

Four alternatives are provided for each question. Choose the most appropriate alternative.

And write it with its alphabet.

1 x 8 = 8



- a] combination reaction b] Double displacement reaction
c] Decomposition reaction d] **displacement reaction**

2. An aqueous solution of sodium acetate will turn

- a] Methyl orange yellow b] Red litmus blue
c] Phenolphthalein solution pink d] **all of these**

3. Which of the following methods is suitable for preventing an iron frying pan from rusting?

- a] Applying grease b] Applying paint
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4. The chamber of heart that receives deoxygenated blood from the tissues of body is

- a] Left atrium b] **Right atrium** c] Left ventricle d] Right ventricle.

5. The Brain is responsible for

- a] thinking b] regulating the heart blood
c] balancing the body d] **All of the above**

6. Three resistances of $4\ \Omega$, $5\ \Omega$ and $20\ \Omega$ are connected in parallel. Their combined resistance is

- a] **$2\ \Omega$** b] $4\ \Omega$ c] $5\ \Omega$ d] $20\ \Omega$

7. The magnetic lines of force of a straight conductor carrying current are

- a] parallel to conductor b] **concentric circles**
c] Perpendicular to conductor d] none of these.

8. Which of the following constitute a food chain?

- a] Grass, wheat and mango b] **Grass, goat and human**
c] Goat, cow and elephant d] Grass, fish and goat

9. The medicine used for treating indigestion is - *Antacid*

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10. The kidneys in human beings are a part of the system for -----**Respiration**

11. Oil and fat containing food items are flushed with nitrogen why ?

Solution: Oil and fat containing food items are flushed in nitrogen because nitrogen act as An antioxidant and it prevents them from being oxidised.

12.What is the common name of the compound CaOCl_2 ?

Solution: the common name of the compound CaOCl_2 is Bleaching powder.

13.Name two metals which are found in nature in the free state.

Solution: The metals at the bottom of the reactivity series are mostly found in the free state.
e.g., Gold , Silver and Platinum.

14.Which instrument is used to measure the blood pressure in human beings ?

Solution: Blood pressure is measured by using sphygmomanometer.

15. What are plant hormones?

Solution: Plants are special chemicals which regulate the growth of various plant parts E.g., Auxins

16. Calculate the power ratings of the heater coil when used on 220 V supply taking 5 amps.

Solution: Voltage $V = 220 \text{ V}$ and current $I = 5 \text{ A}$, power = $V I = 220 \times 5 = 1100 \text{ W} = 1.1 \text{ KW}$

ANSWER THE FOLLOWING

17.State the principle of an electric generator .

2 x 8 = 16

Solution: Electric generator works on the principle of electromagnetic induction. Electricity is Generated by a rotating coil inside the magnetic field.

18. Why is respiration considered as an exothermic reaction? Explain.

Solution: Respiration is considered as an exothermic reaction because in respiration, oxidation of glucose Takes place which produces a large amount of heat energy.



19.What is the difference between the displacement and double displacement reactions? Write equations

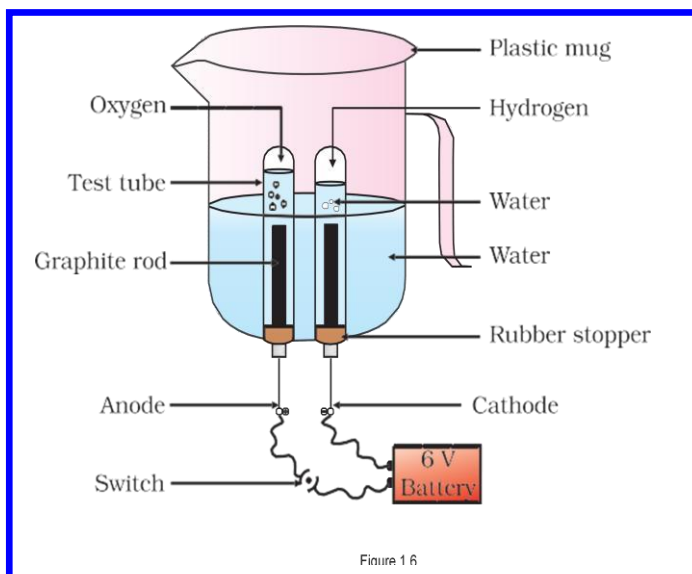
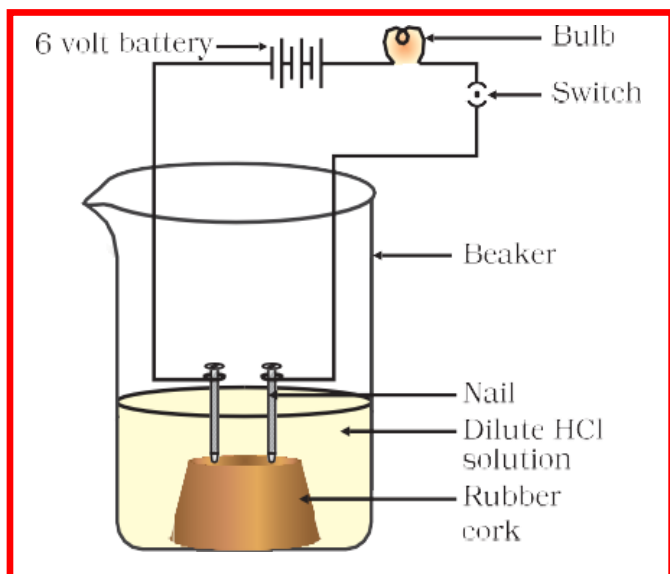
For these reaction. **Solution:**

