

Sanya (24)  
X-B

**GYAN BHARATI SCHOOL**  
**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 Section-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 | Herbivores have longer small intestine while carnivores have shorter small intestine. Give reason.   | 1 |
| 2 | Mention one reason why tungsten is used for making filament of electric lamp.  | 1 |
| 3 | What are hot spots inside earth's crust?   | 1 |
| 4 | (i) In nature, metal 'A' is found in free state while metal 'B' is found in the form of its compounds. Which of the two will be nearer to the top of the activity series of metals? Why?<br>(ii) In a solution of silver nitrate, a copper coin was placed. After sometime silver from the solution was deposited on the copper coin. Which metal is more reactive, copper or silver? Why? | 2 |

- 5 A white chemical compound becomes hard on mixing proper quantity of water. It is also used to maintain joints in a fixed position. Name the chemical compound and write its chemical formula. Write the chemical equation to show what happens when water is added to this compound in proper quantity. 2
- 6 What is synapse ? How does a message or an impulse transmit through a synapse ? 2
- 7 Define a chemical reaction. Which observations help you to determine whether a chemical reaction has taken place ? 3
- 8 (a) Name one natural source of each of the following acids : 3
- (i) Citric acid
- (ii) Oxalic acid
- (iii) Lactic acid
- (iv) Tartaric acid
- (b) Which ion is commonly produced by all acids?
- 9 When we overeat we feel burning sensation in the stomach. State reason. Which substance can be used to nullify its effect? Give one example, state the property due to which we feel relief. 3
- 10 Study the following reactions and explain the reactivity. Arrange Cu, Fe, Zn and Ag in increasing order of their reactivity 3
- (i)  $\text{CuSO}_4 + \text{Fe} \rightarrow \text{FeSO}_4 + \text{Cu}$
- (ii)  $\text{FeSO}_4 + \text{Zn} \rightarrow \text{ZnSO}_4 + \text{Fe}$
- (iii)  $2 \text{AgNO}_3 + \text{Cu} \rightarrow \text{Cu}(\text{NO}_3)_2 + 2 \text{Ag}$
- 11 Plants absorb water from the soil. Explain how does the water reach the tree top? 3
- 12 Explain how does our body respond when adrenaline hormone is secreted into the blood? 3
- 13 Draw a diagram of human respiratory system and label on it : 3
- (i) Diaphragm (ii) Larynx
- 14 List two characteristics of the material to be used in fuse wire. Name the material it is made of. A fuse is always connected in series in an electric circuit? Justify this statement giving reason. 3
- 15 A circuit has a line of 5 A. How many lamps of rating 40 W; 220 V can simultaneously run on this line safely? 3

16 Express work done in an electric field in terms of charge and potential difference. Calculate the amount of work done in carrying a charge of 5 mC against a potential difference of 100 V. 3

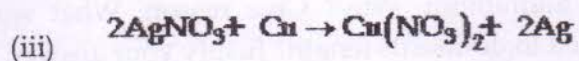
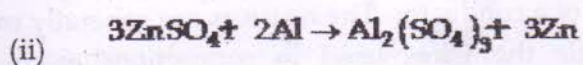
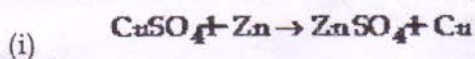
17 Raman has read that burning of fossil fuels has many disadvantages. He is also aware of the fact that pollution caused by burning of fossil fuel can be reduced to some extent by using some techniques. Even then Raman always discourages the use of fossil fuels as a source of energy. 3

Answer the following questions :

- (i) Why does Raman discourage the use of fossils fuel as a source of energy?
- (ii) Mention two techniques that can reduce the effect of harmful gases to the environment.
- (iii) What quality of Raman is portrayed in his act?

18 Energy can neither be created nor destroyed, explain with an example as to why we should worry about our energy resources? 3

19 (a) The following reactions are observed to occur : 5



Arrange Cu, Zn, Al and Ag in decreasing order of their reactivity.

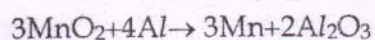
(b) Write one example each of decomposition reaction carried out with the help of :

- (i) electricity
- (ii) sunlight

20 (a) Explain the following terms : 5

- (i) Mineral
- (ii) Ore
- (iii) Gangue

(b) Name the reducing agent in the following reaction :

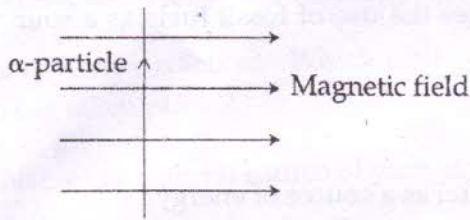


Which is more reactive Mn or Al and why?

