SUMMATIVE ASSESSMENT – I, 2014

SCIENCE

Class – X

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.**

भाग-अ / SECTION-A

1 Name one plant hormone which inhibits growth. Write its one more function. 1

2 List two sources of magnetic fields. 1

3 Name any two devices used to harness solar energy. 1

4 State what is observed when silver chloride is exposed to sunlight. Write the balanced chemical equation for this reaction. 2

5 What is universal indicator ? State the purpose for which this indicator is used. 2

6 What are enzymes ? Name any one enzyme of our digestive system and write its function. 2

7 State the property utilized in the following : 3

(i) Graphite in making electrodes.

(ii) Electrical wires are coated with polyvinyl chloride (PVC) or a rubber like material.

(iii) Metal alloys are used for making bells and strings of musical instruments.

8 P, Q and R are three elements which undergo chemical reactions according to the following equations : 3

$$P_2O_3 + 2Q \rightarrow Q_2O_3 + 2P$$

$3RSO_4 + 2Q \rightarrow Q_2(SO_4)_3 + 3R$

$3RO + 2P \rightarrow P_2O_3 + 3R$

Answer the following questions with reasons :

(a) Which element is the most reactive ?

(b) Which element is the least reactive ?

(c) State the type of reaction listed above.

9 Complete and balance the following chemical equations : 3

(i) $K_2CO_3 + HCl \rightarrow$

(ii) $CuO + HCl \rightarrow$

(iii) $Fe + HCl \rightarrow$

10 Name the acid present in the following foodstuffs which provides a sour taste to them : 3

(i)	Lemon juice	(iv)	Tomato
(ii)	Vinegar	(v)	Orange
(iii)	Tamarind	(vi)	Curd

11 State three common features of respiratory organs of animals. 3

12 Mention three major regions of brain. Write one function of each. 3

13 (a) An old man is advised by his doctor to take less sugar in his diet. Name the disease from which the man is suffering. Mention the hormone due to imbalance of which he is suffering from this disease. Which endocrine gland secretes this hormone ? 3

(b) Name the endocrine gland which secretes growth hormone. What will be its effect on a person of :

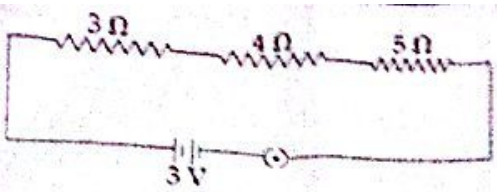
(i) Deficiency of growth hormone.

(ii) Excess secretion of growth hormone.

14 How much current will an electric iron draw from a 220 V source if the resistance of its element when hot is 55 ohms. Calculate the wattage of the electric iron when it operates on 220 volts. 3

15 With the help of a diagram of experimental set up describe an activity to show that the force acting on a current carrying conductor placed in a magnetic field increases with increase in field strength. 3

16 Study the following circuit and find the potential difference across 4 Ω resistor 3



17 Anita lived with her parents in a joint family in which almost every member had an independent bathroom fitted with electric geysers. Anita persuaded her grandfather to replace these by filling solar geyser on the roof and all agreed to this suggestion after hearing her arguments. 3

(a) List two values exhibited by Anita.

(b) Explain how Anita succeeded in passing on these values to all members of her family .

18 Give three reasons to support the statement that biogas production is environment friendly. 3

19 (a) Write chemical equation for the reactions taking place when : 5

(i) Manganese dioxide is heated with aluminium powder.

(ii) Steam is passed over red hot iron.

(iii) Magnesium reacts with hot water.

(b) The oxide X_2O_3 is unaffected by water. Name a method by which metal X can be obtained from its ore. Give one reason as to why have you chosen this method ?

20 Explain the meaning of water of crystallization with an example. Which properties usually change when water of crystallization is removed ? Support your answer with an example. 5

21 (a) Draw a diagram of human excretory system and label the following parts on it : 5

(i) Aorta (ii) Vena cava

(iii) Urinary bladder (iv) Left kidney

(b) List two vital functions of kidney.

22 (a) Explain why there are two separate circuits one for high power rating appliances and the other for low power rating appliances. 5

(b) A domestic circuit has a 5 A fuse. How many bulbs of rating 100 W; 220 V can be safely used in this circuit ? Justify your answer.

