

17103

11718

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 :

18

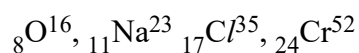
- (a) Compare proton, neutron and electron with respect to mass, charge and location.
- (b) Define electrovalency. What are types of electrovalency ?
- (c) Differentiate between orbit and orbital.
- (d) State factors affecting degree of ionization.
- (e) Calculate pH value of solution having Hydrogen ion concentration of 1×10^{-3} gm ions per liter.
- (f) Explain Faraday's second law of electrolysis and give its expression.
- (g) Define electroplating. Give its two purposes.
- (h) Define the terms : (i) mineral (ii) ore
- (i) Define :
 - (i) Tensile strength
 - (ii) Machinability
- (j) Write any two purposes of making an alloy with one example each.
- (k) State any four characteristics of a thermal insulator.
- (l) Which property of rubber is used in tyres ? Name and explain the property.

[1 of 2]

P.T.O.

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

- (a) Write orbital electronic configuration of



- (b) Describe the formation of N_2 molecule. Which type of bond is present in N_2 molecule ?
- (c) Differentiate between isotopes and isobars. (4 points)
- (d) State Arrhenius theory of ionization. (4 points)
- (e) A current of 3 amperes passing through silver nitrate solution for 20 minutes deposit 4.09 gms of silver. What is E.C.E. and C.E. of silver ?

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

- (a) Explain froth floatation method of concentration of ore with the help of diagram.
- (b) Differentiate between calcination and roasting. (4 points)
- (c) Give composition, properties and applications of Duralumin.
- (d) Name and explain the process used to increase stiffness of rubber with chemical reaction.
- (e) Write four properties of plastic and their related applications.
- (f) Give two properties and two applications of
- (i) Glasswool
 - (ii) Thermocole
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