



# PHYSICS

## BOOKS - JBD PUBLICATION

### Mock test paper 1

#### Exercise

1. In S.I system of unit kilogram is the unit of

.....

A. mass

B. energy

C. velocity

D. momentum

**Answer:**



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2. If a body is moving with constant velocity, its acceleration will be zero (True . False.



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3. Directional of centripetal force is towards the centre of circle (yes / No).



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4. In a non-elastic collision the physical quantity which is not conserved is:

A. mass

B. linear momentum

C. Total energy

D. Kinetic energy

**Answer:**



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5. Angular momentum of earth is conserved, why?



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6. Define Joule's Mechanical equivalent of heat.



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7. What is an ideal gas ?



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8. Define seconds pendulum.



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9. A body starts from rest moves with constant acceleration  $p$ . Find the ratio of the distances travelled by the body in 5 seconds and 5th second.



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10. What is SI unit of coefficient of viscosity?



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**11.** Explain Reflection methods (Radar and Sonar) for measuring distances.



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**12.** 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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**13.** A body of mass 10 kg at rest was moved by a constant force 50 N. Find the K.E. of the body at the end of 5 seconds.



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**14.** It is easier to balance a bicycle in motion.  
Why?



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**15.** Prove that  $g = G \frac{M}{R^2}$ , where M is mass and R is radius of earth.



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



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**17.** When a projectile is projected at an angle with the horizontal, find the angle of projection for its maximum horizontal range and find the corresponding height achieved by the projectile?



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**18.** A body travels 200 m in 2 seconds and 220 m in the next 4 seconds. What will be its

velocity at the end of the 7th second from the start?



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**19.** What do you mean by banking of road?



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**20.** Show that Lenz's law obeys the law of conservation of energy.



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**21.** Define escape velocity. Obtain an expression for the escape velocity of a body from the surface of earth.



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**22.** Surface tension depends on



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**23.** Find the amount of heat required to convert 1g ice at  $0^{\circ} C$  into steam at  $100^{\circ} C$ .



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**24.** What is heat engine, write its essential parts? Write its working and find an expression for its efficiency .



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**25.** Deduce the expression for work done in an isothermal process.



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**26.** What is the nature of the sound waves?



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**27.** What are stationary waves? State their characteristics.



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## 28. Fill in the Blanks

Rotation of earth around its own axis is .....

.



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29. What is Doppler's effect? Derive a general expression for the apparent frequency when

both source and observer are in relative motion.



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**30.** State Hooke's law.



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**31.** State Newton's law of cooling.



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**32.** Define specific heat.



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**33.** Define stress and strain. What are the units in which these quantities are measured?



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**34.** Define angular momentum and find its relation with moment of inertia.



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**35.** Define radius of gyration.



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**36.** For which of the following does the centre of mass lie outside the body?



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**37.** Prove the theorem of parallel axes.



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