

17103

13141

2 Hours / 50 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) Preferably, write the answers in sequential order.

Marks

1. Attempt any NINE of the following:

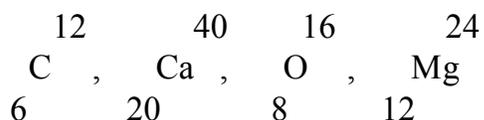
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- a) Why an atom is electrically neutral ?
- b) State Aufbau principle.
- c) If atomic and atomic mass number of an element is 11 and 23 respectively. Write the number of protons, neutrons and electrons.
- d) Define pH. What is the pH of extremely acidic and extremely alkaline solution.
- e) State any two points of Arrhenius theory of ionization.
- f) State Faraday's second law of electrolysis.
- g) Calculate the pH value of a solution having hydrogen ion concentration 1×10^{-4} gm ions per liter.
- h) Define the term Metallurgy.
- i) Write composition of Duralumin.
- j) Define alloy. Give one example of ferrous and non-ferrous alloy.
- k) Define plastics and write two examples of Thermosoftening plastic.
- l) Write chemical unit and structure of rubber.

P.T.O.

2. Attempt any FOUR of the following:**16**

- a) Write electronic configuration of



- b) Describe formation of MgO molecule with diagram and name the type of bonding.
- c) Differentiate between electrovalent and covalent bond.
- d) Describe electrolysis of CuSO_4 solution using platinum electrodes.
- e) Describe electro refining of copper with suitable diagram.
- f) A current of 3 amperes passing through silver nitrate solution for 20 minutes deposit 4.09 gms of silver, what is the E.C.E. and C.E. of silver.

3. Attempt any FOUR of the following:**16**

- a) Distinguish between Calcination and Roasting.
- b) Define Tensile Strength, Hardness, Weldability and Machinability.
- c) Describe Fusion method of preparation of Alloy.
- d) Describe Thermosetting plastic with example. Write characteristics of Thermosetting plastic.
- e) What is natural rubber ? Write drawbacks of it.
- f) Describe how glass wool is prepared ? Write properties and applications of it.
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