Summative-I

September **Class-X**

Time allowed: 3 hours **Maximum Marks: 90**

General Instructions:

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

Section A

1. Identify the compound which is reduced in the following reaction:
   $Cu_2O + H_2 \rightarrow Cu + H_2O$
2. Why are titanium and chromium classified as strategic element?
3. Which has a higher resistance: a 100W lamp or 50W lamp bulb and how many times?
4. A drop of litmus solution is added to each of the four solutions give below. State the colour of litmus solution observed in each.
   Soap solution, Sodium bicarbonate solution, Acetic acid, Tomato juice
5. Translate the following statements into chemical equations and then balance the equations:
   a. Aluminium metal replaces iron from ferric oxide. Fe_2O_3, giving aluminum oxide and iron.
   b. Barium chloride reacts with zinc sulphate to give zinc chloride and a precipitate of barium sulphate.

6. What is the chemical name of washing soda? Name the three chief raw materials used for making washing soda.

7. Write four characteristics used for selecting a suitable fuel.

8. How many 176Ω resistors (in parallel) are required to carry 5A on a 220V line? Distinguish between the terms electrical resistance and resistivity of a conductor.

9. What is solenoid? Draw field lines of the magnetic field through and around a current carrying solenoid. What does the magnetic field pattern inside the solenoid indicate?

10. a) What is power?
b)In a house hold, 5 tube lights of 40W each are used for 5 hours and electric press of 500W for 4 hours every day. Calculate the total electrical energy consumed by the tube lights and press in a month of 30 days.

11. Given the following reaction

$$2Al + Fe_2O_3 \rightarrow 2Fe + Al_2O_3 + Heat$$

Answer the following with reason.
a. Name the oxidising agent.
b. Name the reducing agent.
c. Name the substance oxidised.

12. A compound which is prepared from gypsum has the property of hardening when mixed with a proper quantity of water. Identify the compound. Write the chemical equation for its preparation.
For what purpose is it used in hospital?

13. a. Show the formation of NaCl from sodium and chlorine atoms by the transfer of electrons.
b. Why has sodium chloride, a high melting point?
c. Name the anode and the cathode used in electrolytic refining of impure copper metal.

14. What are the functions of
a. Gibberellins
b. Cytokinins
c. Absorbic acid

15. Define nerve impulse‘ which structure in a neuron helps to conduct a nerve impulse.

16. State three advantages associated with using solar cells to produce electricity.

17.

a. State Ohm's law.
b. Draw the circuit diagram of Ohm's law.
c. What is the nature of graph in terms of relation between V and I.

18. a. An electric bulb is rated as 50W, 220V. Calculate the energy consumed by the bulb in 20 minutes. Express your answer in commercial units of electricity.
b. Distinguish between Overloading and Short Circuiting in a domestic circuit.
c.Why is it essential to earth electrical appliances having metallic body?

19. What are the environmental consequences of the increasing element for energy? What steps would you suggest to reduce energy consumption?

20. Name the hormone thati.
is produced by thyroid gland
ii. Prepares the body for action
iii. Controls the amount of sugar in blood
iv. Brings about changes in boys at puberty
V. Brings about changes in girls at puberty

21. Draw neat and labelled diagram of digestive system.
Write the functions of the following glands.
i. Salivary gland
ii. Liver
iii. Pancreas

22.
a. Why should curd and sour substances not be kept in brass and copper vessels?
b. Why does an aqueous solution of acid conduct electricity?
c. Why plaster of Paris should be stored in a moisture proof container?
d. What is efflorescence?
e. Why is baking soda used as an antacid?

23.
a. State reasons for the following.
i. Metals are good conductor of heat.
ii. Addition of some silver to pure gold for making ornaments.
iii. Inability of non – metals for displacing hydrogen from dilute sulphuric acid.
b. Balance the following equations
iv. $CaO + H_2O \rightarrow Ca(OH)_2$
v. $NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$

24. a. Explain why i) solar cooker is painted black from inside.
ii) the solar cooker box is covered with a glass sheet.
iii)the plain mirror reflector is used in solar cooker.
b.Draw a neat and well labelled diagram of solar cooker

SECTION – B

25 Absorption of light energy by mesophyll cells of leaf causes.

a) Oxidation of chlorophyll b) Excitation of chlorophyll
c) Reduction of chlorophyll d) Evolution of O_2

26 Which of the following does not secrete any hormone?
a) Testis b) Spleen
c) Ovary d) Pancreas

27 Which part of sunlight is used in making solar cell?
a) Infrared radiation b) Ultraviolet radiation
c) Visible radiation d) All of these

28 Which one of the following reaction can be a non – redox reaction?
a) Combination b) Decomposition
c) Displacement d) Double displacement.

