

## Yakeen NEET 2.0 2026

## Practice Sheet

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## Units and Measurements

- Q1** In a particular system, the unit of length, mass and time are chosen to be 10 cm, 10 g and 0.1 s respectively. The unit of force in this system will be equivalent to;  
 (A) 0.1 N (B) 1 N  
 (C) 10 N (D) 100 N
- Q2** Which of the following is smallest unit?  
 (A) Millimetre (B) Angstrom  
 (C) Fermi (D) Metre
- Q3** If the unit of length, mass and time each be doubled, the unit of work is increased by;  
 (A) 2 times (B) 4 times  
 (C) 6 times (D) No change
- Q4** Which of the following is not a unit of time?  
 (A) Lunar month (B) Light year  
 (C) Leap year (D) Microsecond
- Q5** Which of the following is not the unit of surface tension?  
 (A)  $\frac{N}{m}$  (B)  $\frac{J}{m^2}$   
 (C)  $\frac{kg}{s^2}$  (D)  $\frac{W}{m}$
- Q6** Which of the following is not a unit of energy?  
 (A) Ws (B)  $kg\ m\ s^{-1}$   
 (C) N m (D)  $kg\ m^2\ s^{-2}$
- Q7**  $[ML^{-1}T^{-1}]$  stand for dimension of  
 (A) work  
 (B) torque  
 (C) linear momentum  
 (D) coefficient of viscosity
- Q8** Imagine a system of units in which the unit of mass is 10 kg, length is 1 km and time is 1 minute. Then 1 J in this system is equal to \_\_\_\_\_ units of work;  
 (A) 360  
 (B) 3.6  
 (C)  $3.6 \times 10^5$   
 (D)  $36 \times 10^{-5}$
- Q9** If the force is given by  $F = at + bt^2$  with t as time. The dimensions of a and b are;  
 (A)  $[MLT^{-4}]$  and  $[MLT^{-2}]$   
 (B)  $[MLT^{-3}]$  and  $[MLT^{-4}]$   
 (C)  $[ML^2T^{-3}]$  and  $[ML^2T^{-2}]$   
 (D)  $[ML^2T^{-3}]$  and  $[ML^3T^{-4}]$
- Q10** Calculate the dimensional formula of energy from the equation  $E = \frac{1}{2}mv^2$ .  
 (A)  $[M^0L^2T^2]$   
 (B)  $[M^1L^2T^{-2}]$   
 (C)  $[M^0L^2T^{-2}]$   
 (D)  $[M^0L^{-2}T^{-2}]$
- Q11** The dimensions  $ML^{-1}T^{-2}$  may correspond to  
 (A) Work done by a force  
 (B) Linear momentum  
 (C) Pressure  
 (D) Energy per unit area
- Q12** The dimensional formula of modulus of elasticity and its unit are;  
 (A)  $[ML^{-1}T^{-2}]$  and Pascal  
 (B)  $[ML^{-2}T^{-1}]$  and Pascal  
 (C)  $[ML^{-1}T^{-2}]$  and Poise  
 (D)  $[ML^{-2}T^{-1}]$  and Poise
- Q13** If force is proportional to square of velocity, then the dimension of proportionality constant is;  
 (A)  $[ML^{-1}T]$  (B)  $[ML^{-1}T^0]$



