

Sub.: SCIENCE
M.M.: 90

19

Class : X
TIME : 3hrs

GENERAL INSTRUCTIONS:

1. The Question paper comprises of two sections A & B. You are attempt both the sections.
2. All questions are compulsory.
3. There is no overall choice. However internal choice has been provided in all the five questions of five marks category. Only one option in each question is to be attempted.
4. All questions of Section A and all questions of Section B are to be attempted separately.
5. Questions 1-3 in Section A are one mark questions. These are to be answered in one word or one sentence.
6. Questions 4-7 are two marks questions, to be answered in about 30 words.
7. Questions 8-19 are three mark questions, to be answered in about 50 words.
8. Questions 20 to 24 are five mark questions, to be answered in about 70 words.
9. In section B questions 25 to 42 in Section B are multiple choice questions based on practical skills. Each question is a one mark questions. You are to choose one most appropriate response out of the four provided to you.

[SECTION-A]

- Q1. What is an amalgam. [1]
- Q2. Name the physical quantity that remains constant when resistances are connected- [1]
a) in series b) in parallel.
- Q3. a) Name the blood vessel that brings deoxygenated blood to the human heart. [1]
b) Which chamber of the human heart receives deoxygenated blood?
- Q4. Give the chemical equation for the following- [2]
a) Decomposition of Silver Chloride in the presence of Sunlight
b) Formation of water from H_2 and O_2 .
- Q5. When water is added to white powder 'A' vigorous reaction takes place and a large amount of heat is released. 'A' is also used for white washing Identify A, write the equation for its reaction with water and name the product. [2]
- Q6. a) List any two advantages associated with solar cells [2]
b) Name any two materials that are used for making solar cells.
- Q7. What is charcoal? Why is charcoal considered a better fuel than wood? (Give any two reasons) [2]
- Q8. a) What is the effect of acidic and basic solution on blue litmus paper? [1+2]
b) You have two solution. Solution A with pH 6 and Solution B with pH 8.
i) Which solution has more hydrogen ion concentration?
ii) Which of these is acidic?
- Q9. a) How is Plaster of Paris manufactured? [1+1+1]
b) Why POP should be stored in air tight container?
c) Give 2 uses of POP.
- Q10. a) On eating spicy food we feel burning sensation in our stomach. Why? Which medicine will you take as remedy? [2+1]
b) What is the chemical name and formula of washing soda?
- Q11. a) Show the formation of Na_2O by the transfer of electrons. What are the ions present in the compound. [2+1]
b) Solid NaCl is a bad conductor of electricity but its aq. solution or molten state can conduct electricity. Why?

- Q12. a) Differentiate between tropic & nastic movement. Give an example of each. [2+1]
 b) Give an eg. of chemotropism in plants.
- Q13. List any three digestive glands in our digestive system. Name the enzyme/juice produced by them. [3]
- Q14. a) Draw a diagram of human brain (label any 3 parts) [3]
 b) What is the role of cerebellum
- Q15. a) How is wind energy converted into electrical energy?
 b) What is a wind energy farm?
- Q16. a) Define resistivity and write its S.I. unit. [3]
 b) A wire of length L and resistance R is stretched so that its length is doubled and the area of cross section A is halved. How will its
 i) resistance change? ii) resistivity change?
- Q17. a) What are 'magnetic field lines'?
 b) List any two properties of magnetic field lines.
 c) Draw a diagram showing the pattern of magnetic field lines around a bar magnet. [3]
- Q18. a) How many Joules are equal to 1 KW h?
 b) In a household, an electric press of 500 W is used for 4 hours everyday. Calculate the cost of using the electric press for 60 days, if the cost of 1 unit of electrical energy is two rupees. [3]
- Q19. a) Write the function of an earth wire in electrical instruments
 b) Which two capacities of fuses are usually used in domestic supply?
 c) Write any two advantages of alternating current over direct current. [3]
- Q20. a) Green Ferrous sulphate crystals are heated very strongly in a test tube.
 i) Identify the type of chemical reaction that undergoes.
 ii) Write the chemical equation for the observed change?
 iii) Why does the colour of ferrous sulphate crystals change on heating?
 b) Define corrosion.
 c) What do you understand by Rancidity? [3+2=5]

OR

With the help of an activity show that iron is more reactive than copper. Following information should be included in the activity.

