravitational
(B) Weak
(C) Electromagnetic
(D) Strong

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

Q91 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

In a RC circuit, where R is resistance and C is capacitance which of the following has the dimension of time.

(A) R/C
(B) C/R
(C) $\sqrt{RC}$
(D) RC

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

Q92 AP EAPCET 2022 · 8 Jul · Shift 1 MCQ

$[\mathrm{ML^2T^{-2}K^{-1}}]$ is the dimensional formula of the physical quantity

(A) Boltzmann constant
(B) Specific heat capacity
(C) Thermal expansion coefficient
(D) Latent heat

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

Q93 AP EAPCET 2022 · 8 Jul · Shift 2 MCQ

The two principal thrusts in physics are

(A) Diversification and complexification
(B) Unification and simplification
(C) Unification and reduction
(D) Diversification and simplification

Answer: (C) Unification and reduction · The council's preliminary key

Q94 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

The number of significant figures in quantity 0.00005041 J is

(A) 9
(B) 4
(C) 3
(D) 10

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

Q95 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

A physical quantity P is related to four observables a, b, c, and d as $P = \frac{\sqrt{ab} \cdot d^{\alpha}}{\sqrt{C}}$ (α is constant) The percentage errors in a, b, c and d are 0.5% in each. If the percentage error in P is 2% , then α is

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

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

Q96 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

Which of the following is the fundamental force in nature?

(A) Normal force
(B) Frictional force
(C) Spring force
(D) Strong nuclear force

Answer: (D) Strong nuclear force · The council's preliminary key

Q97 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

The expressions below give current I through an electronic component as a function of applied potential V. I_o and V_o are constants having dimensions of current and potential respectively. Which of the following are dimensionally incorrect?

a) $I = I_o \left| \left(e^{\frac{2V}{V_o}} + 1 \right) \right|$
b) $I = I_o \left| \left(e^{\frac{V}{2V_o}} - 1 \right) \right|$
c) $I = I_o V_o \left| \left(e^{\frac{V}{V_o}} - 1 \right) \right|$
d) $I = I_o \left(\frac{V}{V_o} \right) \left| \left(e^{\frac{V}{V_o}} - 1 \right) \right|$

(A) a
(B) b
(C) c
(D) d

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

Q98 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

The energy E of a system is a function of time t and is given by $E(t) = \alpha t - \beta t^3$ where α and β are constants. The dimensions of α and β are

(A) $[\mathrm{ML^2T^{-1}}]$ and $[\mathrm{ML^2T}]$
(B) $[\mathrm{LT^{-1}}]$ and $[\mathrm{LT}]$
(C) $[\mathrm{ML^2T^{-3}}]$ and $[\mathrm{ML^2T^{-5}}]$
(D) $[\mathrm{MLT^{-1}}]$ and $[\mathrm{MLT}]$

Answer: (C) $[\mathrm{ML^2T^{-3}}]$ and $[\mathrm{ML^2T^{-5}}]$ · The council's preliminary key

Q99 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

If the dimensional formula of '(Energy $\times$ speed)' is $[\mathrm{M^aL^bT^c}]$ then a, b and c are

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

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

Q100 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

If N_A, N_B and N_C are the number of significant figures in A = 0.001204 m, B = 43120000 m and c = 1.200 m respectively then

(A) $N_A = N_B = N_C$
(B) $N_A > N_B > N_C$
(C) $N_A < N_B < N_C$
(D) $N_A > N_B < N_C$

Answer: (A) $N_A = N_B = N_C$ · The council's preliminary key

Q101 AP EAPCET 2022 · 4 Jul · Shift 2 MCQ

In SI units, $\mathrm{kg\,m^2\,s^{-2}}$ is equivalent to which of the following?

(A) newton
(B) watt
(C) joule
(D) pascal

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

Q102 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

Match the following?
Column-I
a) Capacitance
b) Magnetic Induction
c) Inductance
d) Resistance
Column-II
i) $\text{volt}\,(\text{ampere})^{-1}$
ii) $\text{volt second}\,(\text{ampere})^{-1}$
iii) $\text{newton}\,(\text{ampere})^{-1}\,(\text{metre})^{-1}$
iv) $\text{coulomb}^2\,(\text{joule})^{-1}$

(A) (a - ii), (b - iii), (c - iv), (d - i)
(B) (a - iv), (b - iii), (c - ii), (d - i)
(C) (a - iii), (b - iv), (c - i), (d - ii)
(D) (a - iv), (b - i), (c - ii), (d - iii)

Answer: (B) (a - iv), (b - iii), (c - ii), (d - i) · The council's preliminary key

Q103 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

When two resistors of resistances $R_1 = (200 \pm 2)\,\Omega$ and $R_2 = (400 \pm 4)\,\Omega$ are connected in series, the equivalent resistance of the combination is _____

(A) $(800 \pm 7)\,\Omega$
(B) $(600 \pm 2)\,\Omega$
(C) $(600 \pm 6)\,\Omega$
(D) $(200 \pm 2)\,\Omega$

Answer: (C) $(600 \pm 6)\,\Omega$ · The council's preliminary key

Q104 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

The book "Pisces of Physics" has been written by _____

(A) Newton
(B) Einstein
(C) Archimedes
(D) Galileo

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

Q105 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

Which quantity among the following has neither units nor dimensions?

(A) Relative velocity
(B) Relative density
(C) Angle
(D) Energy

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

Q106 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

Which of the following pairs of physical quantities possess same dimension?

