

SADHU VASWAN

SUMMATIVE ASSESSMENT – I, 2015-16
SCIENCE (Set-II)
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. Each question is of two marks.

SECTION-A

1. Write relation between heat energy produced in a conductor when a potential difference V is applied across its terminals and a current I flows through it for time t . 1
2. Why would you put Biogas in the category of ideal fuel? Give two reasons. 1
3. Identify the category, in which the organisms using carbon dioxide and water as ingredients for making food, are placed. 1
4. Can oxidation and reduction take place alone? Why or why not? What are such reactions called? 2
5. What is a synapse? How is the message of an impulse transmitted through a synapse? 2
6. The reaction of metal 'X' with Fe_2O_3 is highly exothermic and is used to join railway tracks. Identify the metal 'X': Write the chemical equation of the reaction. 2
7. An aqueous solution of metal nitrate 'A' reacts with sodium bromide solution to form precipitate of compound 'B' which is used in Black and White photography. B on exposure to sunlight undergoes decomposition reaction to form metal present in 'A' along with a reddish brown gas. Identify A and B. Write balanced chemical equations for the chemical reaction. List two categories in which the type of reactions can be classified. 3
8. Which three chemical substances are obtained when electricity is passed through an aqueous solution of brine? Write one industrial use of each. 3
9. Translate the following statements into chemical equations and balance them : 3
 - (a) Lead nitrate reacts with sulphuric acid to form a precipitate of lead sulphate and nitric acid.
 - (b) Magnesium burns in the presence of nitrogen to form magnesium nitride.
 - (c) Aluminium metal strip is added in hydrochloric acid to produce aluminium chloride and

hydrogen gas.

10 Differentiate between the following :

- (i) Reaction of magnesium and calcium with water.
- (ii) Roasting and calcination processes (giving an example of each).
- (iii) Nature of metal and non metal oxides (with one example each).

11 In single celled organisms diffusion is sufficient to meet all their requirements of food, exchange of gases or removal of wastes, but it is not in case of multicellular organisms. Explain the reason for this difference. 3

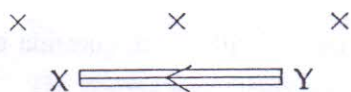
12 (a) Define Reflex action. 3

(b) Draw a diagram to trace the sequence of events which occur in our body when we touch a hot object.

13 Explain the feedback mechanism to regulate the action of the hormones with the help of one suitable example. 3

14 Calculate the resistance of a 5 m length of a wire of area of cross - section 0.01 mm^2 and resistivity $50 \times 10^{-8} \text{ ohm meter}$. 3

15 Crosses \otimes represent a uniform magnetic field directed into the paper. A conductor XY placed in the field carries current in Y to X direction. Find the direction of the force experienced by the conductor. Name the rule you applied. What will happen to the direction of force if the direction of field and direction of current both are reversed?



16 A coil of copper wire is connected to a galvanometer. Explain the observation if a bar magnetic is : 3

- (a) Pushed into the coil with its north pole entering first.
- (b) Held at rest inside the coil.
- (c) Pulled out of the coil

17 Make a list of three features due to which L.P.G is considered to be a good fuel? 3

18 Rahul made his own solar cooker for heating up his lunch box in the school. He painted his solar cooker black and used a plane mirror on its lid. 3

- (i) Why did Rahul paint the box of solar cooker in black color?
- (ii) Why did he put a plane mirror on the lid of the solar cooker?
- (iii) State the values that prompted the action taken by Rahul.

19 Define rancidity. What kind of substances are used to prevent rancidity ? Explain any three methods to prevent rancidity. 5

20 Define a chemical reaction. State four observations which help us to determine that a chemical reaction has taken place. Write one example of each observation with a balanced chemical equation. 5

21 List two distinguishing features between the resistance and resistivity of a conductor. A wire is stretched so that its length becomes $6/5$ times of its original length. If its original resistance is 25 ohm find its new resistance and resistivity. Give justification for your answer in each case. 5

22 (a) The upward movement of water normally requires a pump in our houses but in tall trees water rises up without any external support. Explain this mechanism. *Xylem takes it up* 5

(b) State three points of difference between the transport of materials in xylem and phloem tissues.

23 State Ohm's law. How is it verified experimentally? List two precautions you would observe while performing the experiment. Draw a graph between potential difference (V) and current (I) for a conductor obeying this law. 5

24 A student fixed a white sheet of paper on a drawing board. He placed a bar magnet in the centre of it. He sprinkled some iron filling uniformly around the bar magnet and tapped the board gently. Now Answer the following questions : 5

- (i) What change did the student observe on the paper? Show it by a diagram.
- (ii) What is the reason of this change?

(iii) What does the crowding of iron filling at the ends of the magnet indicate?

SECTION - B

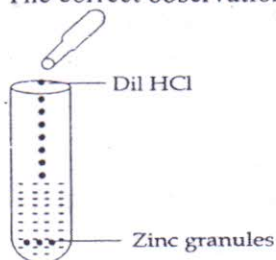
25 A drop of colourless liquid was placed on blue litmus paper. The litmus paper turns red. The liquid could be :

- (a) distil water
- (b) sodium bicarbonate solution
- (c) dil. hydrochloric acid
- (d) dil. sodium hydroxide solution

26 A student added a few drops of universal indicator to a solution of dil hydrochloric acid. She would observe that the colour of the solution changed from colourless to :

- (a) yellow
- (b) red
- (c) blue
- (d) green

27 A student added dil hydrochloric acid to zinc granules as shown in figure. The correct observation would be :

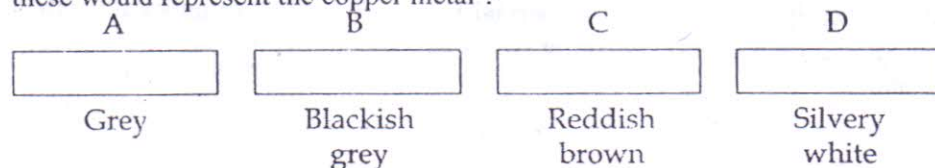


- (a) Evolution of a gas
- (b) Formation of a precipitate
- (c) Zn granules turned green
- (d) No reaction occurs

28 If the metals A, B, C and D are arranged on the basis of their reactivity as $A > B > C > D$, then the statement which will not hold good will be :

- (a) 'D' cannot displace C from its salt solution.
- (b) A can displace B from its salt solution.
- (c) A will not react with C.
- (d) B can undergo oxidation when placed in a salt solution of D.

29 Four plates labelled as A, B, C and D along with their corresponding colours are given below. Which of these would represent the copper metal ?



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

30 To perform the experiment of finding equivalent resistance of a parallel combination of resistances, a student should join voltmeter and ammeter with the combination as :

- (a) both in series with it
- (b) both in parallel with it
- (c) ammeter in parallel and voltmeter in series with it
- (d) ammeter in series and voltmeter in parallel with it.

31 Three students connected two resistors in parallel to find equivalent resistance by three methods X, Y, Z.

