

T.Y.B.SC. SEM – VI (CBCS - 2016 Course) : SUMMER - 2019
SUBJECT : CHEMISTRY : INORGANIC CHEMISTRY – II

Day : Wednesday
Date : 10/04/2019

S-2019-0903

Time : 03.00 P.M. To 06.00 P.M
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.

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- Q.1** Attempt **ANY TWO** of the following: [12]
- a) Construct M.O. energy level diagram for C₂ molecule and discuss the bonding in it.
 - b) Discuss Ion-exchange method for the separation of the lanthanide elements.
 - c) When silicon doped with Arsenic it shows n-type semi-conductivity. Explain.
- Q.2** Attempt **ANY TWO** of the following: [12]
- a) Write a comparison between BMO and ABMO.
 - b) Construct MO energy level diagram for O₂ molecule and discuss bonding in it.
 - c) Write a note on biochemical effects of Lead.
- Q.3** Attempt **ANY TWO** of the following: [12]
- a) What is Ziegler-Natta catalyst? Explain the advantages of Ziegler Natta catalyst with suitable example.
 - b) What are transuranic elements? Explain any two methods for preparation of transuranic elements.
 - c) Describe, why diamond is an insulator?
- Q.4** Attempt **ANY THREE** of the following: [12]
- a) Write the differences between Atomic Orbital (AO) and Molecular Orbitals (MO).
 - b) What are biochemical effects of Arsenic?
 - c) Explain the properties of homogeneous catalyst.
 - d) NiO when heated shows n-type of semi-conductivity. Explain with diagram.
- Q.5** Attempt **ANY FOUR** of the following: [12]
- a) Explain combination of P – P Atomic Orbitals.
 - b) Define following terms:
 - i) Nuclear fuel ii) Fusion fuel iii) Fission fuel
 - c) Explain electrical conductivity in divalent metals.
 - d) Compare sigma M.O.S and Pi M.O.S. on the basis of Molecular Orbital Theory.
 - e) Define and explain the terms in brief with example:
 - i) Intrinsic semi-conductivity ii) Extrinsic semi-conductivity
 - f) What is impact of Toxic Chemicals on enzymes?

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