(A) Force and surface tension
(B) Frequency and velocity gradient
(C) Angular speed and solid angle
(D) Stefan's constant and Planck's constant

Answer: (B) Frequency and velocity gradient · The council's preliminary key

Q107 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

Zero error belongs to the category of:

(A) Constant errors
(B) Instrumental errors
(C) Personal errors
(D) Random errors

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

Q108 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

Unification of weak and electromagnetic interactions was done by _____

EdLoop EAPCET

(A) Einstein
(B) Raman
(C) Salam
(D) Hubble

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

Q109 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

In an experiment, four quantities a, b, c, d are measured with percentage errors 2%, 1%, 3% and 5% respectively. Quantity P is measured as $P = \frac{a^2b^2}{cd}$. Find the percentage error in measuring P.

(A) 10%
(B) 15%
(C) 14%
(D) 12%

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

Q110 AP EAPCET 2021 · 23 Aug · Shift 2 MCQ

The volume of a liquid is proportional to _____, given its density ρ, viscosity η and t the time of flow through a capillary tube of length L and radius R, with a pressure difference P across its ends

(A) $\frac{P^2R^2t}{\eta L}$
(B) $\frac{PR^4}{\eta Lt}$
(C) $\frac{PR^4t}{\eta L}$
(D) $\frac{P^2R^2t}{\eta L^2}$

Answer: (C) $\frac{PR^4t}{\eta L}$ · The council's preliminary key

Q111 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

Which year was declared as the International year of physics?

(A) 2002
(B) 2003
(C) 2005
(D) 2007

Answer: (C) 2005 · The council's preliminary key

Q112 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

One angstrom (Å) is equal to:

(A) 10^{-6} mm
(B) 10^{-7} mm
(C) 10^{-8} mm
(D) 10^{-9} mm

Answer: (B) 10^{-7} mm · The council's preliminary key

Q113 AP EAPCET 2021 · 20 Aug · Shift 2 MCQ

The dimensions of stress is _____

(A) $[ML^{-1}T^{-2}]$
(B) $[ML^{-3}T^{-1}]$
(C) $[ML^{2}T^{-2}]$
(D) $[ML^{-3}T^{-2}]$

Answer: (A) $[ML^{-1}T^{-2}]$ · The council's preliminary key

Q114 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

The speed of ripples (v) on water surface depends on surface tension (σ), density (ρ), and wavelength (λ). Then the square of speed (v) is proportional to _____

(A) $\frac{\sigma}{\rho\lambda}$
(B) $\frac{\rho}{\sigma\lambda}$
(C) $\frac{\lambda}{\sigma\rho}$
(D) $\sqrt{\frac{\rho\lambda}{\sigma}}$

Answer: (A) $\frac{\sigma}{\rho\lambda}$ · The council's preliminary key

Q115 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

The strongest force among the following forces in nature is

(A) Electromagnetic force
(B) Weak Nuclear force
(C) Gravitational force
(D) Strong Nuclear force

Answer: (D) Strong Nuclear force · The council's preliminary key

Q116 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

Consider a series of measurements of the length of a box in an experiment. The readings are 2.4 m, 2.5 m, 2.6 m, 2.8 m, 3.0 m. What would be the relative error?

(A) 0.110
(B) 0.089
(C) 0.079
(D) 0.072

Answer: (D) 0.072 · The council's preliminary key

Q117 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

Which of the following is NOT a fundamental force in nature?

(A) Weak Force
(B) Gravity
(C) Friction
(D) Electromagnetic

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

Q118 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

The error in the measurement of the length and the breadth of a rectangular table is $1\,\%$. If the length and breadth of the table are $1\ \mathrm{m}$ and $50\ \mathrm{cm}$ respectively, then the area of the table including error is

(A) $(0.5 \pm 0.1)\ \mathrm{m}^2$
(B) $(0.5 \pm 0.01)\ \mathrm{m}^2$
(C) $(5000 \pm 10)\ \mathrm{cm}^2$
(D) $(5000 \pm 1)\ \mathrm{cm}^2$

Answer: (B) $(0.5 \pm 0.01)\ \mathrm{m}^2$ · The council's preliminary key

Q119 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

Consider an expression $QV = kPTL^{\alpha}$ where V, P, T, L are volume, pressure, time and length respectively. The quantity [Q] has dimension $\mathrm{ML^{-1}T^{-1}}$. k is dimensionless constant. The value of integer α is:

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

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

Q120 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

Which of the following statement is correct?

(A) Electromagnetic force is short ranged
(B) Relative strength of gravitational force is higher than that of weak nuclear force
(C) Range of the weak nuclear force is smaller than that of strong nuclear force
(D) Relative strength of strong nuclear force may or may not be higher than that of electromagnetic force

Answer: (C) Range of the weak nuclear force is smaller than that of strong nuclear force · The council's preliminary key

---

Q121 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

If ε_0 and μ_0, represent the permittivity and permeability of free space respectively, then the dimension of the product $\varepsilon_0\mu_0$ is,

(A) $M^0L^{-2}T^2$
(B) $M^0L^2T^{-2}$
(C) M^0LT^{-1}
(D) $M^0L^{-1}T$

Answer: (A) $M^0L^{-2}T^2$ · The council's preliminary key

Q122 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

Which of the following statement is incorrect?

