TAGORE INTERNATIONAL SCHOOL
EAST OF KAILASH, NEW DELHI

SUMMATIVE TEST -1
SCIENCE (SET-2)
CLASS X

Date - 19.9.12 **Max.marks-90**

Time— 3 hrs. **No.of pages-7**

General Instructions:

(i) The question paper comprises of two sections, A and B. You are to attempt both the sections.

(ii) All questions are compulsory.

(iii) 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.

(iv) All questions of section A and all questions of section B are to be attempted separately.

(v) Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.

(vi) Questions 4 to 7 in section A are two marks questions. These are to be answered in about 30 words each.

(vii) Questions 8 to 19 in section A are three marks questions. These are to be answered in about 50 words each.

(viii) Questions 20 to 24 in section A are five marks questions. These are to be answered in about 70 words each.

(ix) Questions 25 to 42 in section B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.

SECTION-A

1. Name the type of current : 1
   (a) Used in household supply (b) given by a cell
2. How shoot and roots of a plant respond to light? 1
3. Name the major constituent of biogas and its approximate percentage content in it. 1
4. In the following reactions, state the reactants which undergo oxidation and which undergo reduction. 2
   (i) $ZnO + C \rightarrow Zn + CO$
   (ii) $MnO_2 + 4HCl \rightarrow MnCl_2 + Cl_2 + 2H_2O$
5. (i) Aluminium is more reactive than iron but it does not corrode like iron. Why? 2
   (ii) Corrosion of iron can be prevented by coating it with a layer of oil. State reason..
6. (i) List three factors on which the resistance of a conductor depends. 2
   (ii) Write the SI unit of resistivity .
7. (a) Draw magnetic field lines around a bar magnet 2
   (b) The magnetic field in a given region is uniform. Draw a diagram to represent it.
8. A student has mixed the solutions of lead (II) nitrate and potassium iodide. 3

(a) State the colour of the precipitate formed?
(b) Write a balanced chemical equation for the reaction.
(c) Suggest an alternative name for the above precipitation reaction. Give justification for your answer.

9. Define a decomposition reaction. Why is this reaction always endothermic? Write a chemical equation to represent a decomposition reaction. 3

10 (a) Write the name given to bases that are highly soluble in water. Give an example. alkali. 3
(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?

11 Describe an activity to show that the rusting of iron occurs in the presence of air and moisture. Draw related diagrams and label them. 3

12 A lamp rated 60W and an electric iron rated 800W are used for 6 hours everyday. Calculate the total energy consumed in 30 days. 3

13 (a) Nichrome wire of length *l* and radius 'r' has resistance of 10 Ω. How would the resistance of the wire change when : 3
(i) Only length of the wire is doubled?
(ii) Only diameter of the wire is doubled? Justify your answer.
(b) Why element of electrical heating devices are made up of alloys?

14 (a) State Right Hand Thumb rule to find the direction of the magnetic field around a current carrying straight conductor. 3
(b) How will the magnetic field be affected on :
(i) increasing the current through the conductor
(ii) reversing the direction of flow of current in the conductor.

15. List in tabular form three differences between aerobic respiration and anaerobic respiration. 3

16 (a) How is brain protected from injury and shock? 3
(b) Name two main parts of hind brain and state the function of each.

17 Smita's father has been advised by a doctor to reduce his sugar intake. 3
(i) Name the disease he is suffering from and name the hormone whose deficiency causes it.
(ii) Identify the gland that secretes it and mention the function of this hormone.
(iii) Explain how the time and amount of secretion of this hormone is regulated in human system.

18 List four characteristics of a good source of energy and two disadvantages of burning fossil fuels. 3

19 Why is the construction of dams opposed by the environment and social activists? List three reasons for the opposition of such projects. 3

20 How is copper obtained from its sulphide ore? Write balanced equations involved in the process. Explain with the help of labelled diagram the electrolytic refining of impure copper. 5

OR

(a) Name the method used to extract metals of high reactivity.
(b) Name the main ore of mercury. How is mercury obtained from its ore? Give balanced chemical equations.
(c) Explain what is thermit reaction with the help of balanced equation. How is it used to join railway tracks or cracked machine parts ?

