# CURRENT ELECTRICITY AND HOUSEHOLD CIRCUITS

**TOTAL MARKS :35**

1) What are the factors on which the resistance of a conductor depends? [2m]
2) Name the colour of the three core cable along with their corresponding electrical connections to a socket. [2m]
3) 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. [3m]

4) Give one example each of material suitable for making (i) fuse wire and (ii) heater element.[2m]
5) What is meant by earthing of an electrical appliance? How does earthing offer protection?[2m]
6) Two fuse wires of the same length are rated 5 A and 20 A. Which of the two fuse wires is thicker and why? [2m]
7) Of the three connecting wires in a household circuit :

   (i) Which two of the three wires are at the same potential?

   (ii) In which of the three wires should the switch be connected? [2m]

8) An electric heater is rated 500 kVA, 220 V. If the heater is operated for 1 hour, calculate the energy consumed

(i) in kWh and

(ii) in joule. [3m]

9) What quantity of heat will be produced in a coil of resistance 80 ohm if current of 3 A is passed through it for 4 second. [2m]

10) A geyser has a label 2 kW, 240 V. What is the cost of running it for 30 minute, if the cost of electricity is Rs3.00 per unit? [2m]

11) Distinguish between terminal potential difference and emf of a cell. [2m]

12) Mention two factors on which the internal resistance of a cell depends. [2m]

13) Two resistors of 2 ohm and 3 ohm in parallel are connected to a cell of emf 1.5 V and internal resistance 0.3 ohm. Draw a labelled circuit diagram showing the above arrangement and the current drawn from the cell. [3m]

14) Four cells each of emf 1.5 V and internal resistance 2.0 ohm are connected in parallel. The battery of cells is connected to an external resistance of 2.5 ohm. Calculate :

(i) the total resistance of the circuit

(ii) the current flowing in the external circuit and

(iii) the drop in potential across the terminals of the cells. [3m]

15) State Ohm's law. [2m]

16) State the purpose of a fuse in an electric circuit [1m]