(A) Conservation laws have deep connection with symmetries of nature
(B) Weak nuclear force is weakest among all fundamental forces of nature
(C) A conservation law is a hypothesis based on observations and experiments
(D) In a nuclear process mass gets converted to energy or vice versa

Answer: (B) Weak nuclear force is weakest among all fundamental forces of nature · The council's preliminary key

---

Q123 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

The dimensions of σb^4 where 'σ' is Stefan's constant and 'b' is Wien's constant are

(A) $[M^0L^0T^0]$
(B) $[ML^4T^{-3}]$
(C) $[ML^{-2}T]$
(D) $[ML^6T^{-3}]$

Answer: (B) $[ML^4T^{-3}]$ · The council's preliminary key

Q124 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

The ratio (E/W) of relative strength of electromagnetic force (E) to weak nuclear force (W) is

(A) 10^{-11}
(B) 10^{11}
(C) 10^{20}
(D) 10^{-20}

Answer: (B) 10^{11} · The council's preliminary key

Q125 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

Consider a physical quantity Z expressed as $Z = \frac{AB^{1/2}}{C^2}$. If the relative error in the magnitudes of A, B and C is 1% then the relative error in Z will be

(A) 0.5%
(B) 3.5%
(C) 1%
(D) $2\sqrt{2}\%$

Answer: (B) 3.5% · The council's preliminary key

Q126 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

The physical quantities that have the same dimension are _____

(A) Couple of force and work
(B) Force and power
(C) Latent heat and specific heat
(D) Work and power

Answer: (A) Couple of force and work · The council's preliminary key

Q127 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

The ratio of the strengths of the four fundamental forces in nature, $\mathrm{F_G} : \mathrm{F_N} : \mathrm{F_E} : \mathrm{F_W} =$

(A) $1 : 10^{26} : 10^{36} : 10^{38}$
(B) $1 : 10^{36} : 10^{26} : 10^{38}$
(C) $1 : 10^{38} : 10^{36} : 10^{26}$
(D) $10^{38} : 1 : 10^{26} : 10^{36}$

Answer: (C) $1 : 10^{38} : 10^{36} : 10^{26}$ · The council's preliminary key

Q128 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

Which of the following is not a unit of time?

(A) Lunar month
(B) Light year
(C) Leap year
(D) Microsecond

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

Q129 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

Which among the following has dimensions of charge?

(A) $\varepsilon_o \vec{E}/\vec{ds}$
(B) $\varepsilon_o \vec{E} \cdot \vec{ds}$
(C) $\frac{\mu_o}{\varepsilon_o} \vec{E} \cdot \vec{ds}$
(D) $\frac{\varepsilon_o}{\mu_o} \vec{E} \cdot \vec{ds}$

Answer: (B) $\varepsilon_o \vec{E} \cdot \vec{ds}$ · The council's preliminary key

Q130 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

Which of the following statement is correct?
A) Becquerel, who discovered natural radioactivity, belongs to France
B) Marconi, who discovered wireless telegraphy, was an American
C) Newton was an American, who discovered the laws of motion
D) Einstein belongs to England, who simplifies the laws of photoelectric effects

(A) A
(B) B
(C) C
(D) D

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

Q131 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

The S.I. unit of length is "meter". Suppose we adopt a new unit of length which equals x meter. Then, the area of $1\ \mathrm{m}^2$ expressed in terms of new unit has a magnitude _____

(A) x
(B) x^2
(C) $\frac{1}{x}$
(D) $\frac{1}{x^2}$

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

Q132 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

The unit of magnetic induction is _____

(A) $\mathrm{Wb\ m^{-2}}$
(B) $\mathrm{Wb\ m^{-1}}$
(C) $\mathrm{Wb\ A}$
(D) Wb

Answer: (A) $\mathrm{Wb\ m^{-2}}$ · The council's preliminary key

Q133 AP EAMCET 2020 · 18 Sep · Shift 1 MCQ

Choose the physical quantity pair with the same dimensions

(A) angular momentum and work
(B) work and torque
(C) potential energy and linear momentum
(D) kinetic energy and velocity

Answer: (B) work and torque · The council's preliminary key

Q134 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

To estimate 'g' from $g = 4\pi^2 \frac{L}{T^2}$, error in measurement of L is $\pm 2\,\%$ and error in measurement of T is $\pm 3\,\%$. The error in estimated 'g' will be

(A) $\pm 8\,\%$
(B) $\pm 5\,\%$
(C) $\pm 3\,\%$
(D) $\pm 6\,\%$

Answer: (A) $\pm 8\,\%$ · The council's preliminary key

Q135 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

Weak nuclear force always operates between

(A) Electrons and neutrino
(B) Heavier elementary particles
(C) Charged particles
(D) All the objects in the universe

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

Q136 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

Strength of gravitational force compared to strong nuclear force = _____

EdLoop EAPCET

(A) 10^{-39}
(B) 10^{-13}
(C) 10^{-2}
(D) 1

Answer: (A) 10^{-39} · The council's preliminary key

Q137 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

Dimensions of ε_0 are _____

(A) $\mathrm{M^{-1}L^{-3}T^{4}A^{2}}$
(B) $\mathrm{M^{0}L^{-3}T^{3}A^{3}}$
(C) $\mathrm{M^{-1}L^{-3}T^{3}A}$
(D) $\mathrm{M^{-1}L^{-3}TA^{2}}$

Answer: (A) $\mathrm{M^{-1}L^{-3}T^{4}A^{2}}$ · The council's preliminary key

Q138 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

Find the correct statement

(A) photon carry some momentum because they have a finite rest mass
(B) electromagnetic force is weaker than weak nuclear force but stronger than gravitational force
(C) weak nuclear force is responsible for the stability of nuclei
(D) electromagnetic force acts over large distances and does not need any intervening medium

Answer: (D) electromagnetic force acts over large distances and does not need any intervening medium · Official TGCHE final key

Q139 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

The dimension of $\frac{E^2}{\mu_0}$ in mass (M), length (L) and time (T) is

(E= Electric field, μ_0 = permeability of free space)

