



CHINMAYA VIDYALAYA / B S CITY

SUMMATIVE ASSESSMENT –I (2014)

MODEL QUESTION PAPER

STD- X

SUB : SCIENCE & TECHNOLOGY

F.M. : 90

TIME : 3 Hrs

General Instructions:

All questions are compulsory.

The question paper comprises of two sections, A and B. You are to attempt both the sections.

Section A

- Write the chemical formula for the following: (1)
 - Sodium zincate
 - Phosphorus pentachloride
- Two wires, one of manganin and the other of copper have equal lengths and resistances. Which one of these wires will be thicker? (1)
- How many ATPs can be generated by oxidizing one NADH_2 ? (1)
- What is the role of acid in our stomach? (1)
- What does 'slaking of lime' stand for? Why is there a hissing sound during this process? Write the chemical equation for the reaction involved. (2)
- What is the function of earth wire? Why is it necessary to earth the metallic appliance? (2)
- Give the characteristics tests for the following gases: (2)
 - SO_2
 - O_2
 - H_2
- Alia bought a chips packet and open it. Suddenly her friend Priyanka came. She started playing and forgot to eat the chips. On the next day, when she ate the chips, she felt the taste was not good and she was not feeling well. She told her mother to take her to a doctor. The doctor told them this is because of eating rancid chips. He gave medicines by which Alia became well within a few days. (2)
 - What make the chips fresh for a longer time in a sealed packet?
 - Why did chips of an open packet become rancid?
 - What value do you learn from this passage?
 -
- A compound X of sodium forms a white powder. It is a constituent of baking powder and is used in some antacid prescriptions. When heated, X gives out a gas and steam. The gas forms a white precipitate with limewater. (2)
 - Write the chemical formula and name of X and the chemical equation for its decomposition on heating.
 - What is its role in baking powder and in antacids.
- Name with examples three common compounds in which metal occur in nature. Write chemical equation for the metal reacting with a dilute acid to produce hydrogen gas. (2)
- State the role of plant hormone? Name a plant hormone which is essential for cell division. (2)
- How do plants get rid of excretory products? (2)
- Differentiate between sensory nerve and motor nerve? (2)
- What are the function of RBC in human? (2)
- Explain how the following metals are obtained from their compounds by the reduction process: (3)
 - Metal 'X' which is low in reactivity series.
 - Metal 'Y' which is middle of the reactivity series.
 - Metal 'Z' which is high up in the reactivity series
- (a) Two conductors X and Y of resistances 15 ohm and 10 ohm respectively can be arranged in parallel and later on in series. In each arrangement, the total voltage applied across it is 20 volts. In which arrangement will the voltage across X and Y be the same and in which case will the current flowing through X and Y be the same? (3)
 - Calculate the total resistance for each arrangement.
- (a) Why does a rectangular coil carrying current rotate in a magnetic field? ($1\frac{1}{2} + 1\frac{1}{2} = 3$)
(b) Does a current carrying conductor experience a force when placed in a magnetic field? Give two application of this.
- Write different ways of harnessing energy from biomass. (3)
- What is a nuclear waste? What are the hazards of nuclear waste to living things? How is it disposed off? (3)
- Consider the chemical equation given below and answer the questions that follow: $\text{MnO}_4^- + \text{Fe}^{2+} \rightarrow \text{MnO}_2 + \text{Fe}^{3+}$ (3)
 - Name the substance which is getting oxidized.
 - Name the substance which is getting reduced.
 - Name the oxidizing agent.
 - Name the reducing agent.
 - What type of a reaction does this equation represent?

Or

(a) What do you mean by precipitation reactions? Explain with examples.

(b) Grapes hanging on the plant do not ferment but after being plucked from the plant can be fermented. Under what conditions do these grapes ferment? It is a chemical or a physical change?

21. What is the basic filtration unit in the lungs and in the kidney? Describe. (3)

22. Give the function of the epiglottis in man? Draw a level diagram of human respiratory system. (3)

23. Name the three parts of the small intestine and its function. (3)

24. (i) Given below are the steps for the extraction of copper from its ore. Write the reaction involved. (5)

(a) Roasting of Copper (I) sulphide

(b) Reduction of Copper (I) oxide with copper (I) sulphide

(c) Electrolytic refining

(ii) Draw a neat and well labelled diagram for electrolytic refining of copper.

Or

A metal lies in the middle of activity series. It occurs both as sulphides and carbonate.

(a) Identify the metal.

(b) How can one extract this metal from its ore?

25. (a) How can we magnetize a material? Give the character of magnetic materials used. (5)

(b) Does a current carrying conductor experience a force when placed in a magnetic field? Give two applications of this.

