

**CHT15 - Chemistry Paper-III - Discipline Specific Elective - Chemistry-VII :  
Inorganic Materials of Industrial Importance**

P. Pages : 2

GUG/W/22/13343

Time : Three Hours



Max. Marks : 50

- Notes :
1. All questions carry equal marks.
  2. Diagrams and chemical equation should be given wherever necessary.
  3. Illustrate your answers wherever necessary with the help of neat sketches.
  4. Use of slide rule, Logarithmic tables, Steam tables, Mollier's chart, Drawing instruments, Thermodynamic tables for moist air, Psychrometric charts and Refrigeration charts is permitted. Non Programmable Electronic Calculator is allowed
  5. Discuss the reaction, mechanism wherever necessary.

1.
  - a) What is glass? Explain manufacture and processing of glass. **05**
  - b) What is cement? Explain Manufacture of cement and setting process. **05**

**OR**

  - c) Explain composition and properties of soda lime glass, armoured glass. **2½**
  - d) Explain high technology ceramics **2½**
  - e) Explain superconducting and semiconducting oxides **2½**
  - f) What are carbon nanotubes? **2½**
  
2.
  - a) What are fertilizers? Explain the manufacture of (i) Urea (ii) Potassium sulphate (iii) Ammonium phosphate **05**
  - b) What is mean by preliminary treatment of Surface? Explain classification of surface coating. **05**

**OR**

  - c) Explain paint and pigments formulation **2½**
  - d) Discuss manufacture of mixed fertilizer **2½**
  - e) What are special paints **2½**
  - f) Explain wax polishing and metallic coating. **2½**
  
3.
  - a) Explain manufacture of steel in detail. **05**
  - b) What are primary and secondary battery? Explain characteristics of battery. **05**

**OR**

  - c) Give the classification of alloys. **2½**
  - d) Explain the working of Li-Battery and solar cell. **2½**

- e) State argon treatment and heat treatment for surface treatment of steel. 2½
- f) Explain nitriding for surface treatment of steel. 2½
- 4.** a) Compare the activity and reactivity as man – made catalyst and enzyme **05**
- b) Give any two methods of preparation and properties of following chemical explosive **05**  
 (i) Leadazide (ii) PETN.
- OR**
- c) Give applications of zeolite as catalyst 2½
- d) State factors affecting on enzyme activity. 2½
- e) Explain Haber’s process. 2½
- f) What is mean by rocket propellants 2½
- 5.** Attempt **any ten** of following. **10**
- a) Give composition of borosilicate glass.
- b) Write two important clay.
- c) What is fullerenes.
- d) What is lake pigment.
- e) What is enamels.
- f) Define dyes.
- g) What is polymer cell?
- h) Give two components of battery.
- i) Define carburizing.
- j) Give two properties of RDX.
- k) What is catalysis?
- l) What is deactivation of catalyst?

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