



PHYSICS

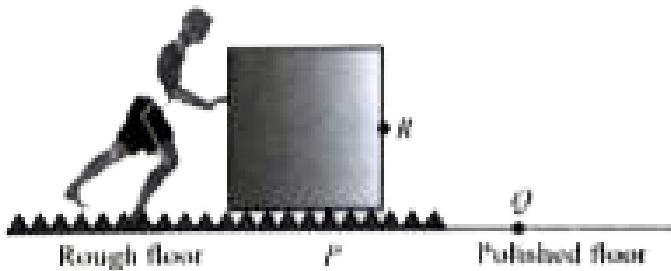
BOOKS - HT Olympiad Previous Year Paper

NSO QUESTION PAPER 2019-20 SET A

Science

1. Ram pushes the box by applying a force of 500 N in horizontal direction so that the box

starts sliding along the floor as shown in the figure. Find the point(s) where the frictional force acting on the box is maximum.



- A. P
- B. Q
- C. R
- D. P, Q and R

Answer: A



Watch Video Solution

2. The given table shows the melting and boiling points of four elements.

Element	Melting point	Boiling point
W	198°C	390°C
X	-101°C	150°C
Y	185°C	1087°C
Z	20°C	160°C

Which element is in liquid state at $311^{\circ} F$?

A. Z

B. Y

C. X

D. W

Answer: A



Watch Video Solution

3. Anju walks 10 m to the East, then 7 m to the South, then 10 m to the West and finally 7 m to the North. What is the distance covered and displacement of Anju?

	Distance travelled	Displacement
A.	0 m	0 m
B.	0 m	34 m
C.	34 m	0 m
D.	34 m	34 m

A. 0 m , 0m

B. 0 m, 34 m

C. 34 m, 0 m

D. 34 m , 34 m

Answer: C



Watch Video Solution

4. A positively charged object attracts a suspended light conducting sphere. The light conducting sphere can be

I. Negatively charged

II. Positively charged

III. Neutral

A. I only

B. II only

C. II and III only

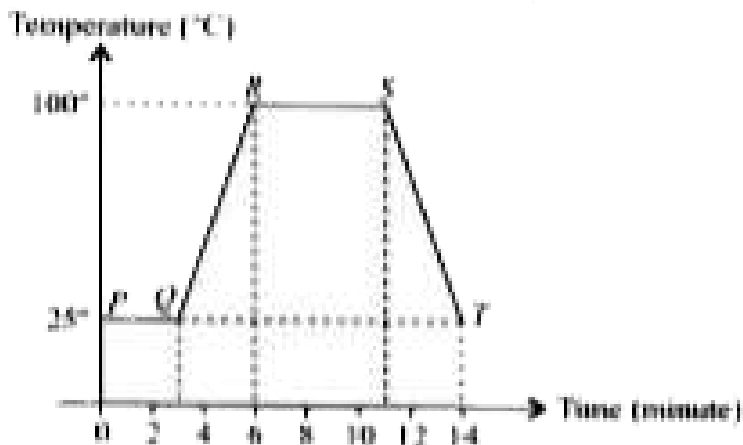
D. I and III only.

Answer: D



Watch Video Solution

5. Change in temperature of a closed kettle containing water is recorded for 14 minutes. It is represented in the graph shown here. Which of the given statements are true regarding the given situation?



I. The water was heated for 6 minutes.

II. There was less water in the kettle at point T than at point P.

III. The water took 3 minutes to reach its boiling point after it was heated.

IV. The water in the kettle started boiling at R.

A. I and II only

B. III and IV only

C. I, II and III only

D. I, II, III and IV

Answer: B



Watch Video Solution

6. Two plane mirrors are inclined to each other at an angle of 45° . If a ray of light incident on the first mirror is parallel to the second mirror, then it is reflected from the second mirror as

