KRM.

8U7V4YD

# 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.

## SECTION-A

1 Define photosynthesis. 1

2 Draw a diagram to show uniform magnetic field in a given region. 1

3 Name any two constituents of biogas. 1

4 Write a balanced chemical equation to show the chemical change that occur when magnesium ribbon is burnt in air. Name the product formed and mention the characteristics of the flame produced. 2

| | | |
|---|---|---|
| 5 | State reason for the following :<br>(i) Ionic compounds conduct electricity only in the molten state.<br>(ii) Ionic compounds are generally soluble in water but insoluble insolvents such as kerosene, petrol etc. | 2 |
| 6 | Name the gland and the hormone secreted by the gland, which are associated with the following problems.<br>(i) a girl has grown extremely tall.<br>(ii) a woman has a swollen neck. | 2 |
| 7 | Write example of one strong acid and one weak acid.<br>(a) State the role of hydrochloric acid present in our stomach in digestion.<br>(b) Define acidity. How can its effect be neutralized ? | 3 |
| 8 | Explain why sodium hydroxide solution cannot be kept in aluminium containers ? Write equation for the reaction that may take place for the same. | 3 |
| 9 | On the basis of their pH values, how will you identify neutral, acidic and basic salt solution ? How are these salts prepared ? | 3 |
| 10 | State what would happen if :<br>(i) some zinc pieces are placed in blue copper sulphate solution.<br>(ii) some copper pieces are placed in green ferrous sulphate solution.<br>(iii) an iron nail is dipped in a solution of copper sulphate for some time. | 3 |
| 11 | (a) How does exchange of respiratory gases oxygen and carbon dioxide take place between tissues and blood in human beings ?<br>(b) Name the respiratory pigment in humans. Where is it found ? | 3 |

12 (a) Name the organs where receptors are usually located ? 3

(b) State the functions of :

(i) gustatory receptors

(ii) olfactory receptors

(c) Identify the parts of a neuron

(i) Where information is acquired

(ii) Through which information travels

13 How does chemical coordination occur in plants ? Explain with the help of three examples. 3

14 Show four different ways in which three resistors of r ohm each may be connected in a circuit. In which case is the equivalent resistance of the combination 3

(i) maximum (ii) minimum ?

15 Calculate the resistance of 5 m length of a wire of area of cross – section 0.01 $mm^2$ and resistivity $50X10^{-8}$ ohm metre. 3

16 How will the strength of magnetic field due to a circular coil carrying current change at its centre when the - 3

(i) strength of current flowing in the coil is increased ?

(ii) number of turns in the coil is increased ?

(iii) radius of the coil is increased ?

17 Prachi is an entrepreneur (business woman) and knows that there are many limitations in the setting up and harnessing energy from wind energy farms, but still she wants to do it. 3

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

(ii) Is wind energy a conventional or non-conventional source of energy?

Give reason for your answer.

(iii) State the values that prompted the action taken by Prachi.

18 Explain the term 'geothermal energy'. How can it be exploited ? Though it is economical yet it is not harnessed in most of the countries. Why ? 3

19 (a) Manganese dioxide reacts with hydrochloric acid to form manganese chloride and chlorine gas. Write a balanced chemical equation for the reaction. Name the substance oxidized and the substance reduced. 5

(b) When copper powder is heated in a china dish the surface of copper powder becomes coated with black copper (II) oxide. If hydrogen gas is passed over this heated material (CuO) the black coating on the surface turns brown and copper is obtained. Write two chemical equations for the reactions given above and mention the substance oxidized and the substance reduced in both the reactions.

20 (a) Baking soda is used in small amount in baking bread and cake. It helps to make these soft and spongy. An aqueous solution of baking soda turns red litmus blue. It is also used in sodaacid fire extinguisher. 5

Use the information to answer the following questions :

(i) How does baking soda help to make cakes and bread soft and spongy ?

(ii) How does it help in extinguishing fire ?

(iii) Is pH value of baking soda solution less than or greater than 7 ?

(b) State the chemical name and formula of washing soda. Write two chemical equations involved in the preparation of washing soda from baking soda.

21 Respiration in human beings is a complex and continuous process resulting in the renewal of gases in blood. Describe the three stages of respiration. 5

22 (a) Describe in brief any three important features of domestic electric supply lines. 5

(b) List two distinguishing features between overloading and short circuiting in domestic circuits.

23 What is meant by the term magnetic field ? Draw the pattern of magnetic field lines due to a current carrying solenoid. How can the strength of this magnetic field be increased ? Explain. List two properties of magnetic field lines. 5

24 (a) Name the effect of electric current which is utilised in the working of an electrical fuse. 5

(b) How is a fuse connected in a domestic circuit ?

