A

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E 906-Ph

ANNUAL EVALUATION 2022-23

PHYSICS

Standard : IX

Time : 1½ Hour
Total Score : 40

Instructions

- First 15 minutes is given as cool off time. This time is to be spent for reading and understanding the questions.
- Answer the questions based on instructions.
- Answer the questions according to score and time.
- **The graph paper given in the question paper can be used to answer question no. 22. Attach it to the answer sheet.**

Answer any three questions from 1 to 4. (1 score each) **(3 x1 = 3)**

1. Find out the relation from the first pair and complete the other. (1)

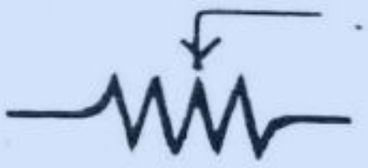
   Current : ampere :: Electric charge : .....

2. On an electric motor, it is labelled as 1 HP. Express the power of the motor in watt? (1)

3. A body of mass 3 kg is moving with a velocity of 4 m/s. What is its momentum.

   (7 kgm/s , 12 kgm/s , 24 kgm/s, 48 kgm/s) (1)

4. Choose the symbol of rheostat from the following. (1)

   a)  b)  c)  d) 

Answer any 7 questions from 5 to 13. (2 score each) **(7 x2 = 14)**

5. Density of liquid ethanol is 789 kg/m^3. Calculate its relative density. (2)

   (Density of water is 1000 kg/m^3)

6. What is the work done against the gravitational force of the earth in the following situations?

   a) i) A boy standing with a load of mass 10 kg.

   ii) A boy travelling 2 m along a level ground carrying a load of mass 10 kg. (1)

   b) Justify your answer. (1)

7. A battery is a combination of cells.

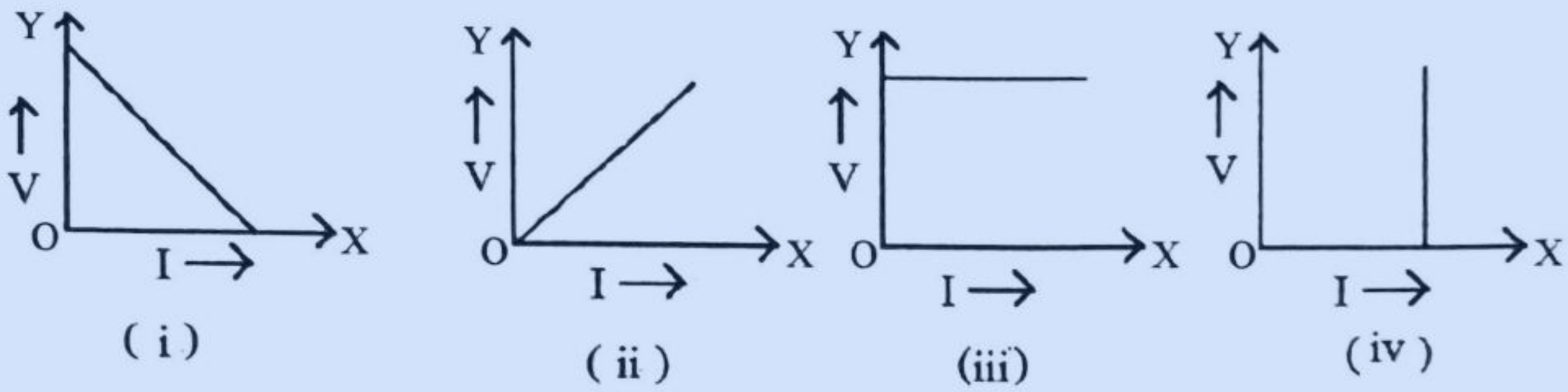
   a) What are the ways in which cells can be arranged in a battery? (1)

   b) 6 cells of 1.5 V each are to be arranged to form a battery of 9 V. Draw the diagram showing the arrangement. (1)

8. Match the following appropriately. (2)

A	B
a. Ultrasonic waves	i) Acoustics of buildings
b. Earthquake	ii) reverberation
c. Multiple reflection	iii) echo cardiograph
d. Construction of recording studio	iv) seismic waves
	v) 15000 Hz

9. a) Which of the following graphic representation is related to Ohm's law? (1)



b) A current of 0.2 A flows through a 100 Ω resistor. Calculate the potential difference across the resistor. (1)

