PHYSICS

BOOKS - JBD PUBLICATION

Model Test Paper 12

Exercise

1. Which one is not the unit of distance?

A. Kilometer

B. angstrom

C. Light year

D. Slug

Answer:

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2. A vector multiplied by a sclar will give a scalar. (yes / no)

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3. Action and reaction cannot be added. (true/false)

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4. Potential of a spring is measured in .....

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5. On what factors does the moment of inertia depend?

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6. Every simple harmonic motion is periodis, is the reverse also true .

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7. Write four characteristics of any natural force.

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8. What are the limitations of dimensional analysis?

9. A car covered 10 m in 5th second 16 m in 8th second. Find the distance travelled by it in 10th second.

10. A body of mass 10 kg is acted upon by two perpendicular forces 6N and 8N. Find the magnitude of acceleration produced in the body.

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11. A body is projected horizontally on a rough surface and it comes to rest after travelling a distance S. Find the value of co-efficient of friction.

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12. Find moment in inertia of a uniform ring about a tangent perpendicular to the ring.

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13. Two masses 20 kg and 50 kg attract each other with a force 5 gf. Fid the distance between the two masses.

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14. Why is it painful to walk bare footed on a road covered with edged pebbles?

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

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16. A boy wants to throw a ball to his friend across the street 40 m wide. The bou's window is 10 m below the friends window. Find with what velovcity he should throw the ball.

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17. How can force of friction be reduced ?

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18. A body of mass 5 kg placed on the surface of rough inclined plane rising 7 in 25 just slides down. Calculate the value of limiting friction ci-efficient of friction.

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19. State and prove work energy theorem.

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20. State Keplers' laws of planetary motion.

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

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22. What is an oscillartory motion?

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23. What are statiionary waves?State their characteristics.

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24. Define an echo?

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

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26. Define terminal velocity and find an expression for it.

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27. What is Poisson's ratio? Give its expression.

What are its units?

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28. State Newton's law of cooling.

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29. Define centre of mass of a rigid body.

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30. Drive the equations of rotatory motion, $\omega^2 - \omega_0^2 = 2\alpha\theta$ and $\theta = \omega_0^t + \frac{1}{2}\alpha t^2$, where every letter has its usual meaning.

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31. State the principle of conservation of angular momentum.

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32. Define the theorem of parallel axes and apply it to find the moment of inertia of a uniform rod about an axis passing through one of its ends and perpendicular to its length.

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