Electricity

Previous Year Questions

Q.1. List two precautions to be taken to avoid accidents due to electricity. Mention how these precautions protect the circuit/appliance from potential damage.

Q.2. (a) What is meant by 'Joule's heating effect of electric current'?

(b) Write the mathematical expression for it.

(c) Name any two devices based on this effect.

Q.3. (a) State the mathematical form of Joule's law of heating.

(b) Why is the heating element of an electric toaster or electric iron made of an alloy rather than a pure metal?

(c) An electric iron consumes energy at a rate of 880 W when heating is at the maximum rate and 330 W when the heating is at the minimum. If the source voltage is 220 V, calculate the current and resistance in each case.

Q.4. List the factors on which the resistance of a uniform cylindrical conductor of a given material depends

Q.5. (a) State Ohm's Law.

(b) How is an ammeter connected in an electric circuit?

Q.6. (a) State the relationship between Joule's heat produced in a conductor of resistance R, when a current I flows through it for time t.

(b) Which has more resistance a 100 W bulb or a 60 W bulb, both operating at 220 V? Justify your answer.

Q.7. (a) An electric kettle is rated at 220 V, 2.2 kW. Calculate the amount of electric current flowing through it.

(b) Find the amount of electrical energy consumed in Joules when this kettle is used for 2 hours daily for 30 days.

(c) If the cost of one unit of energy is Rs 5, calculate the total cost of the energy consumed.

Q.8. How does a chemical signal generated by hormones differ from an electric impulse generated by nerve cells?

Q.9. List two uses of any one product obtained from the electrolysis of brine.

Q.10. (a) Write the colours of the insulation covers of the line wires through which supply comes to our homes.

(b) What should be the current rating of the fuse used in the main circuit?