

# SAMPLE QUESTION PAPER - 5

Solved \_\_\_\_\_

Time : 3 Hours

Maximum Marks : 90

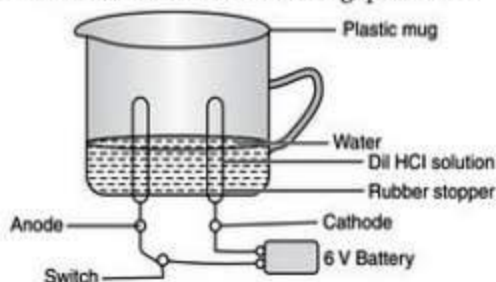
## General Instructions :

1. The question paper comprises of two sections, A and B. You have 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 one sentence.
5. Question numbers 4 to 6 in Section A are two marks questions, to be answered in about 30 words.
6. Question numbers 7 to 18 in Section A are three marks questions, to be answered in about 50 words.
7. Question numbers 19 to 24 in Section A are five marks questions, to be answered in about 70 words.
8. Question numbers 25 to 36 in Section B are based on practical skills. Question 25 to 33 carry one mark each and Question numbers 34 to 36 carry two marks each.

## SECTION 'A'

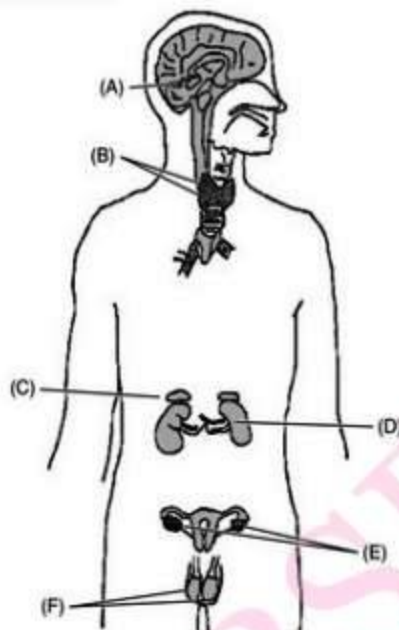
1. Mention one reason why tungsten is exclusively used for making filaments of electric lamps. 1
2. How is an ammeter connected in a circuit to measure current flowing through it ? 1
3. List two non-conventional sources of energy. 1
4. State Right hand Thumb Rule and also draw diagram. 2
5. Classify the following into acidic oxides and basic oxides :  
 $\text{Na}_2\text{O}$ ,  $\text{SO}_2$ ,  $\text{MgO}$ ,  $\text{CO}_2$  2
6. Translate the following statement into chemical equation and then balance it : 2  
"A metal in the form of ribbon burns with a dazzling white flame and changes into a white powder." 3
7. A substance X used as an antacid, reacts with hydrochloric acid to produce a gas Y, which is used in extinguishing fire.  
(a) Name the substance X and gas Y.  
(b) Write a balanced equation of the reaction between X and hydrochloric acid. 3

8. Look at the figure given below and answer the following questions :



- (a) Out of the two test-tubes A and B, state the tube that contains hydrogen gas.
- (b) If the volume of hydrogen gas collected is 10 ml, what will be the volume of oxygen collected ?
- (c) State the purpose of adding a few drops of dil. sulphuric acid to the water in the plastic mug. 3
9. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light and electricity. 3
10. (a) A solution of a substance 'X' is used for testing carbon dioxide. What will be the reaction of 'X' with carbon dioxide ? Write the balanced equation for this reaction.
- (b) How is 'X' obtained ? Give the chemical equation. 3
11. A compound 'P' forms the enamel of teeth. It is the hardest substance of the body. It doesn't dissolve in water but gets corroded when the pH is lowered below 5.5.
- (a) Identify the compound 'P'.
- (b) How does it undergo damage due to eating of chocolate and sweets ? What should we do to prevent tooth decay ? 3
12. (a) What is meant by a magnetic field ? Mention two parameters that are necessary to describe it completely.
- (b) If magnetic field lines are crossed at a point, what does it indicate ? 3
13. Draw symbol of :
- (a) Rheostat, (b) Voltmeter, (c) Electric bulb 3
14. What is overloading and short circuiting ? What is the function of earth wire ? 3
15. For a receiving tennis player. Explain what the path from the stimulus to the response is. 3
16. What is phototropism ? Describe an activity to demonstrate phototropism.
- Or**
- Design an experiment to demonstrate positive phototropism and negative phototropism.
- Or**
- (a) Write an activity to show phototropism and geotropism.
- (b) What type of movement is shown by mimosa plant leaves when touched with a finger. 3
17. Name the process by which nuclear energy is generated and also name one substance used for it. Give two advantages and two hazards of nuclear energy. 3
18. Explain the principle and working of a biogas plant. 3
19. (a) Draw a diagram of the cross section of the human heart and label the following parts : 5
- (i) Right ventricle
- (ii) Aorta
- (iii) Left atrium
- (iv) Pulmonary arteries
- (b) Give reason for the following :
- (i) The muscular walls of ventricles are thicker than the walls of atria.
- (ii) Arteries have thick elastic walls.

