17103

11718

2 Hours / 50 Marks Seat No. | | | | | | | | |

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.

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

(a) Write orbital electronic configuration of

$_{8}O^{16}$, $_{11}Na^{23}$ $_{17}Cl^{35}$, $_{24}Cr^{52}$

(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 froath 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