21 (a) Write the chemical name and formula of each of the following-
(i) Baking soda (ii) Washing soda (i) Sodium hydrogencarbonate. (ii) Sodium carbonate. 5
(b) Why is baking soda important while preparing bread or cake?
(c) Mention one use each of baking soda (except in baking) and washing soda (except in washing/cleaning)

OR

(a) Giving reason for each, state which of the following will conduct electricity and which will not.

(i) A solution of glucose (ii) Dilute Hydrochloric acid

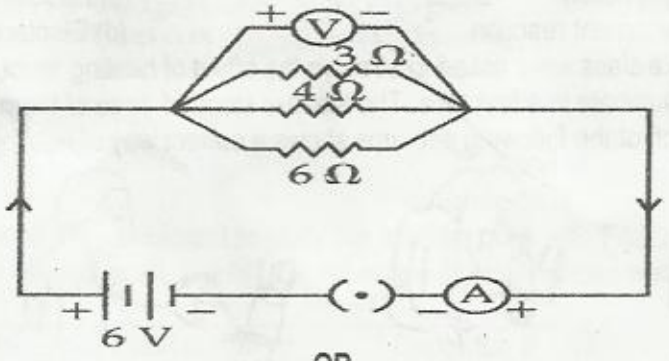
(b) If acetic acid and hydrochloric acid of same concentration are taken, which of the two is a stronger acid and why?

(c) How is the strength of an acid affected when some water is added to it?

22 State Ohm's law. Represent it graphically. In the given circuit diagram, calculate 5

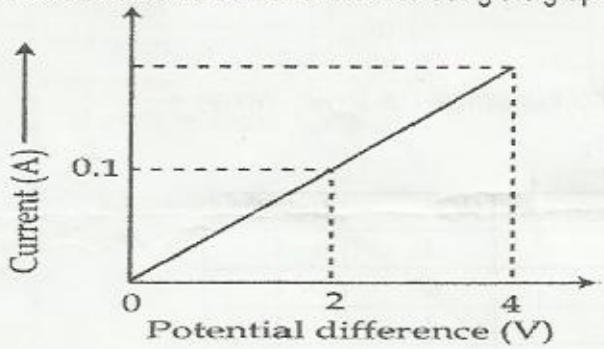
(i) the total effective resistance of the circuit.

(ii) the current through each resistor.



OR

(a) Calculate the resistance of the wire using the graph.



(b) How many 176 Ωresistors in parallel are required to carry 5A on a 220 V line?

(c) Define electric power. Derive relation between power, potential difference and resistance.

23 (a) Draw a schematic labelled diagram of a domestic wiring circuit which includes : 5

(i) a main fuse

(ii) a power meter

(iii) an electric bulb

(iv) a power plug

(b) Why is it necessary to connect an earth wire to electric appliances having metallic covers?

OR

(a) What is a solenoid? Draw a diagram to show field lines of the magnetic field through and around a current carrying solenoid. State the use of magnetic field produced inside a solenoid.

(b) List two properties of magnetic lines of force.

24 (a) Draw a diagram of human alimentary canal and label on it : 5

(i) stomach (ii) liver (iii) pancreas (iv) small intestine

(b) Explain the role of bile juice in digesting food.