(A) $[\mathrm{M^{2}L^{3}T^{-2}A^{2}}]$
(B) $[\mathrm{MLT^{-4}}]$
(C) $[\mathrm{ML^{3}T^{-2}}]$
(D) $\mathrm{ML^{4}T^{-4}}$

Answer: (B) $[\mathrm{MLT^{-4}}]$ · Official TGCHE final key

Q140 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

Identify the incorrect statement

(A) All conserved quantities are not necessarily scalars
(B) The law of conservation of energy is valid only in macroscopic domain
(C) Weak nuclear force operates in the range of $\sim 10^{-16}\,\mathrm{m}$
(D) Laws of nature do not change with time

Answer: (B) The law of conservation of energy is valid only in macroscopic domain · Official TGCHE final key

Q141 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

In an experiment the angles are required to be measured using an instrument in which 29 divisions of the main scale exactly coincide with the 30 divisions of the vernier scale. If the smallest division of the main scale is half- a degree ($= 0.5^0$), then the least count of the instrument is:

(A) half minute
(B) one degree
(C) half degree
(D) one minute

Answer: (D) one minute · Official TGCHE final key

Q142 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

Let G, W, E and S be relative strength of gravitational, weak-nuclear, electromagnetic and strong-nuclear forces respectively. The correct statement is

(A) $S > W > E > G$
(B) $E > W > S > G$
(C) $S > E > W > G$
(D) $S > E > G > W$

Answer: (C) $S > E > W > G$ · Official TGCHE final key

Q143 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

What is the dimension of $\frac{1}{\mu_0 \varepsilon_0}$?
(μ_0 = magnetic permeability
ε_0 = permittivity of free space)

(A) L^2T^{-2}
(B) LT^{-1}
(C) L^2T^2
(D) LT^2

Answer: (A) L^2T^{-2} · Official TGCHE final key

Q144 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

The long range force experienced by a neutral particle with a finite mass.

(A) Gravitational force
(B) Weak force
(C) Electromagnetic force
(D) Strong force

Answer: (A) Gravitational force · Official TGCHE final key

Q145 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

The dimension of angular momentum in mass (M), length (L) and time (T) is:

(A) MLT^{-1}
(B) $\mathrm{ML}^{-1}\mathrm{T}^{-1}$
(C) $\mathrm{ML}^{2}\mathrm{T}^{-1}$
(D) $\mathrm{ML}^{-1}\mathrm{T}^{-2}$

Answer: (C) $\mathrm{ML}^{2}\mathrm{T}^{-1}$ · Official TGCHE final key

Q146 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

Due to an explosion underneath water, a bubble started oscillating. If this oscillation has time period T, which is proportional to $P^{\alpha}S^{\beta}E^{\gamma}$, where P is static pressure, S is density of water and E is total energy of explosion. Determine α, β and γ

(A) $\alpha=\frac{-3}{2},\beta=\frac{1}{3},\gamma=\frac{-5}{6}$
(B) $\alpha=\frac{-5}{6},\beta=\frac{1}{2},\gamma=\frac{1}{3}$
(C) $\alpha=\frac{1}{2},\beta=\frac{-5}{6},\gamma=\frac{7}{4}$
(D) $\alpha=\frac{1}{3},\beta=\frac{3}{2},\gamma=\frac{4}{3}$

Answer: (B) $\alpha=\frac{-5}{6},\beta=\frac{1}{2},\gamma=\frac{1}{3}$ · Official TGCHE final key

Q147 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

In atomic scale the weakest force in nature is

(A) Strong force
(B) Electromagnetic force
(C) Gravitational force
(D) Weak force

Answer: (C) Gravitational force · Official TGCHE final key

EdLoop EAPCET

Q148 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

In five successive measurements, the mass of a ball is measured to be 2.61 g, 2.58 g, 2.40 g, 2.73 g and 2.80 g. The absolute error in the measurement is

(A) 0.09 g
(B) 0.07 g
(C) 0.11 g
(D) 0.13 g

Answer: (C) 0.11 g · Official TGCHE final key

Q149 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

If E and E_0 represent the energies, t and t_0 represent the times, in which of the following is dimensionally correct relation?

(A) $E = E_0 e^{-t}$
(B) $E = E_0 t_0 e^{-t/t_0}$
(C) $E = E_0 t_0 e^{-t^2}$
(D) $E = E_0 e^{-t/t_0}$

Answer: (D) $E = E_0 e^{-t/t_0}$ · Official TGCHE final key

Q150 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

The dominant force experienced by an electron moving in a wire is

(A) Gravitational
(B) Electromagnetic
(C) Strong nuclear
(D) weak nuclear

Answer: (B) Electromagnetic · Official TGCHE final key

Q151 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

If absolute error is 0.05 m for a measured length of 5m. What is the percentage error?

(A) $1\ \%$
(B) $2\ \%$
(C) $3\ \%$
(D) $4\ \%$

Answer: (A) $1\ \%$ · Official TGCHE final key

Q152 TS EAMCET 2019 · 6 May · Shift 1 MCQ

Consider a spongy block of mass 'm' floating on a flowing river. The maximum mass of the block is related to the speed of the river flow (v), acceleration due to gravity (g) and the density of the block (ρ) such that the $m_{max} = kv^x g^y \rho^z$ (k is constant). The values of x, y and z should respectively be (Mass of the spongy block is assumed to vary due to absorption of water by it)

(A) 6, 3, 2
(B) 6, -3, 1
(C) 3, 6, 1
(D) 6, 1, 3

Answer: (B) 6, -3, 1 · Official TGCHE final key

Q153 TS EAMCET 2019 · 4 May · Shift 1 MCQ

A quantity z, to be estimated has a dependency on the variables a, b and c as $z = ab^2c^{-2}$. The percentage of error in the measurement of a, b and c are respectively 2.1%, 1.3% and 2.2%. The percentage of error in the measurement of z would then be

(A) 5.6%
(B) 1.6%
(C) 1.0%
(D) 9.1%

Answer: (D) 9.1% · Official TGCHE final key

Q154 TS EAMCET 2019 · 4 May · Shift 2 MCQ

Identify the correct option.

