



PHYSICS

BOOKS - JBD PUBLICATION

MODEL TEST PAPER -08

Exercise

1. What is a vector quantity?



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2. Static friction is more than kinetic friction.

(Yes / No).



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3. Kilowatt is the unit of :

A. power

B. work

C. momentum

D.

Answer:



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4. Moment of inertia of a body depends only on the mass of body.(True / False).



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5. Working of a refrigerator is based upon law of thermodynamics.



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6. Write an expression for the kinetic energy of a gas molecule .



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7. Write one example of periodic motion.



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8. What type of phenomenon can be used as a measure of time? Give two examples of it.



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9. The resistance $R = \frac{V}{I}$, if $V = (50 \pm 2)$ and $I = (5 \pm 0.1)$, find the percentage error in R .



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10. If $\vec{A} = 2\hat{i} - \hat{j} + 2\hat{k}$ and $\vec{B} = 2\hat{k} + \hat{j} - 3\hat{i}$

Find the value for $\left| \begin{array}{c} \vec{A} \\ \times \\ \vec{B} \end{array} \right|$.

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11. Prove that second law of motion measures force.

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12. What is mass energy equivalence and write its importance?



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13. A body of mass 20g is rotating around a pole 50 cm away with a frequency 5 r.p.s. Find the rotational kinetic energy of the body.



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14. What is geostationary satellite ?Write its two applications.



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15. What is anomalous expansion of water and its use in nature?



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



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17. A bullet is fired at an angle 30° in horizontal with velocity 300ms^{-1} . Calculate its time of flight, horizontal range and the height achieved by it



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18. Define centripetal force and find an expression for it.



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19. A steam engine of mass 3×10^4 kg pulls two wagons each of mass 2×10^4 kg with an acceleration of 0.2 m s^{-2} . Neglecting frictional force, calculate the force exerted by the engine.



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20. Define potential energy of a body .Find an expression for the potential energy of a stretched spring.



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21. How does value of acceleration due to gravity vary with altitude



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22. Explain different modes of transfer of heat from one place to the other place along with example.



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23. What do you mean by thermal equilibrium ? Define zeroth law of thermodynamics and deduce the definition of temperature from it.



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24. Give the main postulates of kinetic theory of matter.



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



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26. What are stationary waves? State their characteristics.



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27. How is sound propagated ? Can it be propagated through vacuum ? out of solid, liquid and gas in which medium speed of sound is maximum and in which it is least minimum ?



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28. What is the effect of pressure on the speed of sound?



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29. State Hooke's law.



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30. What is terminal velocity?



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31. Define latent heat.



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32. Find a relation between co-efficient of linear expansion and co-efficient of cubical expansion of a solid.



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33. What are the dimensions and unit of moment of inertia?



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34. State the principle of conservation of angular momentum.



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35. What is physical significance of moment of inertia?



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36. What is the moment of inertia of a disc about their diameters?



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