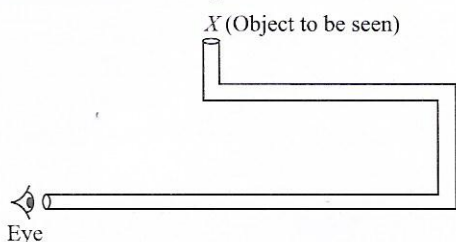


SCIENCE

11. Which of the following statements is/are true?
- I. Lightning conductor protects a building from lightning.
 - II. Earthquakes can be predicted in advance.
 - III. The process of electric discharge cannot occur between clouds and the earth.
 - IV. Earthquakes occur all the time all over the world.
- A. I only B. III only
C. II and III only D. I and IV only
12. Sunil planned an activity to observe an object X through a pipe as shown in the figure.



How many plane mirrors (minimum) should he use to see the object?

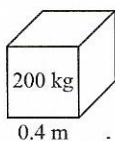
- A. 2 B. 3 C. 4 D. 5
13. According to the table, on which planet would a ball fall the fastest?

Planet	Earth	Jupiter	Neptune	Saturn
Acceleration due to gravity (m s^{-2})	10	26	14	12

A. Jupiter B. Saturn C. Neptune D. Earth

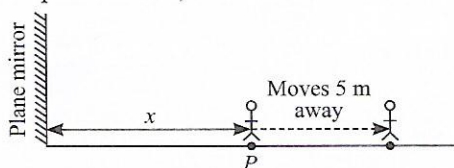
14. A simple pendulum makes 15 oscillations in 30 seconds. What is the time period and frequency of its oscillation?
- A. 2 s, 2 Hz B. 2 s, 1 Hz
C. 2 s, 0.5 Hz D. 2 s, 4 Hz

15. A cube of side 0.4 m rests on the floor, as shown. Given that the cube has a mass of 200 kg, the pressure exerted by the cube on the floor is _____.
- (Take $g = 10 \text{ N kg}^{-1}$)



A. 25 N m^{-2} B. 250 N m^{-2}
C. 1250 N m^{-2} D. 12500 N m^{-2}

16. The diagram shows a man standing at a position P in front of a plane mirror, at a distance x from the mirror.

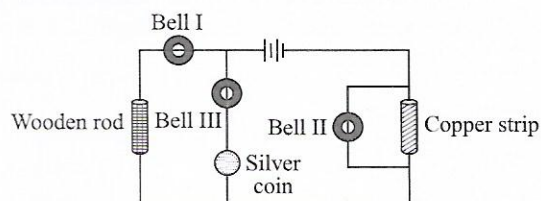


When the man moves 5 m away from the mirror, the new distance between the man and his image becomes 26 m. What is the value of x ?

A. 5 m B. 6 m C. 7 m D. 8 m

17. A boy rolls a rubber ball on a wooden surface. The ball travels a short distance before coming to rest. To make the same ball travel longer distance before coming to rest, he may
- A. Spread a carpet on the wooden surface
 - B. Cover the ball with a piece of cloth
 - C. Sprinkle talcum powder on the wooden surface
 - D. Sprinkle sand on the wooden surface.

18. The diagram shows an electric circuit with three different materials and three identical bells.



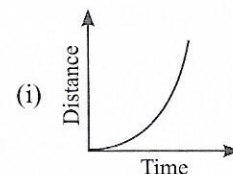
Which of the bell(s) in the given circuit will ring?

- A. Bell II only B. Bells II and III only
C. All of the bells D. None of the bells
19. Read the given statements and select the correct option.
- Statement 1 : If one litre of water at 40°C is mixed with one litre of water at 50°C , the final temperature of the mixture will be between 40°C and 50°C .
- Statement 2 : The temperature of mixture of two liquids does not depend on their masses.
- A. Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
 - B. Both statements 1 and 2 are true, but statement 2 is not the correct explanation of statement 1.
 - C. Statement 1 is true but statement 2 is false.
 - D. Statement 1 is false but statement 2 is true.
20. Match column I with column II and select the correct option from the given codes.

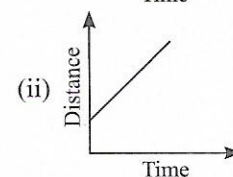
Column I

Column II

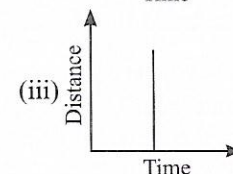
P. The graph which is not possible



Q. Object moving with variable speed



R. Object moving with constant speed



- A. P-(i), Q-(ii), R-(iii) B. P-(iii), Q-(i), R-(ii)
C. P-(iii), Q-(ii), R-(i) D. P-(i), Q-(iii), R-(ii)