(A) The range of the gravitational force is large but not infinite.
(B) The range of electromagnetic force is large but lesser than the range of gravitational force.
(C) The range of weak nuclear force is smaller than the range of strong nuclear force, gravitation force and elelctro magnetic force. (sic)
(D) The range of the weak as well as strong nuclear force is of the order of 10^{-10} m

Answer: (C) The range of weak nuclear force is smaller than the range of strong nuclear force, gravitation force and elelctro magnetic force. (sic) · Official TGCHE final key

Q155 TS EAMCET 2019 · 4 May · Shift 2 MCQ

A current carrying conductor obeys Ohm's law ($V = RI$). If the current passing through the conductor is $I = (5 \pm 0.2)$ A and voltage developed is $V = (60 \pm 6)$ V, then find the percentage of error in resistance, R

(A) 18
(B) 6
(C) 14
(D) 2

Answer: (C) 14 · Official TGCHE final key

Q156 TS EAMCET 2019 · 3 May · Shift 1 MCQ

Match the following fundamental forces of nature with their relative strength.
List - I
A) Strong nuclear force
B) Weak nuclear force
C) Electromagnetic force
D) Gravitational force
List - II
I) 10^{-2}
II) 1
III) 10^{-39}
IV) 10^{-13}
The correct match is

(A) A-II, B-IV, C-I, D-III
(B) A-III, B-II, C-IV, D-I
(C) A-II, B-III, C-IV, D-I
(D) A-IV, B-II, C-I, D-III

Answer: (A) A-II, B-IV, C-I, D-III · Official TGCHE final key

Q157 TS EAMCET 2019 · 3 May · Shift 1 MCQ

Identify the incorrect statement among the following.

(A) A true length of 5.678 km has been measured in two experiments as 5.5 km and 5.51 km respectively. The second measurement has more precision.
(B) Lengths of 1 m and 0.5 m have both been measured with the same absolute error of 0.01 m. Both measurements are equally accurate.
(C) The numbers of significant digits in 1.6 and 0.60 are both two.
(D) The number 2.445 can be rounded to two decimal places as 2.45.

Options (2) or (4) were accepted. More than one answer was accepted. · Official TGCHE final key

Q158 TS EAMCET 2019 · 3 May · Shift 2 MCQ

Which of the following represents fundamental forces of nature?

EdLoop EAPCET

(A) Gravitational force; Coulomb's force; Strong surface tension force; Weak Van der Waal's force
(B) Gravitational force; Electromagnetic force; Strong viscous force; Weak nuclear force
(C) Gravitational force; Magnetostatic force; Strong nuclear force; Weak frictional force
(D) Gravitational force; Electromagnetic force; Strong nuclear force; Weak nuclear force

Answer: (D) Gravitational force; Electromagnetic force; Strong nuclear force; Weak nuclear force · Official TGCHE final key

---

Q159 TS EAMCET 2019 · 3 May · Shift 2 MCQ

Match the physical quantities given in List - I with dimensions in List - II.
List - I
A) Gravitational potential
B) Stefan's constant
C) Permittivity
D) Specific heat capacity
List - II
I) $M^0L^2T^{-2}K^{-1}$
II) $M^0L^2T^{-2}$
III) $ML^0T^{-3}K^{-4}$
IV) $M^{-1}L^{-3}T^4I^2$
(The dimensions of mass, length, time, temperature and current are M, L, T, K and I respectively)
The correct match is

(A) A-IV, B-I, C-III, D-II
(B) A-I, B-IV, C-II, D-III
(C) A-III, B-II, C-I, D-IV
(D) A-II, B-III, C-IV, D-I

Answer: (D) A-II, B-III, C-IV, D-I · Official TGCHE final key

---

Q160 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

Assertion (A) : The number 0.00764 has three significant figures.
Reason (R) : If the number is less than 1, the zeros on the right of the decimal point but to the left of the first non-zero digit are not significant.

(A) Both (A) and (R) are true and (R) is the correct explanation of (A)
(B) Both (A) and (R) are true but (R) is not the correct explanation of (A)
(C) (A) is true but (R) is false
(D) (A) is false but (R) is true

Answer: (A) Both (A) and (R) are true and (R) is the correct explanation of (A) · Official APSCHE final key

EdLoop EAPCET

Q161 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

If 1% and 2% are the errors in the measurement of mass and density of a cube respectively, then the error in the measurement of length is

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

Answer: (A) 1% · Official APSCHE final key

Q162 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

If 'A' represents density, 'B' represents velocity, 'C' represents specific heat capacity and 'D' represents wavelength, then the quantity having the dimensions of product of A, B, C and D is

(A) Stefan's constant
(B) Boltzmann constant
(C) Thermal conductivity
(D) Universal gas constant

Answer: (C) Thermal conductivity · Official APSCHE final key

Q163 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

Two intervals of time are measured as $\Delta t_1 = (2.00 \pm 0.02)\,\text{s}$ and $\Delta t_2 = (4.00 \pm 0.02)\,\text{s}$. The value of $\sqrt{(\Delta t_1)(\Delta t_2)}$ with correct significant figures and error is

