

**SUMMATIVE ASSESSMENT – I, 2015-16**  
**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. Each question is of two marks.

**SECTION-A**

- Mention the source of oxygen given out by plants during the process of photosynthesis. 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
- The chief constituent of biogas is methane. List any two other constituents of biogas. 1
- A white powder 'X' is used by the doctors for supporting fractured bones. 2
- (a) Write the name and chemical formula of the 'X'.
- (b) Write chemical equation for the reaction when this powder 'X' is mixed with water.
- Name the reducing agent in the following reaction :
- $3\text{MnO}_2 + 4\text{Al} \rightarrow 3\text{Mn} + 2\text{Al}_2\text{O}_3$ , State which is more reactive, Mn or Al and why? 2

- 6 ✓ A doctor advised a patient to go on a diet without sugar and take insulin injections also. 2  
Name the disease he is suffering from. Why has he been given the two advises ?
- 7 Identify the type of each of the following reactions. Also write balanced chemical equation for each. 3
- (a) ✓ The reaction mixture becomes warm.
- (b) ✓ An insoluble substance is formed.
- 8 ✓ You are provided with three test tubes A, B and C which contain distilled water, acidic 3  
solution and basic solution respectively. If you are given blue litmus paper only, how will  
you identify the contents of each test tube ?
- 9 ✓ Give reason for the following : 3
- (a) Sodium is kept immersed in kerosene oil.
- (b) Iron, the most widely used metal, is never used in its pure state
- (c) Hydrogen is not evolved when a metal reacts with nitric acid (except Mn and Mg)
- 10 ✓ Mention three ways by which a usual chemical equation can be made more informative. 3
- 11 ✓ Differentiate between autotrophs and heterotrophs and give one example of each. 3
- 12 ✓ Define hormone. Name the hormone secreted by thyroid gland. Write its function. Why is it 3  
advised to use iodised salt ?
- 13 ✓ (a) State the purpose of formation of urine 3  
1/2 (b) What will happen if there is no tubular reabsorption in the nephrons of kidney ?
- 14 ✓ Define kwh. Derive that how many joules are equal to 1 KWh ? 3
- 15 ✓ State the rule to determine the direction of : 3
- (i) the magnetic field produced around a current carrying conductor.
- 2 (ii) a force experienced by a straight current carrying conductor placed perpendicular to a  
uniform magnetic field. (iii) a current induced in a circuit by changing magnetic flux due to a  
bar magnet.



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?



- 17 Ria visited her aunt's house and observed that all the tube lights and fans in her house were switched on without any need. She switched off all the lights and fans which were not in use but was scolded by her aunt for doing so. She then explained her aunt about the need to save electricity. Later, Ria's aunt promised her that she will now save electricity. Now answer the following questions : 3
- Why did Ria insist on saving electricity ?
  - State two ways by which electricity can be saved.
  - Which values of Ria are reflected in her actions?
- 18 State three reasons to justify that LPG is considered an ideal fuel. 3
- 19 Name the material used for the preparation of plaster of Paris. Write chemical equation for the reaction involved. What will happen if heating is not controlled while preparing plaster of Paris. Which property of plaster of Paris is utilised in making casts for broken limbs in hospital. Write an equation to show the reaction between plaster of Paris and water. 5
- 20 (a) Define a balanced chemical equation. Why should an equation be balanced ? 5
- (b) - Write the balanced chemical equations for the following reactions :
- Phosphorus burns in chlorine to form phosphorus pentachloride.
  - Burning of natural gas.
  - The process of respiration.
- 21 (a) Define reflex arc. Draw a flow chart showing the sequence of events which occur during sneezing . 5
- (b) List four plant hormones. Write one function of each.

22 ✓ When an electric current flows through a conductor it becomes hot. Why? List the factors on which the heat produced in a conductor depends. State Joule's law of heating. How will the heat produced in an electric circuit be affected, if the resistance in the circuit is doubled for the same current? 5

23 ✓ (a) Draw the pattern of magnetic field lines through and around the current carrying solenoid. What does the magnetic field pattern inside the solenoid indicate? 5

(b) How can this property of solenoid be utilized to make an electromagnet?

