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CBSE Sample Paper-01
SUMMATIVE ASSESSMENT –I

Time allowed: 3 hours | SCIENCE (Theory) **Class – X** | 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. What happens when a chemical reaction occurs?
2. Name the pigment present in plants, which can absorb solar energy.
3. A wire of resistivity p is stretched to double its length. What is its new resistivity?
4. (a) What is observed when sulphur dioxide is passed through (i) water, (ii) limewater?
   (b) Also write chemical equations for the reactions that takes place.
5. Name the hormone responsible for regulation of:
   (i) Metabolism of carbohydrates, fats and proteins.
   (ii) Balance of calcium and phosphate.
   (iii) Blood pressure.
   (iv) Water and electrolytic balance.
6. With the help of neat diagram describe how you can generate induced current in the circuit.
7. Identify the substances oxidized and the substances reduced in the following reactions. Write the ionic equation for the substances oxidized and reduced.
   (a) $H_2(g) + Cl_2(g) \longrightarrow 2HCl(g)$
   (b) $H_2(g) + CuO(s) \longrightarrow Cu(s) + H_2O(l)$
   (c) $H_2S(g) + SO_2(g) \longrightarrow S(s) + H_2O(l)$

8. $2FeSO_4(s) \longrightarrow Fe_2O_3(s) + SO_2(g) + SO_3(g)$. Is it a redox reaction or not? If yes, why?
9. (a) Write the formula and chemical name of Bleaching powder.
   (b) Write chemical equation to represent the action of atmospheric CO_2 gas on bleaching powder when left exposed in open.
   (c) State for what purpose is bleaching powder used in water treatment plants.
10. Dinesh is a student of class 10^{th} standard. He went to a remote area of Rajasthan for trekking with his friends. Dinesh found that it was a sparsely inhabited area. He was surprised to know that there was still no electricity in this area. The people used kerosene oil lamps to light up their homes at night and there were no street lights. The children also had to study with kerosene lamps at night. The village farmers used diesel to run irrigation pumps. Actually there were no pwer transmission lines which could bring electricity to this remote area. Dinesh was really disturbed by the living conditions of the people in thei part of Rajasthan. One day Dinesh gathered all the people of village in the village school. He told them thay if they put pressure on their area MLAs and MPs for making available the required funds, then he could tell them about the devices to light up their homes and streets at night, play radio and television and also run irrigation pumps with electricity without there being power transmission lines. All the people agreed and Dinesh described them the devices to get electricity in their area in detail. The village people were very happy to know this and soon they got electricity in their area.
    Read the passage and answer the following questions:
    (a) What was the device described by Dinesh to the village people to obtain electricity locally?
    (b) What source of energy is made uses of in this device to obtain electricity?
    (c) Why do you think this device is more appropriate for an area like Rajasthan?
    (d) What is the name of the single unit of this device?
    (e) What values are shown by Dinesh in this incident?

    [Value Based Question]
11. (a) Why is *ZnO* called a amphoteric oxide? Name another amphoteric oxide.
    (b) What are alkali's? Give one example of alkali.
12. How is haemoglobin associated with respiration explained?
13. With the help of diagram, show pulmonary circulation in man.
14. Draw a diagram of human brain and label the following parts:
    (a) Cerebrum (b) Meninges (c) Medulla oblongata (d) Cerebellum
15. (a) State Ohm's law.
    (b) Draw a schematic diagram of the circuit for studying Ohm's law.
16. The flow of a current in a circular loop of wire creates a magnetic field at its centre. How many existence of this field be detected? State the rule which helps to predict the direction of this magnetic field.
17. (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?
18. (a) State one limitation of solar energy available from solar cells.

(b) What is the minimum wind velocity required to obtain useful energy with a wind mill.
(c) Define the term 'Nuclear fission'.

19. Identify the type of chemical reaction taking place in each of the following:
(i) Barium chloride solution is mixed with copper sulphate solution and a white precipitate is observed.
(ii) On heating copper powder in air in a China dish, the surface of copper powder turns black.
(iii) On heating green coloured ferrous sulphate crystals reddish brown solid is left and small of a gas having odour of burning sulphur is experienced.
(iv) Iron nails when left dipped in blue copper sulphate solution become brownish in colour and the blue colour of copper sulphate fades away.
(v) Quick lime reacts vigorously with water releasing a large amount of heat.

Or

During the reaction of some metals with dilute hydrochloric acid, following observations were made:
(i) Silver metal doesn't show any change.
(ii) The temperature of reaction mixture rises when aluminium (Al) is added.
(iii) The reaction of sodium metal is found to be highly explosive.
(iv) Some bubbles of a gas are seen when lead (Pb) is reacted with the acid.
(v) A gas produced when sodium carbonate is added to the acid.
Explain these observations giving suitable reasons.

