PHYSICS

BOOKS - JBD PUBLICATION

MODEL TEST PAPER-06

Exercise

1. Give an example of a physical quantity which has neither unit nor dimensions.

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2. A book lying on a table is at absolute rest. (Yes /NO)`.

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3. Co-efficient of friction has no ..... .

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4. What is coefficient of restitution? What is its value for perfectly elastic and inelastic collisions?

A. 1

B. 0.5

C. 1.5

D. 0

Answer:

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5. Is the angular momentum a scalar quantity ?State its unit.

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6. It is a reversible process- Melting of ice

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7. Define degree of freedom.

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8. Define seconds pendulum.

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9. State principle of hmogenity of dimensio and its use in dimensional analysis.

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10. An experiment measures quantities a,b,c and d and x is calculated from formula

$$x = \frac{ab^{1/2}}{c^{3/2}d^3}.$$

The percentage errors in a,b,c and d are 2%, 4% , 6% and 1% respectively. What is the percentage error in x ?

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11. The displacement of a particle along a straight time at line t is given by ,x=4+2t

$+3t^2+4t^3$.Find acceleration fo the particle at t=2 second.

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12. Explain why:- a cricketer moves his hands backwards while holding a catch.

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13. What is conservative force?

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14. The wheel of a motor accelerated uniformly form rest rotates through 2.5 radian during the first second.Find the angle rotated in the next second.

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15. A tunnel is dug through the centre of the earth. Show that a body of mass m when

dropped from rest from one end of the tunnel will execute simple harmonic motion.

16. How is an iron ship able to float where as an iron needle sinks?

17. For uniform accelerated motion, draw by graphical method establish the following

equations of motion: $S = ut + \frac{1}{2}at^2$.

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18. A bullet from the ground is just able to cross in a horizontal directin the to of a wall 50 m away and 25 m high .Find the speed and direction of projection of the bullet.

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19. What is law of conservation of momentum ?

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20. Two masses 8 kg and 12 kg are connected at the two ends of a light inextensible string that goes over a frictionless pulley. Find the acceleration of the masses, and the tension in the string when the masses are released.

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

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22. State Keplers' laws of planetary motion.

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23. What is Stokes' law? Derive the relation by method of dimensions.

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

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25. State Avogadro's law

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26. Define wavelength of a wave.

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27. Write an expression for the frequency produced by a stretched string.

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28. What do you mean by beats in sound?

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29. What are statiionary waves?State their characteristics.

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30. Define the term stress.

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31. Sate Pascal's law . Is it an independent law?

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32. State Hooke's law.

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33. Define co-effecient of linear expansion and find its relation with co-efficient of areal

expansion.

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34. Define moment of inertia

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35. Prove the theorem of parallel axes.

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36. Which law is used by a ballet dancer to change her speed or rotation?

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37. Define the terms angular velocity and angular displacement and find their respective relation with linear velocity and linear acceleration.

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