

63/90

LPS

614HUYO

**SUMMATIVE ASSESSMENT – I, 2016-17**  
**SCIENCE / Class – X**

Time Allowed : 3 hours

Maximum Marks : 90

**General Instructions :**

- The question paper comprises of two Sections, A and B. You are to attempt both the sections.
- All questions are compulsory
- All questions of Section-A and all questions of Section-B are to be attempted separately.
- Question numbers 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence
- Question numbers 4 to 6 in Sections-A are two marks questions. These are to be answered in about 30 words each.
- Question numbers 7 to 18 in Section-A are three marks questions. These are to be answered in about 50 words each
- Question numbers 19 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.
- 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.
- Question numbers 34 to 36 in Section-B are questions based on practical skills. Each question is of two marks.

**SECTION-A**

- ① 1 Even when we are not doing any apparent activity we need energy. Justify giving reason. 1
- ② 2 What is meant by an electric circuit? 1
- ③ 3 Why is a biogas plant a safe and efficient method of waste disposal? Justify. 1
- ④ 4 Write the name and chemical formula of one salt each which contains : 2
- ⑤ 5 (a) two molecules of water of crystallisation. *Gypsum*  
(b) ten molecules of water of crystallisation. *Washing soda* 2
- ⑥ 6 Name one metal each which is extracted by : 2
- (a) reduction with carbon *Carbon calcium*  
(b) electrolytic reduction *Potassium*  
(c) reduction with aluminium *zinc*  
(d) reduction with heat alone
- ⑦ 7 Why is it important for us to have iodised salt in our diet? 2
- ⑧ 8 (a) Define an acid - base indicator. Mention one synthetic acid - base indicator. 3
- (b) If someone in the family is suffering from a problem of acidity after overeating, which of the following substances would you suggest as a remedy? 3
- lemon juice, vinegar or baking soda solution.*
- Mention the property on the basis of which you will choose the remedy.
- ⑨ 9 Give an example of a decomposition reaction. Describe an activity to illustrate such a reaction. 3
- ⑩ 10 A metal 'P' when exposed to the moist air for longer period of time, loses its shiny brown surface and gains a green coat. Why has this happened? Identify the metal. Write the name and chemical formula of this green coloured compound. List two ways to prevent this process. 3
- Copper, copper oxide  
Paint*

10

Complete and balance the following chemical equations :



2 1/2

Draw a well labelled diagram of Neuron. Mention the function of any two parts. 3

2 1/2

Draw a diagram of human respiratory system and label on it : 3

(i) Diaphragm      (ii) Larynx

2

State the importance of tropic movements in plants. List two such movements. 3

2

How much work is done in moving a charge of 3 coulombs from a point at 38 Volts to a point at 48 Volts? 3

2 1/2

What is an electric fuse? What is its role in electric circuits? Should it be placed on neutral wire or on live wire? Justify your answer. 3

2 1/2

List three advantages we have of connecting the electrical appliances in parallel with the mains instead of connecting them in series. *eg distri of current, less resistance, 1 short circuit* 3

2 1/2

Now a days you might have seen at the roofs of buildings, hospitals, hostels and hotels etc., solar cell panel and solar water heater for obtaining electricity and hot water respectively. Many people are also preferring these methods as a source of energy in their homes also. Answer the following questions : 3

(i) What kind of source of energy is used here? *Solar*

(ii) Why are people preferring these types of sources of energy? *renewable, non-polluting, easily available*

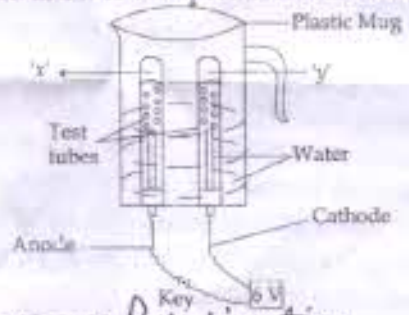
(iii) How will it affect our environment?

2 1/2

List any three characteristics of a good source of energy. 3

3 1/2

Study the following diagram and answer the questions that follow : 5



(i) What does this activity indicate? *Purification*

(ii) Identify the 'x' and 'y' in the test tubes.

(iii) Why is the amount of 'y' collected in one of the test tubes is double of the amount of 'x' collected in the other?

(iv) Write balanced chemical equation of the reaction that takes place when electric current is passed on closing the key.

20

(a) Define universal indicator. For what purpose it is used? 5

(b) Two solutions A and B have pH values of 3.0 and 9.5 respectively Which of these will turn litmus solution from blue to red and which will turn phenolphthalein from colourless to pink?