20. Give reasons for the following:
(a) Metals conduct electricity.
(b) Metals generally do not form compounds with hydrogen.
(c) A piece of zinc placed in blue copper sulphate solution decolourize it.
(d) Alumina is dissolve in molten cryolite for electrolysis to obtain aluminium metal.
(e) Nitrogen gas is used to preserve food.

Or

(a) What is corrosion of metals? Name one metal which does not corrode and one which corrodes on being kept in atmosphere.
(b) How will you show that the rusting of iron needs oxygen and moisture at the same time.

21. (a) Draw a diagram of human alimentary canal.
(b) Label oesophagus, Liver, Pancreas and Gall bladder on the diagram drawn.
(c) What is the function of enzyme 'pepsin' in the digestion process?

Or

(a) Draw a diagram of the human urinary system and label on it:
(i) Kidney (ii) Ureter (iii) Urinary bladder (iv) Urethra
(b) Name the two major components of normal human urine.

22. (a) What is the function of an earth wire in electrical instruments? Why is it necessary to earth the metallic electric appliances?
(b) Explain what is short circuiting and overloading in an electric supply.

(c) What is the usual capacity of the fuse wire in the line to feed:
(i) Lights and fans?
(ii) Appliances of 2 kW or more power?

Or

(a) Define the unit of electric current.
(b) Describe the activity with the help of a diagram to establish the relationship between current (I) flowing in a conductor and potential difference (V) maintained across its two ends.
(c) Draw the shape of the curve obtained when a graph is plotted between I and V.

23. (a) What is meant by a magnetic field?
(b) How is the direction of magnetic field at a point determined?
(c) Describe an activity to demonstrate the direction of the magnetic field generated around a current carrying conductor.
(d) What is the direction of magnetic field at the centre of current carrying circular loop?

Or

(a) What is an electromagnet?
(b) List any of its two uses.
(c) Draw a labelled diagram to show how is an electromagnet made?
(d) What is the purpose of the soft iron core used in making an electromagnet?

24. What is biogas? Describe the working of a biogas plant with the help of a labelled diagram.

Or

Explain why:
(a) It is difficult to burn a piece of wood fresh from a tree.
(b) Pouring dry sand over the fire extinguishes it.
(c) It is difficult to use hydrogen as a source of energy.
(d) Charcoal is considered a better fuel than wood.

Section B

25. If phenolphthalein is added to dilute HCl, then what will happen? Justify your answer also.
26. (a) Why does plant cool the atmosphere?
(b) Define that term also.
27. The given wire made of material resistivity 'ρ' is stretched to triple its length. Then what will be new resistivity? Justify your answer also.
28. Conc. H_2SO_4 should be kept away from body because:
(a) it is oily liquid.
(b) it reacts with skin which gets burnt.
(c) of its pungent smell.
(d) it has high boiling point.
29. If we invert a gas jar of SO_2 over water, the observation and conclusion will be:
(a) Water level rises up because SO_2 is insoluble in water.
(b) Water level rises up because SO_2 is soluble in water.

(c) There is no change in water level as SO_2 is lighter than air.
(d) Water level rises up because SO_2 is heavier than air.

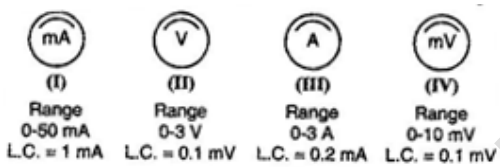
30. The thistle funnel should dipped into conc. H_2SO_4 because:
(a) SO_2 gas will come out from the thistle funnel.
(b) SO_2 is lighter than air.
(c) SO_2 is soluble in water.
(d) SO_2 is pungent smelling gas.

31. Which of the following is not a part of reflex arc:
(a) Sensory neuron (b) Brain
(c) Relay neuron (d) Spinal cord

32. Which hormone is not released from pituitary gland:
(a) Growth hormone (b) Oestrogen (c) Oxytocin (d) Prolactin

33. A resistor is connected to an ammeter in series and a voltmeter in parallel to a source of energy. The quantity that cannot be found directly is:
(a) Current (b) Potential Difference
(c) Resistance (d) All of these

34. Four different measuring instruments are shown below. Out of these, the instrument that can be used for measuring current is/are the instruments labelled as:



(a) I and III with III more reliable of the two.
(b) I and IV with IV more reliable of the two.
(c) II and III with II more reliable of the two.
(d) II and IV with IV more reliable of the two.

35. Choose the incorrect statement from the following regarding magnetic lines of field:
(a) The direction of magnetic field at a point is taken to be the direction in which the north pole of a magnetic compass needle points.
(b) Magnetic field lines are closed curves.
(c) In magnetic field lines are parallel and equidistant, they represent zero field strength.
(d) Relative strength of magnetic field is shown by the degree of closeness of the field lines.

36. Acid rain happens because:
(a) Sun leads to heating of upper layer of atmosphere.
(b) Burning of fossil fuels release oxides of carbon, nitrogen and sulphur in the atmosphere.
(c) Electrical changes are produced due to friction amongst clouds.
(d) Earth atmosphere contains acids.