SUMMATIVE ASSESSMENT – I, 2014
Class – X SCIENCE

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

General Instructions :

1. The question paper comprises of **two Sections**, A and B. You are 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 in **one sentence**
5. Question numbers 4 to 6 in **Sections-A** are **two marks** questions. These are to be answered in about **30 words** each.
6. Question numbers 7 to 18 in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each
7. Question numbers 19 to **24** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
8. Question numbers **25** to **33** 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.
9. Question numbers **34** to **36** in **Section-B** are questions based on practical skills are two **marks** questions.

SECTION-A

1 Mention the site of complete digestion of carbohydrates, proteins and fats in humans. 1

2 The potential difference across the terminal of a cell is 1.5 volt. It is connected with a resistance is 30 ohms. Calculate the current flowing through the circuit. 1

3 Explain the term 'Hot Spots' in the context of geothermal energy production. 1

4 Write one word each for the following alloys : 2

(i) In which one of the metals present is mercury.

(ii) Which has a low melting point and is used in joining metals for electrical work.

(iii) Which is used for making utensils and decoration articles.

(iv) Which is used for making medals and statues.

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 Define neuron. Name the parts of the neuron where : 2

(i) information is acquired

(ii) impulse must be converted into a chemical signal for onward transmission

7 Write the chemical formula of washing soda. How can it be obtained from baking soda ? Name two industrial uses of washing soda. 3

8 State the chemical property in each of the following cases, on which the following uses of baking soda are based : 3

(i) applied on an ant stung area

(ii) as a constituent of baking powder

(iii) in soda - acid fire extinguisher

9 Write one point of difference between each of the following : 3

(i) A hydrated salt and an anhydrous salt

(ii) Washing soda and soda ash

(iii) Baking soda and Baking powder

10 (a) When hydrogen gas burns in presence of oxygen, water is formed and when water is electrolysed, then hydrogen and oxygen gases are produced. State the kind of reaction that takes place : 3

(i) in the first case

(ii) in the second case

(b) In the experimental set up for electrolysis of water hydrogen and oxygen gases are produced at the cathode and anode respectively. Mention the ratio of the volumes of hydrogen and oxygen gases.

11 What do the following transport ? 3

(i) Xylem (ii) Phloem (iii) Pulmonary vein

(iv) Venacava (v) pulmonary artery (vi) Aorta

12 Name two hormones secreted by pancreas. Write one function of each. 3

13 Describe the structure and function of nephron with the help of diagram. 3

14 Describe in brief three different ways to induce current in a coil. 3

15 "The magnetic field produced at its centre by a coil of n turns is n times as large as produced by a single turn". Give reason to justify this statement. 3

16 Write symbols of the following circuit elements : 3

(i) Battery (ii) Ammeter (iii) Voltmeter

State the role of these elements in an electric circuit.

17 There are many limitations associated with the setting up of wind energy farms to harness energy. Raman wants to generate electricity by using wind mill in his parental village in Uttar Pradesh. 3

(i) Is it advisable to set up such wind energy farms in his village. Give reason for your answer.

(ii) Write any two limitations associated with the wind energy farms.

(iii) Write the energy transformations which take place when wind mill is used for generating electricity ?

18 List any three qualities of an ideal source of energy. 3

19 Define rancidity. What kind of substances are used to prevent rancidity ? Explain any three methods to prevent rancidity. 5

20 Write balanced chemical equation for the following statements and state the colour changes you observe when : 5

(i) Iron nail is kept immersed in copper sulphate solution.

(ii) Potassium iodide solution is added to lead nitrate solution.

(iii) Lead nitrate powder is heated in a boiling tube.

(iv) When a piece of zinc metal is placed in copper sulphate solution.

(v) Barium chloride solution is added to sodium sulphate solution.

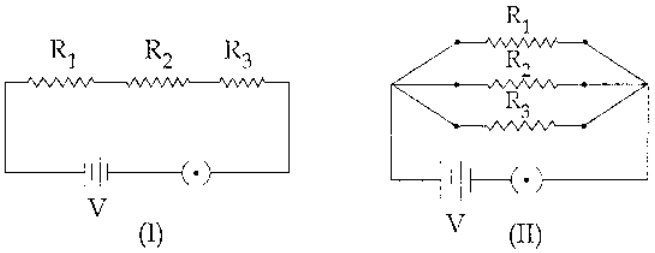
21 (a) Write three main functions of the nervous system. 5

(b) In the absence of muscle cells, how do plant cells show movement ?