(c) Water is a neutral substance. What colour will you get when you add a few drops of universal indicator to a test tube containing distilled water? *colourless*

21


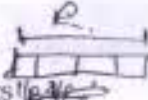
(a) Define hormone. Write four characteristics of hormones in humans. 5

(b) Name the disorder caused by the following situations :

- 3 1/2
- (i) Under secretion of growth hormone *dwarfism*
  - (ii) Over secretion of growth hormone
  - (iii) Under secretion of insulin *diabetes*
  - (iv) Deficiency of iodine *goitre*

22 3 1/2 Obtain the expression for the heat developed in a resistor by the passage of electric current through it. 200 J of heat is produced each second in a  $8 \Omega$  resistor. Find the potential difference across the resistor. 5

23 3 1/2 The flow of current in a circular loop of wire creates a magnetic field at its centre. How can the existence of this field be detected? State the rule which helps to determine the direction of this magnetic field. *Thumb rule, Compass*  
Name four common devices that use current carrying conductors and magnetic fields. 5

- 24 (a) Define Ohm's law. 5  
(b) Draw graph between V and I   
(c) A piece of wire having resistance R is cut into four equal parts   
(i) Compare the resistance of each part with the resistance of the original wire.  
(ii) If the four parts are connected in parallel, compare the equivalent resistance with the resistance of the original wire.

### SECTION - B

25 Basic nature of dilute NaOH can be tested by : 1

- (a) red litmus (b) blue litmus
- (c) sodium carbonate (d) lime water

26 A student added granulated zinc in dil hydrochloric acid taken in a test tube. The correct observation made by her is : 1

- (a) The surface of the metal turns shining.
- (b) The reactions mixture turns milky.
- (c) The odour of chlorine is observed.
- (d) A colourless and odourless gas evolved with bubbles.

27 When dil HCl is added to  $\text{Na}_2\text{CO}_3$  the gas liberated is : 1

- (a) hydrogen (b) carbon dioxide
- (c) carbon monoxide (d) chlorine

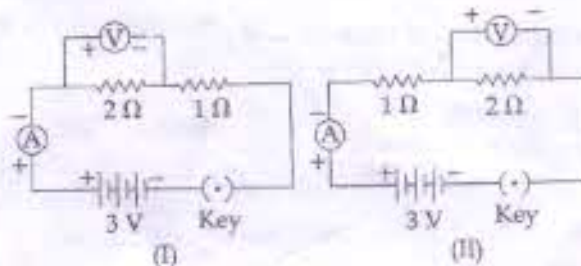
28 In which of the following solution metallic ion can be displaced by aluminium? 1

- (a)  $\text{CuSO}_4$  (b)  $\text{NaCl}$  (c)  $\text{CaCl}_2$  (d)  $\text{MgSO}_4$

29 An aluminium foil is placed in Zinc sulphate solution. After sometime we observe that the solution : 1

- (a) becomes colourless (b) remains colourless
- (c) becomes blue (d) becomes green

30 In two circuit diagrams I and II given below the voltmeter readings across  $2 \Omega$  resistance will be : 1



- (a) In both circuit diagram 2.0 V.
- (b) In diagram I 2.0 volt and in diagram II 0.0 volt
- (c) In both circuit diagram 0.0 volt
- (d) In diagram I 0.0 volt and in II 2.0 volt

31 Four students measured the following reading by observing the position of pointer in 1 voltmeter. The correct reading is :

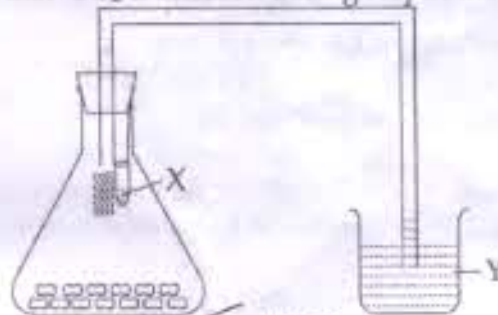


- (a) 2.2 V (b) 2.4 V
- (c) 4.2 V
- (d) ~~None of the above~~

32 On completion of the experiment to demonstrate that "light is necessary for photosynthesis", four students reported the inference as follows. Identify the correct inference.

- (a) Part of the leaf covered with strip can only undergo photosynthesis
- (b) Uncovered parts of the leaf cannot synthesize starch
- (c) Photosynthesis takes place only in the presence of sunlight
- (d) Light is necessary for synthesis of starch in green plants

33 In the given set up to show that 'CO<sub>2</sub> is released during respiration' Identify 'X' and 'Y' :



- (a) X - KCl, Y - water
- (b) X - KOH, Y - water
- (c) X - KOH, Y - HCl
- (d) X - KCl, Y - HCl

34 To study the different types of chemical reactions following salts in solid forms are given to the students : ~~Copper sulphate~~ <sup>white</sup>, ~~Iron sulphate~~ <sup>green</sup>, sodium sulphate, barium chloride. Write the colour of the above salts. ~~white~~ <sup>white</sup> ~~white~~ <sup>white</sup> ~~green~~ <sup>green</sup>

35 To verify ohm's law a student prepared a circuit and took the readings in Voltmeter and Ammeter.

Potential difference (V) (in Volts) :	1.0	4.00	6.00	8.00	10.0
Electric current (I) (in m Amperes) :	10	20	30	50	80

- (i) Draw the graph between V and I.
- (ii) From the graph can you verify ohm's law?

36 Ravi followed the following procedure for staining the temporary mount of leaf peel on the slide.

- (i) <sup>2</sup> To put a single drop of stain on leaf peel and wash it with water.
- (ii) <sup>3</sup> Cover the leaf peel with cover slip.
- (iii) <sup>1</sup> To put a single drop of glycerine on leaf peel.
- (iv) <sup>4</sup> observe the slide under microscope.

But the steps are not in order. What should be the correct sequence?

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