20. (a) Identify the endocrine glands A, B, C, D, E and F in the given diagram.  
 (b) List the functions of parts D and F.



- 5
21. (a) Define the terms 'alloy' and 'amalgam'. Name the alloy used for welding electric wires together. What are its constituents?  
 (b) Name the constituents of the following alloys:  
 (i) Brass                      (ii) Stainless steel                      (iii) Bronze,  
 State one property in each of these alloys, which is different from its main constituents. 5
22. (a) A metal compound 'X' reacts with dil  $H_2SO_4$  to produce effervescence. The gas evolved extinguishes a burning candle. If one of the compound formed is calcium sulphate, then what is 'X' and the gas evolved? Also write a balanced chemical equation for the reaction which occurred.  
 (b) (i) Name one antacid. How does it help to relieve indigestion in stomach?  
 (ii) A farmer treats the soil with quick lime or calcium carbonate. What is the nature of soil? Why does the farmer treat the soil with quick lime? 5
23. (a) What are magnetic field lines? State a method of determining the direction of magnetic field at a point.  
 (b) Draw two field lines around a bar magnet along its length on its two sides and mark the field directions of them by arrow marks.  
 (c) List any three properties of magnetic field lines. 5
24. (i) A wire of resistivity  $\rho$  is stretched to double its length which is its new resistivity. Give reason for your answer.  
 (ii) Draw a schematic diagram of a circuit consisting of a battery of three cells of 2V each, a  $5\Omega$  resistor,  $8\Omega$  resistor and  $12\Omega$  resistor and a plug key all connected in series.  
 (iii) Two wires, one of copper and other of manganese have equal lengths and equal resistances which is thicker. (Given that resistivity of manganese is lower than that of copper.) 5

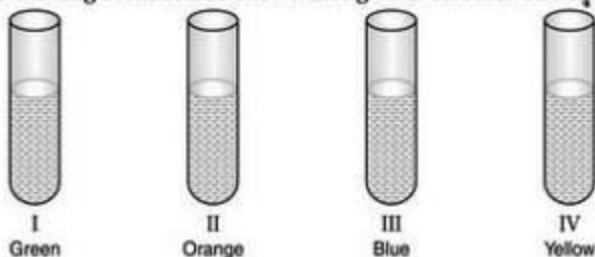
## SECTION 'B'

25. In a decomposition reaction of ferrous sulphate crystals, there is :  
 (A) Only one product formed  
 (B) Only solid product formed

1

- (C) Only one reactant break down to give simpler products  
 (D) Only gaseous product formed

26. Four test-tubes containing solution are shown along with colours.  $\text{CuSO}_4$  is contained in : 1



- (A) I (B) II (C) III (D) IV
27. Taha took 10 ml each of two solutions, A and B separately in two test-tubes. The solutions were of ferrous sulphate and zinc sulphate respectively. The colour of the two solutions were : 1
- (A) A-pale green, B-blue (B) A-blue, B-colourless  
 (C) A-colourless, B-pale green (D) A-pale green, B-colourless

28. Only germinating seeds are used in the experiment to show that ' $\text{CO}_2$  is given out during respiration' because they : 1

