General Instructions :

1. The question paper comprises of **two Sections, A and B**. You are to attempt both the sections.
2. **All** questions are **compulsory**
3. **All** questions of **Section-A** and **all** questions of **Section-B** are to be attempted separately.
4. Question numbers **1** to **3** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**
5. Question numbers **4** to **6** in **Sections-A** are **two marks** questions. These are to be answered in about **30 words** each.
6. Question numbers **7** to **18** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each
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. Each question is of two **marks**.

SECTION-A

Give an example of a plant hormone that promotes its growth. Where is it synthesized ? 1

What is meant by magnetic field? 1

What are hot spots inside earth's crust ? 1

A milk man adds very small amount of baking soda in fresh milk. 2

(a) Why does he shift the pH of fresh milk from 6 to slightly alkaline ?

(b) Why does this milk take a long time to set as curd ?

Select a metal out of the following which reacts with hot water but not with cold water : 2

Iron, sodium, magnesium

Write the chemical equation of the reaction and name the main product formed during the reaction.

(a) Name the respiratory pigment found in human beings. 2

(b) How is carbon di oxide transported in our body ?

Which of the following substances in water will show acidic properties? State reason. 3

Sugar, carbon dioxide, acetic acid, alcohol, sulphur dioxide, urea.

8 Zinc oxide reacts with carbon, on heating to form Zinc metal and carbon monoxide. Write a balanced chemical equation for this reaction. Name (i) the substance oxidised and (ii) the substance reduced. 3

9 (a) In electrolytic refining of impure copper metal, what are used as cathode and anode ? 3

(b) Show the formation of $MgCl_2$ from magnesium and chlorine atoms by the transfer of electrons. (Atomic number of magnesium and chlorine are 12 and 17 respectively) 3

10 State what happens when : 3

(i) Gypsum is heated at 373 K.

(ii) Blue Crystals of copper sulphate are heated.

(iii) excess of carbon dioxide gas is passed through lime water.

11 State the function of receptors in our body. Think of any three situations where receptors in the body do not work properly. Mention the problems which are likely to arise. 3

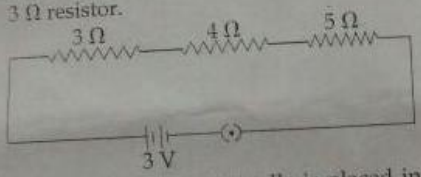
12 If all the leaves of a healthy potted plant are covered with Vaseline, will the plant remain healthy for long ? Explain your answer with reason. 3

13 What do the following transport ? 3

(i) Xylem (ii) Phloem (iii) Pulmonary vein

(iv) Venacava (v) pulmonary artery (vi) Aorta

14 Study the following electric circuit and determine the potential difference across 3 Ω resistor. 3



15 A magnetic compass needle is placed in the plane of the paper. In which plane would you place a straight current carrying conductor near this needle so that there is no change in the deflection of the compass? State the condition of the current carrying conductor in which the compass needle will show the maximum deflection. Justify your answer. 3

16 An electric heater is used on 220 V supply and takes a current of 5 A. What is its power ? Calculate the per hour cost of using the heater if 1 unit costs. Rs. 6.0. 3

17 Mariyam made a solar cooker on her own. She used a white metallic box with a lid. She put the food in the solar cooker for heating and closed the lid. But she did not get good results. She then consulted her teacher to know her mistakes. Her teacher pointed out her mistakes, which she later rectified. 3

(i) According to you, which two mistakes were made by Mariyam and what did she do to rectify them ?

(ii) Which qualities of Mariyam are reflected in her action ?

18 Explain the need and technological input adopted to increase the efficiency of wood as a better fuel. 3

19 (a) Define corrosion. 5

(b) What is corrosion of iron called ?

(c) How will you recognise the corrosion of silver ?

(d) Why corrosion of iron is a serious problem ?

(e) How can we prevent corrosion of iron ?

State what happens when a concentrated solution of sodium chloride (brine) is electrolysed ? Name the process. Write the equation of the reaction involved. Write the names of products obtained. Mention one use of each product. 5

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

(b) Name the disorder caused by the following situations : 5

(i) Under secretion of growth hormone

(ii) Over secretion of growth hormone

(iii) Under secretion of insulin

(iv) Deficiency of iodine

(a) The heating element of an electric heater glows while the cord does not glow. Give reason. 5

(b) Which uses more energy a 200 Watt Television set in 40 minutes or 1000 watt toaster in 20 minutes?

