SAMPLE QUESTION PAPER 2015

SUMMATIVE ASSESSMENT – I, 2015 SCIENCE Class – X

SECTION-A

1. Name the cell organelle in which breakdown of pyruvate to give carbon dioxide, water and energy takes place.[1]

2. State the principle on which a fuse works.

3. What are hot spots inside earth's crust ?

4 . When iron rod is kept dipped in copper sulphate solution for some time, a brown coating is formed on the iron rod. What change will be observed in the colour of the solution ? Also write chemical equation for the reaction involved.[2]

5. List three products obtained in the chlor – alkali process. Which of these products is used for the manufacture bleaching powder ?

6. Explain the following terms : (i) hydrotropism (ii) geotropism

7. Describe electrolytic refining of copper with chemical equations. Draw a well labelled diagram for it.[3]

8. Complete the following table :

Sample solution	Red litmus solution	Blue litmus solution	Phenolphthalein solution
Acetic acid			
Sodium hydroxide			
Baking Soda			

9. Name the acid present in the following foodstuffs which provides a sour taste to them :

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

10. Balance the following chemical equations :

(i) NH_3 + CuO ----> Cu + N_2 + H_2O

(ii) Al + Fe_2O_3 ---------->Al_2O_3 + Fe

(iii) P4 + Cl_2 ----> PCl_5

11. Write in sequence the names of main organs of human digestive system involved in the process of digestion of food. Name the organ in which complete digestion of carbohydrates, proteins and fats is carried out.

12. Illustrate with the help of a diagram the effect of auxins in different parts of a plant.

13 . Draw a neat diagram of sectional view of human heart and label on it :

(i) Pulmonary artery (ii) Pulmonary vein

14 .A 5 Ω resistor is connected across a battery of 6 volts. Calculate :

(i) the current flowing through the resistor. (ii) the energy that dissipates as heat in 10 s.

15. What is the function of an earth wire in a domestic circuit ? Why is it essential to earth the metallic body of electrical appliances such as electric iron or electric toaster ? Explain.

16. A uniform magnetic field is directed vertically upwards. In which direction in this field should an □ – particle be projected so that it is deflected south ward ? Name and state the rule you have used to find the direction in this case.

17 . Arvind visited his ancestral home in a remote village in mountains where the electric supply has not reached yet. He saw the villagers using lantern. He met the village head and explained him about the conversion of solar energy into electric energy. Village head called a meeting of villagers and then gave the important task of bringing electricity to the village to Arvind. Arvind happily agreed. Now answer the following questions :

(i) Name the device that converts solar energy into electric energy. Name the main element used for making this device.

(ii) State two advantages of using this device. (iii) State the values that prompted Arvind's action.

18. Write any three characteristics of a good fuel.

19 . Five metals A, B, C, D and E were added to different solutions separately. The results observed are shown in following table : [5]

Metals	Solutions				
	$FeSO_4$	$CuSO_4$	$ZnSO_4$	$AgNO_3$	$Al_2(SO_4)_3$
A	No change	No change	No change	A coating on the metal	No change
B	A grey deposit on the metal	A brown coating on the metal	No change	A coating on the metal	No change
C	No change	No change	No change	No change	No change
D	No change	-	No change	A coating on the metal	No change
E	-	Brown	A coating on the	A coating on the	No change

Based on the observations recorded in the table answer the following :

(i) Write the most reactive metal. (ii) Write the least reactive metal.

(iii) What would be observed if metal D is added to a solution of copper sulphate ?

(iv) What would be observed if metal E is added to a solution of iron (II) sulphate ?

(v) Arrange the metals A, B, C, D and E in order of decreasing reactivity.

20. Give suitable reasons for the following statements :

(i) Rain water conducts electricity but distilled water does not.

(ii) We feel burning sensation in the stomach when we overeat.

(iii) A tarnished copper vessel regains its shine when rubbed with lemon.

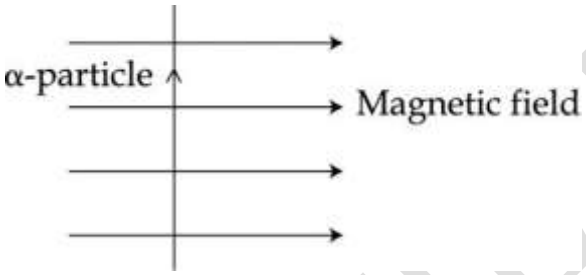
(iv) The crystals of washing soda change to white powder on exposure to air.

(v) An aqueous solution of sodium chloride is neutral but an aqueous solution of sodium carbonate is basic.

21. (a) Name the hormone which is released into the blood when its sugar level rises. Name the organ which produces this hormone and its effect on blood sugar level. Also mention the digestive enzymes secreted by this organ with one function of each (b) Explain the need of Chemical communication in multicellular organisms.

22. (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.

(b) An α -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. The flow of current in a circular loop of wire creates a magnetic field at its centre. How can the existence of this field be detected? State the rule which helps to determine the direction of this magnetic field. Name four common devices that use current carrying conductors and magnetic fields.

