

SAMPLE QUESTION PAPER - 10

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'

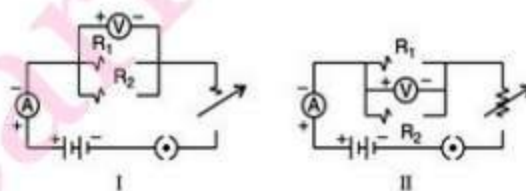
1. The magnetic field in a given region is uniform. Draw a diagram to represent it. 1
2. State the location and the function of gastric glands ? 1
3. Thermal power plants are set up near coal or oil fields. Give reasons. 1
4. Identify the type of chemical reaction and also write the chemical equation for the reaction that takes place when a solution of potassium chloride is mixed with silver nitrate solution. Write the chemical name of one of the products obtained. 2
5. Write balanced equation for the reaction between magnesium and hydrochloric acid. Name the product obtained, identify the type of reaction. 2
6. Calculate the resistance of a metal wire of length 2 m and area of cross section $1.55 \times 10^{-6} \text{ m}^2$, if the resistivity of the metal be $2.8 \times 10^{-8} \Omega\text{m}$? 2
7. (i) $2\text{PbO} + \text{C} \longrightarrow 2\text{Pb} + \text{CO}_2$
(ii) $\text{MnO}_2 + 4\text{HCl} \longrightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$
What is redox reaction ? Identify the substance oxidised and the substance reduced in the above reactions. 3

8. A compound which is prepared from gypsum, has the property of hardening when mixed with right quantity of water :
- Identify the compound and write its chemical formula.
 - Write the chemical equation for its preparation.
 - List any two uses of the above compound. 3
9. (a) How chloride of lime chemically differs from calcium chloride ?
(b) What happens when chloride of lime reacts with sulphuric acid ? Write chemical equation involved.
(c) Mention two uses of chloride of lime. 3
10. Give reasons :
- Sodium metal is kept in Kerosene oil.
 - Platinum, gold, silver are used to make jewellery.
 - Tarnished copper vessels are cleaned. 3
11. Compare the power used in the $2\ \Omega$ resistor in each of the following circuits :
- A 6 V battery in series with $1\ \Omega$ and $2\ \Omega$ resistors
 - A 4 V battery in parallel with $12\ \Omega$ and $2\ \Omega$ resistors 3
12. Explain whether an alpha particle will experience any force in a magnetic field if :
- It is placed in the field at rest.
 - It moves in the magnetic field parallel to field lines.
 - It moves in the magnetic field perpendicular to field lines. 3
13. Explain the function of fuse in a domestic electric circuit ? An electric oven having power rating 2000 W, 220 V is used in an electric circuit, having a fuse of 5A rating. What is likely to happen when the oven is switched on ? Explain. 3
14. Plants absorb water from the soil. Explain how does the water reach the tree top ? 3
15. (a) Why do ventricles have thicker, muscular walls than atria ?
(b) What are peristaltic movements ?
(c) 'Stomata remain closed in desert plants during day time.' How do they do photosynthesis ? 3
16. State the meaning of the term 'hot spot' in the context of the Earth crust. Write one advantage and one limitation of utilizing energy obtained from the hot spots. 3
17. (a) Write the name given to bases that are highly soluble in water. Give an example.
(b) How is tooth decay related to pH ? How can it be prevented ?
(c) Why does bee-sting cause pain and irritation ? Rubbing of baking soda on the sting area gives relief. How ? 3
18. List any three parameters, which categorise any source of energy as a good source of energy. 3
19. (i) Write the electron-dot structures for sodium (11), Oxygen (8), chlorine (17) and magnesium (12). Show the formation of Na_2O and MgO by the transfer of electrons.
(ii) Name the ions present in these compounds. 5
20. (a) Bee-sting leaves a chemical substance that causes pain and irritation. Name the chemical substance. Identify the type of substance which may give relief on the sting area when applied on it.
(b) Mention the pH value below which tooth decay begins. How this fall below this value ? Explain the ill effect of the acidic medium in the mouth. How can this be prevented ?
(c) What are strong acids and weak acids ? Give an example of each. 5
21. (a) Explain what is the difference between a direct current and an alternating current. Write one important advantage of using alternating current.
(b) An air conditioner of 2kW is used in an electric circuit having a fuse of 10 A rating. If the potential difference of the supply is 220 V, will the fuse be able to withstand, when the air conditioner is switched on ? justify your answer. 5

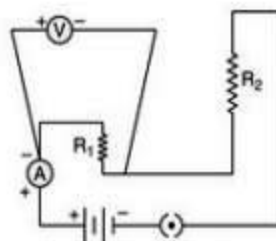
22. (a) Explain the term : Heating effect of electric current.
 (b) Derive an expression for the heat produced by electric current and state Joule's Law.
 (c) Explain why an inert gas like argon is filled in bulbs. 5
23. (a) Explain in brief the mechanism of circulation of blood in the human body.
 (b) "Lymph is another type of fluid involved in transportation." Justify this statement by explaining the process. 5
24. List and describe in brief any five functions of blood in tabular form. 5