Displacement reaction	Double displacement reaction
One element from its salt is displaced by a more reactive Element	Exchange of ions takes place between two reactants , to Form new products
E.g., $\text{CuSO}_4 + \text{Zn} \longrightarrow \text{ZnSO}_4 + \text{Cu}$	$\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \longrightarrow \text{BaSO}_4 + 2\text{NaCl}$

20. Why should curd and sour substances not be kept in brass and copper vessels.

Solution: Curd and other sour substances contain acids. Therefore when they are kept in brass and copper vessels the metals react with acid to liberate hydrogen gas and harmful products. Thereby spoiling food.

21. Draw a neat diagram of electrolysis of water. Solution:



22. Draw a neat diagram to show that the Acid solution in water conducts electricity.

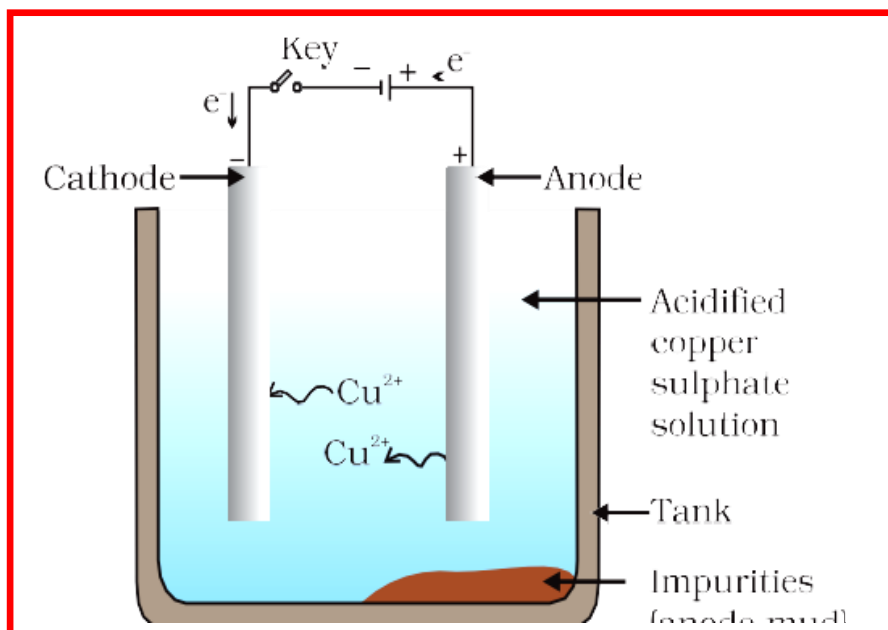
Solution: Ans above

23. Differentiate between metal and non – metal on the basis of their chemical properties.

Solution:

Metal	Non - metal
Metals are electropositive	Non-metals are electro negative
Oxides of metal are basic in nature.	Oxides of non-metals are acidic in nature.
Metals displace hydrogen from dilute acids.	Cannot replace hydrogen from dilute metals.
Metals form chlorides which are electrovalent or ionic compounds	Non-metals form chlorides which are covalent compounds.

