

PPSC Mock Test # 1

Choose the correct option.

The notes are prepared by Mr Physicist. For anyone kind of assistance feel free to contact me at my WHATSAPP NUMBER 923401457058

1. **What is not the physical quantity name below?**
(a) KG (b) IMPULSE (c) E (d) DENSITY
2. **Light year is the unit of ?**
(a) time (b) mass (c) distance (d) time
3. **PARSEC is a unit of ?**
(a) t (b) ANGLE (c) S (d) V
4. **What is NOT the unit of mass, length and time alone of the following units?**
(a) FPS (b) SI (c) CGS (d) MKS
5. **Surface Tension has unit of -----**
(a) joule.m² (b) joule.m⁻² (c) joule.m (d) joule.m³
6. **The measurement of a physical amount is performed as nu , where u is the unit used and n the numerical value. If the result is in different units, then?**
(a) n is directly proportional to size of u
(b) n is directly proportional to size of u^2
(c) n is directly proportional to size of square root of u
(d) n is directly proportional to size of $1/u$
7. **1 watt-hour =**
(a) 6.3×10^3 joule (b) 6.3×10^{-7} joule (c) 3.6×10^3 joule (d) 3.6×10^{-3} joule

8. **What are the dimensions of length of length in $F = \text{force} \cdot \text{displacement} / \text{time}$?**
 (a) minus two (b) zero (c) two (d) three
9. **A pair of physical quantities having the same dimensional formula is :**
 (a) angular momentum and torque (b) force and power
 (c) power and angular momentum (d) torque and energy
10. **The SI unit of length is the meter. Suppose we are adopting a new unit of x metres in length. The area of 1m^2 of the new unit is of a magnitude?**
 (a) x (b) x^2 (c) $1/x$ (d) $1/x^2$
11. **Convert density of 2g/cm^3 into MKS??**
 (a) $2 \cdot 10^{-3}\text{kg/m}^3$ (b) $2 \cdot 10^3\text{kg/m}^3$ (c) $4 \cdot 10^3\text{kg/m}^3$ (d) $2 \cdot 10^6\text{kg/m}^3$
12. **Since V is the speed, R is the radius and g is gravitational acceleration. Which of the following is dimensionless ?**
 (a) $v^2 g/r$ (b) $v^2 rg$ (c) $vr^2 g$ (d) v^2/rg
13. **The value of $G = 6.67 \cdot 10^{-11}\text{Nm}^2/\text{kg}^2$. Its numerical value in CGS system will be**
 (a) $6.67 \cdot 10^{-8}$ (b) $6.67 \cdot 10^{-6}$ (c) 6.67 (d) $6.67 \cdot 10^{-5}$
14. **The two circles have a radius of r and $4r$ respectively. What is their perimeter and area ratio?**
 (a) $1/4$ (b) $2/4$ (c) $4/8$ (d) a,c both
15. **Internal radius of a ball is 3cm and external radius is 4cm. What will be the volume of the volume of the material used?**
 (a) $148\pi/3$ (b) $180\pi^2/7$ (c) 40π (d) 30π

16. **What does the time unit follow?**

- (a) SOLAR DAY (b) PARALLATIC SECOND (c) LEAP YEAR (d) LUNAR MONTH

17. **A DIMENSIONLESS Quantity has :**

- (a) NO unit (b) unit (c) might have Unit (d) don't exist

18. **A UNITLESS Quantity :**

- (a) Never Has Nonzero Dimension (b) Always Has Nonzero Dimension
(c) May Have Nonzero Dimension (d) don't exist

19. **The result of time and energy is called action. The dimensional action formula is the same as for**

- (a) Power (b) Angular Energy (c) Force * Velocity (d) Impulse * Distance

20. **If force, acceleration and time are taken as fundamental quantities, then the dimension of length will be :**

- (a) FT^2 (b) $F^{-1} A^2 T^{-1}$ (c) FA^2T (d) AT^2

21. **Which of these can be a SET of Fundamental Quantities**

- (a) Length, Velocity, Time (b) Momentum, Mass, Velocity
(c) Force, Mass, Velocity (d) Momentum, Time, Frequency

22. **If E, M, J and G denote energy, mass, angular momentum and gravitational constant respectively, then $EJ^2/M^5 G^2$ has the dimension of**

- (a) length (b) angle (c) mass (d) time

23. **If the unit of force is 1 kilo newton, the length is 1km and time is 100 second, what will be the unit of mass:**

- (a) 1000 kg (b) 10 kg (c) 10000 kg (d) 100 kg

24. The velocity of a freely falling body changes as $g^p h^q$ where g is acceleration due to gravity and h is the height. The values of p and q are :
 (a) 1, 1/2 (b) 1/2, 1/2 (c) 1/2, 1 (d) 1,1
25. If ' c ' the velocity of light, ' g ' the gravitational acceleration and ' P ' the atmospheric pressure are the fundamental units, then the dimensions of length will be
 (a) c/g (b) $P \cdot c \cdot g$ (c) c/P (d) c^2/g
26. The units of length, velocity and force are doubled. Which of the following is the correct change in other units?
 (a) unit of time is doubled (b) unit of mass is doubled
 (c) unit of momentum is doubled (d) unit of energy is doubled
27. If the units of force and that of length are doubled, the unit of energy will be
 (a) 1/4 times (b) 1/2 times (c) 2 times (d) 4 times
28. Which of the following is not the unit of length?
 (a) micron (b) light year (c) angstrom (d) radian
29. The 'rad' is the correct unit used to report the measurement of
 (a) the ability of a beam of gamma ray photons to produce ions in a target
 (b) the energy delivered by radiation to a target
 (c) the biological effect of radiation
 (d) the rate of decay of radioactive source
30. In the formula $X=3YZ^2$, X and Z have dimensions of capacitance and magnetic induction respectively. What are the dimensions of Y in MKSQ system?
 (a) $M^{-3} L^{-1} T^3 Q^4$ (b) $M^{-3} L^{-2} T^4 Q^4$
 (c) $M^{-2} L^{-2} T^4 Q^4$ (d) $M^4 L^{-2} T^4 Q^1$