A student fixes a sheet of white paper on a drawing board. He places a bar magnet in the centre of it. He sprinkles some iron filings uniformly around the bar magnet. Then he taps the board gently. 5

Now answer the following questions :

(i) What does the student observe ? Draw a diagram to illustrate your answer.

(ii) Why do the iron filings arrange in such a pattern ?

(iii) What does the crowding of the iron filings at the ends of the magnet indicate ?

(a) Draw a schematic labelled diagram of a domestic electric circuit. 5

(b) Why is it necessary to provide (i) a fuse in an electric circuit and (ii) an earth wire to electric appliances having metallic body ? Explain.

SECTION - B

The two colours seen at the ends of pH chart are :

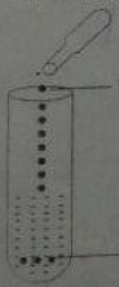
(a) Red and Green (b) Orange and Green

(c) Green and Blue (d) Red and Blue

If NaOH is added to distilled water the, pH of new solution will be :

(a) >7 (b) <7 (c) 7 (d) 0

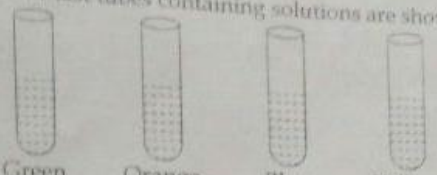
A student added dil hydrochloric acid to zinc granules as shown in figure. The correct observation would be :



(a) Evolution of a gas (b) Formation of a precipitate

(c) Zn granules turned green (d) No reaction occurs

28. Four test tubes containing solutions are shown along with colours. $CuSO_4$ is contained in : 1

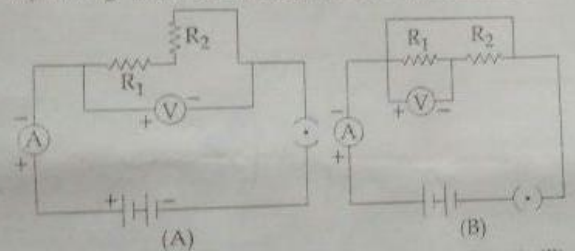


(a) I (b) II
(c) III (d) IV

29. Renu added some iron filings to 100 ml of copper sulphate solution. After sometime she observed that the colour of the solution changed and noticed some deposits on the iron filings. The colour of the solution and the coating would respectively be : 1

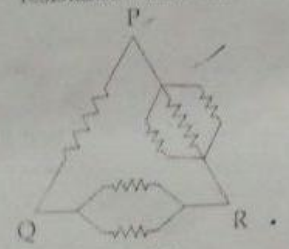
(a) brown and blue (b) red and blue
(c) green and reddish-brown (d) yellow and green

30. Two circuits A and B are shown for series combination of two resistors R_1 and R_2. The correct circuit for series combination is : 1



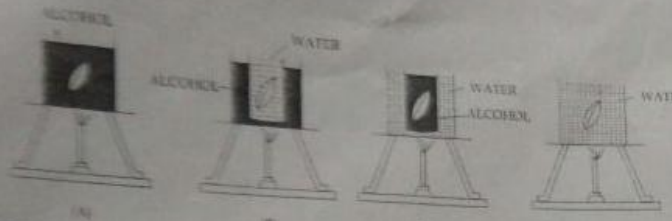
(a) Circuit (A) only (b) Circuit (B) only
(c) Both Circuit (A) and (B) (d) none of two circuits

31. Six equal resistances are connected between points P,Q and R as shown in figure. Then the net resistance will be minimum between : 1



(a) P and Q
(b) Q andR
(c) P andR
(d) Both between Q & R and P & R

32. Which of the following methods should be followed while de-starching the leaf? 1



(a) A (b) B (c) C (d) D

33. During the experiment to demonstrate that 'CO_2 is given out during respiration' Rishi was asked to report his observations regarding the level of water in the delivery tube. He correctly reported that : 1

(a) Water level in the delivery tube remains the same as in the beginning.
(b) Water turns milky and rises in the bent tube
(c) water turns milky but does not rise
(d) Water level rises in the delivery tube.

34. While demonstrating a reaction in laboratory, a teacher added small amount of sodium sulphate solution to barium chloride solution in a test tube. 2

(i) Name the products obtained. Are the products soluble in each other?
(ii) Write the type of chemical reactions in this case.

35. To study ohm's law the value of electric current (I) corresponding to potential difference (V) across a resistor are given below : 2

Potential difference (V) in volt :	0.5	1.0	1.5	2.0	2.5
Electric current (I) in mA :	10	20	30	40	50

(a) Plot the graph between V and I.
(b) Calculate the resistance of the resistor by graph.

36. Mention the shape of guard cells and write its constituents. 2