24. Draw a diagram of Electrolytic refining of copper .



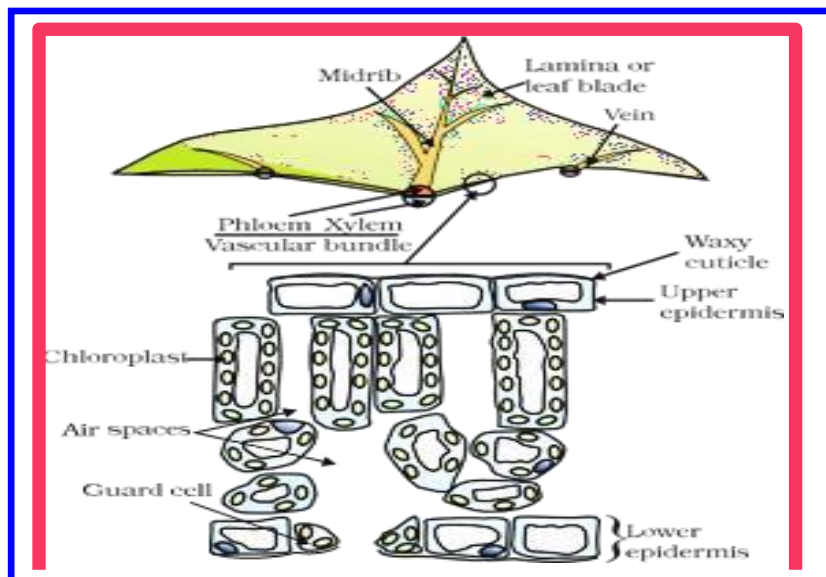
25. Write the differences between Autotrophic and Heterotrophic nutrition ,

Solution:

Autotrophic nutrition ,	Heterotrophic nutrition ,
Food is synthesised from simple materials like carbon di oxide from the air and water from the Salt .	Food is obtained directly or indirectly from the autotrophs. The complex food is broken down to simpler absorbable forms with the help of digestive enzymes.
Food is prepared in the leaf in the presence of sunlight [chlorophyll is required]	Chlorophyll is not necessary

26. Draw a neat diagram of

Cross – section of leaf.



27. How does chemical coordination take place in animals?

Solution: chemical coordination take place in animals with the help of hormones. Hormones are the Chemical fluids that are secreted by the glands of endocrine system. Hormones regulate the overall growth And development of the animals.

28. Why are some patients of diabetes treated by giving injections of insulin ?

Solution: Diabetes is caused due to less or no secretion of the hormone insulin by pancreas . In such a Person , the blood sugar level will be high. Insulin converts the extra sugar present in blood into Glycogen. Thus patients suffering from diabetes are given insulin injection to control their blood sugar Level.

29. An electric heater of resistance 8Ω draws a 15 A from the service mains 2 hours. Calculate the rate

At which heat is developed in the heater.

Solution: Given resistance $R = 8 \Omega$

Electric current [I] = 15 A

Time [t] = $2 \text{ h} = 2 \times 60 \times 60 \text{ s} = 7200 \text{ S}$

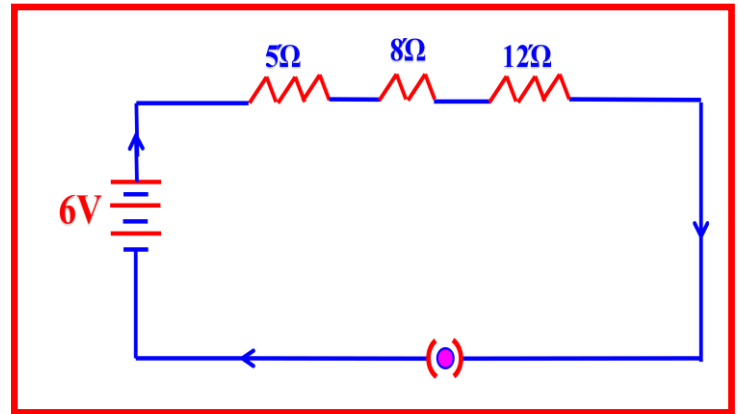
Rate at which heat is developed in the heater = ? $\frac{I^2 R t}{t} = I^2 R =$

We know that rate of heat produced = $(15 \text{ A})^2 \times 8 \Omega = 225 \times 8 \text{ J/s} = 1800 \text{ J/s}$

30. [A] Why is tungsten used almost exclusively for filament of electric lamps?

