Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
(Autonomous)
End Semester Examination: MAR / APR 2025
Faculty: Science and Technology

Program: B.Sc.General **Semester: VI** **SET: A**
Program (Specific): Chemistry **Course Type:DSEC**
Class: T.Y.B.Sc. **Max.Marks: 35**
Name of the Course: Inorganic Chemistry-III
Course Code: 24-CH-605 **Time: 2Hr**
Paper: V

Instructions to the candidate:

1) *There are 4 sections in the question paper. Write each section on separate page.*
2) *All Sections are compulsory.*
3) *Figures to the right indicate full marks*
4) *Draw a well labelled diagram wherever necessary.*

SECTION: A

Q1) Chose the correct option. **[5 x 1 = 5 Marks]**

a) Which of the following is a non-protonic solvent ?
i) NH_3 ii) CH_3COOH iii) H_2O iv)CCl_4

b) Out of the following compounds ,…….is not a crystalline solid.
i) glass ii)sodium chloride iii)sulphur iv)sugar

c) Which of the following is not applicable to zeolites?
I) homogeneous catalyst ii) heterogeneous catalyst iii) molecular sieves
iv) porous materials having aluminosilicate framework

d) Toxic chemicals occuring in environment are added by …
i) nature ii) man made industries iii) animals iv) outer planet

e) Nanomaterials have size ……..
i) 10^{-8} m ii) 10^{-7} m iii) 10^{-10} m iv) 10^{-9} m

Q2) Answer the following in brief . (any 4/6) **[4 x 1 = 4 Marks]**

a) What is full form of HOMO and LUMO ?

b) Define the term unit cell.

c) What are zeolites?

d) Define the term chemical toxicology.

e) Define the term nanomaterial.

f) Define the term Lewis base.

SECTION: B

Q3) Answer the following. (any 4/6) **[2 X 4 = 8 M]**

I) Explain the term Arrhenius base with one example.
II) What are protic solvents ?
III) What are uses of Born Haber cycle ?
IV) What are the applications of zeolites ?
V) What is ultra sonification?
VI) Write the cause of Minamata disease.

SECTION: C

Q4) Answer in short . (any 4/6) **[2 X 4 = 8M]**

I) What is acid and base according to Bronsted-Lowry concept?

II) Explain tetrahedral hole in closest packing.

III) What are structure directing agents(SDAs) ?

IV) What is cryochemical synthesis ?

V) Write two names of the toxic trace elements in water.

VI) Write the reaction for ionization of water.

SECTION: D

Q5) Attempt the following (any 2/4) **[5 X 2 = 10 M]**

I) Explain Lewis acid base theory with examples

II) Explain types of voids.

III) Write classification of zeolites.

IV) Write biochemical effects of Arsenic.

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