

NEET UNITS AND MEASUREMENTS — DIMENSIONS OF PHYSICAL QUANTITIES — PYQS

Max. Marks: 72
Questions: 18

Section A (MCQ) — 18 questions

Q.1 The quantities which have the same dimensions as those of solid angle are: [NEET (UG) 2024]

- (1) strain and angle
- (2) stress and angle
- (3) strain and arc
- (4) angular speed and stress

Scan or tap for the full solution



Q.2 The dimensions $[MLT^{-2}A^{-2}]$ belong to the [NEET (UG) 2022]

- (1) Magnetic flux
- (2) Self inductance
- (3) Magnetic permeability
- (4) Electric permittivity

Scan or tap for the full solution



Q.3 Plane angle and solid angle have [NEET (UG) 2022]

- (1) Units but no dimensions
- (2) Dimensions but no units
- (3) No units and no dimensions
- (4) Both units and dimensions

Scan or tap for the full solution



Q.4 The physical quantity that has the same dimensional formula as pressure is [NEET (UG) 2022 (Phase 2)]

- (1) Coefficient of viscosity
- (2) Force
- (3) Momentum
- (4) Young's modulus of elasticity

Scan or tap for the full solution



Q.5 If E and G respectively denote energy and gravitational constant, then $\frac{E}{G}$ has the dimensions of : [NEET (UG) 2021]

- (1) $[M^2][L^{-2}][T^{-1}]$
- (2) $[M^2][L^{-1}][T^0]$
- (3) $[M][L^{-1}][T^{-1}]$
- (4) $[M][L^0][T^0]$

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Q.6 Dimensions of stress are : [NEET (UG) 2020]

- (1) $[ML^2T^{-2}]$
- (2) $[ML^0T^{-2}]$
- (3) $[ML^{-1}T^{-2}]$
- (4) $[MLT^{-2}]$

Scan or tap for the full solution



Q.7 The pair of quantities having same dimensions is [NEET 2013 (Karnataka)]

- (1) Impulse and Surface Tension
- (2) Angular momentum and Work
- (3) Work and Torque
- (4) Young's modulus and Energy

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Q.8 The dimensions of $(\mu_0\epsilon_0)^{-1/2}$ are [AIPMT 2012 (Mains)]

- (1) $[L^{1/2}T^{-1/2}]$
- (2) $[L^{-1}T]$
- (3) $[LT^{-1}]$
- (4) $[L^{1/2}T^{1/2}]$

Scan or tap for the full solution



Q.9 The damping force on an oscillator is directly proportional to the velocity. The units of the constant of proportionality are [AIPMT 2012 (Prelims)]

- (1) $kg\ m\ s^{-1}$
- (2) $kg\ m\ s^{-2}$
- (3) $kg\ s^{-1}$
- (4) $kg\ s$

Scan or tap for the full solution



Q.10 The dimensions of $(\mu_0\epsilon_0)^{-1/2}$ are [AIPMT 2011 (Prelims)]

- (1) $[L^{1/2}T^{-1/2}]$
- (2) $[L^{-1}T]$
- (3) $[LT^{-1}]$
- (4) $[L^{1/2}T^{1/2}]$

Scan or tap for the full solution



Q.11 The dimension of $\frac{1}{2}\epsilon_0 E^2$, where ϵ_0 is permittivity of free space and E is electric field, is [AIPMT 2010 (Prelims)]

- (1) ML^2T^{-2} (2) $ML^{-1}T^{-2}$
 (3) ML^2T^{-1} (4) MLT^{-1}

Scan or tap for the full solution



Q.12 If the dimensions of a physical quantity are given by $M^aL^bT^c$, then the physical quantity will be

[AIPMT 2009]

- (1) velocity if $a = 1, b = 0, c = -1$
 (2) acceleration if $a = 1, b = 1, c = -2$
 (3) force if $a = 0, b = -1, c = -2$
 (4) pressure if $a = 1, b = -1, c = -2$

Scan or tap for the full solution



Q.13 Which two of the following five physical parameters have the same dimensions ?

1. Energy density
2. Refractive index
3. Dielectric constant
4. Young's modulus
5. Magnetic field

[AIPMT 2008]

- (1) 1 and 4 (2) 1 and 5 (3) 2 and 4 (4) 3 and 5

Scan or tap for the full solution



Q.14 Dimensions of resistance in an electrical circuit, in terms of dimension of mass M , of length L , of time T and of current I , would be

[AIPMT 2007]

- (1) $[ML^2T^{-2}]$ (2) $[ML^2T^{-1}I^{-1}]$
 (3) $[ML^2T^{-3}I^{-2}]$ (4) $[ML^2T^{-3}I^{-1}]$

Scan or tap for the full solution



Q.15 The ratio of the dimensions of Planck's constant and that of moment of inertia is the dimensions of

[AIPMT 2005]

- (1) time (2) frequency
 (3) angular momentum (4) velocity

Scan or tap for the full solution



Q.16 The dimensions of universal gravitational constant are

[AIPMT 2004]

- (1) $[M^{-1}L^3T^{-2}]$ (2) $[ML^2T^{-1}]$
 (3) $[M^{-2}L^3T^{-2}]$ (4) $[M^{-2}L^2T^{-1}]$

Scan or tap for the full solution



Q.17 The dimensions of Planck's constant are equal to those of

[AIPMT 2001]

- (1) energy (2) momentum
 (3) angular momentum (4) power

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Q.18 Which pair does not have equal dimensions?

[AIPMT 2000]

- (1) Energy and torque
 (2) Force and impulse
 (3) Angular momentum and Planck constant
 (4) Elastic modulus and pressure

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	1	3	1	4	2	3	3	3	3	3	2
Ques.	12	13	14	15	16	17	18				
Ans.	4	1	3	2	1	3	2				