

# SAMPLE QUESTION PAPER - 8

Self Assessment \_\_\_\_\_

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.

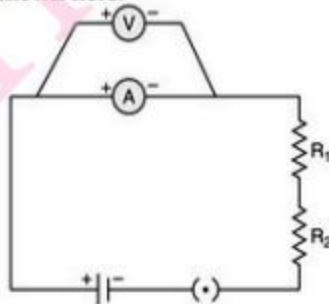
## SECTION 'A'

1. What happens to the magnitude of a magnetic field when the current flowing through a conductor increases ? 1
2. Suggest one way of discriminating a wire carrying current from a wire carrying no current. 1
3. Write one limitation in harnessing tidal energy. 1
4. Write the balanced chemical equation for the following reaction and identify the type of reaction and define it. 'Iron III oxide reacts with aluminium and gives molten iron and aluminium oxide'. 2
5. A solution of substance 'X' is used for white washing :
  - (a) Name the substance 'X' and write its formula.
  - (b) Express the reaction of 'X' with water in the form of a balanced chemical equation. 2
6. What is induced current ? State the rule used to find the direction of induced current. 2
7. (a) You are given two solutions A and B. The pH of solution A is 6 and pH of solution B is 8.
  - (i) Identify the acidic and basic solution.

- (ii) Which solution has more  $H^+$  ion concentration? Give reasons for your answer.
- (b) Why is HCl a stronger acid than acetic acid? Explain. 3
8. Differentiate between strong and weak acids. Identify the strong and weak acids from the following list of acids : hydrochloric acid, acetic acid, formic acid, nitric acid. 3
9. Define acids. Explain two chemical properties of an acid and write the chemical equation for one example of each property. 3
10. (a) Arrange the following metals in the order of their decreasing activities :  
Aluminium, Gold, Sodium, Copper.
- (b) Give chemical equation for the reaction of aluminium powder with manganese dioxide on heating. 3
11. An electric bulb, when connected to a 200 V source, draws a current of 0.40 A. Calculate the power and resistance of the bulb. 3
12. What is short circuiting? State one factor, condition that can lead to it. Name a device in the household that acts as a safety measure for it. State the principle of its working. 3
13. A circuit has a line of 5A. how many lamps of rating 40W; 220 V can simultaneously run on this line safely? 3
14. (a) Explain the role of bile juice in digesting food.
- (b) Mention the purpose of making urine. 3
15. Explain how the following metals are obtained from their compounds by reduction process :  
(a) Metal X which is low in reactivity series.  
(b) Metal Y which is in the middle of reactivity series.  
(c) Metal Z which is high in the reactivity series. 3
16. Illustrate with the help of a diagram, the effect of auxins in different parts of a plant. 3
17. What is Solar cell panel? Name two materials used for making solar cell. Write two limitations of solar cells. 3
18. How is nuclear energy generated? Give one use of nuclear energy. 3
19. What happens when zinc granules are treated with dilute solutions of  $H_2SO_4$ , HCl,  $HNO_3$ , NaCl and NaOH? Also write the chemical equation. 5
20. (i) Dry pellets of a base 'X' when kept in open absorbs moisture and turns sticky. The compound is also formed by chlor-alkali process. Write chemical name and formula of X. Describe chlor-alkali process with balanced chemical equation. Name the type of reactions occur when X is treated with dilute hydrochloric acid. Write the chemical equation.
- (ii) While diluting an acid, why is it recommended that the acid should be added to water and not water to the acid? 5
21. Define power. State the difference between 1 watt and 1 watt hour. Establish the relationship between unit of electric energy and SI unit of energy.  
An electric heater rated 1000 W/220 V operates for two hours daily. Calculate the cost of energy to operate for 30 days @ ₹ 5.00 per kWh. 5
22. List four important features of domestic electric circuits. Draw a schematic diagram of common domestic circuit showing live, neutral and earth wires. 5
23. (a) Name the substances that get reabsorbed by the tubules.  
(b) Why is dialysis done to a patient suffering from kidney failure?  
(c) How are lungs designed in human beings to maximise the area for exchange of gases?  
(d) What happens in the first step of aerobic and anaerobic respiration. Which step is common for both and where?  
(e) How do unicellular organisms remove their wastes? 5
24. (a) (i) Draw a labelled diagram of stomata.  
(ii) Write two functions of stomata.  
(b) What are the basic materials used during photosynthesis. Write chemical equation for photosynthesis. 5