OR

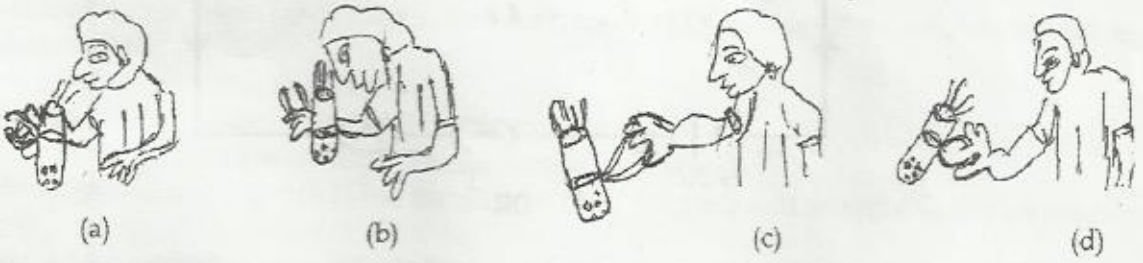
(a) Draw a diagram of human excretory system and label on it :
(i) left kidney (ii) urethra (iii) ureter (iv) urinary bladder
(b) Explain the purpose of making urine.

SECTION- B

25 On mixing solutions of Barium chloride and sodium sulphate a white precipitate is obtained. This reaction can be categorized as : 1

(a) Combination reaction
(b) Double displacement reaction
(c) Decomposition reaction
(d) Displacement reaction

26 Four students in a class were asked to observe the effect of heating ferrous sulphate crystals. They started heating ferrous sulphate in a test tube. The teacher stopped three of them for adopting a wrong procedure for heating. Which of the following set - ups shows a correct way of heating? 1



(a) (b) (c) (d)

(a) (a)
(b) (b)
(c) (c)
(d) (d)

27 Four students were asked to test the pH of four samples as shown. Whose result is reported correctly? 1

Student	Water	Ethanoic acid	HCl	NaOH
(a)	7	1	1	1
(b)	7	3	1	1
(c)	7	1	1	13
(d)	7	3	1	13

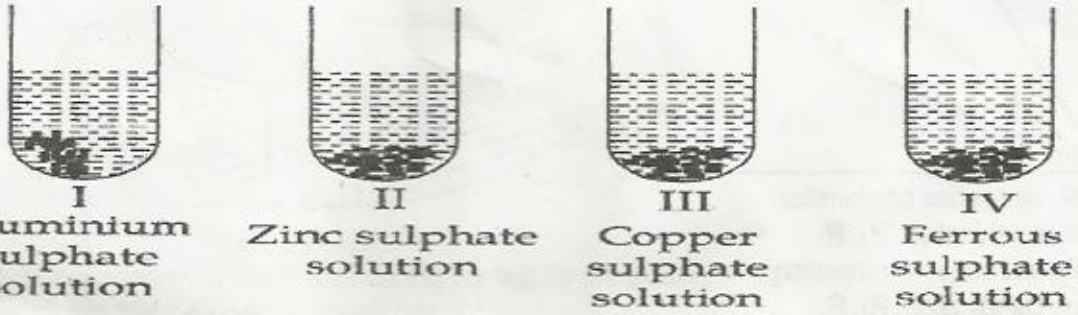
28 A student has four samples A, B, C and D containing dil.HCl, aqKCl, dil. NaOH and distilled water respectively. The solutions with equal pH are : 1

(a) A and B
(b) B and C
(c) C and D
(d) B and D

29 A solution in test tube 'A' turns red litmus blue, evolves hydrogen on reaction with Zn and does not react with sodium carbonate, whereas solution in test tube 'B' turns blue litmus red, liberates hydrogen on reaction with Zn and CO_2 with Na_2CO_3. Solution taken in 'A' and 'B' are : 1

(a) acid in A base in B
(b) base in A acid in B
(c) base in both 'A' and 'B'
(d) Acid in both 'A' and 'B'

30 Zinc granules are placed in each of the four solutions I, II, III and IV as shown : 1



The colour change would be observed in :

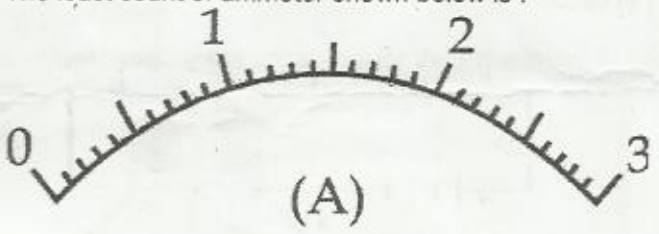
(a) I and II (b) II and III

(c) III and IV (d) I and IV

31 Students in a lab were assigned the experiment to study the reaction of Zn with $FeSO_4$ solution. The following set of observations was obtained. Identify the set where all observations were correct. 1