- (C)  $[MLT^0]$  (D)  $[M^0LT^{-1}]$
- Q14** The radius of nucleus is  $R = R_0 A^{1/3}$ , where A is mass number. The dimension of  $R_0$  is;  
 (A)  $[MLT^{-2}]$  (B)  $[M^0LT^0]$   
 (C)  $[M^0LT^{-1}]$  (D) None of these
- Q15** The equation of a wave is given by  $y = A \sin \omega \left( \frac{x}{v} - t \right)$  where x is the position of a particle,  $\omega$  is the angular velocity, and v is the linear velocity. The dimension of t is;  
 (A) LT (B) T  
 (C)  $T^{-1}$  (D)  $T^2$
- Q16** Candela is the unit of;  
 (A) Electric intensity  
 (B) Luminous intensity  
 (C) Sound intensity  
 (D) None of these
- Q17** 1 kWh =  
 (A) 1000 W (B)  $36 \times 10^5 J$   
 (C) 1000 J (D) 3600 J
- Q18** The ratio of the dimensions of Planck's constant and that of the moment of inertia is the dimension of;  
 (A) frequency  
 (B) velocity  
 (C) angular momentum  
 (D) time
- Q19** An object is moving through the liquid, the viscous damping force acting on it is proportional to the velocity. then dimensional formula of constant of proportionality is;  
 (A)  $[ML^{-1}T^{-1}]$   
 (B)  $[MLT^{-1}]$   
 (C)  $[ML^0LT^{-1}]$   
 (D)  $[ML^0T^{-1}]$
- Q20** Dimensions of relative density is;  
 (A)  $[ML^{-2}]$  (B)  $[ML^{-3}]$   
 (C) Dimensionless (D)  $[M^2L^{-6}]$
- Q21**

Given that force (F) is given by  $F = Pt^{-1} + Qt$ . Here t is time. The unit of P is same as that of;  
 (A) Displacement (B) Velocity  
 (C) Acceleration (D) Momentum

- Q22** The dimension of the ratio of angular momentum and linear momentum is;  
 (A)  $L^0$  (B)  $L^1$   
 (C)  $L^2$  (D) MLT
- Q23** Which of the following is not a physical quantity?  
 (A) Time (B) Current  
 (C) Hotness (D) Temperature
- Q24**  $Erg - m^{-1}$  can be the unit of measure for;  
 (A) Force (B) Momentum  
 (C) Power (D) Acceleration
- Q25** The dimensions of universal gravitational constant are;  
 (A)  $M^{-2}L^2T^{-2}$   
 (B)  $M^{-1}L^3T^{-2}$   
 (C)  $ML^{-1}T^{-2}$   
 (D)  $ML^2T^{-2}$
- Q26** What is the number of significant figures in  $0.310 \times 10^3$ ?  
 (A) 2 (B) 3  
 (C) 4 (D) 6
- Q27** **Assertion:** The dimensional formula for relative velocity is same as that of the change in velocity.  
**Reason:** Relative velocity of P w.r.t. Q is the ratio of velocity of P and that of Q.  
 (A) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.  
 (B) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.  
 (C) If the Assertion is correct but Reason is incorrect.  
 (D) If both the Assertion and Reason are incorrect.

Q28



Subtract  $2.5 \times 10^{-6}$  from  $4.0 \times 10^{-4}$  with due regard to significant figures.

- (A)  $4.0 \times 10^{-4}$   
 (B)  $6.0 \times 10^{-4}$   
 (C)  $4.0 \times 10^{-3}$   
 (D)  $4.0 \times 10^{-5}$

**Q29** The dimensional formula of physical quantity is  $[M^a L^b T^c]$ . Then, that physical quantity is;

- (A) spring constant if  $a = 1, b = -1, c = -2$   
 (B) surface tension if  $a = 1, b = 1, c = -2$   
 (C) force if  $a = 1, b = 1, c = 2$   
 (D) angular frequency if  $a = 0, b = 0, c = -1$

**Q30** If Voltage  $V = (200 \pm 8) \text{ V}$  and current  $I = (20 \pm 0.5) \text{ A}$ , the percentage error in resistance  $R$  is

- (A) 5.2% (B) 25%  
 (C) 3% (D) 6.5%

**Q31** The flux density of mass is defined as the amount of mass crossing unit area per unit time. The dimension of this unit is

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

**Q32** Which among the following quantities has dimensions independent of mass and length?

- (A) Energy  
 (B) Thrust  
 (C) Momentum  
 (D) Angular velocity

**Q33** If the error in the measurement of radius of a sphere is 2%, then the error in the determination of volume of the sphere will be;

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

**Q34** If  $Z = \frac{A^2 B^3}{C^4}$ , then the relative error in  $Z$  will be;

- (A)  $\frac{\Delta A}{A} + \frac{\Delta B}{B} + \frac{\Delta C}{C}$   
 (B)  $\frac{2\Delta A}{A} + \frac{3\Delta B}{B} - \frac{4\Delta C}{C}$   
 (C)  $\frac{2\Delta A}{A} + \frac{3\Delta B}{B} + \frac{4\Delta C}{C}$   
 (D)  $\frac{\Delta A}{A} + \frac{\Delta B}{B} - \frac{\Delta C}{C}$

**Q35** A vernier callipers has 1 mm marks on the main scale. It has 20 equal divisions on the vernier scale which match with 16 main scale divisions.

