

# SAMPLE QUESTION PAPER - 2

Solved \_\_\_\_\_

Time : 3 Hours

Maximum Marks : 90

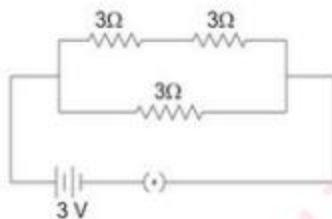
## General Instructions :

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. State the effect on the strength of magnetic field produced at a point near a straight conductor if the electric current flowing through it increases. 1
2. List any two advantages of using wind energy. 1
3. Name the physical quantities that are indicated by the directions of thumb and forefinger in the Fleming's right hand rule. 1
4. Mention the provision of two different current ratings in our domestic circuits. Explain with reason the advantage of such a provision. 2
5. When hydrogen gas is passed over heated copper (II) oxide, copper and steam are formed. Write the balanced chemical equation for this reaction and state (i) the substance oxidized and (ii) the substance reduced in the reaction. 2
6. Write balanced chemical equations for the following reaction :
  - (i) Silver bromide on exposure to sunlight decomposes into silver and bromine.
  - (ii) Sodium metal reacts with water to form sodium hydroxide and hydrogen gas. 2
7. (a) Give the formulae of the stable compound that is formed by the combination of Na and Cl using electron dot structure. (Atomic No. Na = 11, Cl = 17).
  - (b) Name the cation and anion present in the ionic compound formed. 3

8. What is meant by a precipitation reaction? Explain by giving an example. Also give a balanced chemical equation for the reaction stating the states of the reactions and the products formed. 3
9. Write balanced chemical equation for the reactions that take place during respiration. Identify the type of combination reaction that takes place during this process and justify the name. Give one more example of this type of reaction. 3
10. Name the salts that are used in black and white photography. Give reactions when they are exposed to light. Define the type of chemical reaction taking place. 3
11. Write the steps for balancing the chemical equation for the formation of ammonia by the combination of nitrogen and hydrogen. 3
12. Three resistors of  $3\ \Omega$  each are connected to a battery of  $3\text{ V}$  as shown. Calculate the current drawn from the battery.



13. Explain whether an alpha particle will experience any force in a magnetic field if :
  - (i) It is placed in the field at rest.
  - (ii) It moves in the magnetic field parallel to field lines.
  - (iii) It moves in the magnetic field perpendicular to field lines. 3
14. Define resistance. Write the SI unit of resistance. Match the correct range of resistivity with the materials given :
 

(a) Conductors	(i) $10^{-6}\ \Omega\text{m}$	
(b) Alloys	(ii) $10^{12}$ to $10^{17}\ \Omega\text{m}$	
(c) Insulators	(iii) $10^{-6}$ to $10^{-8}\ \Omega\text{m}$	3
15. Write three main functions of the nervous system.
16. The rate of breathing in aquatic organisms is much faster than that seen in terrestrial organisms. Give reason. 3
17. List in tabular form two distinguishing features between renewable and non-renewable sources of energy. Give two examples of each. 3
18. What is geothermal energy? How can it be used commercially? List in tabular form three distinguishing features between a thermal power plant and a geothermal power plant. 3
19. Explain the following :
  - (a) Why is tungsten used exclusively for filament of electric lamps?
  - (b) Why are the conductors of electric heating devices, such as bread toasters and electric iron made of an alloy rather than a pure metal?
  - (c) Why is series arrangements not used for domestic circuit?
  - (d) How does the resistance of a wire vary with its area of cross section?
  - (e) How many joules are there in one kilo watt hour? 5
20. (i) A coil of insulated copper wire is connected to a galvanometer. What happens if a bar magnet is :
  - (a) pushed into the coil?
  - (b) withdrawn from inside the coil?
  - (c) held stationary inside the coil?

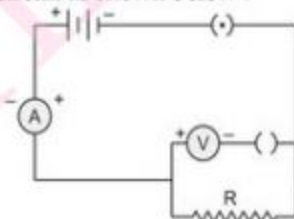
Give reasons for your observation.

  - (ii) Mention one more method of inducing current in a coil. 5
21. Give suitable reasons for the following statements :
  - (a) Rain water conducts electricity but distilled water does not.