Solution: The melting point and resistivity of tungsten are very high. It does not burn readily at High temperature. The electric lamp glow at very high temperatures. Hence tungsten is mainly used As heating element of electric bulbs.

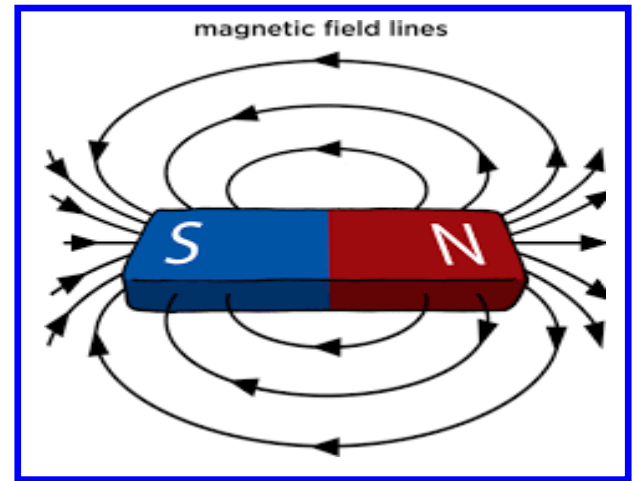
30 [B] Draw a schematic diagram of a circuit consisting of a battery of three cells of 2v each, a 5 Ω resistor, An 8 Ω resistor, and a 12 Ω resistor and a plug key, connected all in series



31. Draw magnetic field lines around a bar magnet

AND Name some devices in which electric motors are used.

Solution: Some of the devices in which electric motors are used Are water pumps, Electric fans, Electric mixers and washing Machines.



32[A]. How can you help in reducing the problem of waste Disposal? Give any two methods.

Solution: We can help in reducing the problem of waste disposal by these methods.

- a. By separating biodegradable substances from non-biodegradable substances.
- b. By reducing, reusing and recycling non – biodegradable substances

32[B] What will happen if we kill all the organisms in one trophic level?

Solution: If we kill all the organisms of one trophic level it will create an imbalance in the eco system. As an example in a food chain Grass --- Deer -----Lion, if we remove all lions then population of Deer will increase which will cause over grazing. This will lead to deforestation. It may even lead to Soil erosion causing further conversion of fertile land into barren desert.

33. What are the functions of digestive enzymes?

Solution: [Any three]

	Enzymes	Food to be digested	Medium of action	Action of enzymes

1	Ptyalin or Salivary amylase	Carbohydrates	Neutral	Carbohydrates to Maltose
2	Pepsin	proteins	Acidic	Proteins to Polypeptides
3	Lipase	Cream fats	Acidic	Fats of the cream To fatty acids Emulsified fats to fatty acids and glycerol
4	Trypsin	Polypeptides	Alkaline	Polypeptides to dipeptides.
5	Amylase	Starch	Alkaline	Starch to simple Sugars.

Answer the following:

34. Five solutions A, B, C, D, and E when tested with universal indicator showed pH as 4, 1, 11, 7 and 9

Respectively . Which solution is

4 x 4 = 16

- [a] neutral ?
- [b] Strongly alkaline ?
- [c] Strongly acidic ?
- [d] Weakly acidic ?
- [e] Weakly alkaline ?

Solution: [Any three]

- [a] Neutral = Solution D with pH 7
- [b] Strongly alkaline = Solution C with pH 11
- [c] Strongly acidic = Solution B with pH 1
- [d] Weakly acidic = Solution A with pH 4
- [e] Weakly acidic = Solution E with pH 9



35. Write the balanced chemical equations for the following reactions.

- [A] Calcium hydroxide + carbon dioxide \longrightarrow Calcium carbonate + water
- [B] Zinc + Silver Nitrate \longrightarrow Zinc nitrate + Silver.
- [C] Aluminum + Copper chloride \longrightarrow Aluminium chloride + Copper

Solution:

- [a] $\text{Ca(OH)}_2 + \text{CO}_2 \longrightarrow \text{CaCO}_3 + \text{H}_2\text{O}$
- [b] $\text{Zn} + 2\text{AgNO}_3 \longrightarrow \text{Zn(NO}_3)_2 + 2\text{Ag}$
- [c] $2\text{Al} + 3\text{CuCl}_2 \longrightarrow 2\text{AlCl}_3 + 3\text{Cu}$

36. The values of current I flowing in a given resistor for the corresponding values of potential difference V

Across the resistor are given below plot a graph between V and I and calculate the resistance of the resistor.