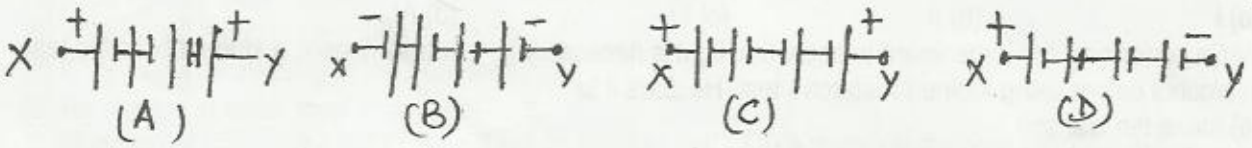
Set	Initial colour of solution	Final colour of solution	Deposits, if any
(a)	Colourless	Colourless	Red
(b)	Colourless	Pale green	Black
(c)	Pale green	Blue	Black
(d)	Pale green	Colourless	Black

32 The least count of ammeter shown below is : 1



(a) 0.05 A (b) 0.1 A (c) 0.2A (d) 0.25 A

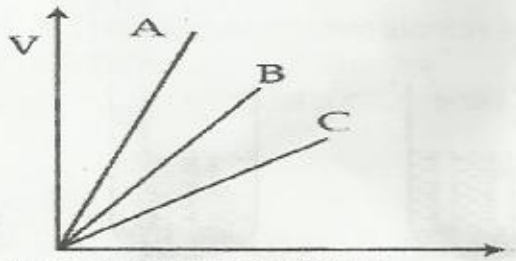
33 A student performed an experiment "To study the dependence of potential difference (V) across a resistor on current (I) flowing through it" by using four cells, each of 1.5 V. She connected the cells as shown below. The correct combination of cells to obtain 6V potential difference across XY is : 1



(a) A (b) B (c) C (d) D

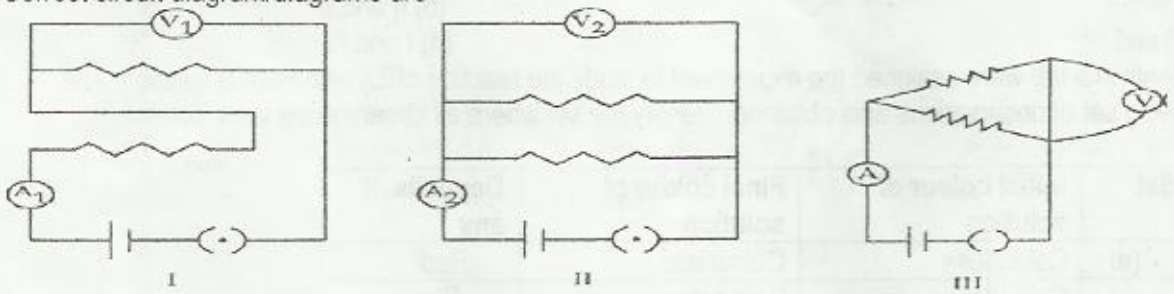
34 Ohm's law experiment is performed separately with individual resistors R_1, R_2 [$R_1 > R_2$] and series combination of R_1, R_2. Graph is plotted between potential difference (V) and current (I) as shown in figure for each case : Identify which one is for R_1, R_2 and combination of resistors ? 1