- i) Material required ii) Procedure
 iii) Observation iv) Chemical equation
 v) Diagram [1×5=5]

- Q21. a) Give reasons for the following :
 i) Silver metal get tarnished when left exposed in air.
 ii) Highly reactive metal oxides can't be reduced using carbon [2+3=5]
 b) List three differences between calcination and roasting.

OR

- a) For storing, sodium metal is kept immersed in Kerosene oil. Why?
 b) Write balanced equation for the following :
 i) Zinc metal reacts with dil hydrochloric acid.
 ii) Iron is strongly heated in oxygen.
 c) List any two differences between metals and non-metals. [1+2+2=5]

- Q22. a) What are two vital functions of the human kidney? [2]
 b) Draw labelled diagram of human urinary system (label any 4 parts) [3]

OR

- a) Draw a neat diagram of human respiratory system & label the following parts :
 i) that has cartilaginous rings
 ii) Sheet of muscle that separate the chest cavity from the abdominal cavity.
 iii) Serves as a common passage for food & air.
 b) How are the alveoli designed to maximise the exchange of gases. Suggest any two features. [3+2]

- Q23. a) What happens when north pole of a magnet is brought near a (i) north pole, (ii) south pole of another magnet?
 b) What is magnetic effect of electric current?
 c) Describe an experiment to demonstrate the magnetic effect of current. What conclusion can be drawn from this experiment? Also draw the necessary diagrams. [5]

OR

- a) What is an electromagnet?
 b) Draw a labelled diagram to show how an electromagnet is made.
 c) Name and explain the rule to determine the direction of a (i) force experienced by a current carrying straight conductor placed in a magnetic field which is perpendicular to it. (ii) Current induced in a coil due to its rotation in a magnetic field. [5]
 Q24. a) An electric bulb of resistance 400Ω draws a current of 0.5 A . Calculate the power of the bulb and potential across its ends.
 b) Explain why?
 i) the cord of an electric heater does not glow while the heating element does
 ii) the tungsten is used almost exclusively for filaments of electric lamps
 iii) copper and aluminium wires are usually employed for electricity transmission.

OR

- a) State Ohm's law.
 b) Will current flow more easily through a thick wire or a thin wire of the same material. When connected to the same source? Why?
 c) An electric lamp whose resistance is 20Ω and a conductor of 10Ω resistance are connected in series to a 6V battery.

Calculate :

- i) the total resistance of the circuit,
 ii) the current through the circuit,
 iii) the potential difference across the electric lamp and conductor. [5]

[SECTION-B]

- Q25. Which one of the following is not required to find the pH of a solution? [1]
 a) pH paper b) Litmus paper
 c) Universal Indicator d) Standard pH value chart

- Q26. Bottle A contains acetic acid and bottle B contains sodium carbonate solution. When pH paper is dipped in each of the solutions, the colours seen in A and B respectively are. [1]
 a) Orange, red b) Blue, Orange
 c) Green, blue d) Orange, green

Q27. Test tube A contains dil HCl and test tube B contains dil NaOH. Solid sodium carbonate is added to both of them. The correct observation is. [1]

- a) A brown coloured gas liberated in A
- b) A brown coloured gas liberated in B
- c) A colourless gas liberated in A
- d) A colourless gas liberated in B

Q28. Given below are the observations reported by four students I, II, III & IV for the changes observed with dil HCl and dil NaOH with different materials. [1]

Material	dil HCl	dil NaOH
I Red litmus paper	Remains Red	Red turns blue
II Blue litmus paper	Blue turns red	Remains blue
III Zinc metal	Reacts at room temp	Does react at room temp
IV Solid Sodium Carbonate	No reaction	Brisk effewescence

Which student made incorrect observation. [1]

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

Q29. The colour of ferrous sulphate crystals is- [1]

- a) Dark green
- b) yellow
- c) Light blue
- d) Light green

Q30. A student added zinc granules to copper sulphate solution. Out of the following which is/are the correct observation made by him. [1]

- I. Zinc granules have no regular shape
- II. Zinc granules have a silvery grey colour
- III. The colour of Zinc granules changed to brownish black.