(A) $(2.828 \pm 0.01)\,\text{s}$
(B) $(2.83 \pm 0.01)\,\text{s}$
(C) $(2.828 \pm 0.0075)\,\text{s}$
(D) $(2.83 \pm 0.0075)\,\text{s}$

Answer: (B) $(2.83 \pm 0.01)\,\text{s}$ · Official APSCHE final key

Q164 AP EAMCET 2019 · 21 Apr · Shift 2 MCQ

N divisions on the main scale of a vernier calipers coincide with (N + 1) divisions of the vernier scale. If each division of main scale is 'a' units, then the least count of the calipers is

(A) $\frac{a}{N}$
(B) a
(C) $\frac{a}{N+1}$
(D) $\frac{Na}{N+1}$

Answer: (C) $\frac{a}{N+1}$ · Official APSCHE final key

Q165 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

If the charge of electron 'e', mass of electron 'm', speed of light in vacuum 'c' and Planck's constant 'h' are taken as fundamental quantities, then the permeability of vacuum 'μ_0' can be expressed as

(A) $\frac{h}{mc^2}$
(B) $\frac{hc}{me^2}$
(C) $\frac{h}{ce^2}$
(D) $\frac{mc^2}{he^2}$

Answer: (C) $\frac{h}{ce^2}$ · Official APSCHE final key

Q166 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

A physical quantity obtained from the ratio of the coefficient of thermal conductivity to the universal gravitational constant has a dimensional formula $\mathrm{M}^{2a}\mathrm{L}^{4b}\mathrm{T}^{2c}\mathrm{K}^{d}$, then the value of $\frac{a+b}{c+b} - d$ is

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

Answer: (D) $+\frac{1}{2}$ · Official APSCHE final key

Q167 TS EAMCET 2018 · 7 May · Shift 1 MCQ

Dimensions of the quantity $\frac{P}{\epsilon_0\mu_0}$, where P is the pressure, ϵ_0 is electric permittivity of free space, μ_0 is permeability of free space, will be

(A) MLT^{-4}
(B) $\mathrm{ML}^2\mathrm{T}^{-2}$
(C) $\mathrm{ML}^3\mathrm{T}^{-3}$
(D) $\mathrm{ML}^2\mathrm{T}^{-4}$

Answer: (A) MLT^{-4} · The council's preliminary key

Q168 TS EAMCET 2018 · 5 May · Shift 1 MCQ

Choose the incorrect statement from the following

(A) Strong nuclear force is a short range force
(B) Weak nuclear force is weakest among gravitational, electromagnetic, weak and strong nuclear forces
(C) Electromagnetic force is a long range force
(D) Gravitational force acts on all objects

Answer: (B) Weak nuclear force is weakest among gravitational, electromagnetic, weak and strong nuclear forces · The council's preliminary key

---

Q169 TS EAMCET 2018 · 5 May · Shift 1 MCQ

If V_o is the volume of a standard unit cell of Germanium crystal containing N_o atoms, then the expression for the mass 'm' of a volume 'V' in terms of V_o, N_o, M_{mol} and N_A is [Here M_{mol} is the molar mass of Germanium and N_A is the Avogadro's constant]

(A) $M_{mol}\frac{V}{V_o}\frac{N_A}{N_o}$
(B) $\frac{N_A}{N_o}\frac{V_o}{V}M_{mol}$
(C) $M_{mol}\frac{V}{V_o}\frac{N_o}{N_A}$
(D) $M_{mol}\frac{V_o}{V}\frac{N_o}{N_A}$

Answer: (C) $M_{mol}\frac{V}{V_o}\frac{N_o}{N_A}$ · The council's preliminary key

---

Q170 TS EAMCET 2018 · 5 May · Shift 2 MCQ

A wooden cubical block of mass $m = 20\ \text{kg}$ is measured within an error of $10\ \text{g}$. Its side length $l = 100\ \text{cm}$ is measured within an error of $1\ \text{mm}$. Then the relative error in the measurement of its density is

(A) 1.8×10^{-2}
(B) 2.6×10^{-2}
(C) 3.5×10^{-3}
(D) 4.8×10^{-3}

Answer: (C) 3.5×10^{-3} · The council's preliminary key

Q171 TS EAMCET 2018 · 4 May · Shift 1 MCQ

A gas satisfies the relation $PV^{5/3} = K$ where P is pressure, V is volume and K is constant. The dimensions of constant K are

(A) $\mathrm{ML^4T^{-2}}$
(B) $\mathrm{ML^2T^{-2}}$
(C) $\mathrm{ML^6T^{-2}}$
(D) $\mathrm{MLT^{-2}}$

Answer: (A) $\mathrm{ML^4T^{-2}}$ · The council's preliminary key

Q172 TS EAMCET 2018 · 4 May · Shift 2 MCQ

Match the entries in column A with those in column B.
A) Unified interaction reducing the number of fundamental forces from four to three
B) Force between two molecules separated by a distance near about the sum of the molecular radii
C) Nuclear binding force
D) Bodies of astronomical proportions
I) Strong interaction
II) Gravitational force
III) Electroweak interaction
IV) Electromagnetic interaction
The correct answer is

(A) A-III, B-IV, C-I, D-II
(B) A-III, B-I, C-II, D-IV
(C) A-III, B-I, C-IV, D-II
(D) A-II, B-I, C-III, D-IV

Answer: (A) A-III, B-IV, C-I, D-II · The council's preliminary key

Q173 TS EAMCET 2018 · 4 May · Shift 2 MCQ

Assertion (A) : Electromagnetic force is enormously strong as compared to gravitational force. Yet, gravity dominates in the large-scale phenomena (e.g. formation of galaxies).
Reason (R) : Existence of positive and negative charges make matter mostly electrically neutral.
Which of the following is true?

