



TEST PAPER: PHYSICS

Time: 70 Minutes

Class: I.C.S.E. 10

Max. Marks: 50 Marks

Date: 26th July 2018

Marking Scheme: All questions carry 10 marks each. Subparts (A) and (B) carry 3 marks each and subpart (C) carries 4 marks.

Question 1

- A. i) If the amplitude of a wave is doubled, what will be the effect on its loudness?
ii) State the conditions for resonance to occur?
- B. There are three pins in an electric plug top.
Answer the following:
(i) How would you identify the earth pin?
(ii) In which of the three connecting wires should the electric switch be connected?
(iii) Explain why a switch should not be touched with wet hands.
- C. i. Find the heat energy produced in a coil of resistance 80Ω if $3A$ current is passed through it for 4 seconds.
ii. Four resistance of 2.0Ω each are joined end to end to form a square ABCD. Calculate the equivalent resistance of the combination between any two adjacent corners.

Question 2

- A. You have just paid the electricity bill for your house
(i) what was it that your family consumed, for which you had to pay?
(ii) In what unit was it measured?
(iii) State its S.I. unit
- B. Name the material used for making fuse wire. State two properties of the material of fuse wire which make it suitable for use.
- C. Two resistors of 2Ω and 3Ω in parallel are connected to a cell of emf $1.5V$ and internal resistance 0.3Ω . Draw a labelled circuit diagram showing the above arrangement and the current drawn from the cell.

Question 3

- A. Mention three factors on which the resistance of a wire depends.
- B. An electric kettle is rated $2.5kW$, $250V$. Find the cost of running the kettle for 2 hours at 50 paise per unit.
- C. A bulb is marked $100W$, $220V$ and an electric heater is marked $2000W$, $220V$
(i) What is the ratio of their resistances?
(ii) In which of the above a thicker connecting wire or lead is required?

Question 4

- A. The wavelength of waves produced on the surface of water is $15cm$. If the wave velocity is $36m/s$. Find:
(i) the number of waves produced in one second and
(ii) the time required to produce one wave.
- B. Calculate the total electrical energy in SI units consumed by a $100W$ bulb and a $60W$ fan connected in parallel in 5 minutes.
- C. A man standing in front of a vertical cliff fires a gun. He hears the echo after 3 seconds. On moving closer to the cliff by $82.5m$, he fires again. This time, he hears the echo after 2.5 seconds. Calculate:
(i) the distance of the cliff from the initial position of the man.
(ii) the velocity of sound.

Question 5

- A. State the three factors on which heat energy produced in a current carrying wire depend.
- B. State any three advantages of using ring system for household wiring.
- C. In the figure given alongside, A, B and C are three ammeters. The ammeter B reads $0.5A$. (All the ammeters have negligible resistance.) Calculate:

- i) The total resistance of the circuit.
ii) E.M.F. of the cell used
iii) The readings in the ammeters A and C