I (amperes)	0.5	1.0	2.0	3.0	4.0
V (volts)	1.6	3.4	6.7	10.2	13.2

Solution:

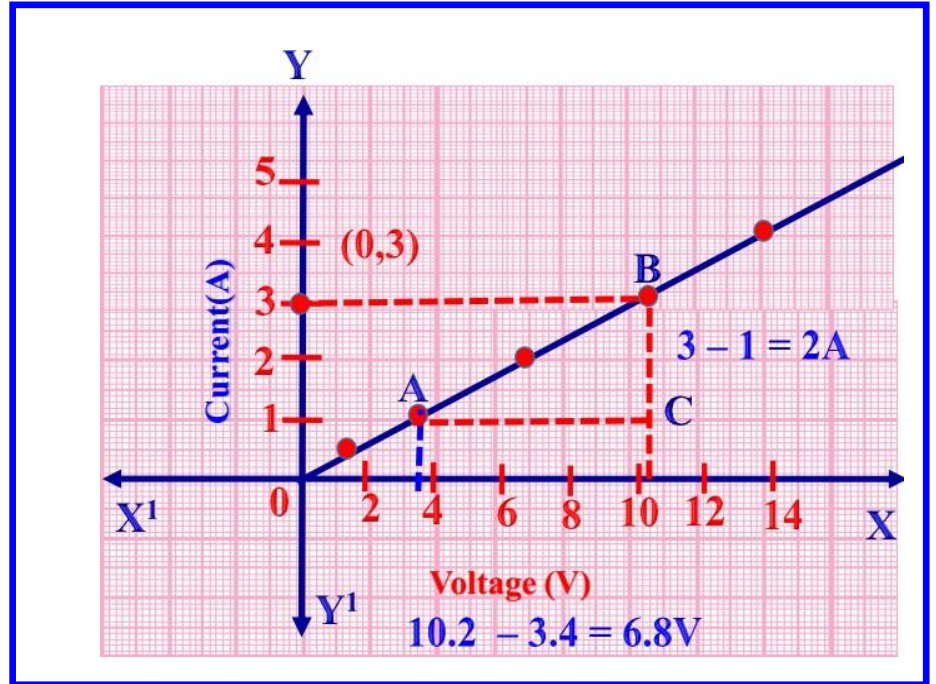
The plot between voltage and current for different values is called IV characteristic

The voltage is plotted on x-axis and current is plotted on y – axis

The slope of the line gives the value of resistance (R) as

$$\text{Slope} = \frac{I}{R} = \frac{BC}{AC} = \frac{2}{6.8} = R = \frac{6.8}{2} = 3.4$$

Therefore the resistance
Of the resistor is 3.4Ω



37. Why is the damage to the ozone layer a cause for concern? What steps are being taken to limit this damage?

OR

37. Match the following :

	A	B	Ans
1	Phototropism	Towards chemical responses	3
2	Geotropism	Towards water	4
3	Chemotropism	Towards Earth's gravity	2
4	Hydrotropism	Towards light	1
		Towards touch of an object	

Solution: The damage to the ozone layer is a cause for concern because

- A] It causes skin darkening , skin cancer, ageing and corneal cataracts in human being.
- B] It can result in the death of many phytoplankton's that leads to increased global warming.

The following steps can be taken to minimize the damage.

- a. The release of CFCs into the atmosphere must be reduced.
- b. CFCs used as refrigerants and in the fire extinguishers should be replaced with environmentally Safe alternatives.
- c. The release of CFCs through industrial activities should be controlled

Answer the following :

