CBSE Sample Paper-01 (Unsolved)
SUMMATIVE ASSESSMENT –I
SCIENCE (Theory)
Class – X

Time allowed: 3 hours Maximum Marks: 90

General Instructions:

a) All questions are compulsory.
b) The question paper comprises of two sections, A and B. You are to attempt both the sections.
c) Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.
d) Questions 4 to 6 in section A are two marks questions. These are to be answered in about 30 words each.
e) Questions 7 to 18 in section A are three marks questions. These are to be answered in about 50 words each.
f) Questions 19 to 24 in section A are five marks questions. These are to be answered in about 70 words each.
g) Questions 25 to 27 in section B are 2 marks questions and Questions 28 to 36 are multiple choice questions based on practical skills. Each question of multiple choice questions is a one mark question. You are to select one most appropriate response out of the four provided to you.

Section A

1. Write the formula and names of the compounds formed between:
   (a) Potassium and Iodine ion (b) Sodium and Sulphide ion
2. Name the term for transport of food from leaves to other parts of plants.
3. What is the S.I. unit of Electric potential?
4. (a) Give Arrhenius definition of an acid and a base.
   (b) Choose strong acid and strong base from the following:
   CH_3COOH, NH_4OH, KOH, HCl
5. Name the two hormones secreted by pancreas. Write one function of each hormone named.
6. What is meant by the term "Magnetic field lines"? List any two properties of magnetic field lines.
7. Write the formulae and names of the compounds formed by:
   (a) Na^+ and HCO_3^- (b) K^+ and CO_3^{2-} (c) Cr^{3+} and PO_4^{3-}
   (d) Zn^{2+} and SO_4^{2-} (e) Na^+ and SO_4^{2-} (f) NH_4^+ and CO_3^{2-}
8. What is the relationship between oxidation and oxidizing agent in a redox reaction? Write an example of a redox reaction showing the relationship between oxidation and oxidizing agent.

9. Name the raw materials that are required for the manufacturing of washing soda by Solvay process. Describe the chemical reactions involved in the process.

10. (a) Name the chief ore of Iron. Write its formula.
    (b) How is an Iron ore concentrated? Describe it briefly.

11. Describe with labelled diagram, the Froth Floatation Process used to separate the gangue from a Sulphite ore.

12. Om, Rohit and Kishore always remain in a hurry. One day, during lunch hour they all quickly gulped food and went out to play. Om suddenly developed stomach ache while playing.
    Read the given passage and answer the following questions:
    (a) What according to you might have gone wrong with him?
    (b) Give reason for happening wrong in scientific terms.
    (c) Mention the associated value of the Om that he should follow in the passage.
    [Value Based Question]

13. Draw the diagram of a palisade cell of a plant leaf and label the following in it:
    (a) Chloroplast (b) Vacuole (c) Cytoplasm (d) Nucleus

14. Describe the central nervous system in human being under the following heads:
    (a) Regions included.
    (b) Three functions of any one region.

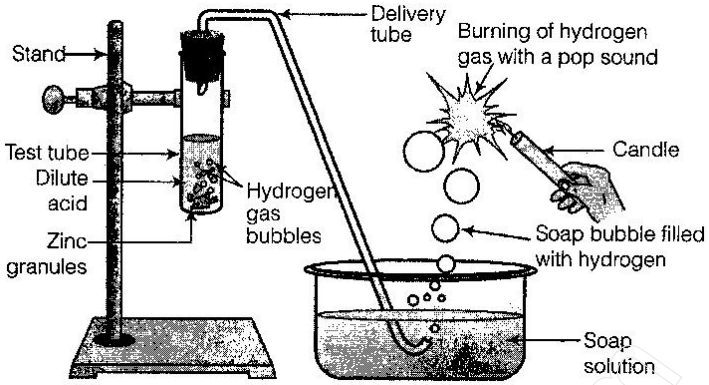
15. (a) What is meant by "Electric Resistance" of a conductor?
    (b) A wire of length L and resistance R is stretched so that its length is doubled and area of cross-section is halved. How will its:
    (i) resistance change (ii) resistivity change

16. How does the strength of the magnetic field at the centre of a circular coil of wire depend on:
    (a) The radius of the coil.
    (b) The number of turns of wire in the coil.
    (c) The strength of current flowing in the coil.

17. (a) Why is the solar cooker box covered with a plane glass plate?
    (b) Why is energy of water flowing in a river considered to be an indirect form of Solar energy?
    (c) How is the fission of $^{235}_{92}U$ nucleus brought about?

18. (a) Describe the steps involved in obtaining biogas and explain what is meant by anaerobic decomposition.
    (b) Which isotope of uranium can undergo fission readily.

19. In the following schematic diagram for the preparation of hydrogen gas as shown in the figure, what would happen if the following changes are made:



(a) In place of Zinc granules, same amount Zinc dust is taken in the test-tube.
(b) Instead of dilute sulphuric acid, dilute hydrochloric acid is taken.
(c) In place of Zinc, Copper turnings are taken.
(d) Sodium hydroxide is taken in place of dilute sulphuric acid and the tube is heated.