## SECTION 'B'

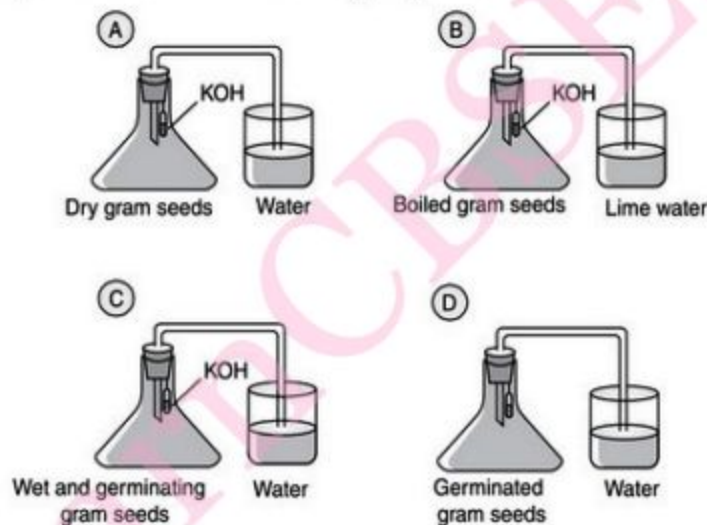
25. Zinc metal used for experiments in laboratories is available in the form of ..... : 1  
 (A) Filings (B) Turnings  
 (c) Granules (D) Pellets
26. When you place a zinc plate in copper sulphate solution, you observe a reddish brown coating formed on the zinc plate. This coating is : 1  
 (A) Soft and dull (B) Smooth and shiny  
 (C) Hard and flaky (D) Rough and granular
27. A voltmeter had graduation 0, 0.5, 1.0 and 1.5. A student noticed that the pointer of the voltmeter was indicating the third graduation mark after 0 mark even when the circuit was open. The space between 0 mark and 0.5 mark was divided into 10 equal divisions. The zero error in the voltmeter was : 1  
 (A) + 0.3 V (B) + 0.15 V  
 (C) - 0.15 V (D) - 0.30 V
28. In the experiment on finding the equivalent resistance of two resistors, connected in series, a student connects the terminals of a voltmeter to : 1  
 (A) One terminal of each of the two resistors and these terminals are not interconnected.  
 (B) One terminal of each of the two resistors and these terminals are also interconnected.  
 (C) Both the terminals of each of the two resistors.  
 (D) Both the terminals of one resistor and one terminal of the other resistor.
29. A milliammeter had graduations marked 0, 100, 200 ..... 500. The space between 100 mark and 200 mark is divided into 20 divisions. If the pointer of the milliammeter is indicating the seventh graduation after 100 mark, the current flowing through the circuit is : 1  
 (A) 107 mA (B) 135 mA  
 (C) 170 mA (D) 175 mA
30. In an experiment to find the equivalent resistance of a series combination of two resistors,  $R_1$  and  $R_2$ , a student uses the circuit shown here.



- The circuit will give : 1  
 (A) Correct reading for voltage V, but incorrect reading for current I.  
 (B) Correct reading for current I, but incorrect reading for voltage V.  
 (C) Correct reading for both current I and voltage V.  
 (D) Incorrect reading for both current I and voltage V.
31. When guard cells are observed under high power microscope, the following structures are visible : 1  
 (A) Vacuole with violet pigment  
 (B) Chloroplast containing violet pigments  
 (C) Vacuole filled with chlorophyll pigments  
 (D) Chloroplast containing chlorophyll pigments



32. The small test-tube suspended inside the flask during the experiment to study "CO<sub>2</sub> is released during respiration" contains : 1  
 (A) Potassium chloride (B) Sodium hydroxide  
 (C) Potassium hydroxide (D) Calcium hydroxide
33. In a set-up to study "CO<sub>2</sub> is released during respiration", the water level did not rise in the delivery tube. Which of the following could be the reasons ? 1  
 (i) The conical flask is not airtight. (ii) Germinating seeds are dry.  
 (iii) Water is not coloured. (iv) KOH is not fresh.  
 (A) (i) and (ii) (B) (ii) and (iii)  
 (C) (i), (ii) and (iv) (D) (ii) and (iv)
34. In an electrical circuit, the total resistance is 6 Ω and the battery provides 12 volts. The current flowing through the circuit is ..... 2
35. Addition of water to quick lime to form new compound is an example of which type of reaction ? 2
36. After performing the experiment to show that germinating seeds give out carbon dioxide during photosynthesis, four students drew the following diagrams : 2



The correct labelled diagram is ..... . Why ?

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