22 State and explain Ohm's law. Define resistance and give its SI unit. What is meant by 1 ohm resistance ? Draw V-I graph for an ohmic conductor and list its two important features. 5

23 Name an instrument that measures potential difference between two points in a circuit. Define the unit of potential difference in terms of SI unit of charge and work. Draw the circuit symbols for a (i) variable resistor, (ii) a plug key which is closed one. 5

Two electric circuits I and II are shown below



(i) Which of the two circuits has more resistance ?

(ii) Through which circuit more current passes ?

(iii) In which circuit, the potential difference across each resistor is equal ?

(iv) If $R_1 > R_2 > R_3$, in which circuit more heat will be produced in R_1 as compared to other two resistors ?

24 Establish a relationship to determine the equivalent resistance R of a combination of three resistors having resistances R_1, R_2 and R_3 connected in series. Calculate the equivalent resistance of the combination of three resistors of 2 ς, 3 ς and 6 ς joined in parallel. 5

SECTION - B

25 Which statement is correct for universal indicator ? 1

(a) It is the solution of phenolphthalein and methyl orange.
(b) It is solution of aq. HCl and aq. NaOH.
(c) It is solution of methyl orange in water.
(d) It is a mixture of many indicators.

26 1

While doing experiment, to find pH of given sample which of the following tiles should be used for keeping pH paper on it to get correct value of pH of the sample.

(a) a glazed yellow tile (b) kota stone floor tile
(c) designed marble floor tile (d) a glazed white tile

27 A thin plate of zinc metal is placed in a beaker containing aqueous $FeSO_4$ solution. After 15 minutes Zn plate was taken out. The deposit formed on Zn plate is of : 1

(a) iron sulphate (b) iron oxide
(c) iron metal (d) iron sulphide

28 To turn an aqueous solution of $CuSo_4$ colourless, we can add to it : 1

(a) Only zinc (c) Only Iron

(c) Only Aluminium (d) Zinc or Aluminium.

29 Zn I $FeSO_4 \rightarrow ZnSO_4 + Fe$ (A) 1

Fe I $ZnSO_4 \rightarrow FeSO_4 + Zn$ (B)

Sapna after observing the reactions between Zn and $FeSO_4$ and Fe and $ZnSO_4$ wrote the above equations, identify the equation which correctly represents reaction.

(a) Only A (b) Only B

(c) Both A and B (d) Neither A nor B

30 In our domestic electric circuit the component which is always connected in series is : 1

(a) Fuse wire

(b) Earth wire

(c) Live wire

(d) Connecting wire

31 A piece of wire of resistance R is cut into five equal parts. These parts are then connected in parallel. If the equivalent resistance of this combinations is R^1, Then the ratio R/R^1 is – 1

(a) 1/25

(b) 1/5

(c) 5

(d) 25

32 On completion of the experiment to demonstrate that "light is necessary for photosynthesis", four students reported the inference as follows. Identify the correct inference. 1

(a) Part of the leaf covered with strip can only undergo photosynthesis

(b) Uncovered parts of the leaf cannot synthesize starch

(c) Photosynthesis takes place only in the presence of sunlight

(d) Light is necessary for synthesis of starch in green plants

33 In an experimental set – up to demonstrate that CO_2 is released during respiration, Vaseline is applied to : 1

(a) fix the rubber stopper at the mouth of the flask

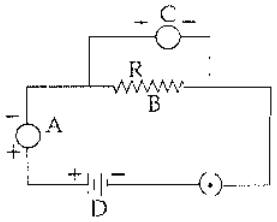
(b) the mouth of the U-shaped tube

(c) the germinating seeds

(d) the rubber stopper where the delivery tube enters and the mouth of the flask

34 An iron nail is dipped in the solution of copper sulphate for about 30 minutes, state the change in colour observed. Give the reason for the change. 2

35 A student draws the following circuit diagrams for the experiment on studying the dependence of current (I) on potential difference (V) across a resistor. Name the parts labelled as A, B, C and D in the diagram. 2



36 Mention the sequence of steps in the preparation of temporary mount of a stained leaf peel. 2