10) You might have seen Tsunami warning through media.Write down any two safety measures to be adopted when there is a Tsunami warning. (2)

11) An object weighs 40 kgwt on the earth. What is its weight on the moon? (g_{moon} = 1.62 m/s²) (2)

12) Write down the energy change in the following devices.

a) Electric fan (1)

b) Battery in the mobile phone (while charging) (1)

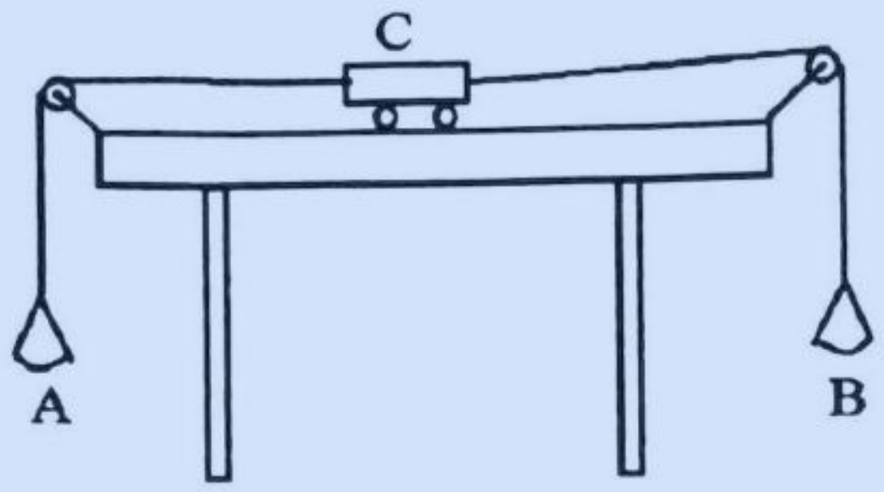
13) A man heard an echo of his sound after 4 s. Calculate the distance between him and the reflecting surface. (Assume the speed of sound in air as 340 m/s) (2)

Answer any 5 questions from 14 to 19. (3 score each) **(5 x3 = 15)**

14) a) Draw a circuit diagram including all the following devices to lit a bulb. (1)
(ammeter, voltmeter, switch, 12 V battery, bulb, connecting wire)

b) Calculate the resistance in this circuit if the current is 0.5 A. (2)

15) In the figure given below C is a frictionless toy car of low mass. Threads are taken from either end of the car through pulleys and weights are hung at the ends as shown.

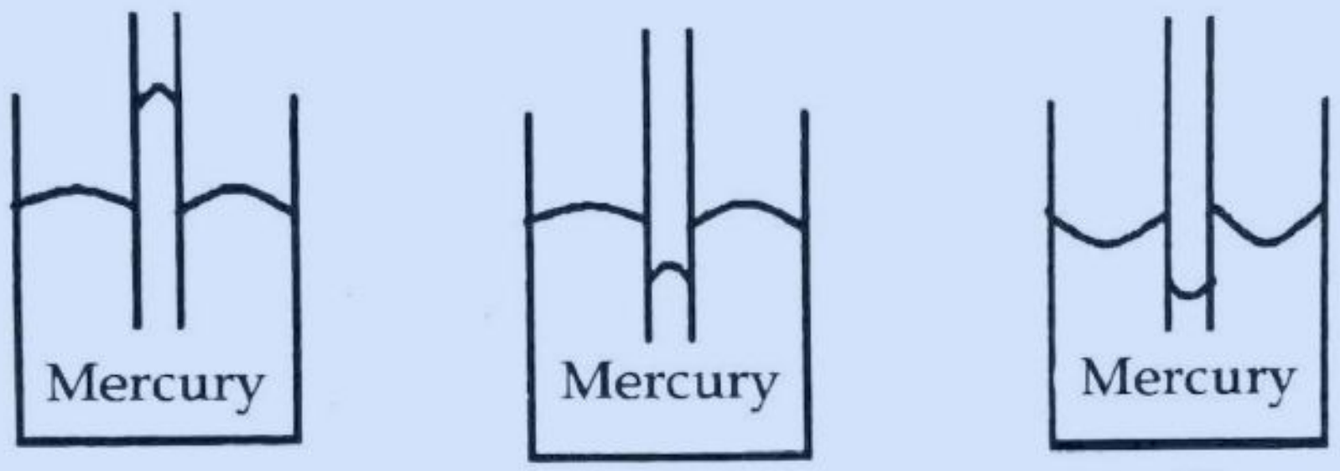


a) What will you observe on placing 100 g weight each in pans A and B? (1)

b) What will be your observation on placing 100 g weight in A and 200 g weight in B? Justify your answer. (2)

16) Temperature is a factor affecting the resistance of a conductor. Write down three other factors that influence the resistance of a conductor. (3)

17) Observe the figures and write down the answer.



