

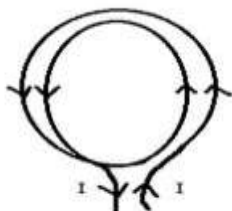
## SAMPLE QUESTION PAPER 2015

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

#### SECTION-A

1. When we breathe out, why does the air passage not collapse? [1]
2. What is meant by an electric circuit?
3. Write any two uses of biogas?
4. What is observed when a solution of potassium iodide solution is added to a solution of lead II nitrate? Name the type of reaction. Write a balanced chemical equation to represent the above chemical reaction. [2]
5. Name one natural source each, of the following acids:  
(i) Citric acid (ii) Oxalic acid (iii) Lactic acid (iv) Tartaric acid
6. Write two differences between the response of the plants and response of the animals to stimuli.
7. Write chemical equations for the reactions taking place when: 3  
(i) Iron reacts with steam. (ii) Magnesium (Mg) reacts with dil. HCL. (iii) Copper is heated in air.
8. You are given samples of three metals – sodium, magnesium and copper. Suggest any two activities to arrange them in order of their decreasing reactivity.
9. Write the chemical equation of the reaction with an example each in which the following changes have taken place:  
(i) Change in colour (ii) Change in temperature (iii) Formation of precipitate
10. You are provided with magnesium ribbon and sulphur powder. Explain with the help of an activity that metal oxides are basic and nonmetal oxides are acidic in nature.
11. Explain why the transportation of materials is necessary in animals?
12. Illustrate with the help of a diagram the effect of auxins in different parts of a plant.
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?  
(b) Name the endocrine gland which secretes growth hormone. What will be its effect on a person having –  
(i) Deficiency of growth hormone. (ii) Excess secretion of growth hormone.
14. Name, State and explain with the help of a diagram the rule to find the direction of magnetic field around a straight conductor carrying current.
15. List two safety measures commonly used in electric circuits. Explain the main function of each.

16. For the circular coil carrying current shown alongside, draw magnetic field lines. Decide which of its face behaves as North Pole and which face as south pole. Give reason to justify your answer.



17. When Devraj visited his ancestral village in a remote mountain region, he observed that power transmission line has not reached his village yet. But he saw certain structures (devices) which used sun's energy (solar energy) and converted it to electricity. He decided to use those devices when he came back home in his city. But he found that these devices are very expensive. Now answer the following questions:

- Name the devices used by villagers to convert solar energy into electrical energy.
- Why are these devices expensive?
- Suggest some other ways by which Devraj can use solar energy.

18. Define fuel. List any two characteristics that you would look for in a good fuel.

19. (a) An ore on treatment with dilute hydrochloric acid produces brisk effervescence. What type of ore is this? What steps will be required to obtain metal from the enriched ore?

(b) Copper coin is kept immersed in silver nitrate solution for some time. What change will take place in the coin and colour of the solution? Write the reaction involved. [5]

20. (a) Write one example for each of the decomposition reactions carried out with the help of –

- Electricity
- Heat
- Sunlight

Give balanced chemical equations in each case.

(b) Which of the following statements is correct and why?

- Copper can displace silver from the solution of silver nitrate and
- Silver can displace copper from the solution of copper sulphate

21. (a) State reason for the following :

(i) Herbivores need a longer small intestine while carnivores have shorter small intestine.

(ii) The lungs are designed in human beings to maximise the area for exchange of gases.

(b) The rate of breathing in aquatic organisms is much faster than that seen in terrestrial organisms.

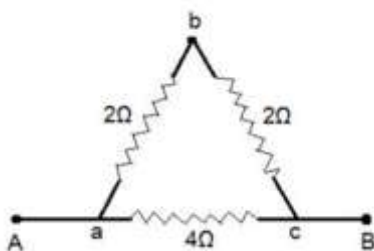
22. (a) Draw magnetic field lines of a bar magnet. "Two magnetic 5

field lines never intersect each other". Why?

(b) An electric oven of 1.5 kW is operated in a domestic circuit (220 V) that has a current rating of 5 A. What result do you expect in this case? Explain.

23. (a) With the help of a circuit diagram prove that when a number of resistors are connected in parallel the reciprocal of the equivalent resistance of the combination is equal to the sum of the reciprocals of the individual resistances of the resistors.

(b) Find the resistance between A and B in the following network.



24. (a) How does the resistance of a wire change when- (i) Its length is tripled? (ii) Its radius is tripled?

(iii) Its material is changed to one whose resistivity is three times?

(b) List two reasons why nichrome is used for making heating element of electrical appliances.

## SECTION - B

25. A solution turns blue litmus red. The nature of solution is 1

- (a) Neutral                      (b) Acidic                      (c) Basic                      (d) Strongly acidic

26. A student studied reaction of HCl with zinc and of HCl on  $\text{Na}_2\text{CO}_3$  and compared the properties of  $\text{CO}_2$  and  $\text{H}_2$ . Correct observation should be that both  $\text{CO}_2$  and  $\text{H}_2$  are:

- (a) Pungent in odour                      (b) Non flammable                      (c) Colourless                      (d) Heavier than air

27. The colour of Cu Metal is:

- (a) Reddish brown                      (b) Blue                      (c) Green                      (d) Grey

28. Betty added Aluminium metal to colourless solution of Zinc sulphate. After half an hour the solution was observed. It was colourless.