(c) Draw a schematic labelled diagram of a domestic circuit which has a provision of a main fuse, meter, one light bulb and a switch/socket.

## SECTION - B

25 For which of the samples of equal concentration the pH value of its sample will be highest : 1

(a) dilute NaOH solution (b) dilute HCl

(c) dilute sodium bicarbonate solution (d) dilute $CH_3$ COOH solution

26 Lime water which is used to confirm the liberation of $CO_2$ when HCl reacts with $Na_2CO_3$ is an aqueous solution of : 1

(a) $CaCO_3$ (b) $Ca(HCO_3)_2$

(c) $CaSO_4$ (d) $Ca(OH)_2$

27 Some Zn granules were kept in test tube containing $ZnSO_4$ solution. How much time do you think will be required to change the colour of $ZnSO_4$ solution from colourless to green ? 1

(a) 8 hours (b) 5 minutes

(c) 16 hours (d) change will not take place at all

28 An iron nail was kept immersed in aluminium sulphate solution. Correct observation made after half an hour, would be – 1

(a) the colourless solution changed to green.

(b) a grey coating was deposited on iron nail.

(c) the iron nail became red, the colourless solution remained colourless.

(d) the solution remained colourless and no deposition observed.

29 Bidisha took two solutions A and B separately in two test tubes, 10 mL each. The solutions were of copper sulphate and iron sulphate respectively. The colours of the solutions A and B were : 1

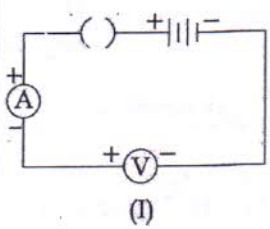
(a) A- colourless , B- blue

(b) A-blue , B- pale green

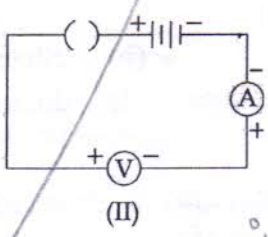
(c) A- blue , B- colourless

(d) A- colourless , B- colourless

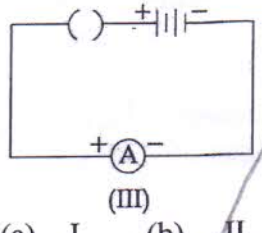
30 In which of the circuits, the voltmeter/ammeter is likely to be damaged, on plugging the key, 1



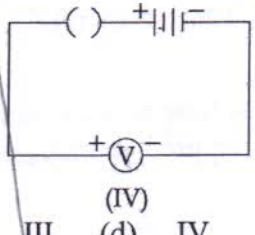

(I)




(II)




(III)




(IV)

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

A wire of resistance R is cut into 10 equal parts which are then joint in parallel. The resistance of combination is
i) 0.01 R ii) 0.1 R
iii) 10 R iv) 100

2

31 Four students measured the following reading by observing the position of pointer in voltmeter correct reading is : 1

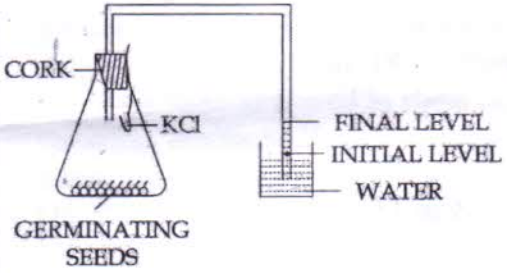

(a) 2.2 V (b) 2.4 V (c) 4.2 V (d) 4.4 V

32 A plant is kept in the sunlight for 8 hours, but it does not show a positive test with iodine. It means it is: 1

(a) Not a green plant (b) Not alive

(c) Dehydrated (d) Not photosynthesizing

33 A student drew the given diagram for the set - up of the experiment to show that $CO_2$ is released during respiration. The error in the diagram can be corrected by : 1




(a) Cork must be replaced by cotton plug

(b) Seeds should be dry seeds

(c) Beaker must contain lime water

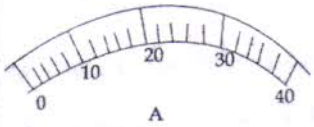
(d) Test tube should have KOH

34 A student prepares aqueous solutions of the following salts : 2

Copper sulphate, ferrous sulphate, Sodium sulphate, Barium chloride

Write the colour of each solution thus formed.

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





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

-o0o0o0o-

$\frac{40}{10} = 4A$

$\frac{300}{100} = 3V$

2