Yash D.P.S V.K

SUMMATIVE ASSESSMENT – I, 2016-17

SCIENCE

Class – X

Set – B

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. Each question is of two marks.**

SECTION-A

1 Why are magnetic field lines more crowded towards the pole of a magnet ? 1

2 What is a wind energy farm ? 1

3 Mention the part of the brain which maintains posture and equilibrium of the body. 1

4 (a) How many chambers are present in the heart of 2

(i) fish

(ii) amphibians.

(b) Why is it necessary to separate oxygenated and deoxygenated blood in mammals and birds ?

5 Mention the pH of aqueous solution of the following salts as 7, more than 7 or less than 7 : 2

(i) Potassium chloride

(ii) Sodium carbonate

(iii) Ammonium sulphate

(iv) Sodium nitrate

6 Name one metal each which is extracted by : 2

(a) reduction with carbon
(b) electrolytic reduction
(c) reduction with aluminium
(d) reduction with heat alone

7 A solution of a metal salt was kept in a copper pot. After a few days, the copper pot was found to have a number of holes on it. Explain the reason with the help of equation. Which metal salt could it possibly be? 3

8 What is meant by the term rancidity. To prevent rancidity of foods containing fats or oils, some substances are added to them, what are these substances called ? Suggest two preventive measures of slowing down this process. 3

9 Write the chemical equations involved in the following chemical reactions : 3

(i) White washing
(ii) Black and white photography

10 A chemical compound is used for removing permanent hardness of water. It is obtained from baking soda. Identify the compound. State its chemical name and formula. Write chemical equations involved in its preparation from baking soda. 3

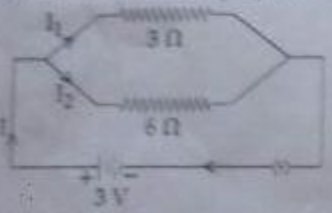
11 Write two different type of movements shown by plants. Explain by giving one example for each. 3

12 Name the secretion of the following glands and state in brief their functions : 3

(i) pituitary gland
(ii) testes
(iii) thyroid gland

13 Explain the significance of photosynthesis. Write the balanced chemical equation involved in the process. 3

14 Find the values of I_1, I_2 and I in the following electric circuit. 3



15 The resistance per metre length of a wire is 10Ω/m. If the resistivity of the material of the wire is 50×10^{-8} Ωm, find the area of cross – section of the wire. 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 Explain the term 'Tidal energy'. How is electricity produced from tidal energy? 3

18 Burning of fossil fuel causes air pollution. Generally these fossil fuels are used in our vehicles. 3

(i) As an aware citizen, list two ways to reduce air pollution caused due to vehicles.

(ii) Write two harmful effects other than air pollution, that are caused due to burning of fossil fuels.

19 (a) Write three properties each of acids and bases. 5

(b) How will you show with an example that metal oxides are basic in nature? Give chemical equation also.

20 Complete the flow chart by filling the blanks in the schematic representation of breakdown of glucose molecule in case of aerobic respiration. 5

Glucose $\xrightarrow{\text{In cytoplasm}}$ [illegible] + [illegible]

[illegible] → [illegible] + [illegible] + Energy

(ii) (a) Name the molecule in the cell which stores the energy produced at the end of the pathway.

(b) Sometimes we get cramps when we perform sudden muscular activity. Give reason.

21 Give chemical equation for the following reactions. 5

(i) Digestion of food in our body

(ii) Rusting of iron

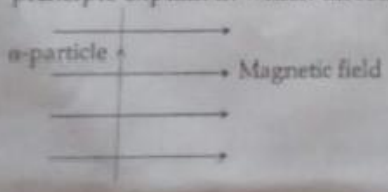
(iii) Heating of manganese dioxide with aluminium powder

(iv) Blue colour of copper sulphate solution disappears when iron filings are added to it

(v) Dilute hydrochloric acid is added to sodium hydroxide solution to form sodium chloride and water

2 (a) Describe an activity to determine the direction of magnetic field produced by a current carrying straight conductor. Also show that the direction of the magnetic field is reversed on reversing the direction of current. 5

(b) An α-particle, (which is a positively charged particle) enters a uniform magnetic field at right angles to it as shown below. Stating the relevant principle explain in which direction will this α-particle move ?



23 (a) A coil of insulated copper wire is connected to a galvanometer. With the help of a labelled diagram state what would be seen if a bar magnet with its south pole towards one face of this coil is :

(i) moved quickly towards it.

(ii) moved quickly away from it.

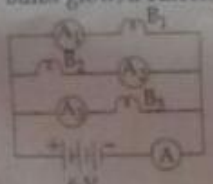
(iii) placed near its one face ?

