

BACHELOR OF SCIENCE (CBCS - 2016 COURSE)
T. Y. B Sc. Sem-VI :SUMMER- 2022
SUBJECT : CHEMISTRY : INORGANIC CHEMISTRY-II

Day : Tuesday
Date : 5/7/2022

S-15051-2022

Time : 11:00 AM-02:00 PM
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 CO molecule and discuss the bonding in it.
- b) Silicon doped with Gallium shows P-type semi-conductivity. Explain with diagram.
- c) Define homogeneous catalysis and write different types and properties of homogeneous catalysts.

Q.2 Attempt **ANY TWO** of the following: [12]

- a) Construct M.O energy level diagram for F₂ molecule and discuss the bonding in it.
- b) Write a comparison between VBT and MOT.
- c) What is catalysis? Write the mechanism of polymerization by Ziegler-Natta Catalyst.

Q.3 Attempt **ANY TWO** of the following: [12]

- a) Write a classification of Toxic substances.
- b) Describe ion-exchange method for the separation of the lanthanide elements.
- c) What is Intrinsic semi-conductivity? Why pure graphite shows intrinsic semi-conductivity?

Q.4 Attempt **ANY THREE** of the following: [12]

- a) ZnO when heated shows n-type semi-conductivity. Explain with diagram.
- b) Explain any one method for preparation of Transuranic elements.
- c) Explain impact of Toxic chemicals on Enzymes.
- d) Write the rules of LCAO on the basis of M.O theory.

Q.5 Attempt **ANY FOUR** of the following: [12]

- a) Explain applications of lanthanides.
- b) Write the total reaction of Monsanto process and write the advantages of the catalyst used in the process.
- c) Explain in brief toxic effects of Arsenic.
- d) Why monovalent metals exhibit good electrical conductivity?
- e) Write any three points of differences between B.M.O. and A.B.M.O.
- f) What is Lanthanide contraction?

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