

## SAMPLE QUESTION PAPER 2015

### SUMMATIVE ASSESSMENT – I, 2015 SCIENCE Class – X

#### SECTION-A

1. State the role of the brain in reflex action.[1]
2. Write any one method to induce current in a coil.
3. Name the volatile liquid boiled with the warm surface water of oceans for running ocean thermal energy plants.
- 4 . Define a balanced chemical equation. Why should chemical equations be balanced ? [2]
- 5 . Define an acid and a base. Name one weak acid and one strong base.
- 6 . Name the two enzymes secreted by pancreas. Write the function performed by these two enzymes.
- 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 could it possibly be ? {3}
- 8 What happens when dilute hydrochloric acid is added to the following. Write balanced chemical equations :
  - (i) Bleaching powder
  - (ii) Zinc granules
  - (iii) Baking soda.
- 9 . Classify the following chemical reactions as exothermic or endothermic :
  - (i) Water is added to quicklime.
  - (ii) Dilute sulphuric acid is added to zinc granules.
  - (iii) When ammonium chloride is dissolved in water in a test tube it becomes cold.
  - (iv) The decomposition of vegetable matter into compost.
  - (v) Electrolysis of water.
  - (vi) Silver chloride turns grey in the presence of sunlight to form silver metal.
10. State reason for the following :
  - (i) dry HCl gas does not change the colour of the dry blue litmus paper.
  - (ii) alcohol and glucose also contain hydrogen, but do not conduct electricity.
  - (iii) Conc. of  $\text{H}_3\text{O}^+$  ion is affected when a solution of an acid is diluted.
11. Explain why there is a need for transportation system with special tissue or organs in plants and animals?
12. Design an experiment to demonstrate positive phototropism and negative phototropism.
13. Name three life processes which are essential for maintaining life and briefly explain the functioning of any one of them.

14 . The potential difference between the two terminals of an electric iron is 220 V and the current flowing through its element is 5.0 A. Calculate the resistance and wattage of the electric iron.

15 . Give reason for the following:

(i) Why are copper and aluminum wires used as connecting wires ?

(ii) Why is tungsten used for filaments of electric lamps? (iii) Why is lead tin alloy used for fuse wires ?

16. An electric heater is used on 220 V supply and takes a current of 5 A. What is its power ? Calculate the per hour cost of using the heater if 1 unit costs. Rs. 6.0.

17 . There are upcoming tidal power plants in Gujarat and West Bengal. But tides as a source of energy have not been tapped properly in India.

(i) Is tidal energy a renewable or a non renewable source of energy ? Give reason for your answer.

(ii) How is tidal energy produced ?

(iii) Why are tidal power plants not being developed extensively ?

18 . List any three advantages of biogas as a source of energy ?

19. (a) Explain the whole information conveyed by the following chemical equation : (b) In what ratio are the gases hydrogen and oxygen collected when water is subjected to electrolysis ? [5]

20 . (a) Describe an activity to show that metals are good conductors of electricity.

(b) Account for the following:

(i) Hydrogen gas is not evolved when a metal reacts with nitric acid.

(ii) For storing sodium metal, it is kept immersed in kerosene.

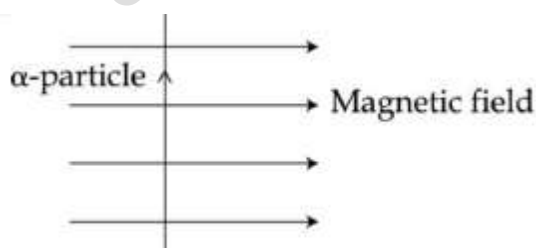
(iii) The reaction of iron (III) oxide with aluminium is used to join cracked iron parts of machines.

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  $\alpha$ -particle enters a uniform magnetic field at right angles to it as shown below. Stating the relevant principle explain in which direction will this  $\alpha$ -particle move ?



23 . A student fixes a sheet of white paper on a drawing board. He places a bar magnet in the centre of it. He sprinkles some iron filings uniformly around the bar magnet. Then he taps the board gently. Now answer the following questions :

- (i) What does the student observe ? Draw a diagram to illustrate your answer.
- (ii) Why do the iron filings arrange in such a pattern ?
- (iii) What does the crowding of the iron filings at the ends of the magnet indicate ?

24 . What is meant by electric circuit ? What is done in order to have continuous flow of electric charge from a point A to another point B in an electric circuit ? Write the relation between coulomb and ampere.