(b) Name the phenomena involved in the above cases.

(c) State Flemings right hand rule.

24 (a) Express electrical power in term of current and potential difference. Define its S.I. unit. 5

(b) Three identical bulbs B_1, B_2, B_3 are connected as shown in figure. When all the bulbs glow, a current of 4 A is recorded by ammeter A.



(i) Calculate the power dissipated in the circuit when all bulbs glow.

(ii) What happens to two bulbs B_2 and B_3 when bulb B_1 get fused?

SECTION - B

25 Four students A, B, C and D determine the pH of water, lemon juice and dil sodium bicarbonate solution. They recorded their observations and arranged them in descending order of pH values as fallows : 1

Student	Solutions
(A)	water, lemon juice, sodium bicarbonate solution
(B)	water, sodium bicarbonate solution, lemon juice
(C)	lemon juice, water, sodium bicarbonate solution
(D)	sodium bicarbonate solution, water, lemon juice

The correct sequence is of the student :

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

26 Two solutions A and B were found to produce colours on pH paper blue and red respectively 1
The inference which can be drawn is :

(a) The pH value of solution B is more than the solution A.

(b) The pH value of solution B is less than the solution A.

(c) The solution B is a base.

(d) The solution A is an acid.

27 An aluminium foil is placed in Zinc sulphate solution. After sometime we observe that the solution : 1

(a) becomes colourless (b) remains colourless

(c) becomes blue (d) becomes green

28 When dil HCl is added to Na_2CO_3 the gas liberated is : 1

(a) hydrogen (b) carbon dioxide

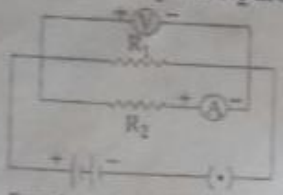
(c) carbon monoxide (d) chlorine

29 Select the correct order of reactivity for four metals copper, iron, zinc, aluminium : 1

(a) Al > Zn > Fe > Cu (b) Al > Zn > Cu > Fe

(c) Zn > Al > Fe > Cu (d) Al > Fe > Zn > Cu

30 A student draws a circuit diagram to calculate equivalent resistance when two resistances R_1 and R_2 are connected in parallel. 1



For the given circuit which statement is true ?

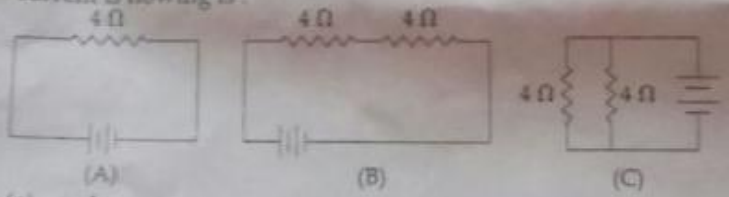
(a) Positions of both Ammeter and Voltmeter are not correct

(b) Positions of both Ammeter and Voltmeter are correct

(c) Position of Ammeter is correct but Voltmeter is not correct

(d) Position of Ammeter is not correct but Voltmeter is correct

31 Observe the circuits A,B and C as given below. The circuit through which maximum current is flowing is : 1



(a) A

(b) B

(c) C

(d) Same in all the cases

32 Shubham sets up the apparatus to show that 'CO_2 is evolved during respiration.' After 3 hours he would observe : 1

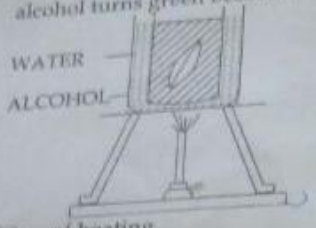
(a) Water level rising in the bent tube in the beaker

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

(c) Water turning turbid in the beaker

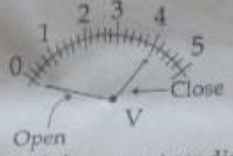
(d) Potassium hydroxide solution turns milky

33 During an experiment on photosynthesis, in the step shown in figure below, the alcohol turns green because : 1



(a) of heating
(b) chlorophyll being organic in nature, dissolves in it
(c) of the impurities of the surroundings
(d) cells of leaf disintegrate in it

34 To study the dependence of potential difference (V) on current (I) flowing across a resistor, a student takes readings through voltmeter and ammeter when key is open and closed respectively. 2



(i) Find the correct reading of voltmeter.
(ii) Find the correct reading of ammeter.

35 In an experiment to prepare temporary mount of a leaf peel, staining of leaf peel is done before putting a drop of glycerine. Explain why ? 2

36 While performing an experiment a student observes that when he heats some green crystals in a boiling tube, the colour of the crystals changes to brown and a gas evolves which smells like burning sulphur . Interpret the observations and results. 2