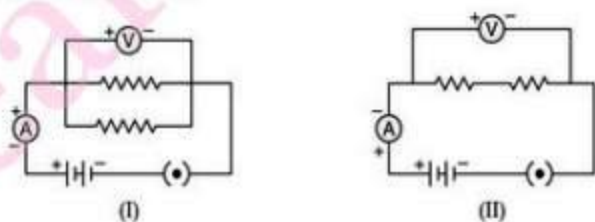
- (A) Respire at a slow rate  
 (B) Absorb carbon dioxide and moisture present in the conical flask  
 (C) Respire actively at a faster rate  
 (D) Respire at a very slow rate

29. Which of the following precautions should be kept in the mind while preparing a temporary mount of an epidermal peel of a leaf ? 1

- I. Wash off extra stain from the peel with distilled water.  
 II. Clean the slide and the coverslip before use.  
 III. Put only a drop of glycerine on the coverslip.  
 IV. Pull out a thin leaf peel.  
 V. Use filter paper to remove extra stain from the peel.

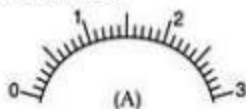
- A. I, II, III B. I, II, IV C. III, IV, V D. II, IV, V

30. Two students are using the two circuits as shown below. They are carrying out an experiment to find the equivalent resistance of a : 1



- (A) Series combination and a parallel combination respectively, of the two given resistors.  
 (B) Parallel combination and a series combination respectively of the two given resistors.  
 (C) Series combination of the two given resistors in both the cases.  
 (D) Parallel combination of the two given resistors in both the cases.

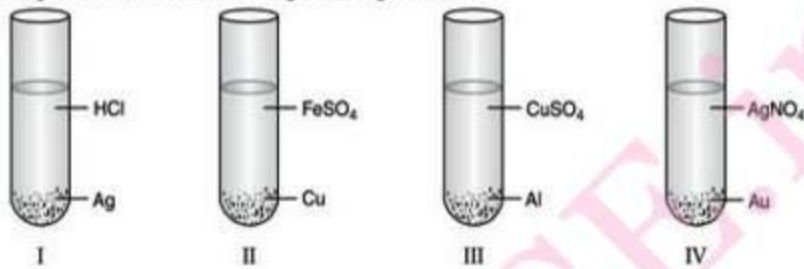
31. The least count of ammeter shown below is : 1



- (A) 0.05 A (B) 0.1 A  
 (C) 0.2 A (D) 0.25 A

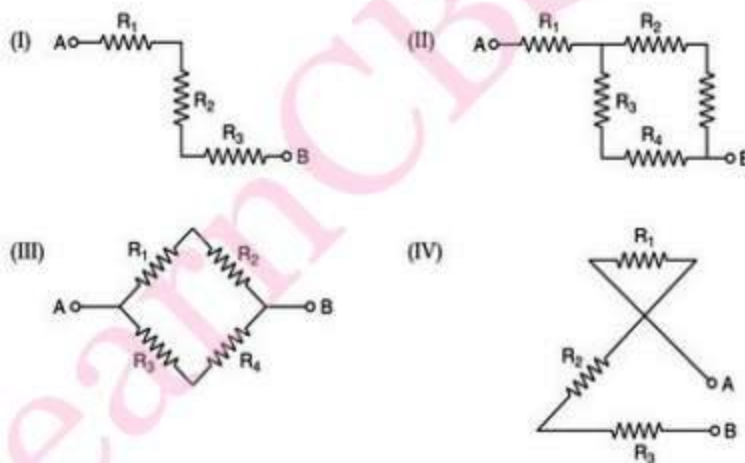
32. The wire connected necessarily in series is : 1  
 (A) fuse wire (B) connected wire  
 (C) heating wire (D) source wire
33. A student performed the experiment to show that 'light is necessary for photosynthesis.' Before carrying out the test for the presence of starch in a leaf and exposure to sunlight, the leaf is put in a beaker containing alcohol and boiled over a water bath. This step is carried out to : 1  
 (A) extract starch  
 (B) remove the chlorophyll from the leaf  
 (C) remove water to move into the leaf  
 (D) activate the chloroplasts

34. A student performed the following four experiments :



In which experiment will no reaction occur ? Why ? 2

35. Identify the series combination in the following circuit : 2



36. Why upper surface of the leaf has fewer stomata ? 2



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