Reg.No. :

I.Answer all the questions.
II.Use blue pen only.

Time : 01:00:00 Hrs

Total Marks : 35

Part-A

5 x 1 = 5

1) The potential difference required to pass a current 0.2 A in a wire of resistance 20 ohm is _____.

   (a) 100V   (b) 4V   (c) 0.01V   (d) 40V

2) Two electric bulbs have resistances in the ratio 1 : 2. If they are joined in series, the energy consumed in these are in the ratio _____.

   (a) 1:2   (b) 2:1   (c) 4:1   (d) 1:1

3) Kilowatt-hour is the unit of _____.

   (a) potential difference   (b) electric power   (c) electric energy   (d) charge

4) _____ surface absorbs more heat than any other surface under identical conditions.

   (a) White   (b) Rough   (c) Black   (d) Yellow

5) The atomic number of natural radioactive element is _____.

   (a) greater than 82   (b) less than 82   (c) not defined   (d) atleast 92

Part-B

10 x 2 = 20

6) In the list of sources of energy given below, find out the odd one. (wind energy, solar energy, hydro electric power)

7) Correct the mistakes, if any, in the following statements. i) A good source of energy would be one which would do a small amount of work per unit volume of mass. ii) Any source of energy we use to do work is consumed and can be used again.

8) The schematic diagram, in which different components of the circuit are represented by the symbols conveniently used, is called a circuit diagram. What do you mean by the term components?

9) The following graph was plotted between V and I values.What would be the values of V / I ratios when the potential difference is 0.5 V and 1 V?
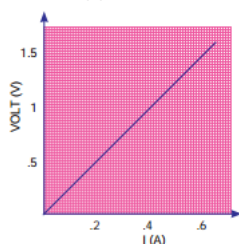
10) We know that γ – rays are harmful radiations emitted by natural radio active substances. i) Which are other radiations from such substances? ii) Tabulate the following statements as applicable to each of the above radiations (They are electromagnetic radiation. They have high penetrating power. They are electrons. They contain neutrons)

11) Draw the schematic diagram of an electric circuit consisting of a battery of two cells of 1.5V each, three resistance of 5 ohm, 10 ohm and 15 ohm respectively and a plug key all connected in series.

12) Observe the circuit given and find the resistance across AB.
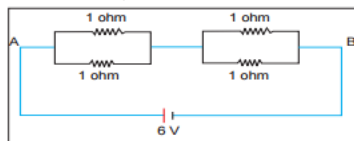
13) Complete the table choosing the right terms within the brackets. (zinc, copper, carbon, lead, lead dioxide, aluminium.)

+ ve electrode	Lead acid accumulator	
- ve electrode	Lechlanche cell	

14) How many electrons flow through an electric bulb every second, if the current that passes through the bulb is 1.6 A.

15) Vani's hair dryer has a resistance of 50 ? when it is first turned on. i) How much current does the hair dryer draw from the 230 V – line in Vani's house? ii) What happens to the resistance of the hair dryer when it runs for a long time? (Hint : As the temperature increases the resistance of the metallic conductor increases.)

Part-C

2 x 5 = 10

16) Veena's car radio will run from a 12 V car battery that produces a current of 0.20 A even when the car engine is turned off. The car battery will no longer operate when it has lost 1.2 x 10^6 J of energy. If Veena gets out of the car, leaving the radio on by mistake, how long will it take for the car battery to go completely dead, i.e. lose all energy? (1 day =86400 second)

17) Find the total current that passes through the circuit. Find the heat generated across the each resistor.

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