

**BACHELOR OF SCIENCE (CBCS-2018 COURSE)**  
**T. Y. B. Sc. Sem-VI :SUMMER- 2022**  
**SUBJECT : CHEMISTRY : INORGANIC CHEMISTRY-II**

Day : Tuesday  
Date : 5/7/2022

**S-18471-2022**

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.
  - 3) Draw neat and labeled diagram wherever necessary.
- 

**Q.1** Attempt **ANY TWO** of the following : **(12)**

- a) Construct M.O. energy level diagram for  $N_2$  molecule and discuss the bonding in it.
- b) What is homogeneous catalysis? Write types and properties of homogeneous catalyst.
- c) What are transuranic elements? Explain any two methods for preparation of transuranic elements.

**Q.2** Attempt **ANY TWO** of the following : **(12)**

- a) Write a comparison between VBT and MOT.
- b) Explain bio chemical effects of Lead.
- c) Silicon doped with Arsenic shows n-type semiconductivity. Explain.

**Q.3** Attempt **ANY TWO** of the following : **(12)**

- a) Explain combination of p-p atomic orbitals.
- b) What is Lanthanide contraction? Explain causes and consequences of Lanthanide contraction.
- c) Explain why diamond is an insulator, using  $N(E)$  by  $(E)$  curves.

**Q.4** Attempt **ANY THREE** of the following : **(12)**

- a) Write a comparison between BMO and ABMO.
- b) Explain different applications of lanthanide elements.
- c) What is Ziegler-Natta Catalyst? Explain the advantages of Ziegler Natta Catalyst.
- d) ZnO when heated, shows n-type semiconductivity. Explain.

**Q.5** Attempt **ANY FOUR** of the following : **(12)**

- a) What are nuclear fission fuels and fusion fuels?
- b) Write classification of toxic substances.
- c) Explain electrical conductivity in Monovalent metals using  $N(E)$  by  $E$  curves.
- d) Explain biochemical effects of Mercury.
- e) Write the rules for L CAO method.
- f) Write a short note on : Misch metal.

\*\*\*\*\*