(A) Both (A) and (R) are true and (R) is the correct explanation of (A)
(B) Both (A) and (R) are true, but (R) is not the correct explanation of (A)
(C) (A) is true, but (R) is false
(D) (A) is false, but (R) is true

Answer: (A) Both (A) and (R) are true and (R) is the correct explanation of (A) · The council's preliminary key

Q174 TS EAMCET 2018 · 4 May · Shift 2 MCQ

An energy of 13.6 eV is equal to

(A) 0.518×10^{-25} Kcal
(B) 6.04×10^{-25} kWh
(C) 2.17×10^{-10} J
(D) 2.17×10^{-15} kN.m

Answer: (B) 6.04×10^{-25} kWh · The council's preliminary key

Q175 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

If 'A' represents Boltzmann constant, 'B' represents Planck's constant and 'C' represents speed of light in vacuum, then the quantity having the dimensions of $A^4B^{-3}C^{-2}$ is

(A) Universal gas constant
(B) Specific heat capacity
(C) Stefan's constant
(D) Heat energy

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

Q176 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

If $10\ \mathrm{gcms}^{-1} = x\ \mathrm{Ns}$, then the number x is _____

(A) 1×10^{-5}
(B) 1×10^{-4}
(C) 1×10^{-6}
(D) 1×10^{-3}

Answer: (B) 1×10^{-4} · The council's preliminary key

Q177 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

Assertion (A) : Energy per unit volume and angular momentum can be added dimensionally.
Reason (R) : Physical quantities having same dimensions can be added or subtracted.

(A) Both (A) and (R) are true and (R) is the correct explanation of (A)
(B) Both (A) and (R) are true but (R) is not the correct explanation of (A)
(C) (A) is true but (R) is false
(D) (A) is false but (R) is true

Answer: (D) (A) is false but (R) is true · The council's preliminary key

Q178 AP EAMCET 2018 · 23 Apr · Shift 2 MCQ

Match the measurements given in List - I with the number of significant figures given in List - II.
List - I
A) 74.083
B) 0.029

C) 0.002407
D) 2.74×10^7
List - II
I) 3
II) 4
III) 2
IV) 5
The correct answer is

(A) A-IV, B-II, C-III, D-I
(B) A-IV, B-III, C-II, D-I
(C) A-III, B-IV, C-II, D-I
(D) A-I, B-II, C-III, D-IV

Answer: (B) A-IV, B-III, C-II, D-I · The council's preliminary key

---

Q179 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

Two resistances $60.36\ \Omega$ and $30.09\ \Omega$ are connected in parallel. The equivalent resistance is

(A) $20 \pm 0.08\ \Omega$
(B) $20 \pm 0.06\ \Omega$
(C) $20 \pm 0.03\ \Omega$
(D) $20 \pm 0.10\ \Omega$

Answer: (A) $20 \pm 0.08\ \Omega$ · The council's preliminary key

---

Q180 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

In a system, units of mass is A kg, length is B m and time is C s, then the value of 10 N in this system is

(A) $10\,A^{-1}B^{-1}C^{-2}$
(B) $10\,A^{-1}B^{-1}C^{2}$
(C) $10\,ABC^{-2}$
(D) $5A^{-1}B\,C^{2}$

Answer: (B) $10\,A^{-1}B^{-1}C^{2}$ · The council's preliminary key

---

Q181 TS EAMCET 2017 · 12 May · Offline MCQ

A force $\bar{F}$ is applied on a square plate of length L. If the percentage error in the determination of L is 3% and in F is 4%, the permissible error in the calculation of pressure is

EdLoop EAPCET

(A) 13%
(B) 10%
(C) 7%
(D) 12%

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

Q182 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

If A, B, C and D represent velocity, acceleration, inductance and capacitance respectively, then $A^{-1}BCD$ has the dimensions of

(A) Length
(B) Mass
(C) Time
(D) Electric Current

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

Q183 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

It is estimated that each cm^2 of earth receives about 2 calorie of heat energy per minute from the sun. This is called solar constant, the value of solar constant in S.I. units is

(A) $2\ \mathrm{J\,m^2\,s^{-1}}$
(B) $1.4\ \mathrm{Wm^{-2}}$
(C) $2.4\ \mathrm{kWm^{-2}}$
(D) $1.4\ \mathrm{kJm^{-2}\,s^{-1}}$

Answer: (D) $1.4\ \mathrm{kJm^{-2}\,s^{-1}}$ · The council's preliminary key

Q184 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

The radius 'r' of a wire is given by $r=\sqrt{\frac{64IA}{\pi Bv}}$, where I is electric current, B is magnetic field and 'v' is velocity. Then the parameter A in the formula represents _____

(A) Resistance
(B) Resistivity
(C) Capacitance
(D) Conductivity

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

Q185 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

The current in a diode is given by the equation $I=\left(e^{1000V/T}-1\right)$ where 'V' is applied voltage in volt and 'T' is absolute temperature in kelvin. A student measures the current as 11 mA at 300K. If the

error in measuring voltage is $\pm 0.01\ \mathrm{V}$, error in the value of current in mA is

(A) ± 0.4
(B) ± 3
(C) ± 2
(D) ± 1

Answer: (A) ± 0.4 · The council's preliminary key

Q186 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

A physical quantity 'P' is given by $P = \epsilon_0 L \dfrac{\Delta V}{\Delta t}$, where ϵ_0 is electric permittivity, L is length, ΔV is potential difference and Δt is time interval. The dimensional formula of P is same as that of