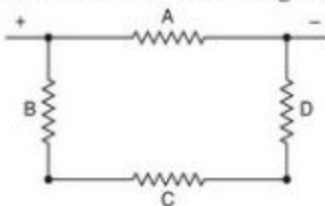
- (b) We feel burning sensation in the stomach when we overeat.  
 (c) A tarnished copper vessel regains its shine when rubbed with lemon.  
 (d) The crystals of washing soda change to white powder on exposure to air.  
 (e) An aqueous solution of sodium chloride is neutral but an aqueous solution of sodium carbonate is basic. 5
22. (a) Explain the term "rancidity."  
 Name the type of chemical reaction responsible for causing rancidity and define it. 5  
 (b) Write three methods for preventing rancidity of food. 5
23. Explain in detail the process of nutrition in Amoeba. Also, draw a diagram. 5
24. (a) Name the enzyme present in Saliva. Why is it important ?  
 (b) What is emulsification ?  
 (c) Name the substance that is oxidized in the body during respiration.  
 (d) Why are lungs divided into very small sac-like structures ? 5

## SECTION 'B'

25. Rina, after making quick lime to react with water, put strips of red and blue litmus papers in it. She observed that : 1  
 (A) red litmus paper turned blue (B) red litmus paper remained red  
 (C) blue litmus paper remained blue (D) blue litmus paper turned red
26. Mousomee was asked to compare the reactivity of metals Zn and Fe. She took zinc granules and ferrous sulphate crystals in a 50 mL beaker. She waited for 10 minutes but no reaction took place. The reason was : 1  
 (A) The beaker was small  
 (B) She should have used a clean and dry test-tube  
 (C) The ferrous sulphate was not an aqueous solution  
 (D) The zinc granules were big in size.
27. A student arranged an electric circuit as shown below :



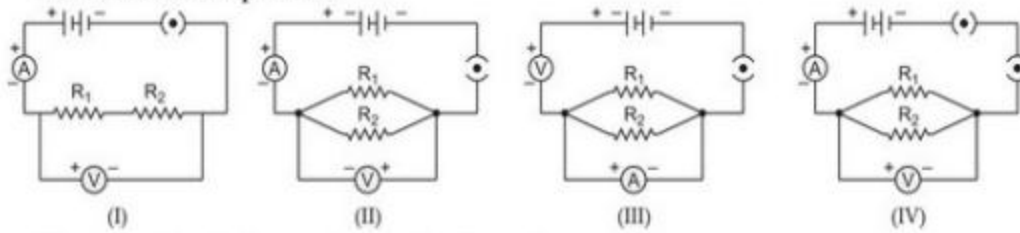
- He will observe : 1  
 (A) no reading in either ammeter or the voltmeter.  
 (B) no reading in voltmeter, but a finite reading in the ammeter.  
 (C) no reading in the ammeter, but a finite reading in the voltmeter.  
 (D) a finite reading in both the ammeter and the voltmeter.
28. The resistors that are connected in series in the following circuit are : 1



- (A) B, A and D (B) B, C and D (C) C, D and A (D) A, B and C

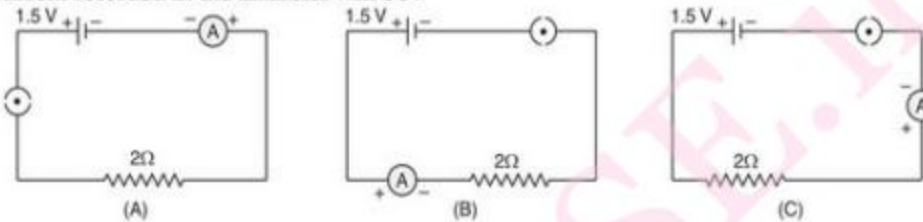


29. Following circuits are drawn by four students to determine the equivalent resistance of two resistors when connected in parallel :



The correct circuit diagram is drawn by the student :

- (A) I (B) II (C) III (D) IV 1
30. A cell, a resistor, an ammeter and a key are arranged in the circuit diagram as shown below. The current recorded in the ammeter will be : 1



- (A) maximum in circuit A (B) maximum in circuit B  
(C) maximum in circuit C (D) Same in all cases 1
31. Photosynthesis is a light dependent : 1
- (A) Autotrophic nutrition (B) Saprophytic nutrition  
(C) Parasitic nutrition (D) Heterotrophic nutrition

32. Chloroplasts are : 1
- (A) present in epidermal cells and absent in guard cells  
(B) present in guard cells and absent in epidermal cells  
(C) present in both guard cells and epidermal cells  
(D) absent in both guard cells and epidermal cells

33. A well-stained leaf peel preparation when focussed under high power microscope would show : 1
- (A) epidermal cell, stomata, guard cell, each with one nucleus each and many chloroplast.  
(B) epidermal cell, stomata, guard cell, each with many nuclei and one chloroplast.  
(C) stomata and guard cells without chloroplast and one nucleus each.  
(D) stomata, but no guard cells or epidermal cells.

34. Four students connect four cells of 1.5 V each to get a battery of voltage 6 V. Which of the following circuits is incorrect ? Give reason. 2



35. Write the steps of an experiment to prove that light is necessary for photosynthesis. 2
36. On the basis of sequence of reactions, identify the most and the least reactive elements. 2

