7. Question numbers **19** to **24** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.

8. Question numbers **25** to **33** in **Section-B** are multiple choice questions based on practical skills. Each question is a **one mark** question. You are to select one most appropriate response out of the four provided to you.

9. Question numbers **34** to **36** in **Section-B** are questions based on practical skills are two **marks** questions.

SECTION-A

1. Differentiate between gustatory receptors and olfactory receptors. 1

2. Name the device that helps to maintain a potential difference across a conductor. 1

3. Why is a solar cooker painted black from outside ? 1

4. List two changes that are observed when fresh milk is kept in open at the room temperature during summers for about a day. Name the substance formed and write its chemical test. 2

5. How is washing soda obtained from baking soda ? Explain with the help of chemical equations for the reactions involved in the process. 2

6. How is food translocated from leaves to the other parts of the plant ? 2

7. Write chemical equations for the reactions taking place when :

   (i) Iron reacts with steam.

   (ii) Magnesium (Mg) reacts with dil. HCl.

   (iii) Copper is heated in air. 3

8. Name the gas which is usually liberated when an acid reacts with a metal. Illustrate with an example. How will you test for the presence of this gas ? 3

9. (a) Name the acid present in the following natural sources :

   (i) nettle sting

   (ii) vinegar

   (iii) tomato

   (iv) curd

   (b) Name two natural acid - base indicators. 3

10. Differentiate between the following :

(i) Reaction of magnesium and calcium with water.

(ii) Roasting and calcination processes giving an example of each.

(iii) Nature of metal and non metal oxides with an example. 3

11. Explain how does auxins promote the growth of a tendril around a support ? 3

12. Draw a neat diagram of open stomata and label any four parts in it. 3

13. (a) State reason for the following :

(i) Rings of cartilage are present in the trachea.

(ii) Plants look green in colour.

(b) Write other names of the following :

(i) alveolar sac

(ii) voice box 3

14. List two characteristic properties of a magnet. Show that the two poles of a magnet have different behaviour. 3

15 How do we connect ammeter and voltmeter in an electric circuit ? Draw a circuit diagram to justify your answer. What is likely to happen if the positions of these instruments are interchanged ? Give reason. 3

16 State Ohm's law. Draw a circuit diagram to verify this law indicating the positive and negative terminals of the battery and the meters. Also show the direction of current in the circuit. 3

17 An NGO is opposing the construction of a dam on a river flowing through a number of villages and forest for the 'purpose' of generating electricity while the Government was insisting that it would bring a number of benefits for the villagers once the project gets completed.

(a) Describe the value exhibited by NGO.

(b) Explain any two concerns of NGO due to which it is opposing construction of dam. 3

18 If energy can neither be created nor destroyed, explain with an example as to why we should worry about our energy resources ? 3

19 (a) Write two observations made for each of the following chemical reactions along with chemical equations :

(i) dilute sulphuric acid is poured over zinc granules.

(ii) potassium iodide solution is added to lead nitrate solution.

(b) Why should magnesium ribbon be cleaned before burning in air ? 5

20 Give suitable reasons for the following statements :

(i) Rain water conducts electricity but distilled water does not.

(ii) We feel burning sensation in the stomach when we overeat.

(iii) A tarnished copper vessel regains its shine when rubbed with lemon.

(iv) The crystals of washing soda change to white powder on exposure to air.

(v) An aqueous solution of sodium chloride is neutral but an aqueous solution of sodium carbonate is basic. 5

21 (a) Define hormone. Write four characteristics of hormones in humans.

(b) Name the disorder caused by the under following situations :

(i) Under secretion of growth hormone

(ii) Over secretion of growth hormone

(iii) Under secretion of insulin

(iv) Deficiency of iodine 5

22 State Joule's law of heating. List two special characteristics of a heating element wire. An electric iron consumes energy at the rate of 880 W when heating is at the maximum rate and 440 W when the heating at the minimum rate. The applied voltage is 220 V. Calculate the current and resistance in each case. 5

23 What is meant by magnetic force ? Name and explain the rule to determine the direction of force experienced by a current carrying conductor in a magnetic field. How does this force gets affected on :

(i) doubling the magnitude of current.

(ii) reversing the direction of current flow.