SECTION 'B'

25. What is observed when aqueous barium chloride solution is added to aqueous sodium sulphate solution in a test-tube ? 1
 (A) Pungent smelling gas is evolved
 (B) The colour of the solution turns blue-black
 (C) A white precipitate is formed immediately
 (D) No change in colour even after shaking the solution well
26. When we heat crystals of ferrous sulphate in a test-tube, which of the following is NOT observed ? 1
 (A) Brown solid is formed
 (B) A gas having smell of burning sulphur is evolved
 (C) A brown gas is evolved
 (D) Oxides of sulphur are produced
27. The slope of V-I graph gives : 1
 (A) Resistance
 (B) Current
 (C) Potential difference
 (D) Conductivity
28. The use of a plain mirror in the meters is to : 1
 (A) Avoid parallax error
 (B) Make the meter look good
 (C) Give brightness to the reading
 (D) Get accurate value
29. Two students are using the circuits shown below. They are doing an experiment to find the equivalent resistance of a : 1

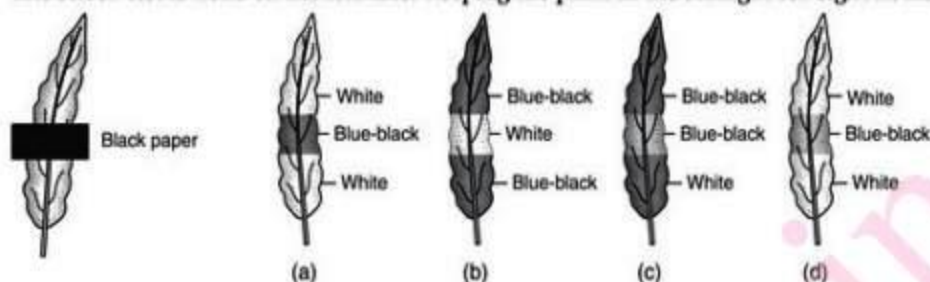


- (A) Series combination and a parallel combination respectively of the two given resistors.
 (B) Parallel combination and a series combination respectively of the two given resistors.
 (C) Series combination of the two given resistors in both the cases.
 (D) Parallel combination of the two given resistors in both the cases.
30. As shown in the figure, a student set-up an electric circuit to find the equivalent resistance of two resistors in series. In this circuit : 1



- (A) Resistors have been connected correctly, but the voltmeter has been wrongly connected.
 (B) Resistors have been connected correctly but the ammeter has been wrongly connected.
 (C) Resistance as well as the voltmeter have been wrongly connected.
 (D) Resistors as well as ammeter have been wrongly connected.

31. A leaf from a destarched plant is covered with a black paper strip as shown in the figures below. The starch test is done on the leaf after keeping the plant in the sunlight for eight hours.



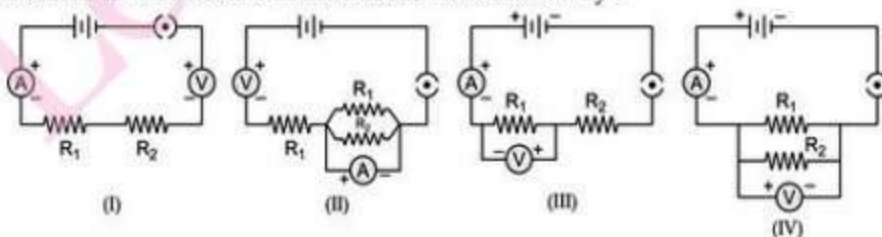
The correct result will be as shown in the diagram :

- (A) a (B) b (C) c (D) d
32. The temporary mount of the leaf epidermal peel, which looked pinkish red under the microscope was :
- (A) Stained in iodine and mounted in glycerine.
 (B) Stained in iodine and mounted in water.
 (C) Stained in safranin and mounted in glycerine.
 (D) Stained in safranin and mounted in water.
33. A student has drawn the diagram of stomata as shown below :



He could not be given full marks as he :

- (A) Forgot to draw nuclei in guard cells and also to label the diagram.
 (B) Did not draw nuclei in guard cells and other cells.
 (C) Should have drawn nuclei and chloroplasts in guard cells and nuclei in all epidermal cells.
 (D) Did not label the stoma in its correct position.
34. In an experiment to find equivalent resistance when two resistors are connected in parallel, the correct connections of voltmeter and ammeter is shown in Why ?



35. Why a leaf is boiled in alcohol before doing starch test ?
36. What is the theory behind the precipitation reaction between aqueous solution of barium chloride and aqueous solution of sodium sulphate ?