1 x 5 = 5

37. Draw a structure of neuron and explain its function.

OR

37 [a] Draw a human

Brain, label the parts

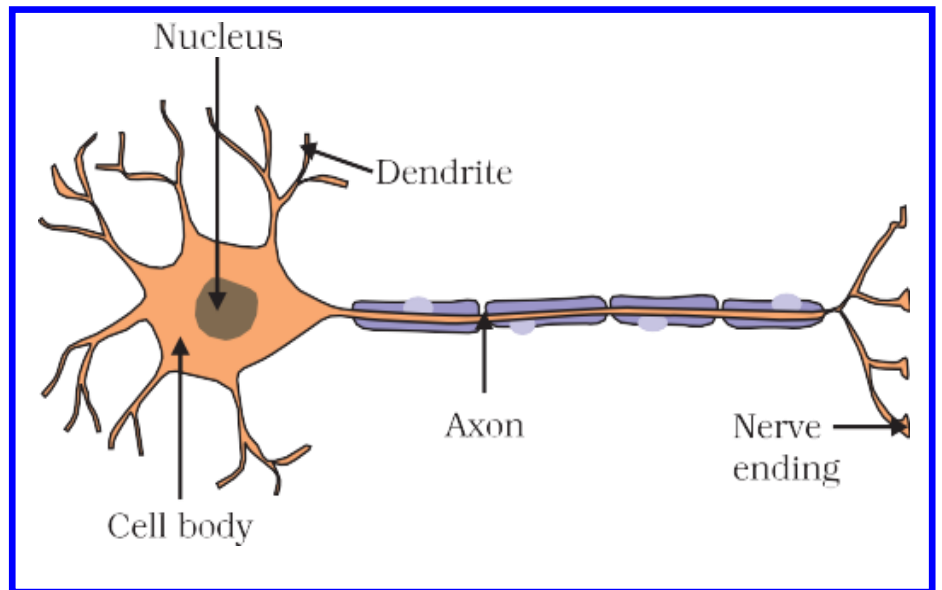
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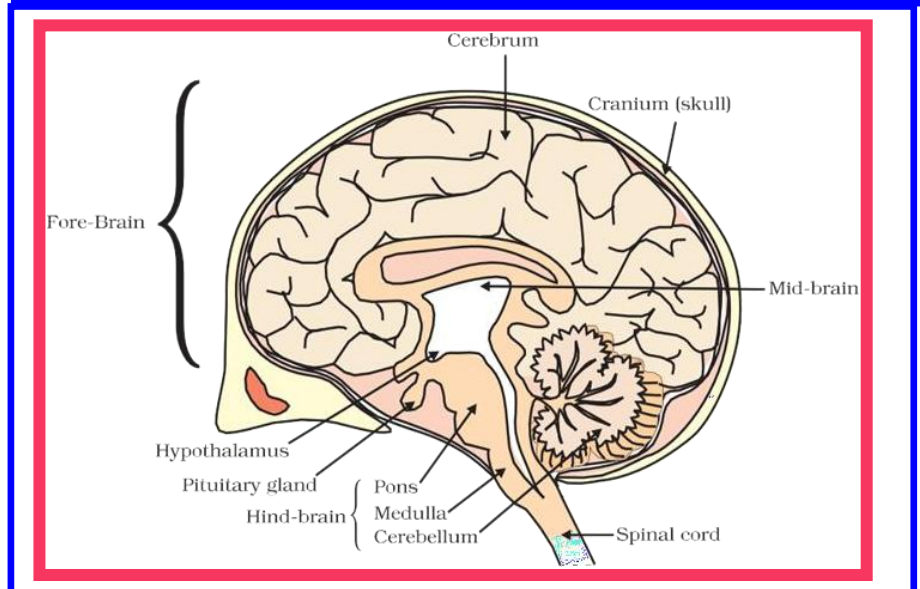
OR

37 [b] Explain the principle and working of an electric generator by drawing a labelled diagram.

