PHYSICS

BOOKS - JBD PUBLICATION

Model Test Paper 10

Exercise

1. Who gave theory of relativity?

A. Newton

B. Einstein

C. Faraday

D. Bohr

Answer:

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2. Give one physical difference between average velocity and instantaneous velocity.

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

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4. Electric charge is scalar quantity. true or false

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5. Fill in the blanks

Centre of mass of a body may or may not lie

..... the material of body.

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6. System A is in thermal equilibrium with Band B is separately in thermal equilibrium with C. Then A and Care in thermal equilibrium. From which law of thermodynamics it follows?

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7. What do you mean by a perfect gas?

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8. Define longitudinal wave.

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9. What are differences between classical physics and modern physics?

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10. What are the characteristics of physical standard?

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11. Show that rest and motion are relative terms.

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12. State and explain the law of conservation of linear momentum. Explain recoil of a gun and explosion of a bomb.

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13. State and prove work-energy theorem.

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14. A person goes up in space to a height equal to $\frac{1}{4}$ times the radius of earth . What will be his weight there as compared to that on the earth?

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15. The average depth of Indian ocean is 3 km. Find the fractional compression of water at the bottom of the ocean, given that bulk modulus of water id $2.2 \times 10^9 Nm^{-2}$.

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16. Energy of 484 J is spent in increasing the speed of a flywheel from 60 r.p.m. to 360 r.p.m. find moment of inertia of the flywheel.

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17. A ball is droped from a 256 m high eower and at the same time another ball is projected vertical upward with velocity 32 m s^{-1} in line

with the first ball. Find when and where the two balls will meet each other. $\left(g = 10ms^{-2}\right)$

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18. Define cross produced of two vectors and state its propertics.

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19. Define angle of friction.

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20. Calculate the angle through which the cyclist bends with the vertical when he crosses a circular path 34.3 m in circumference in $\sqrt{22}$ second.

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21. Explain conservative and non-conservative forces with one example of each.

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22. What is the value of 'g' at a height near the surface of earth?

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

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24. Define first law of themodynamics and expain its limitations.

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25. Write the postilates of kinetic theory of gases.

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26. What is an echo?

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27. Derive Newton's formula for velocity of sound in air. Point out the error and hence discuss Laplace's correction to find out the velocity of sound.

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28. Which physical quantity remains conserved during simple harmonic motion?

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29. Explain Doppler effect.Find an expression for the change in frequency.

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30. Define elasticity.

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31. State Newton's law of cooling.

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32. Define force of cohesion.

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33. Find an expression for the total energy of a liquid.

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34. Define centre of mass.

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35. State the principle of conservation of angular momentum.

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36. What is a rigid body?

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37. Find an expression for the rotational kinetic energy of a body.

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