(c) Why does a rectangular coil carrying current rotate in a magnetic field?

Or

(a) Explain how Oersted explained the formation of magnetic field in its surround?

(b) What are magnetic poles? How can you identify them?

(c) How can we demonstrate the formation of magnetic field surrounding a magnet?

26. Sketch the magnetic field due to a circular coil and a solenoid. What are the important characteristics of the field produced by each? (5)

OR

Describe the main features of the domestic wiring system with the help of a diagram

27. (a) Describe the mechanism of urine formation. (5)

(b) Draw the diagram of human excretory system.

or

(a) Define the terms nutrition & nutrients.

(b) Describe the digestive system of man.

or

Explain the structure and function of human brain.

Section B

28. A student added dilute NaOH to a test tube containing Zinc granules and heated the contents. (3)

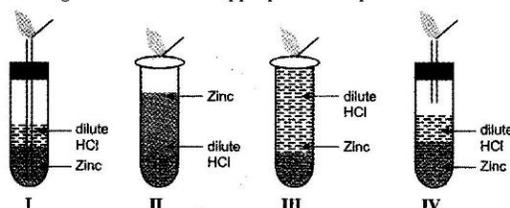
(a) What changes will be observed? (b) Justify your answer.

29. Three resistance of 2 ohm, 4 ohm, and 8 ohm are (3)

- Connected in series
- Connected in parallel

Find the equivalent resistance in each of these cases.

30. Four set ups given below were arranged to identify the gas evolved when dilute Hydrochloric acid was added to Zinc granules. The most appropriate set up is: (1)



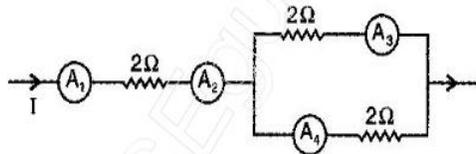
(a) I

(b) II

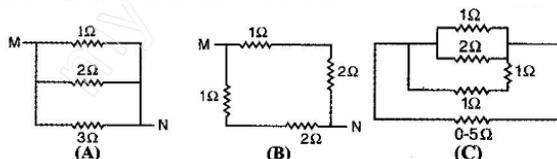
(c) III

(d) IV

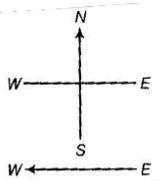
31. Some crystals of copper sulphate were dissolved in water. The colour of solution obtained would be: (1)
 (a) green (b) red (c) blue (d) brown
32. When an aluminium strip is kept immersed in freshly prepared ferrous sulphate solution taken in a test tube, the change which is observed is: (1)
 (a) The green solution slowly turns brown.
 (b) The lower end of the test tube becomes slightly warm.
 (c) A colourless gas with smell of burning sulphur is observed.
 (d) Light green solution changes to blue.
33. The ammeter showing equal current in the following circuit are: (1)



- (a) A1 and A2 (b) A3 and A4 (c) Both (a) and (b) (d) Neither (a) nor (b) (1)
34. The equivalent resistance is the least in which of three cases: (1)



- (a) C (b) B (c) A (d) A and C (1)
35. The power generated in a wind mill: (1)
 (a) is more in rainy season since damp air would mean more air mass hitting the blades.
 (b) depends on the height of the tower.
 (c) depends on wind velocity.
 (d) can be increased by planting tall trees close to the tower.
36. A constant current flows in a horizontal wire in the plane of the paper from east to west as shown in figure. The direction of magnetic field at a point will be north to south: (1)



- (a) directly above the wire. (b) directly below the wire.
 (c) at a point located in the plane of the paper, on the north side of the wire.
 (d) At a point located in the plane of the paper on the south side of the wire.
37. Movement of food through the esophagus. (1)
 (a) Lubrication by saliva (b) Peristalsis
 (c) Gravitational pull (d) All of these
38. A leaf is boiled in alcohol before using iodine for starch test in order. (1)
 (a) Dissolve starch (b) Dissolve chlorophyll
 (c) Soften the leaf (d) To kill the enzymes
39. Preparing of temporarily mount for stomata extra stain is removed by (1)
 (a) Washing with water (b) Washing with alcohol
 (c) Absorbing with filter paper (d) Absorbing with cotton
40. The process of respiration will show CO₂ released, we take (1)
 (a) dry seeds (b) boiled seeds
 (c) wet seeds (d) germinating seeds
41. Stem of plant will show movement (1)
 (a) geotropism (b) phototropism
 (c) hydrotrophism (d) chemotropism
42. Plants movement are neither towards nor away from the stimulus such plant movement is called (1)
 (a) light movement (b) hydral movement
 (c) nastic movement (d) chemotropism