21 Define tropism. Explain four kinds of tropisms with one example each. 5

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. 5

(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 Distinguish between kilowatt and kilowatt hour. For a heater rated at 4.4 kW; 220 V. Calculate the - 5

- (i) current drawn by the heater
- (ii) resistance of the heater element
- (iii) energy consumed by the heater in 5 hours
- (iv) cost of running the heater if 1 kWh costs Rs. 6.50

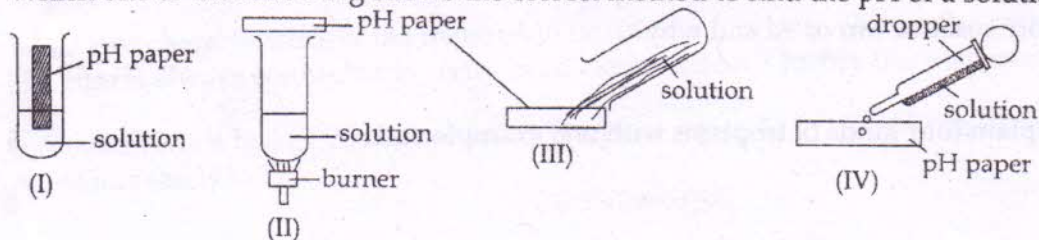
24 Distinguish between resistance and resistivity of a conductor. The resistors are generally made of thin wires of Eureka or Manganin while the wires used in connections are made comparatively thicker and are of copper or aluminium. Why? Give reason. What would happen to the resistance of a wire if it is stretched to double its length? Justify your answer. 5

### SECTION - B

25 To test the presence of a base with litmus paper, a student should : 1

- (a) moisten litmus paper with water and dip in given sample solution.
- (b) dip the litmus paper directly into a given sample solution.
- (c) dip the litmus paper first into an acidic solution and then use it to test the sample.
- (d) dip the litmus paper in alkaline solution and then use it to test sample.

26 Which one of the following shows the correct method to find the pH of a solution ? 1



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

27 The chemical reaction between barium chloride and sodium sulphate is an example of : 1

- (a) combination reaction                      (b) decomposition reaction  
(c) displacement reaction                      (d) double displacement reaction

28 If  $A + MX \rightarrow AX + M$  and AX is green coloured solution, then A and MX respectively are : 1

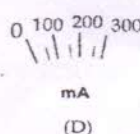
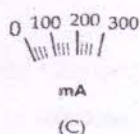
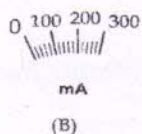
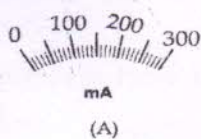
- (a) Zinc and ferrous sulphate  
(b) Zinc and copper sulphate  
(c) Aluminium and copper sulphate  
(d) Iron and copper sulphate

29  $2Al + 3CuSO_4 \rightarrow 3Cu + Al_2(SO_4)_3$  1

The type of reaction shown above and the change of colour of reaction solution to products that was observed is -

- (a) Combination reaction, blue to green  
(b) Displacement reaction, blue to colourless  
(c) Decomposition reaction blue to green  
(d) Displacement reaction, blue to green.

30 Out of the four milliammeters shown below, the one which you would choose for the measurement of current in a circuit is : 1



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

31 To increase effective resistance, resistances must be joined in 1

- (a) Parallel  
(b) Series  
(c) Half of the resistance in parallel , and half of them in series  
(d) One third of resistance parallel and two third of the in series

32 In an experiment to show that 'sunlight is necessary for photosynthesis', the leaf is boiled in alcohol for few minutes using a water bath. It is essential because : 1

- (a) Alcohol is highly volatile
- (b) Steam from the water bath heats the leaf rapidly
- (c) Steam from the water dissolves the chlorophyll
- (d) Alcohol is flammable

33 The material used to seal the connections of the set - up for demonstrating that CO<sub>2</sub> is given out during respiration is : 1

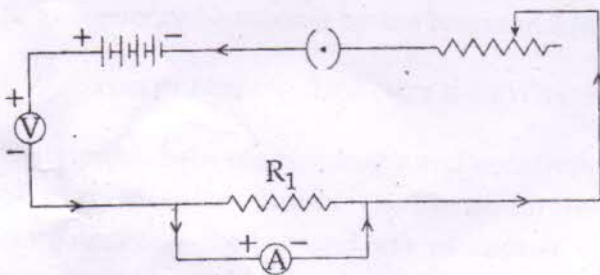
- (a) Wax                      (b) Vaseline                      (c) Glue                      (d) Oil

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 Is the circuit given below correct ? Justify your answer. 2



36 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

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