24. List two distinguishing features between the resistance and resistivity of a conductor. A wire is stretched so that its length becomes 6/5 times its original length. If it's original resistance is 25Ω. Find its new resistance and resistivity. Give justification for your answer in each case.

SECTION - B

25 .Out of the following, the highest pH value is associated with: [1]

(a) Sodium carbonate solution (b) water

(c) Lemon juice (d) dilute sodium hydroxide solution

26. The pH of a NaOH solution is 10. If water is added to it, its pH will:

(a) Remains same (b) Increases (c) Decreases (d) Becomes 7

27. Colour of copper sulphate solution is :

(a) black (b) yellow (c) blue (d) white

28. The set of metal and chemical which will not react is :

(a) Fe and $CuSO_4$ (aq) (b) Fe and $Al_2(SO_4)_3$ (aq)

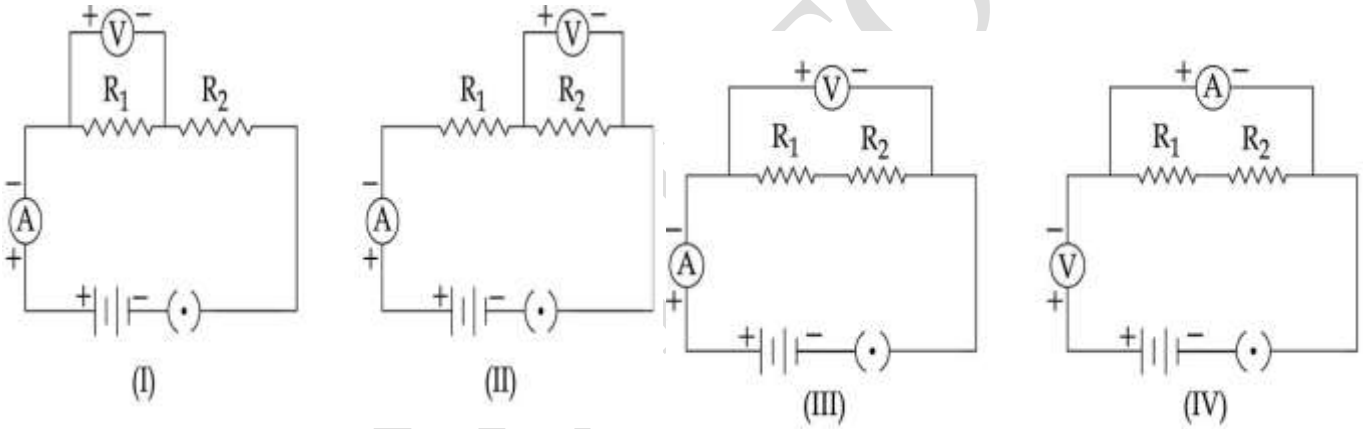
(c) Zn and $CuSO_4$ (aq) (d) Al and $ZnSO_4$ (aq)

29 .Anita added a few iron filings to 5mL of FeSO4 solution in a test tube. The correct observation for change in colour of solution by her is :

(a) It remains colourless (b) It remains Pale green

(c) Brown solution turned colourless (d) It remains blue.

30. In the experiment on finding the equivalent resistance of two resistors, connected in series,the voltmeter is correctly connected only in circuit :



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

31.A circuit with series combination of resistances differs from having parallel combination of resistances

(a) total current becomes very small because resistance increases

(b) total current becomes large. Because resistance decreases.

(c) Potential difference across the combination becomes zero

(d) Both (b) and (c)

32.At very high light intensities, green plant shows :

(a) High rate of photosynthesis (b) Low rate of photosynthesis

(c) High rate of respiration (d) Low rate of respiration

33.Given below are a set of things. Choose the correct one to set up an experiment to show that CO2 is given out during respiration :

(a) Beaker, conical flask rubber stopper, delivery tube, water, KOH, germinating seeds.

(b) Beaker, conical flask, rubber stopper, germinating seeds, water and KMnO4

(c) Beaker, conical flask, rubber stopper, germinating seeds, water

(d) Beaker, conical flask, rubber stopper, water, KOH

34. On keeping iron nails in blue coloured copper sulphate solution, it is observed that the colour of the solution turns light green after some time. Give reason for this colour change. Name the type of this reaction. [2]

35. Suppose the ammeter (or voltmeter) you are using in the Ohm's law experiment do not have + ve and - ve terminal markings. How will you use such ammeter (or voltmeter) in the circuit? [2]

36. Name the observed parts of a temporary mount of a leaf peel when it is focused under :

(a) low power and (b) high power of a compound microscope. [2]

Solution: sample paper 2015 sa1 science class 10

25	(d)
26	(c)
27	(c)
28	(b)
29	(b)
30	(c)
31	
32	(b)
33	(a)
34	Copper is displaced by iron. It is a displacement reaction.
35	Connect the device in the circuit, close the circuit and notice the deflection of the pointer. If it is in opposite direction, then interchange the terminals.
36	Low power - Stomata, Guard cells, Epidermal cells. High power - Contents of Guard cells.