11819

17103

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 : **(9×2=18)**

a) Name isotopes of hydrogen. Draw their atomic diagram.

b) State the maximum number of electrons that can occupy K, L, M and N energy level if 'n' is principal quantum number of that element.

c) Chlorine is electronegative give reason and explain with electronic configuration.

d) Define : 1) Electrode 2) Electrolyte.

e) Give two posulates of Arrhenius theory of ionization.

f) State Faraday's second law of electrolysis.

g) Calculate the pH of solution having H^+ ion concentration 5.5×10^{-5} moles per litre.

h) Define the terms 1) Flux 2) Slag.

i) Define concentration of ore. Name different methods of concentration.

j) Write composition of Wood's metals.

k) Name the type of plastic with one example each.

l) Write any two drawback of natural rubber.

2. Attempt **any four** of the following : **(4×4=16)**

a) Write four posulates of Bohr's atomic theory.

b) State Hund's rule. Write electronic configuration of $_7N^{14}$, $_{18}Ar^{40}$.

c) Define :

i) Atomic number

ii) Atomic mass number

iii) Energy level

iv) Sub energy level

P.T.O.

Marks

d) State Faraday's first law of electrolysis and derived its mathematical expression.

e) Describe with labelled diagram the process of electroplating of silver.

f) Show the chemical reaction of electrolysis of aqueous $CuSO_4$ solution using copper electrodes.

3. Attempt **any four** of the following : **(4×4=16)**

a) Differentiate between calcination and roasting.

b) Define Hardness, tensile strength, toughness machinability.

c) Explain any four purpose of making an alloy with at least one suitable example in each case.

d) Define polymerization. Explain addition polymerization with at least one example.

e) Name and describe the process which increases the stiffness of rubber.

f) Write the properties and application of thermocole.

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