For the vernier callipers, the least count is;

- (A) 0.02 mm (B) 0.05 mm  
 (C) 0.1 mm (D) 0.2 mm

**Q36 Assertion:** The error in the measurement of radius of the sphere is 0.3%. The permissible error in its surface area is 0.6%.

**Reason:** The permissible error is calculated by the formula  $\frac{\Delta A}{A} = \frac{4\Delta r}{r}$ .

- (A) Assertion is correct, Reason is correct, Reason is a correct explanation of the Assertion.  
 (B) Assertion is correct, Reason is correct, Reason is not a correct explanation of the Assertion.  
 (C) Assertion is correct, reason is incorrect.  
 (D) Assertion is incorrect, Reason are correct.

**Q37** The number of significant figures in quantity 0.00005041 J is;

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

**Q38 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.

**Q39** Find the value of  $\frac{1.53 \times 0.9995}{1.592}$  with due regard for significant figures.

- (A) 0.961 (B) 0.123  
 (C) 0.921 (D) 0.913

**Q40** A screw gauge has least count of 0.01 mm and there are 50 divisions in its circular scale. The pitch of the screw gauge is;



- (A) 0.25 mm                      (B) 0.5 mm  
(C) 1.0 mm                      (D) 0.01 mm

**Q41** Pitch of a screw gauge instrument is 0.5 mm and its circular scale is divided into 100 divisions. The least count of the instrument will be;

- (A) 0.005 mm                      (B) 0.05 mm  
(C) 0.0005 mm                      (D) 0.50 mm

**Q42** If  $3.8 \times 10^{-6}$  is added to  $4.2 \times 10^{-5}$  giving due regard to significant figure, then the result will be;

- (A)  $4.58 \times 10^{-5}$   
(B)  $4.6 \times 10^{-5}$   
(C)  $4.5 \times 10^{-5}$   
(D) None of these

**Q43** A cube has a side of length  $1.2 \times 10^{-2} \text{ m}$ . Calculate its volume.

- (A)  $1.7 \times 10^{-6} \text{ m}^3$   
(B)  $1.73 \times 10^{-6} \text{ m}^3$   
(C)  $1.70 \times 10^{-6} \text{ m}^3$   
(D)  $1.732 \times 10^{-6} \text{ m}^3$

**Q44** On heating, the length of the side of cube changes by 2%. The volume of the cube changes by;

- (A) 1%                      (B) 6%  
(C) 0.5%                      (D) 3%

**Q45** The least count of the main scale of a screw gauge is 1 mm. The minimum number of divisions on its circular scale required to measure  $5 \mu\text{m}$  diameter of a wire is;

- (A) 50                      (B) 200  
(C) 500                      (D) 100



## Answer Key

Q1 (A)  
Q2 (C)  
Q3 (A)  
Q4 (B)  
Q5 (D)  
Q6 (B)  
Q7 (D)  
Q8 (D)  
Q9 (B)  
Q10 (B)  
Q11 (C)  
Q12 (A)  
Q13 (B)  
Q14 (B)  
Q15 (B)  
Q16 (B)  
Q17 (B)  
Q18 (A)  
Q19 (D)  
Q20 (C)  
Q21 (D)  
Q22 (B)  
Q23 (C)

Q24 (A)  
Q25 (B)  
Q26 (B)  
Q27 (C)  
Q28 (A)  
Q29 (D)  
Q30 (D)  
Q31 (A)  
Q32 (D)  
Q33 (B)  
Q34 (C)  
Q35 (D)  
Q36 (C)  
Q37 (B)  
Q38 (A)  
Q39 (A)  
Q40 (B)  
Q41 (A)  
Q42 (B)  
Q43 (A)  
Q44 (B)  
Q45 (B)



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