She recorded her observations in the following statements.

(i) No reaction occurred                      (ii) Reaction occurred and aluminium sulphate was formed

(iii) Zinc is more reactive than Aluminium.                      (iv) Aluminium is more reactive than zinc.

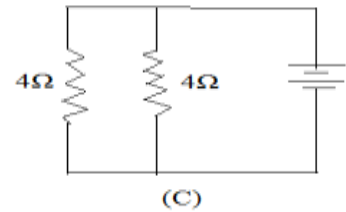
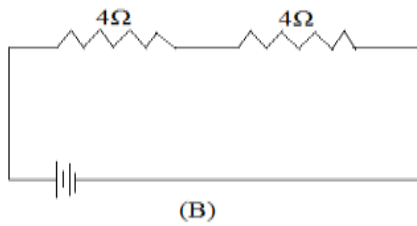
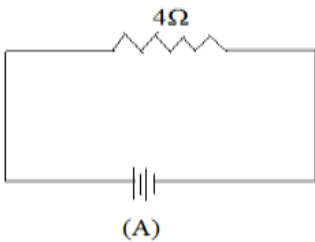
The correct observations are:

- (a) (i), (ii)                      (b) (ii), (iii)                      (c) (iii), (iv)                      (d) (ii), (iv)

29. Priyanka added a few Cu turnings to 50ml CuSO<sub>4</sub> solution in a test tube. The correct observation for any colour change made by her is:

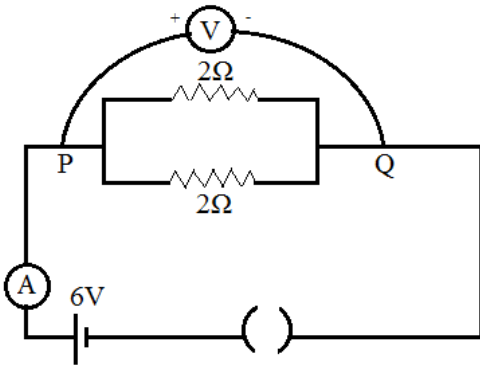
- (a) Pale green solution turned colourless.                      (b) Colourless solution turned blue.  
 (c) Blue solution turned colourless.                      (d) Blue solution remained blue.

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



- (a) A                      (b) B                      (c) C                      (d) Same in all the cases

31. While performing the experiment to find equivalent resistance of a combination of resistance by making a circuit as shown



Reena measured reading of voltmeter 'V' which gives potential differences between P and Q she should find the reading to be: (a) 2 V (b) 4 V (c) 6 V (d) 8 V

32. The colour of light in which rate of photosynthesis is minimum:

- (a) Red                      (b) Blue                      (c) Green                      (d) Yellow

33. The role of potassium hydroxide in the experiment to show that CO<sub>2</sub> is given out during respiration is:

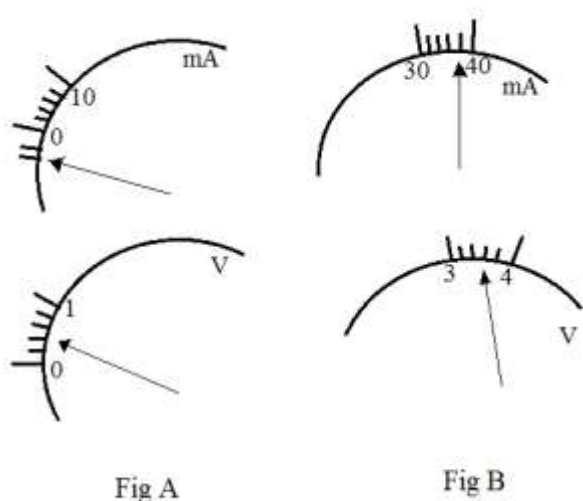
- (a) To absorb oxygen                      (b) To absorb carbon dioxide

(c) To create a partial vacuum in the conical flask

(d) Both (b) and (c)

34. You want to perform an experiment to study a double displacement reaction in your school laboratory. Name two aqueous solutions required for this experiment. State the colour change you are likely to observe on mixing the two solutions. {2}

35. The rest positions of the pointers of a milliammeter and voltmeter not in use are as shown in fig A. When a student uses these in his experiment the reading of pointers are in positions shown in fig B. Calculate the corrected value of current and voltage in this experiment. {2}



36. In an experiment to prepare temporary mount of a leaf peel to show its stomata Ram was provided with a monocot leaf whereas Shyam a dicot leaf. Mention the ideal location where you would expect them to obtain the leaf peel for the experiment. {2}

### Extra

Q. In an experiment to prepare temporary mount of a leaf a very dark liquid is put into it. What is this liquid known as?

Ans: The dark coloured liquid used to prepare temporary mount of leaf is called stain. For example, Methylene blue or glycerine.

Q. 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?

Staining is done to observe the specimen under the microscope. Glycerine is a dehydrating agent. It prevents the drying of the specimen. If staining is done after adding glycerine then the specimen will not be stained properly as the stain will be washed off with glycerine. That's why staining is done before adding glycerine so that the specimen can absorb the stain and any excess stain is removed by adding glycerine.