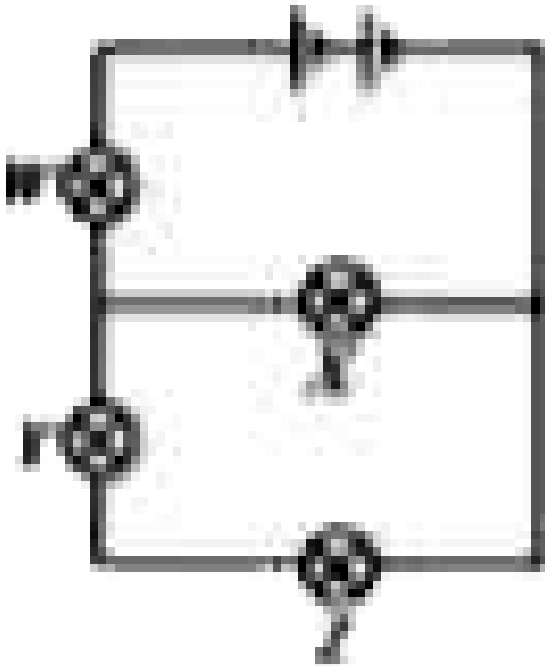
- A. Perpendicular to the first mirror
- B. Parallel to the first mirror
- C. Parallel to the second mirror
- D. Perpendicular to the second mirror.

Answer: D



Watch Video Solution

7. A battery lights up all the four lamps as shown in the figure. When one of the lamps fuses, the other three lamps stay on. Identify the fused lamp.



A. W

B. X

C. Y

D. Z

Answer: B



Watch Video Solution

8. A 40 Pa pressure is applied on the head of a nail placed perpendicular to the surface of a wall. If the area of cross-section of the tip of

the nail is $(1/0)$ times the area of cross-section of the head, then the pressure exerted on the wall is

A. 10 Pa

B. 40 Pa

C. 400 Pa

D. None of these.

Answer: C



Watch Video Solution

9. The image formed by the rear-view mirror of an automobile is

I. Of the same size as that of object

II. Virtual, erect and diminished

III. Erect, real and diminished

IV. Erect and magnified

A. I only

B. II only

C. I and III only

D. III and IV only.

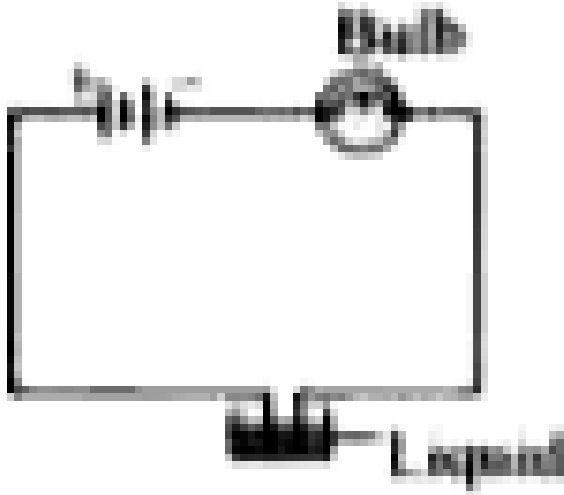
Answer: B



Watch Video Solution

10. The given figure shows a set-up for testing conduction of electricity in different liquids. Pick out the option for which the bulb will not

glow.



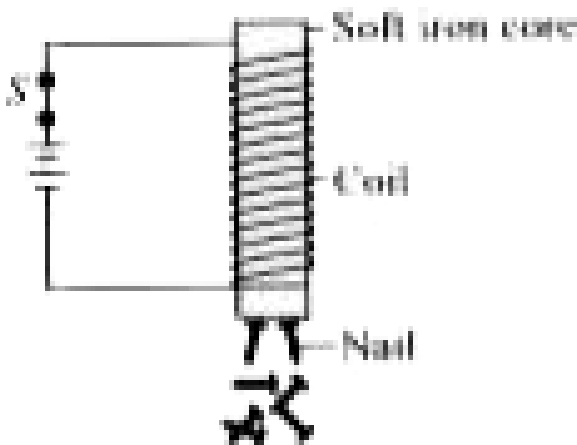
- A. Milk, Lemon juice, Tap water
- B. Vinegar, Tap water, Lemon juice
- C. Honey, Kerosene, Vegetable oil
- D. None of these

Answer: C



Watch Video Solution

11. The diagram shows a soft iron core coiled with wire. When the switch is turned on, some of the iron nails are attracted. Which of the following ways will make the soft iron core attract all the iron nails?



- A. Decrease the number of turns in the coil.
- B. Increase the number of turns in the coil.
- C. Place the soft iron core outside the coil.
- D. None of these

Answer: B



Watch Video Solution

12. Statement 1 : Sound travels faster on a hot summer day than on a cold winter day.

Statement 2 : For a given temperature, velocity of sound depends on pressure.