- a) I
- b) II
- c) III
- d) All of these

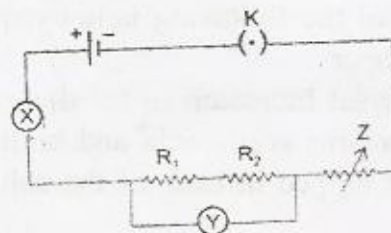
Q31. Potential difference between two points A and B on a conductor carrying current is equal to the-

- a) Work done to move a unit charge from A to B.
- b) Work done in carrying a unit charge from infinity to a point
- c) The rate at which work is dissipated or consumed.
- d) none of these

Q32. An ammeter has 20 divisions between mark 0 and mark 1 on its scale. The least count of the ammeter is- [1]

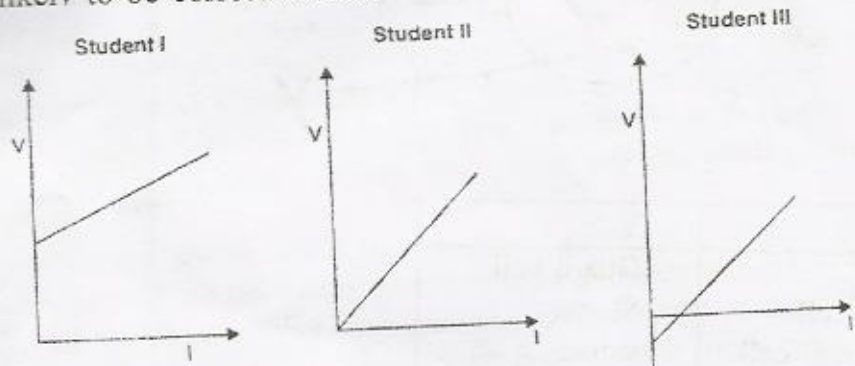
- a) 0.5 A
- b) 0.05 A
- c) 0.2 A
- d) 0.02 A

Q33. The given circuit diagram shows the experimental arrangement of different circuit components for determination of equivalent resistance of two resistors connected in series. The components X, Y and Z shown in the circuit, respectively, represent. [1]

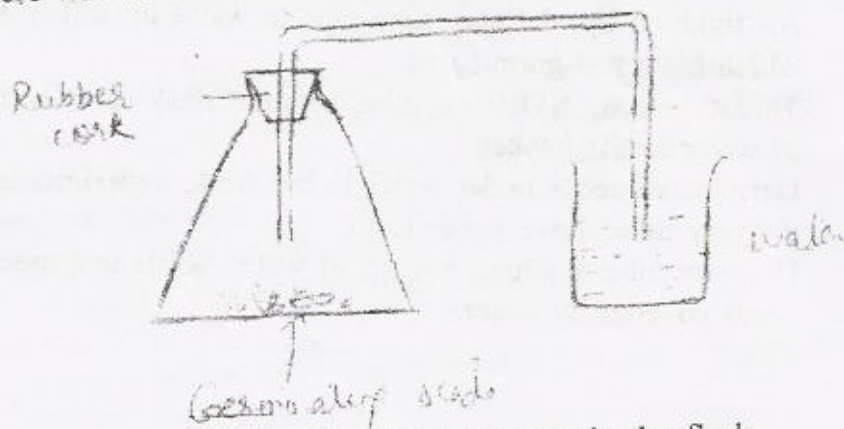


- a) Rheostat, Resistor, Ammeter
- b) Voltmeter, Ammeter, Rheostat
- c) Ammeter, Voltmeter, Rheostat
- d) Rheostat, Ammeter, Voltmeter

