PHYSICS

BOOKS - JBD PUBLICATION

MODEL TEST PAPER-02

Exercise

1. Femto is a unit of time.(True / False)

▶ **Watch Video Solution**

2. Displacement of moving body cannot be :

A. zero

B. positive

C. negative

D. none of above.

Answer:

3. If $\vec{F}$ is the force applied by the agent to produce a velocity $\vec{v}$ in a body,then power supplied by the agent is :

A. $\vec{F} \times \vec{v}$

B. $\vec{F} \cdot \vec{v}$

C. $\vec{F} / \vec{v}$

D. $\vec{F} + \vec{v}$.

Answer:

▶ **Watch Video Solution**

4. Friction is always harmul in life.(Yes / No)

> ▶ **Watch Video Solution**

5. Define angular frequency of rotating body.

> ▶ **Watch Video Solution**

6. What do you mean by reversible and irreversible process? Give example.

7. What do you mean by mean free path of a gas molecule?

▶ **Watch Video Solution**

8. What kinds of energies are posssessed by an oscillating body?

▶ **Watch Video Solution**

9. Draw a graph to show the motion of a body:

with constant velocity.

▶ **Watch Video Solution**

10. Draw a graph to show the motion of a body:

under constant retardation.

▶ **Watch Video Solution**

11. A bomb of mass 10 kg at rest explodes into two parts of 3 kg and 7 kg.If smaller part moves with a speed $14ms^{-1}$ towards east ,find the velocity of the heavier part.

12. A force of 100 N acts on a body at an anle $30°$ with the horizontal.If the body moves a distance 20 m in 5 seconds in the horizontal

direction,calculate the power being suppied by the source of force.

▶ **Watch Video Solution**

13. Prove mathematically that the value of acceleration due to gravity has a constant value at a place.

▶ **Watch Video Solution**

14. Define Angle of contact.

15. What are the limitations of dimensional analysis?

16. Write four characteristics of any natural force.

17. Using time velocity graph,derive the relation $v^2 - u^2 = 2aS$,where every letter has its usual meaning.

18. From second law of motion ,prove that F = ma and hence deduce first law of motin from the second law of motion.

19. Show that sum of P.E. and k.E. of a freely falling body is conserved.

> ▶ **Watch Video Solution**

20. Why does a body becomes weightless at the centre of earth ?

> ▶ **Watch Video Solution**

21. What is surface tension? What is the effect of temperature on surface tension ?

22. A 50 kg girl whose leg bones are $5m^2$ in area and 50 cm long falls from a height of 2 m without breaking her leg bones.If the bones can stand a stress of $10^8 Nm^{-2}$,calculate the Young's modulus for the material of bones.

23. State first law of thermodynamics.

24. If 5% of the hailstones get melted before reaching the earth,find teh geight of clouds,if no heat is provided to hailstones by friction with air.

25. Calculate the external work done when an ideal gas is expanded isothermally

26. Define progressive wave.

27. Draw a graph to show the variation s of P.E., K.E. and total energy of a simple harmonic oscillator with displacement.

28. What is a simple pendulum? Show that motion of simple pendulum is S.H.M.

▶ Watch Video Solution

29. What is Doppler's effect?Derive a general expression for the apparent frequency when both source and observer are in relative motion.

▶ Watch Video Solution

30. What is elastic limit?

31. State and prove Bernoulli's theorem for liquid having streamline flow.

32. State and prove Bernoulli's theorem for liquid having streamline flow.

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.

▶ **Watch Video Solution**

34. What is physical significnce of moment of inertia?

▶ **Watch Video Solution**

35. What is law of conservation of momentum

?

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

37. Find the expression for moment of inertia

of a thin uniform rod

about an axis passing through its centre and

perpendicular to its length

▶ **Watch Video Solution**