(iii) reversing the direction of magnetic field. 5

24 What are magnetic field lines ? List three characteristics of these lines. Describe in brief an activity to study the magnetic field lines due to a current flowing in a circular coil. 5

SECTION - B

25 A student uses lime water to test the gas evolved as a result of action of dilute HCl on solid sodium carbonate. The chemical compound present in lime water is :

(a) calcium chloride
(b) calcium sulphate
(c) calcium nitrate
(d) calcium hydroxide 1

26 The correct order for increasing values of pH for water, fruit juice and soap solution will be :

(a) Water < fruit juice < soap solution.
(b) Fruit juice <soap solution< water
(c) Fruit juice < water < soap solution.
(d) Soap solution < water < fruit juice. 1

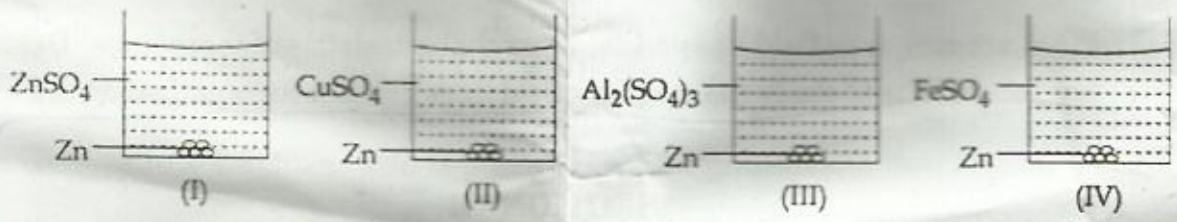
27 A thin plate of zinc metal is placed in a beaker containing aqueous $FeSO_4$ solution. After 15 minutes Zn plate was taken out. The deposit formed on Zn plate is of :

(a) iron sulphate
(b) iron oxide
(c) iron metal
(d) iron sulphide 1

28 Kaleem took 10mL each of two solutions A and B separately in two test tubes. The solutions were of $A1_2(SO_4)_3$ and $ZnSO_4$, respectively. The colours of A and B were:

(a) A- blue , B- colourless
(b) A-colourless , B- colourless
(c) A- pale green , B- blue
(d) A- colourless , B- brown 1

29 Zn granules were added to four beakers I, II, III, IV, containing zinc sulphate, copper sulphate, aluminium sulphate and iron sulphate solutions respectively. The deposition of metal on zinc will be observed in beakers :



(a) I and III (b) I and IV

(c) II and IV (d) III and IV 1

30 When two resistors of resistance 3Ω and 5Ω are connected to a battery it will have across the two resistors :

(a) Same potential difference when connected in series

(b) Same current when connected in parallel

(c) Different potential difference when connected in parallel

(d) Same current flowing through them when connected in series 1

31 A student was measuring equivalent resistance of two equal resistances joined in parallel. His teacher joined one more resistance of same value in the parallel combination. Now net resistance will-

(a) remain same

(b) decrease

(c) increase

(d) not be measurable 1

32 In submerged water plants (e.g., hydrilla)

(a) Light is not needed for photosynthesis

(b) Photosynthesis does not occur

(c) Light is necessary for photosynthesis

(d) Carbon dioxide is not required for photosynthesis 1

33 Rathin used boiled seeds in the set – up to demonstrate that CO_2 is given out during respiration. His observation for the water level in the delivery tube would be :

(a) Water level in the delivery tube decreases

(b) Water level in the delivery tube rises

(c) Water level in the delivery tube does not change

(d) Water level in the delivery tube depends on how well the seeds are boiled

(1)

34 While performing an experiment a student observes that when he heat some green crystals in a boiling tube, the colour of the crystal changes to brown and a gas evolves which smells like burning sulphur . Interpret the observations and results. (2)

35 The rest position's of the pointers of a milliammeter and voltmeter not in use are as shown in fig A. When a student uses these in his experiment the reading of pointers are in position's shown in fig B. Calculate the corrected value of current and voltage in this experiment.

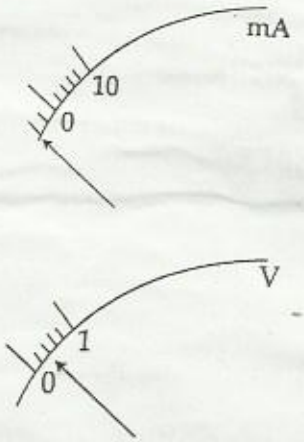


Fig A

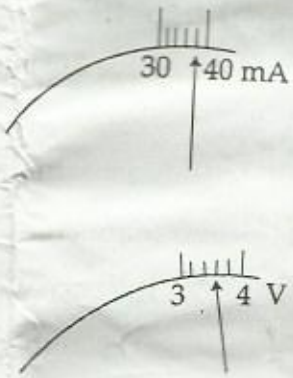


Fig B

36 In an experiment to prepare the temporary mount of a leaf peel to show stomata why glycerine and safranine are used ? 2

2

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