(A) resistance
(B) electric charge
(C) voltage
(D) electric current

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

Q187 TS EAMCET 2016 · 15 May · Offline MCQ

Force is given by the expression, $F = A\cos(Bx) + C\cos(Dt)$ where x is displacement and t is time. The dimension of $\left(\frac{D}{B}\right)$ is same as that of

(A) Velocity
(B) Velocity gradient
(C) Angular velocity
(D) Angular momentum

Answer: (A) Velocity · Official TGCHE final key

Q188 AP EAMCET 2016 · 29 Apr · Offline MCQ

Match the list - I with list - II
List - I
A) Boltzmann constant
B) Coefficient of viscosity
C) Water equivalent
D) Coefficient of thermal conductivity
List - II
I) $\mathrm{ML^0T^0}$
II) $\mathrm{ML^{-1}T^{-1}}$
III) $\mathrm{MLT^{-3}K^{-1}}$
IV) $\mathrm{ML^2T^{-2}K^{-1}}$
The correct match in the following is

(A) A-III; B-I; C-II; D-IV
(B) A-III; B-II; C-I; D-IV
(C) A-IV; B-II; C-I; D-III
(D) A-IV; B-I; C-II; D-III

Answer: (C) A-IV; B-II; C-I; D-III · The council's preliminary key

Q189 AP EAMCET 2014 · 22 May · Offline MCQ

If C the velocity of light, h Planck's constant and G Gravitational constant are taken as fundamental quantities, then the dimensional formula of mass is

(A) $h^{-1/2}G^{-1/2}C^{0}$
(B) $h^{1/2}C^{1/2}G^{-1/2}$
(C) $h^{-1/2}C^{1/2}G^{-1/2}$
(D) $h^{-1/2}C^{-1/2}G^{-1/2}$

Answer: (B) $h^{1/2}C^{1/2}G^{-1/2}$ · The council's preliminary key

Q190 AP EAMCET 2014 · 22 May · Offline MCQ

Match the following (Take the relative strength of the strongest fundamental forces in nature as one)
A) Fundamental forces in nature: (a) Strong nuclear force, (b) Weak nuclear force, (c) Electromagnetic force, (d) Gravitational force
B) Relative strength: (e) 10^{-2}, (f) 1, (g) 10^{10}, (h) 10^{-13}, (i) 10^{-39}
The correct match is :

(A) (a)-(f), (b)-(i), (c)-(e), (d)-(h)
(B) (a)-(f), (b)-(h), (c)-(e), (d)-(h)
(C) (a)-(f), (b)-(h), (c)-(e), (d)-(i)
(D) (a)-(f), (b)-(e), (c)-(h), (d)-(i)

Answer: (C) (a)-(f), (b)-(h), (c)-(e), (d)-(i) · The council's preliminary key

Q191 AP EAMCET 2013 · 10 May · Offline MCQ

If E, M, J and G respectively denote energy, mass, angular momentum and universal gravitational constant, the quantity, which has the same dimensions as the dimensions of $\frac{EJ^2}{M^5G^2}$ is

(A) Time
(B) Angle
(C) Mass
(D) Length

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

Q192 AP EAMCET 2012 · 12 May · Offline MCQ

The length of a pendulum is measured as 1.01 m and time for 30 oscillations is measured as one minute 3 seconds. Error in length is 0.01 m and error in time is 3 secs. The percentage error in the measurement of acceleration due to gravity is

(A) 1
(B) 5
(C) 10
(D) 15

Answer: (C) 10 · Official APSCHE final key

Q193 AP EAMCET 2011 · 8 May · Offline MCQ

The dimensional formula of $\frac{1}{2}\mu_0 H^2$ (μ_0 - Permeability of free space and H-magnetic field intensity) is :

(A) MLT^{-1}
(B) $\mathrm{ML}^2\mathrm{T}^{-2}$
(C) $\mathrm{ML}^{-1}\mathrm{T}^{-2}$
(D) $\mathrm{ML}^2\mathrm{T}^{-1}$

Answer: (C) $\mathrm{ML}^{-1}\mathrm{T}^{-2}$ · The council's preliminary key

Q194 AP EAMCET 2011 · 8 May · Offline MCQ

Some physical quantities are given in the List I and the related units are given in the List II. Match the correct pairs in the lists :
List I
a) Magnetic field intensity
b) Magnetic flux
c) Magnetic pole strength
d) Magnetic induction
List II
e) A-m
f) Wb m^{-2}
g) Wb
h) Am^{-1}
i) Am^2
The correct match is :

(A) (a)-(e), (b)-(f), (c)-(g), (d)-(i)
(B) (a)-(h), (b)-(g), (c)-(e), (d)-(f)
(C) (a)-(h), (b)-(e), (c)-(i), (d)-(f)
(D) (a)-(f), (b)-(g), (c)-(e), (d)-(h)

Answer: (B) (a)-(h), (b)-(g), (c)-(e), (d)-(f) · The council's preliminary key

Q195 AP EAMCET 2010 · 30 May · Offline MCQ

If the force is given by $\mathrm{F} = at + bt^2$ with t as time. The dimensions of a and b are :

(A) $\mathrm{MLT}^{-4}, \mathrm{MLT}^{-2}$
(B) $\mathrm{MLT}^{-3}, \mathrm{MLT}^{-4}$
(C) $\mathrm{ML}^2\mathrm{T}^{-3}, \mathrm{ML}^2\mathrm{T}^{-2}$
(D) $\mathrm{ML}^2\mathrm{T}^{-3}, \mathrm{ML}^3\mathrm{T}^{-4}$

Answer: (B) $\mathrm{MLT}^{-3}, \mathrm{MLT}^{-4}$ · Official APSCHE final key

EdLoop EAPCET