

## 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.

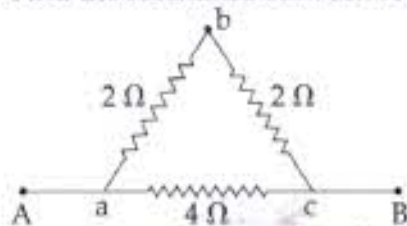
**भाग-अ / SECTION-A**

- Name the process of transport of soluble products of photosynthesis. Mention the tissue which transports it. 1
- Mention the commercial unit of electric energy. Write its relation with Joule. 1
- Why is a biogas plant a safe and efficient method of waste disposal? Justify. 1
- What is chlor - alkali process? Write a balanced chemical equation of the reaction involved in this process to justify your answer. 2
- Metals are said to be shiny. Then why do metals generally appear to be dull? How can their brightness be restored? 2
- Name the hormone which is released when we are in a scary situation? Write two effects of this hormone on our body that enable the body to deal with the situation. 2
- (i) Write the electron dot structure for Magnesium & Chlorine. 3  
(ii) Show the formation of  $MgCl_2$  by the transfer of electrons.
- (a) In the following reactions name the reactants which undergo oxidation and which undergo reduction : 3  
(i)  $CuO_{(s)} + H_{2(g)} \rightarrow Cu_{(s)} + H_2O_{(g)}$   
(ii)  $CuO_{(s)} + Zn_{(s)} \rightarrow ZnO_{(s)} + Cu_{(s)}$   
(b) State one industrial application of reduction.

- 9 How will you extract mercury from its sulphide ore? Write chemical equation for extraction. 3  
Identify the sulphide ore.
- 10 Give reason for the following : 3  
(a) Ionic compounds are usually hard.  
(b) Sodium chloride has a high melting point.  
(c) Non-metals do not displace hydrogen from dilute acids.
- 11 Mention the cause & symptom of disease Goitre. How can it be controlled. Name the 3  
Endocrine gland associated with it.
- 12 Name the gland that produces Bile. 3
- 13 A young green plant receives sunlight from one direction only. What will happen to its 3  
shoots and roots and why ?
- 14 List the various factors on which the resistance of a cylindrical conductor depends. Write an 3  
expression relating these factors. How is resistance of a conductor different from its resistivity?
- 15 Name, state and explain with an example the rule used to determine the direction of force 3  
experienced by a current carrying conductor placed in a uniform magnetic field.
- 16 What is an electric fuse? What is its role in electric circuits? Should it be placed on neutral 3  
wire or on live wire? Justify your answer.
- 17 Aditi wants to install a solar cooker on her roof top. Her mother tries to convince her not to 3  
do so as she is aware of the limitations of a solar cooker. But Aditi still wants to do it.  
(i) What is the main limitation of using a solar cooker ?  
(ii) Would you suggest Aditi to install a solar cooker at her home ? Give reason for your answer.  
(iii) What values of Aditi are depicted in her way of thinking ?
- 18 State any three reasons to justify that LPG is considered an ideal fuel 3
- 19 Identify the type of chemical reaction in the following statements and define each of them : 5  
(i) Digestion of food in our body  
(ii) Rusting of iron  
(iii) Heating of manganese dioxide with aluminium powder  
(iv) Blue colour of copper sulphate solution disappears when iron filings are added to it  
(v) Dilute hydrochloric acid is added to sodium hydroxide solution to form sodium chloride and water
- 20 (a) Compounds such as alcohols & glucose also contain hydrogen but are not categorized 5  
as acids. Explain.  
(b) While diluting an acid, why it is recommended that the acid should be added to water & not water to acid.
- 21 (a) Draw the diagram of Human Respiratory System. 5  
(a) Describe the mechanism of breathing in humans.

- 22 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.