23 For the series combination of three resistors establish the relation : 5

$R = R_1 + R_2 + R_3$

where the symbols have their usual meanings.

Calculate the equivalent resistance of the combination of three resistors of 6 Ω, 9 Ω and 18 Ω joined in parallel.

24 State Ohm's law. Write the necessary condition for its validity. How is this law verified experimentally ? What will be the nature of graph between potential difference and current for a conductor ? Name the physical quantity that can be determined from this graph. 5

भाग-ब/SECTION - B

25 Equal pieces of zinc granules are dropped in four test-tubes. Following substances are poured in all the four test-tubes. The reaction will be vigorous with : 1

(a) CH_3COOH (b) HCl ✓

(c) sodium bicarbonate solution (d) lemon juice

26 Which of the following statements shows the property of an acid ? 1

(a) It turns blue litmus to red (b) It is sour in taste

(c) It has no effect on red litmus (d) All of these ✓

27 Mark and identify the wrong step of experimental procedure for interaction of Al, Fe, Zn and Cu metals with $FeSO_4$ solution. 1

(a) I step → Take four clean test tubes

(b) II step → Dip a clean nail, Zn granules, Cu strip and aluminium strip metal respectively in each test tube

(c) III step → Heat the solution in each test tube ✓

(d) IV step → Note the change occurring in each test tube

28 Anindita took three metals labelled X, Y and Z. She carried out displacement reactions with their salt solutions. She observed that : 1

$X + YA \rightarrow XA + Y$

$Z + XA \rightarrow ZA + X$

The correct conclusion is :

(a) Z is more reactive than Y and Y is more reactive than X

(b) Z is more reactive than X, and X is more reactive than Y ✓

(c) Y is more reactive than X, and X is more reactive than Z

(D) X is more reactive than Z, and Z is more reactive than Y

29 Kavita added a few granules of Zn to 50mL of a solution of $Al_2(SO_4)_3$ in a test tube. The correct observation for the change in colour of solution made by her is : 1

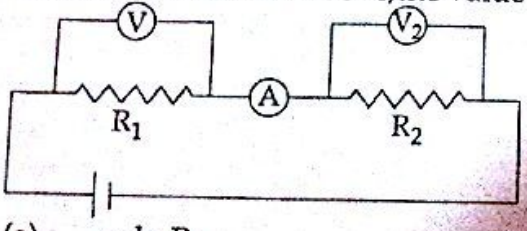
(a) Pale green solution turned blue.

(b) Blue solution turned colourless

(c) Colourless solution remained colourless ✓

(d) Colourless solution turned brown.

30 In the circuit shown above, the value of the current in ammeter depends upon:- 1



(a) only R_1

(b) only R_2

(c) both R_1 and R_2 ✓

(d) neither R_1 nor R_2

31 An ammeter and a voltmeter are joined in series to a cell. Their readings are A and V respectively. If a resistance is now joined in parallel with the voltmeter. 1

(a) Both A and V will increase
(b) Bothe A and V will decrease
(c) A will decrease, V will increase
(d) A will increase, V will decrease

32 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 hours.

(III) Cover a leaf of the plant with a strip of black paper.

(IV) Pluck the leaf and 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

33 The use of water in the beaker in the experimental set-up to show that CO_2 is given out during respiration is to: 1

(a) Provide moisture to the germinating seeds

(b) Absorb carbon dioxide

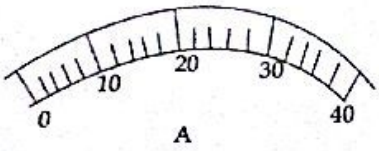
(c) Create a partial vacuum

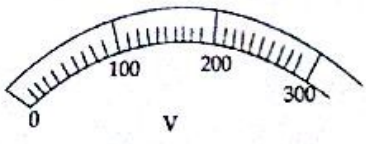
(d) Note the change in its level in the delivery tube immersed in it when partial vacuum is created in the conical flask.

34 On adding water to quick lime, slaked lime is obtained. 2

Write the chemical name of (i) quick lime and (ii) slaked lime. Also state the type of reaction in this case.

35 Calculate the Least Count of the given Ammeter and Voltmeter. 2





36 Mention the nature of the cells that surround stomata ? Name the cells. 2

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