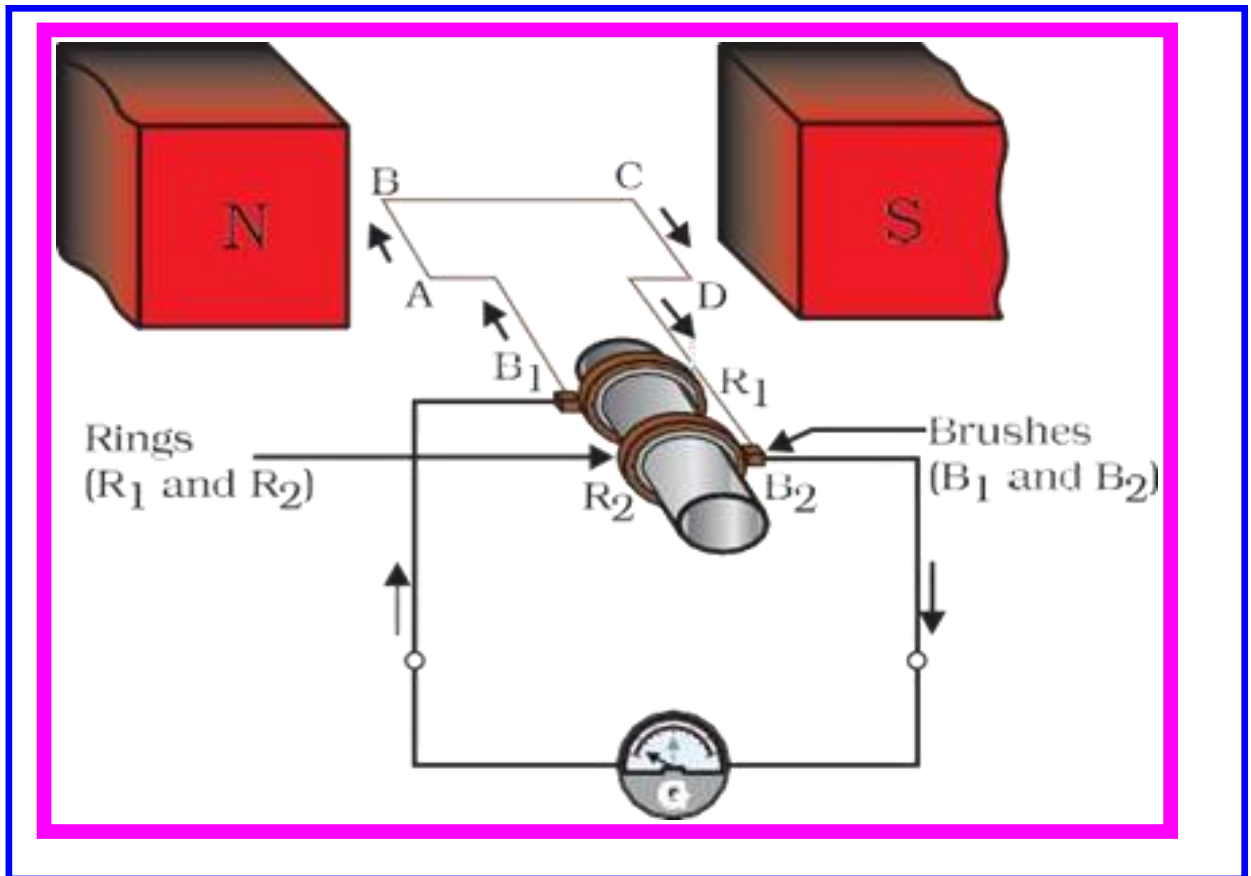
Solution: its special property is to be able to conduct impulses . It consists of a tree like branches or Dendrites that receive the stimulus and pass the resulting impulse to the main cell body cyton which Passes it to the long thread like axon. The axon often extend to great lengths of the body Reaching the Other end of the Oxon the impulse is transmitted to the next neuron or a chain of neurons or into a muscle Or a gland.



38 Draw a human Brain, label the parts and explain its functions.



Explain the principle and working of an electric generator by drawing a labelled diagram



DATE:

TIME: 2 ½ Hrs.

SUB: SCIENCE
MARKS : 80

SUMMATIVE ASSESMENT – 1 [MID TERM]
2019 – 20

CODE: 83

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24. Draw a diagram of Electrolytic refining of copper.
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26. Draw a neat diagram of Cross section of leaf.
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TYPES OF QUESTIONS AND MARKS ALLOTMENT

SL NO	TYPES OF QUESTIONS	NO OF QUESTIONS	MARKS
1	MCQ (1M)	08	08
2	VERY SHORT ANSWER [1M]	08	08
3	SHORT ANSWER [2M]	08	16
4	LONG ANSWER TYPE - 1(3M)	09	27
5	LONG ANSWER TYPE - 2(4M)	4	16
6	LONG ANSWER TYPE -3 (5M)	1	5
		38	80

Weight age to Cognitive level

1	Remembering	10% (8M)
2	Understanding	55% (44M)
3	Application and Writing Skill	20% (16 M)
4	Mathematics Skill	15% (12M)
	Total	100% (80M)