Find the resistance between A and B in the following network

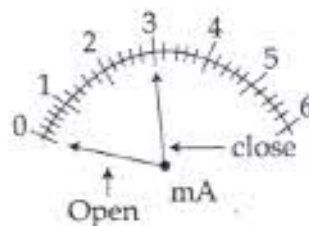
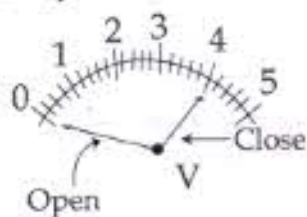


- 23 (a) A coil of insulated copper wire is connected to a galvanometer. With the help of a labelled diagram state what would be seen if a bar magnet with its south pole towards one face of this coil is :
- moved quickly towards it,
  - moved quickly away from it,
  - placed near its one face ?
- (b) Name the phenomena involved in the above cases.
- (c) State Fleming's right hand rule.
- 24 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? Name and state the rule which helps to determine the direction of this magnetic field. Give 2 differences between AC and DC. (columnwise)

#### भाग-ब/SECTION - B

- 25 Solid  $\text{NaHCO}_3$  was placed on a strip of pH paper. The colour of strip - 1
- turned blue
  - did not change
  - turned to green yellow
  - turned to light pink
- 26 A few drops of liquid 'X' are added to distilled water taken in a test tube. It was observed that the pH of distilled water increased. The liquid 'X' could be : 1
- lemon juice
  - ethanoic acid
  - hydrochloric acid
  - sodium bicarbonate solution
- 27 While studying the properties of acids, a student makes hydrochloric acid react with the following substances. Identify the substance which can displace hydrogen from hydrochloric acid and produce hydrogen : 1
- zinc granules
  - sodium chloride
  - sodium bicarbonate
  - sodium carbonate
- 28 If  $A + MX \rightarrow AX + M$  and AX is green coloured solution, then A and MX respectively are : 1
- Zinc and ferrous sulphate
  - Zinc and copper sulphate
  - Aluminium and copper sulphate
  - Iron and copper sulphate
- 29 Iron filings were placed in 20 mL of freshly prepared aqueous solution of aluminium sulphate. After half an hour the observation regarding the colour of the solution was that it turned from : 1
- Colourless to blue
  - colourless to green
  - Green to colourless
  - remained colourless

- 30 The equivalent resistance of a series combination of two resistors is  $20\ \Omega$ . If one of the resistor is  $10\ \Omega$ , the other resistor will be of : 1
- (a)  $20\ \Omega$  (b)  $10\ \Omega$  (c)  $50\ \Omega$  (d)  $40\ \Omega$
- 31 While performing the experiment to find equivalent resistance of resistances in parallel, a student was given a voltmeter and an ammeter of least count  $0.05\ \text{V}$  and  $0.1\ \text{A}$  respectively. On closing the circuit he notes that the pointer is at 25<sup>th</sup> division in voltmeter and 11<sup>th</sup> division in ammeter. He should note these readings as : 1
- (a)  $25\ \text{V}$  and  $11\ \text{A}$   
 (b)  $0.25\ \text{V}$  and  $0.11\ \text{A}$   
 (c)  $1.25\ \text{V}$  and  $1.1\ \text{A}$   
 (d)  $2.5\ \text{V}$  and  $1.1\ \text{A}$
- 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 given out during respiration,' the small test tube containing  $\text{KOH}$  solution is: 1
- (a) Dipped in water in the beaker  
 (b) Hanged outside the beaker containing water  
 (c) Hanged in the conical flask  
 (d) Hanged from the delivery tube outside the conical flask
- 34 Write the colour of the substances in the following reactions as indicated by A, B, C, and D : 2
- (i) Quick lime + Water  $\rightarrow$  slaked lime + heat  
 'A'
- (ii) Ferrous sulphate crystals  $\xrightarrow{\text{Heat}}$  Iron Oxide + Sulphur Dioxide + Sulphur Trioxide  
 'B'
- (iii) Iron + Copper Sulphate Solution  $\rightarrow$  Iron sulphate + copper  
 'C'
- (iv) Sodium Sulphate Solution + Barium chloride solution  $\rightarrow$  Barium sulphate + sodium chloride  
 'D'
- 35 To study the dependence of potential difference (V) on current (I) flowing across a resistor, a student takes readings through voltmeter and ammeter when key is open and closed respectively. 2



- (i) Find the correct reading of voltmeter.  
 (ii) Find the correct reading of ammeter:

- 36 While observing a temporary mount of a leaf peel under microscope draw the structure of stomata & write its function. 2

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