

17103

21819

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.

Marks

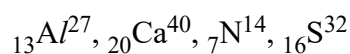
1. Attempt any NINE of the following :

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- (a) Nucleus of an atom has 5 protons and 6 neutrons. What would be the atomic number and atomic mass number ?
- (b) State and explain Aufbau's principle.
- (c) Distinguish between electrovalent and covalent compounds. (any two)
- (d) State any two postulates of Arrhenius theory of electrolytic dissociation.
- (e) How does temperature and concentration of solution affect the degree of ionization ?
- (f) State Faraday's first law of electrolysis.
- (g) Calculate the pH value of a solution having H^+ ion concentration 1×10^{-4} gm ions per litre.
- (h) Define the term flux and slag.
- (i) Give the classification of alloys with examples.
- (j) Write composition of Woods metal.
- (k) Name any four synthetic rubber.
- (l) Define polymerisation. Name its types.

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

- (a) Write orbital electronic configuration of following elements :



- (b) With the help of figure explain the formation of carbon dioxide molecule.

OR

Describe the formation of CO_2 molecule with diagram.

- (c) Give four assumptions of Bohr's atomic theory.
- (d) Explain the mechanism of electrolysis of CuSO_4 solution by using platinum electrodes.
- (e) Define Electrolyte and Electrolytic cell. Write two points of difference between strong and weak electrolyte.
- (f) Same amount of electricity is passed through two cells containing copper sulphate and silver nitrate solution respectively. If 0.99 g of silver and 0.29 of copper are deposited, find out equivalent weight of silver.

[Equivalent weight of copper is 31.6]

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

- (a) Name and explain the method used for the concentration of sulphide ore with diagram.
- (b) Define the terms : Hardness, Ductility, Soldering, Machinability.
- (c) Describe fusion method for preparation of alloys.
- (d) Distinguish between thermosoftening plastics and thermosetting plastics.
- (e) Write four properties and their related applications of rubber.
- (f) How is thermocole prepared ? Give three properties and three uses of thermocole.
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