

SUMMATIVE ASSESSMENT – I, 2016-17 SKT
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 Sections-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 respiratory unit of lungs. | 1 |
| ✓ | Current flows through a horizontal power line from east to west direction. What is the direction of magnetic field at a point directly below it. | 1 |
| ✓ | Why hydrogen is considered a cleaner fuel as compared to CNG? | 1 |
| ✓ | (a) How is the concentration of hydronium ions affected when a solution of an acid is diluted? | 2 |
| ✓ | (b) Name the substance which on treatment with chlorine yields Bleaching powder. | 2 |
| ✓ | What is meant by amphoteric oxides? Choose the amphoteric oxides from the following :
Na ₂ O, ZnO, CO ₂ , Al ₂ O ₃ | 2 |
| ✓ | Define neuron. Name the parts of the neuron where :
(i) information is acquired
(ii) impulse must be converted into a chemical signal for onward transmission | 2 |
| ✓ | (a) Define the term pH of a solution. The pH of gastric juices of the sample collected from the stomach of two persons A and B were found to be 1 and 3 respectively. The gastric juice of which person is more acidic? | 3 |
| ✓ | (b) To protect tooth decay we are advised to brush our teeth regularly. What is the nature of the tooth paste commonly used? Give reasons. | 3 |
| ✓ | Complete and balance the following chemical reactions:- | 3 |
| ✓ | (i) $Zn + H_2SO_4 \longrightarrow$ | |
| ✓ | (ii) $KI + Pb(NO_3)_2 \longrightarrow$ | |

- (iii) $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \longrightarrow$
- 9 ✓ (d) What is an alloy? Give two examples of alloys. 3
- (b) What is Calcination and Roasting? Give one chemical equation of each.
- 10 ✓ State the meaning of strong acids and weak acid. Classify the following into strong acid and weak acids : 3
- $\text{HCl}, \text{CH}_3\text{COOH}, \text{H}_2\text{SO}_4, \text{H}_2\text{CO}_3$
- 11 ✓ Define phototropism. Explain it with an example. 3
- 12 ✓ Name any three glands associated with digestion in humans. Write the names of enzymes secreted by them. 3
- 13 ✓ Define excretion. Write two vital functions of kidney. 3
- 14 ✓ 400 Joules of heat is produced per second in a 16 ohm resistor. Find the potential difference across the resistor. 3
- 15 ✓ Find the minimum rating of fuse that can be safely used on a line on which two 1.1 kW, 3 electric geysers are to run simultaneously. The supply voltage is 220 V. 3
- 16 ✓ Calculate the cost of operating an electric heater for 2 h if it takes 5 A current on a supply of 220 V, 1 kWh energy costs Rs. 6.0. 3
- 17 ✓ Nasim went to his village and saw a biogas plant installed there. He observed that the villagers were putting only cow dung into the biogas plant. He told them that certain other substances can also be put in the biogas plant. 3
- (i) Name any two substances that Nasim is suggesting to be put in the biogas plant.
- (ii) List two advantages of using biogas as a fuel over the use of cow dung cakes.
- (iii) Name two elements which are present in abundance in the slurry that is left behind in the biogas plant.
- 18 ✓ What is Solar energy? What are the advantage and disadvantage of using solar energy? 3
- 19 ✓ (a) Explain two ways by which food industries can prevent rancidity. 5
- (b) Why combination reaction is called opposite of decomposition reaction? Give one chemical reaction for each.
- 20 ✓ (a) Name the product which is obtained when Gypsum is heated at 373K? Write the chemical reaction. 5
- (b) What are the raw materials required for the preparation of Baking Soda? Write the chemical reactions involved. Give two uses of Baking soda.
- 21 ✓ (a) Define hormone. Write four characteristics of hormones in humans. 5
- (b) Name the disorder caused by the following situations :
- (i) Under secretion of growth hormone
- (ii) Over secretion of growth hormone
- (iii) Under secretion of insulin
- (iv) Deficiency of iodine
- 22 ✓ (a) What is meant by electric circuit? What is done in order to have continuous flow of electric charge from a point A to another point B in an electric circuit? Write the relation between coulomb and ampere. 5
- (b) Calculate the number of electrons passing per second through a conductor to produce a current of one ampere.
- (Charge on electron = 1.6×10^{-19} coulomb)
- 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 5

220V
0.60A
220V
H.

of this coil is :

- (i) moved quickly towards it,
 - (ii) moved quickly away from it,
 - (iii) placed near its one face ?
- (b) Name the phenomena involved in the above cases.
(c) State Fleming's right hand rule.

- 24 (a) State Ohm's law. Draw the graph between potential difference and current. 5
• (b) Calculate the current drawn by an electric lamp from 220 volts supply-if the resistance of the lamp while glowing is 200 ohms.

SECTION - B

25 Solid NaHCO_3 was placed on a strip of pH paper. The colour of strip - 1

- (a) turned blue (b) did not change
(c) turned to green yellow (d) 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

- (a) lemon juice (b) ethanoic acid
(c) hydrochloric acid (d) sodium bicarbonate solution

27 No observable change is noticed when dilute hydrochloric acid is added to :

- (a) Sodium carbonate solution (b) Sodium hydroxide solution
(c) Blue litmus solution (d) Zinc granules

28 A student kept Zn granules in FeSO_4 solution. He observed that grayish black coloured powder is deposited on Zn granules. From the above observation he concluded that : 1

- (a) iron is more reactive than zinc
• (b) zinc is more reactive than iron
(c) zinc and iron are equally reactive
(d) reactivity of zinc and iron cannot be predicted

29 On adding copper metal to ferrous sulphate solution the colour of the solution : 1

- (a) Remains unchanged (b) Turns reddish - brown
(c) Turns colourless (d) Turns blue

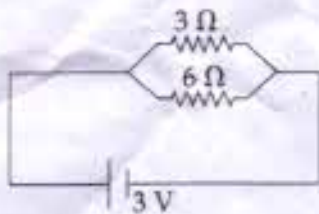
30 A circuit diagram is shown below: 1



The electric current flowing in the circuit will be :

- (a) $\frac{2}{3}$ A (b) $\frac{3}{2}$ A • (c) 1 A (d) 6 A

31 When performing the experiment of finding the equivalent resistance of a parallel combination of resistance, a student was asked to measure the potential drop across the 3Ω resistor. It will be : 1



- (a) 1V
- (b) 1.5V
- (c) 2V
- (d) 3V

32/ The teacher instructed a student to place a healthy potted plant in a darkroom for 24 hours prior to an experiment on photosynthesis. The purpose of placing it in a darkroom is : 1

- (a) To increase the intake of CO_2
- (b) To activate the chloroplasts in the leaves
- (c) To destarch the leaves
- (d) To denature the enzymes in the leaves.

33/ In the experimental set up to show that ' CO_2 is released during respiration,' Anand saw the water level rising in the bent glass tube. The possible reason could be : 1

- (a) CO_2 pulls the water
- (b) Atmospheric pressure pushes the water
- (c) Vacuum is created due to the release of CO_2
- (d) Vacuum is created due to absorption of CO_2 by KOH

34/ Fill up the gaps left in the following table : 2

Experiment	Observation	Inference in the type of reaction
1. Quick lime+water	-----	-----
2. Ferrous sulphate crystals +Heat	-----	-----

35/ An ammeter has a range of 0-3 ampere and there are 30 divisions on its scale. Calculate the least count of the ammeter. 2

36/ A student prepared the temporary mount of stained leaf peel. After observing the slide under microscope, he drew the following sketch. Correct the parts A, B, C and D labelled by him. 2

