

T.Y.B.SC. SEM-VI (2014 COURSE): SUMMER 2019
SUBJECT: CHEMISTRY: INORGANIC CHEMISTRY-VI

Day : *Wednesday*
Date : *10-04-2019*

Time : *3.00 P.M. To 5.00 P.M.*
Max. Marks: 40.

S-2019-1029

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate full marks.
- 3) Draw neat labeled diagrams **WHEREVER** necessary.

Q.1 Attempt any **TWO** of the following: **(10)**

- a) Draw MO energy level diagram of N_2 molecule and discuss the bonding in it.
- b) Write the rules for LCAO method on the basis of MO theory.
- c) Discuss the mechanism of Polymerisation by Ziegler-Natta catalyst.

Q.2 Attempt any **TWO** of the following: **(10)**

- a) What is Intrinsic semiconductivity? Why pure graphite shows intrinsic semiconductivity?
- b) Write a comparison between VBT and MOT.
- c) What do you mean by chemical toxicology? Also explain toxic effects of lead and arsenic.

Q.3 Attempt any **TWO** of the following: **(10)**

- a) What is lanthanide contraction? Explain causes and consequences of lanthanide contraction.
- b) Why silicon doped with Gallium shows p-type semiconductivity?
- c) What are transuranic elements? Explain any one method for preparation of transuranic element.

Q.4 Attempt any **TWO** of the following: **(10)**

- a) Give comparison between Atomic orbital and Molecular orbital.
- b) Define –
(i) Catalyst (ii) Homogeneous catalyst (iii) Heterogeneous catalyst.
Also explain the importance of catalysis.
- c) Write a note on: Applications of semiconductors.

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