PHYSICS

BOOKS - JBD PUBLICATION

MODEL TEST PAPER-01

Exercise

---

1. Define transverse waves.

▶ **Watch Video Solution**

2. Write short note on thermal equilibrium.

▶ **Watch Video Solution**

3. Mass of a body is measured in ....

▶ **Watch Video Solution**

4. A null vector has no magnitude.(True//False)

▶ **Watch Video Solution**

5. Newton's second lasw of motion is not the real law of motion.(Yes//No)

6. Show that gravitational force is a conservative force.

A. Nuclear

B. Gravitaional

C. Frictiona

D. Force of viscosity.

Answer:

▶ **Watch Video Solution**

7. Define centre of mass.

▶ **Watch Video Solution**

8. Avogadro's hypothesis is related with

▶ **Watch Video Solution**

9. Why is G called universal gravitational constant ?

10. Check the relation,$mgh = \dfrac{1}{2}mv^2t$ using dimensional analysis,where every letter has its usual meaning

11. Explain the role of physics in relation to science and society.

▶ **Watch Video Solution**

12. Which metal is used to make shockers and why?

▶ **Watch Video Solution**

13. the resultant of equal vectors pependicular rto each other is 1414.Find the magnitude of each vector.

14. A stone of mass 100 g is rotating in a circular orbit of radius 50 cm with a frequency 5 r.p.s.find the centripetl force acting on the stone.

15. A tank of capacity $10^3 kg$ is placed at the top of a house 10 m high.This tank is filled by a motor in 30 minutes by lifting water from a 20 m deep well.Find the power of motor(Take $g = 10ms^{-2}$.

16. Derive the relation between linear velocity and angular velocity.

17. Deduce the expression for work done in an

isothermal process.

▶ **Watch Video Solution**

18. State second law of thermodynamics ?

▶ **Watch Video Solution**

19. When a projectile os projected at an angle with the horizontal, find the angle of projection for its maximum horizontal range and find the correspondg height achieved by the projectile?

▶ **Watch Video Solution**

20. State and prove work-energy theorem.

▶ **Watch Video Solution**

21. Define orbital velocity and the time period of a satellite. Derive expressions for these

22. If the mass of a planet is 2 times that of earth and radius is 3 times that of earth ,then find the escape velocity for that planet.For earth ,escape velocity $= 11.2 kms^{-1}$

23. Define surface tension.

24. What is the position of centre of mass of a uniform disc?

25. Prove that the time rate of change of the angular momentum of a particle is equal to the torque acting on it.

26. Define a rigid body.

27. What do you mean by centre of mass of a body?Find the position of cenre of mass of a uniform rod.

28. What is resonance ? Explain with the help of one example.

▶ **Watch Video Solution**

29. Find the relations for the first harmonic produced by an open end organ pipe and a closed end organ pipe.

▶ **Watch Video Solution**

30. What determines the natural frequency of a body?

▶ Watch Video Solution

31. What is simple harmonic motion and prove a simple pendulum oscillates simple harmonically?Also find a relation for its frequency.

▶ Watch Video Solution

32. State Hooke's law.

33. Find an expression for the heat which flows from one pont to the other point of a conductor and hence define co-efficient of thermal conductivity of the conductor.

34. Define force of cohesion.

▶ **Watch Video Solution**

35. Derive an expression for the rise of liquid in a capillary tube and show that the height of the liquid column supported is inversely proportional to the radius of the tube.

▶ **Watch Video Solution**