Calculate the number of electrons passing per second through a conductor to produce a current of one ampere. (Charge on electron =  $1.6 \times 10^{-19}$  coulomb)

### SECTION - B

25. Substance which is bitter in taste is likely to be :

- (a) dil. HCl                      (b) CH<sub>3</sub> COOH                      (c) NaOH                      (d) NaCl

26 . Four solutions I, II, III and IV were given to a student to test their acidic or basic nature using pH paper. He observed that the colour of pH paper turned to Red, Blue, Green and Orange respectively when dipped in these four solutions. The correct conclusion of this observation would be :

- (a) I, II, III are acidic      (b) I and IV are acidic      (c) II, III and IV are basic      (d) II and IV are basic

27 . An iron nail was dipped in CuSO<sub>4</sub> solution. After some time a layer of a flaky substance is deposited on the nail and colour of the solution changed. The final colour of the solution and that of the deposit is :

- (a) yellow and green      (b) brown and blue      (c) red and blue green      (d) green and reddish brown

28 . On the basis of sequence of reactions for three metals A, B, C, identify the most and least reactive elements :  $A + Bx \rightarrow Ax + B$  and  $C + Ay \rightarrow Cy + A$

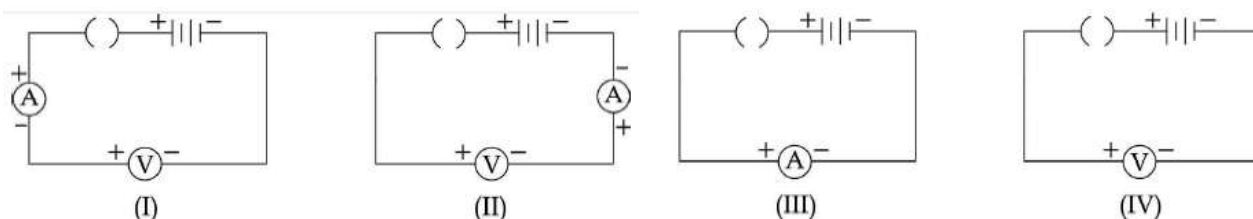
- (a) A, C                      (b) B, C                      (c) C, A                      (d) C, B

29 . Which of the following statement is incorrect for the following reaction ?



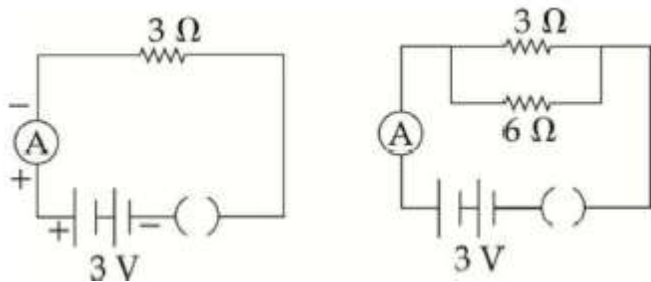
- (a) The colourless solution is ZnSO<sub>4</sub>                      (b) Zn is less reactive than Cu.  
 (c) Cu is less reactive than Zn                      (d) The reaction does not occur.

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



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

31. A student found that when a resistance of 3 was joined with 3V battery as per fig shown below, the current flowing through it was 1A. He then joined another resistance of 6 in parallel with 3 resistance. The reading in the ammeter will now be :



- (a) 9A                      (b) 1.5 A                      (c) 1A                      (d) 6A

32. A destarched leaf on a potted plant was covered with black (A), white (B) and transparent (C) strips of paper as shown in the figure.



After six hours of exposure to sunlight the leaf was removed from the plant and tested for starch. Which one of the following will be the correct observation?

- (a) Whole leaf turned blue-black                      (b) Only B and C portions turned blue-black  
 (c) Only A and B portions remained colourless and the rest of the leaf turned blue black  
 (d) A, B and C portions remained colourless and the rest of the leaf turned blue black

33 . In an experimental set up to demonstrate that CO<sub>2</sub> is released during respiration, Vaseline is applied to

- (a) fix the rubber stopper at the mouth of the flask                      (c) the germinating seeds  
 (b) the mouth of the U-shaped tube                      (d) the rubber stopper where the delivery tube enters and the mouth of the flask

34. The following chemicals are available in solid form in a laboratory to study [2]

- (i) combination reaction                      (ii) decomposition reaction and                      (iii) double displacement reaction.

State the chemicals that can be used in

- (i) Solid form and (ii) aqueous solution form to study the above reactions.

Calcium oxide, Ferrous sulphate, Barium chloride, Sodium sulphate.

35 . What is likely to happen and how it would effect the value of resistance if we pass the current for a longer time ?

36 . In an experiment to prepare the temporary mount of a leaf peel to show stomata why glycerine and safranin are used ?

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