

T.Y.B.SC. SEM – VI (2014 COURSE) : SUMMER - 2018
SUBJECT : CHEMISTRY : INORGANIC CHEMISTRY – VI

Day : **Thursday**
Date : **12/04/2018**

Time **12.00 NOON TO 02.00 PM**
Max. Marks : 40

S-2018-0770

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labelled diagrams **WHEREVER** necessary.

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

- a) Construct MO energy level diagram for O₂ molecule and explain the bonding in it.
- b) Write a comparison between V.B.T. and M.O.T.
- c) What is chemical toxicology? Explain the sources of As, Cd, Pb and Hg and also explain the effects of these elements on human.

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

- a) Germanium doped with Gallium shows P-type semi-conductivity. Explain.
- b) Give the applications of semi-conductors.
- c) Describe important assumptions of MO theory for an octahedral complex.

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

- a) What is lanthanide contraction? Give causes and consequences of lanthanide contraction.
- b) Define nuclear fuels. What are different types of nuclear fuels? Explain any one type of nuclear fuel with suitable example.
- c) Discuss the mechanism of polymerization by Ziegler-Natta Catalyst.

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

- a) Describe n-type semi-conductivity in ZnO.
- b) Draw MO energy level diagram of NO and explain the bonding in NO molecule.
- c) Explain the impact of toxic chemicals on enzymes.

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