In the graph A, B and C respectively represents



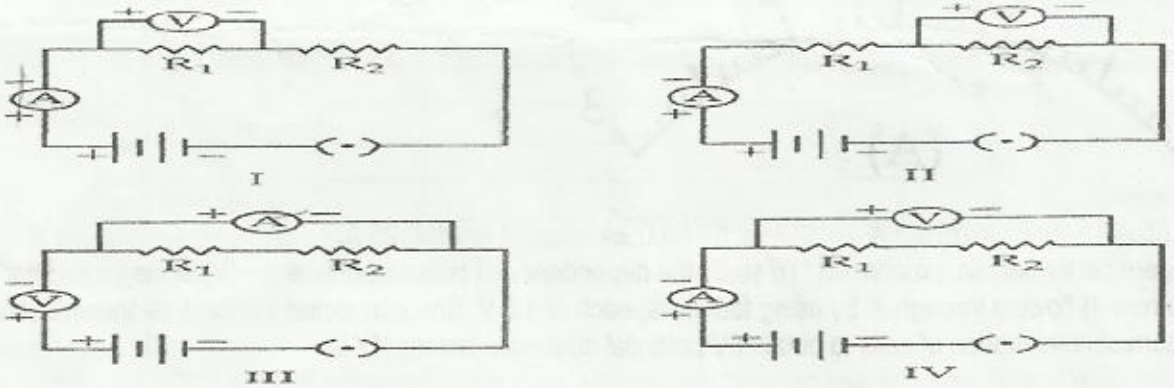
(a) R_1, R_2 and series combination
(b) series combination, R_2, R_1
(c) R_2, R_1 and series combination
(d) series combination, R_1, R_2

35 Three students drew following circuit diagrams to find resistance of parallel combination of two resistors. 1
Correct circuit diagram/diagrams are –



(a) I, II (b) II, III (c) II only (d) I only

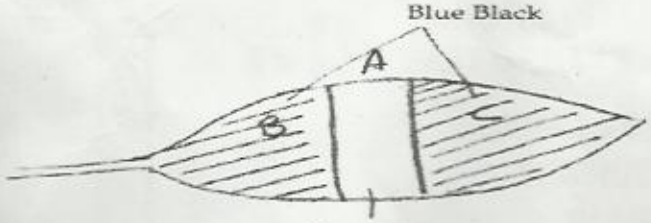
36 In the experiment on finding the equivalent resistance of two resistors, connected in series, the voltmeter across the combination is connected correctly only in circuit. 1



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

37 While performing the experiment to show that light is necessary for photosynthesis, a student boils the leaf in alcohol before using iodine for starch - test. He does it to 1
(a) make the leaf soft.
(b) make the leaf cells dead.
(c) remove chlorophyll from the leaf.
(d) make the leaf react with iodine.

38 Blue Black 1



No change

Above observations were made after testing the leaf for the presence of starch. The inference that can be drawn from it is that the photosynthesis has occurred in :

(a) portion A (b) portion B only

(c) portions B and C (d) all the portions A, B and C

39 We should take the epidermal peel from lower surface of leaf because : 1

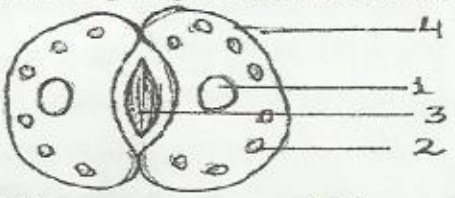
(a) number of stomata are more on lower surface of leaf.

(b) number of stomata are less on the upper surface of leaf.

(c) number of stomata are less on the lower surface of leaf.

(d) there are equal number of stomata on upper and lower surface of leaf

40 In the diagram give below, the stoma is denoted by 1



(a) 1 (b) 2 (c) 3 (d) 4

41 A student sets up the apparatus for the experiment to show that CO_2 is released during respiration 1

After two hours she would observe :

(a) KOH turning milky

(b) Water level rising in bent tube in the beaker

(c) Water level decreasing in the bent tube

(d) No change in water level in the bent tube.

42 The function of KOH in the experimental set up to show that CO_2 is released during respiration is to : 1

(a) enhance respiration

(b) release oxygen for respiration

(c) remove water vapour form the flask

(d) absorb CO_2 released by germinating seeds

----------THE END----------