Or

(a) Given below are the steps for the extraction of copper from its ore. Write the reactions involved.
  (i) Roasting of copper sulphate.
  (ii) Reduction of copper oxide with copper sulphide.
  (iii) Electrolytic refining
(b) Draw a neat and well labelled diagram for electrolytic refining of copper.

20. How are metals low in activity series extracted from their ores? Explain with reference to copper and mercury.

Or

State reasons for the following:
(a) Carbon cannot reduce the oxides of sodium and aluminium.
(b) Calcium does not occur free in nature.
(c) Zinc does not give hydrogen on reacting HNO_3.
(d) Metals can be given different shapes according to our needs.
(e) Gold and Platinum are used in jwellery.

21. (a) Blood goes two times through heart during one cycle of passage through the body. Explain the above statement.
(b) Give one example of regulation of hormone secretion by feedback mechanism in our body.

Or

(a) Draw a labelled diagram of human alimentary canal.
(b) The flow of food through the alimentary canal is well regulated in human beings. Explain the above statement.

22. State Ohm's law. Draw a graph between voltage and current for a metallic conductor. Draw a circuit diagram of a circuit, which consists of battery, ammeter, voltmeter, resistor, rheostat and a key.

Or

(a) A torch bulb is rated 2.5 V and 750 mA. Calculate:
  (i) its power
  (ii) its resistance
  (iii) the energy consumed if in this bulb is lighted for 4h
(b) Two identical resistors each of resistance 2 Ω are connected in torch.
  (i) in series and
  (ii) in parallel, to a battery of 12 V. Calculate the ratio of power consumed in two cases.

23. Draw circuit diagram for the following conditions:
(a) A simple circuit in which a straight copper wire is placed to and over a compass needle.
(b) Deflection of needle becomes opposite when direction of current is reversed.
(c) State reason for the above changes.

Or

With the help of a diagram, describe how one can generate induced current in a circuit?

24. Draw an appropriate schematic diagram showing common domestic circuit and discuss the importance of fuse. Why is it that burnt out fuse should be replaced by another fuse of identical rating?

Or

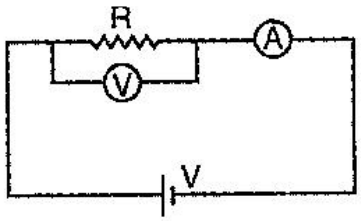
(a) The magnetic field in a given region is uniform. Draw a diagram to represent tit.
(b) How does a solenoid behave like a magnet? Can you determine the North and South poles of a current carrying solenoid using a bar magnet? Explain.
(c) List the properties of magnetic lines of force.

Section B

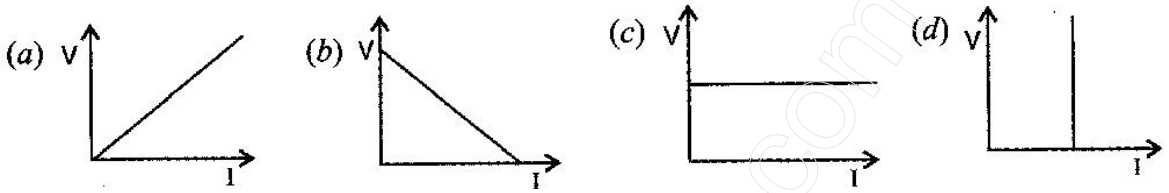
25. When the blue litmus is added to dilute HCl, then what changes will be occur? Justify your answer.

26. To observe stomata, which type of leaf/which part of leaf should be taken and why?

27. Using the adjoining circuit, current and potential difference are measured and plotted in a graph.



(a) Which is the best suited graph?
(b) Give reason.



28. The taste of dilute NaOH is:
(a) Sour (b) Bitter (c) Sweet (d) Salty

29. The colour of Zn metal is:
(a) Grey (b) White (c) Brown (d) Yellow

30. When zinc metal is dipped in copper sulphate solution:
(a) The solution become colourless and reddish brown copper metal gets deposited.
(b) No reaction takes place.
(c) The solution becomes green and copper metal gets deposited.
(d) The solution remains blue and copper metal gets deposited.

31. Leaf is made up of:
(a) Palicade cells (b) Mesophyll cell
(c) Guard cell (d) Parenchyma cell

32. A plant where stomata is absent:
(a) Cactus (b) Lily (c) Hydrilla (d) All of these

33. The rate of flow of charge is called:
(a) Ampere (b) Current (c) Coulomb (d) Ohm

34. "When physical conditions remain the same, the electric current flowing through a conductor is directly proportional to the potential difference." This law is called:
(a) Ohm's law (b) Ampere's law (c) Coulomb's law (d) Joule's law

35. Which of the following correctly describes the magnetic field near a long straight wire:
    (a) The field consists of straight lines perpendicular to the wire.
    (b) The field consists of straight lines parrallel to the wire.
    (c) The field consists of radial lines originating from the wire.
    (d) The field consists of concentric circles centred on the wire.

36. Which of the following are exothermic processes:
    (i) Reaction of water with quicklime.
    (ii) Dilution of an acid.
    (iii) Evaporation of water.
    (iv) Sublimation of camphor (crystals).
    (a) (i) & (ii) (b) (ii) & (iii) (c) (i) & (iv) (d) (iii) & (iv)