

K.P.CLASSES

CLASS – IX

TEST – SCIENCE(PHYSICS)

TIME – 2 HOURS

MAXIMUM MARKS = 50

(Each question carries 1 marks)

1. What is buoyancy?
2. Calculate the energy possessed by a stone of mass 10 g kept at a height of 5 m. (Given $g = 9.8 \text{ m/s}^2$)
3. Define 1 J of work.
4. A lamp consumes 1000 J of electrical energy in 10 s. What is its power?
5. How do hydrogen filled balloons floats in air?
6. What is the audible range of the average human ear?
7. Can there be displacement of an object in the absence of any force acting on it?
8. Why is sound wave called a longitudinal wave?

(Each question carries 2 marks)

9. If the speed of a particle is doubled, what is will be its new kinetic energy?
10. Iron needle sinks in water but huge ship made of iron floats on the surface of water. Why?
11. A refrigerator consumes 500000 J of energy per day. Calculate the energy consumed by it in 30 days in commercial units.
12. Find the energy in kW h consumed in 10 hours by four devices of power 500 W each.
13. Explain how sound is produced by your school bell.
14. An echo returned in 3 s. What is the distance of the reflecting surface from the source, given that the speed of sound is 342 m s^{-1} ?
15. Explain the floatation of submarines.

(Each question carries 3 marks)

16. List the factors on which upthrust depends. Explain with examples.
17. The volume of 50 g of a substance is 20 cm^3 . If the density of water is 1 g cm^{-3} , will the substance float or sink?
18. The kinetic energy of an object of mass, m moving with a velocity of 5 m s^{-1} is 25 J. What will be its kinetic energy when its velocity is doubled? What will be its kinetic energy when its velocity is increased three times?
19. An object of mass 40 kg is raised to a height of 5 m above the ground. What is its potential energy? If the object is allowed to fall, find its kinetic energy when it is half-way down.
20. What are wavelength, frequency, time period and amplitude of a sound wave?
21. Cite an experiment to show that sound needs a material medium for its propagation.

(Each question carries 5 marks)

22. Derive the formula for kinetic energy i.e. $\text{K.E.} = \frac{1}{2} mv^2$
23. Explain the working and application of a sonar.