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. Both statements 1 and 2 are false.

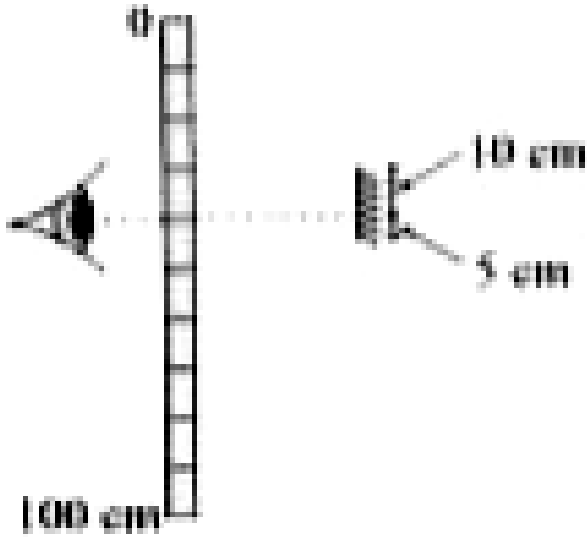
Answer: C



Watch Video Solution

13. A metre ruler is held vertically in front of a plane mirror of length 15 cm as shown in the given figure. Arun peeps through a hole at the 40 cm mark. The range of the scale of the

metre ruler that can be seen is



A. 10 cm to 40 cm

B. 15cm to 45cm

C. 20 cm to 50 cm

D. None of these.

Answer: C



Watch Video Solution

14. Which planet is called the morning star as well as the evening star, depending on its position with respect to the sun?

A. Jupiter

B. Venus

C. Mars

D. Saturn

Answer: B



Watch Video Solution

15. Match column I with column II and select the correct option from the given codes.

Column I

Column II

- | | |
|-------------------------|------------------------------------|
| (a) Electrostatic force | (i) Force on a rolling ball |
| (b) Gravitational force | (ii) Force on a moving charge |
| (c) Frictional force | (iii) Force applied to lift a book |
| (d) Muscular force | (iv) Force on a falling fruit |

A. (a) - (i), (b) - (iv), (c) -(ii), (d) - (iii)

B. (a) -(ii), (b) - (iii), (c) - (i), (d) - (iv)

C. (a) - (ii), (b) -(iv), (c) -(i), (d) - (iii)

D. (a) - (iii), (b) - (ii), (c) - (iv), (d) - (i)

Answer: C



Watch Video Solution

16. Which of the following statements is not correct?

A. Rayon is a man-made fibre obtained from wood pulp.

B. Polythene and PVC are thermosetting plastics.

C. Silk and cotton, both are biodegradable polymers.

D. Acrylic is also called synthetic wool.

Answer: B



Watch Video Solution

17. Sujata, Elina and Suhani bought new bicycles on the same day. After two years, whose bicycle will be in the worst condition due to rusting?

A. Sujata's, who lives near the sea coast in

Mumbai

B. Elina's, who lives in a hilly area with cool

and moist climate

C. Suhani's, who lives near a desert with

hot and dry climate

D. Both B and C

Answer: A



Watch Video Solution

18. In the given figure, different zones of a candle flame are marked by the letters P, Q, R and S.





Which of the following statements is/are incorrect?

(i) P is the luminous zone and is the hottest

part of candle flame.

(ii) In zone Q, there is inadequate supply of oxygen.

(iii) Zone R contains unburnt wax vapours produced by melting of wax.

(iv) In zone S, carbon monoxide burns with a yellow flame.

A. (i) only

B. (ii), (iii) and (iv) only

C. (i) and (iv) only

D. (i), (ii) and (iii) only

Answer: C



Watch Video Solution

Achievers Section

1. Two persons X and Y are standing at a distance of 100 m from a high wall as shown in the given figure. When X gives a clap, the time interval between the two (direct and reflected) sounds heard by Y is 0.2 s. If the speed of sound is 330ms^{-1} , then the distance

d between X and Y is



A. 160 m

B. 270 m

C. 290 m

D. 320 m

Answer: B



View Text Solution

2. The tremors produce waves on the surface of the earth. These are called (i)_____ The waves are recorded by an instrument called the(ii) _____. Richter scale is a (iii) _____ scale. An earthquake of magnitude 6 has (iv)_____ times more destructive energy than an earthquake of magnitude 4.



[View Text Solution](#)