- 31. The SI unit of inductance, the henry can be written as**
- (a) weber/ampere (b) volt-second/ampere (c) joule/(ampere)² (d) ohm-second
- 32. A particle covers half of the circle of radius r. Then the displacement and distance of the particle are respectively?**
- (a) $2\pi r$, 0 (b) $2r$, πr (c) $\pi r/2$, $2r$ (d) πr , r
- 33. A hall has the dimension 10m*10m*10m. A fly starting at one corner ends up at a diagonally opposite corner. The magnitude of its displacement is nearly?**
- (a) $5\sqrt{3}$ (b) $10\sqrt{3}$
(c) $20\sqrt{3}$ (d) $30\sqrt{3}$
- 34. A car travels from A to B at a speed of 20 km/h and returns at a speed of 30 km/h. The average speed of the car for the whole journey is?**
- (a) 5 km/h (b) 24 km/h (c) 25 km/h (d) 50 km/h
- 35. A car travels a distance of 2000m. If the first half distance is covered at 40 km/h and the second half at velocity of v is**
- (a) 56 km/h (b) 60 km/h (c) 50 km/h (d) 48 km/h
- 36. A car runs at constant speed on a circular track of radius 100 m taking 62.8 s on each lap. What is the average speed and average velocity on each complete lap?**
- (a) velocity 10 m/s, speed 10 m/s (b) velocity zero, speed 10 m/s
(c) velocity zero, speed zero (d) velocity 10 m/s, speed zero
- 37. The displacement of a body is given by $2s = gt^2$ where g is a constant. The velocity of the body at any time t is**
- (a) gt (b) $gt/2$ (c) $gt^2/2$ (d) $gt^3/3$
- 38. A particle is moving so that its displacement is $S=t^3-6t^2+3t+4$ meter. Its velocity at the instant when its acceleration is zero will be**
- (a) 3 m/s (b) -12 m/s (c) 42 m/s (d) -9 m/s

39. A body starts from rest and is uniformly accelerated for 30 s. The distance travelled in the first 10 s is $x(1)$, next 10 s is $x(2)$ and the last 10 s is $x(3)$. Then $x(1) : x(2) : x(3)$ is the same as
- (a) 1:2:4 (b) 1:2:5 (c) 1:3:5 (d) 1:3:9
40. The displacement time graphs of two particles A and B are straight lines making angles of respectively 30 degree and 60 degree with the time axis. If the velocity of A is $V(a)$ and that of B is $V(b)$ then the value of $V(a)/V(b)$ is
- (a) $1/2$ (b) $1/\sqrt{3}$ (c) $\sqrt{3}$ (d) $1/3$
41. A body sliding on a smooth inclined plane requires 4 sec to reach the bottom after starting from rest at the top. How much time does it take to cover one fourth the distance starting from the top.
- (a) 1 s (b) 2 s (c) 0.4 s (d) 1.6 s
42. The initial velocity of a particle is 10 m/s and its retardation is 2 m/s^2 . The distance covered in fifth second of the motion will be
- (a) 1 m (b) 19 m (c) 50 m (d) 75 m
43. A body is thrown upward and reaches its maximum height. At that position
- (a) its velocity is zero and its acceleration is also zero
 (b) its velocity is zero but its acceleration is maximum
 (c) its acceleration is minimum
 (d) its velocity is zero and its acceleration is the acceleration due to gravity
44. Two trains each of length 50 m are approaching each other on parallel rails. Their velocities are 10 m/s and 15 m/s. They will cross each other in
- (a) 2 sec (b) 4 sec (c) 10 sec (d) 6 sec
45. A ball is thrown upwards. It returns to ground describing a parabolic path. Which of the following remains constant?
- (a) speed of the ball (b) kinetic energy of ball
 (c) vertical component of velocity (d) horizontal component of velocity
46. The angle of projection of a body is 15 degree. The other angle for which the range is the same as the first one is equal to

(a) 30 (b) 45 (c) 60 (d) 75

47. A ball is thrown at an angle of 45 with the horizontal with kinetic energy E. The kinetic energy at the highest point during the flight is

(a) zero (b) $E/2$ (c) E (d) $(2)^{1/2}E$

48. The maximum range of a projectile is 22 m. When it is thrown at an angle of 15 degree with the horizontal, its range will be

(a) 22 m (b) 6 m (c) 15 m (d) 11 m

49. Two projectiles A and B are thrown with the same speed such that A makes angle θ with the horizontal and B makes angle θ the vertical, then

- (a) both must have same time of flight
- (b) both must achieve same maximum height
- (c) A must have more horizontal range than B
- (d) both may have same time of flight

50. Suppose a player hits several baseballs. Which baseball will be in the air for the longest time?

- (a) the one with the farthest range
- (b) the one which reaches maximum height
- (c) the one with the greatest initial velocity
- (d) The one leaving the bat at 45 degree with respect to the ground