- Q34. A student combined n resistors, each of resistance R . The value of the smallest resistance that he can obtain by combining them is- [1]
- a) n^2R b) n/R
 c) R/n d) none of these
- Q35. In the experiment on studying the dependence of current I on the potential difference V , three students plotted the following graphs between V and I . The graph that is likely to be correct is/are : [1]

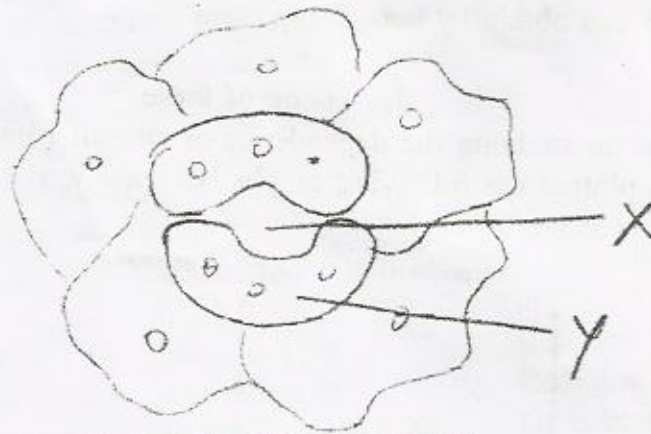


- a) of student I only
 b) of student II only
 c) of student III only
 d) of all the three students [1]
- Q36. A variable resistor called rheostat is used to vary : [1]
- a) Current b) Power
 c) Voltage d) None of these
- Q37. The steps, necessary for setting up the experiment, "To demonstrate that light is necessary for photosynthesis" are not given here in proper sequence. [1]
- i) Keep the potted plant in sunlight for 3 to 4 hours.
 ii) Keep the potted plant in darkness for about 48 hrs.
 iii) Cover a leaf of the plant with a strip of black paper.
 iv) Pluck the leaf & test it for starch.
- The correct sequence of steps is :
- a) I, III, IV, II b) I, IV, III, II
 c) II, IV, III, I d) II, III, I, IV
- Q38. The following experiment was set up to show that a gas is given out during respiration. But there was no rise in the level of water. This was because. [1]



- a) Germinating seeds have not been kept under water in the flask
 b) Water is kept in the beaker instead of lime water.
 c) The cork on the flask is made of rubber
 d) No substance is kept in the flask to absorb the gas given out by the seeds. [1]

- Q39. Four students A, B, C and D make the records given below for the parts marked X & Y in this diagram.



Student	X	Y
A	Stoma	Guard cell
B	Guard cell	Stoma
C	Epidermal cell	stoma
D	Stoma	Epidermal cell

The correct record out of these is that of student :

- a) A b) B
 c) C d) D [1]

- Q40. Sequence in preparing a temporary mount is :

- a) Staining, putting coverslip, mounting
 b) Staining, mounting, putting, coverslip
 c) Putting coverslip, staining, mounting
 d) Mounting, staining, putting coverslip [1]

- Q41. The teacher instructed a student to place a healthy potted flower plant in a dark room for 24 hrs. prior to an experiment on photosynthesis. The purpose of placing it in a dark room is :

- a) To increase the intake of CO_2 .
 b) To activate the chloroplasts in the leaves
 c) To destarch the leaves
 d) To denature the enzymes in the leaves [1]

- Q42. Which one of the following is the correct set of three precautions for setting up the experiment to demonstrate that carbon dioxide is evolved during respiration.

- a) Air tight set up, delivery tube dips in water in beaker & flask has seeds which have just germinated.
 b) Thread holding KOH test tube, air tight flask & delivery tube above the surface of water in the beaker.
 c) Germinated seeds under water in the flask, experimental set up not air tight and delivery tube above water level.
 d) Delivery tube touching bottom of water, KOH test tube held by a thick wire & seeds covered by water. [1]