29 Which of the following metal does not react with dilute sulphuric acid to liberate H_2 gas?
a) Calcium b) Sodium
c) Iron d) Silver

30 Sodium carbonate is not used as:
a) Ingredient in antacids b) As a cleaning agent
c) For removing permanent hardness of water d) For manufacturing of glass

31 Which one of the following compounds is not an ionic compound?
a) Sodium chloride b) Calcium chloride
c) Carbon tetrachloride d) Magnesium chloride

32 Which among the following reactions are endothermic in nature?
(i) Decomposition of lead nitrate (ii) Burning of methane
(iii)Dilution of sulphuric acid (iv) Dissolution of ammonium chloride in water.
a) i. and ii. b) ii. and iii.
c) iii. and iv d) i. and iv

33 Seeds which are kept in the conical flask during the experiment that CO_2 is released during respiration must be.

a) Dry b) Wet

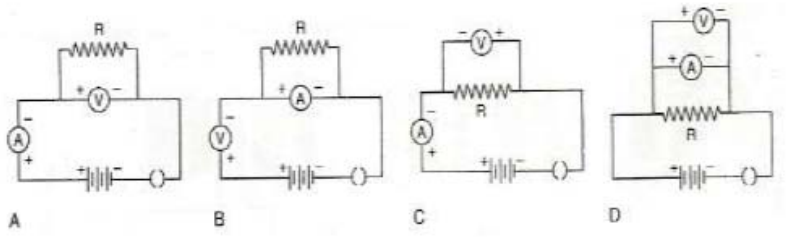
c) Germinated d) Boiled

34 The end products of aerobic respiration are

a) CO_2 energy and hydrogen b) CO_2 and water

c) CO_2, H_2O and ATP d) ADP and CO_2

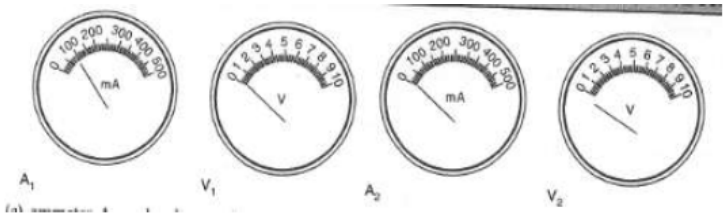
35 The correct set up of for studying the dependence of the current on the potential difference across a resistor is



a) A b) B

c) C d) D

36 The normal positions of the pointers of the two ammeters A_1 and A_2 and two voltmeters V_1 and V_2 available in the laboratory are shown below:

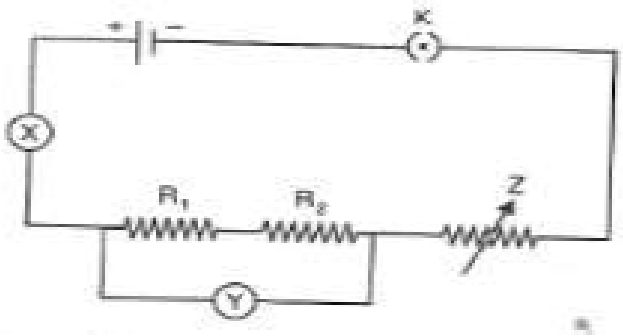


For an experiment to study the dependence of the current on the potential difference across a resistor, the student should select.

a) Ammeter A_1 and voltmeter V_1 b) Ammeter A_2 and voltmeter V_2

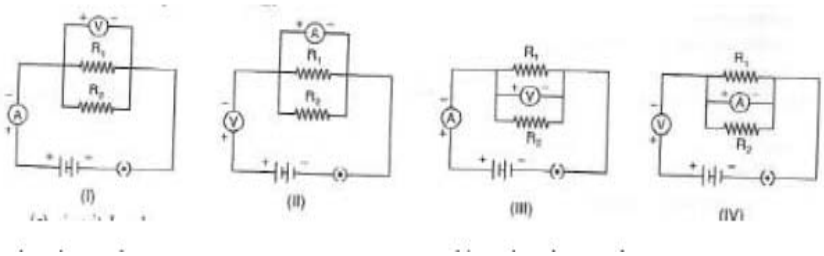
c) Ammeter A_1 and voltmeter V_2 d) Ammeter A_2 and voltmeter V_2

37 The given circuit diagram shows the experiment 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



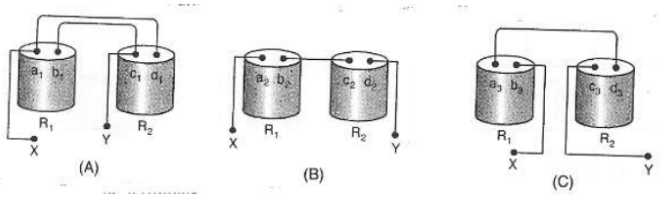
a) Rheostat, Resistor, Ammeter
b) Ammeter, Voltmeter, Rheostat
c) Voltmeter, Ammeter, Rheostat
d) Rheostat, Ammeter, Voltmeter

38 In the experiment on finding the equivalent resistance of two resistors, connected in parallel, the voltmeter has been correctly connected in



a) Circuit I only
b) Circuit II only
c) Both circuits I and III
d) Both circuits II and IV

39 The three students (A), (B) and (C) connected their two given resistors R_1 and R_2 in the manner shown below.



They connect the terminals marked X and Y above to the terminals marked X and Y in the given circuit. They record the ammeter readings (I) for different positions of the rheostat and the corresponding voltmeter readings (V).
The average value of the ratio V/I in their observations would be minimum for:
a) Students (A) and (B) only
b) Students (B) and (C) only
c) Students (C) and (A) only
d) Student (A) only.

40. For testing the presence of starch an illuminated leaf is first
a) Boiled in alcohol
b) Dipped in iodide solution

c) Boiled in water d) Placed in safranin solution

41. Solid sodium bi carbonate was placed on a strip of pH paper. The colour of the strip
a) Turned blue b) did not change
c) Turned green c) Turned light pink

42. The temporary mount of the leaf epidermal peel which looked pinkish red under the microscope was
a) Stained in acetocarmine and mounted in glycerine
b) Stained in iodine and mounted in water
c) Stained in safranin and mounted in glycerine
d) Stained in mythlene blue and mounted in water