(A) (B) (C)

a) Which is the correct figure? (1)

b) Draw the figure showing the changes brought about when mercury is replaced by water. (2)

18) The problems that occur in halls due to reflection of sound can be remedied upto a certain extent by making the walls rough.

a) Which are the problems that can occur in a hall due to reflection of sound? (1)

b) Write down two other methods that can be adopted to minimise the problem. (2)

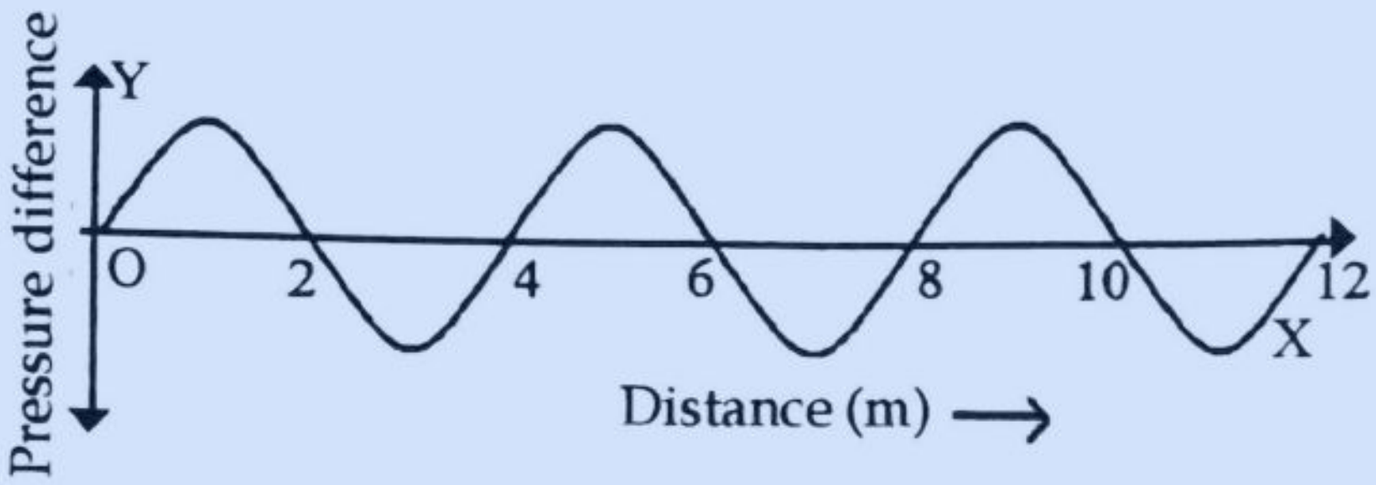
(19) a) Identify the devices shown in the figures. (2)

b) Write down any one use of each. (1)

(i) (ii)

Answer any two questions from 20 to 22. (4 score each) **(2 x 4 = 8)**

20) A wave generated in 1 s is depicted. Observe it and answer the following questions



Calculate the following

a) Wavelength of the wave (1)

b) Frequency of the wave (1)

c) Speed of the wave (1)

d) Which type of wave is this? (1)

21) a) The weight of a freely falling body is zero. Why? (1)

b) What do you mean by free fall? (1)

c) A coconut gets detached from a coconut tree and hits the ground in 1 second. Calculate its velocity just before hitting the ground. (2)

22) The details regarding the travelling of a car with uniform velocity are tabulated.

a) Draw the velocity-time graph using the data. (2)

(The graph paper given in the question paper can be used to answer. Attach it to the answer sheet)

time (s)	0	2	4	6	8	10
velocity (m/s)	10	10	10	10	10	10

b) Calculate the displacement of the car from the 3rd second to the 10th second (2)