(c) State two ways in which strength of this electromagnet can be increased.

24 (a) What is meant by electromagnetic induction? 5

(b) Describe an activity to illustrate the phenomenon of electromagnetic induction. In three different manners with the help of diagram for each.

### SECTION - B

25 ✓ 2 ml of the distilled water was taken in a test tube. Its pH value was determined by using pH paper. Some amount of NaOH solution was then added to the distilled water and the pH of the resulting solution was again determined. It was observed that the resulting solution changed the colour of pH paper from: 1

(a) blue to pink

(b) green to blue

(c) red to blue

(d) blue to red.

26 ✓ Suggest the solution which you would choose for testing pH of given sample:

(a) Blue litmus

(b) Red litmus

(c) Universal indicator solution

(d) Lime water

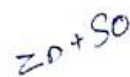
27 ✓ The products of reaction between zinc and sodium hydroxide solution are: 1

(a) sodium carbonate and water

(b) sodium zincate and hydrogen

(c) zinc hydroxide and hydrogen

(d) zinc carbonate and hydrogen



28 ✓ The colour of Cu Metal is:

(a) reddish brown

(b) blue

(c) green

(d) grey



- (a) ammeter, voltmeter, resistance
- (b) rheostat, ammeter, voltmeter
- (c) voltmeter, ammeter, rheostat
- (d) ammeter, rheostat, voltmeter

32 Which one of these is not a product of photosynthesis ?

1

- (a) glucose
- (b) carbon dioxide
- (c) water
- (d) oxygen

33 in the experiment to show that  $\text{CO}_2$  is released during respiration, the solution in the test tube is chemically :

- (a) NaOH
- (b) KOH
- (c) NaCl
- (d) KCl

34 While studying a type of reactions, Neena mixed the substances as shown below :

2

Solid sodium sulphate      Solid barium chloride



- (i) Has Neena observed the occurrence of reaction ? If not why ?
- (ii) What kind of reaction she wanted to study ?

35 To study ohm's law the value of electric current (I) corresponding to potential difference (V) across a resistor are given below :

Potential difference (V) in volt :	0.5	1.0	1.5	2.0	2.5
Electric current (I) in mA :	10	20	30	40	50

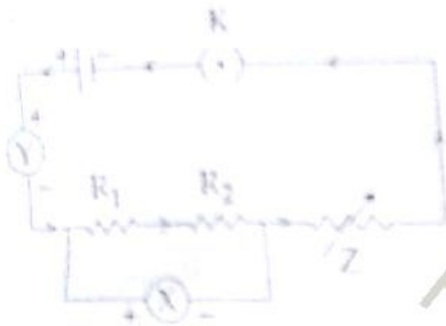
- (a) Plot the graph between V and I.
- (b) Calculate the resistance of the resistor by graph

36 Identify the observed various parts of temporary mount of well stained leaf peel, when focussed under the high power of a microscope.

29 Which of the following reactions will not proceed ?

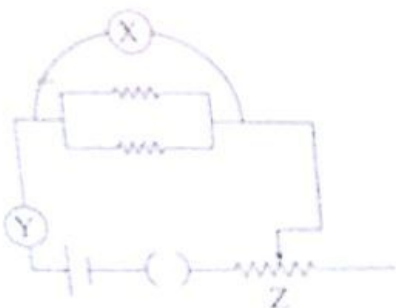
- (a) copper + copper sulphate
- (b) iron + copper sulphate
- (c) zinc + copper sulphate
- (d) aluminium + copper sulphate

30 In an experiment to determine the equivalent resistance of two resistors in series. Name the components X, Y and Z in the circuit given below respectively are



- (a) Rheostat, resistance, voltmeter
- (b) Voltmeter, ammeter, rheostat
- (c) Ammeter, voltmeter, rheostat
- (d) Ammeter, resistance, voltmeter

31 A teacher gave the circuit diagram to find resistance of a parallel combination of two resistance as follows.



A student is finding it difficult to identify the devices marked as X, Y, and Z. The correct identification of X, Y, Z respectively is :