

Roll No. ....

(07/21-II)

**10291**

**M. Sc. EXAMINATION**

(For Batch 2017 & Onwards)

(Fourth Semester)

**CHEMISTRY**

**CH(H)-401**

**Inorganic Special-IV**

*Time : Three Hours*

*Maximum Marks : 70*

**Note :** Attempt *Five* questions in all and Q. No. 1 is compulsory. All questions carry equal marks.

1. Attempt any *seven* of the following :  $2 \times 7 = 14$ 
  - (a) Define molecular recognition with reference to supramolecular chemistry.
  - (b) What is supramolecular reactivity ?
  - (c) What are glass modifiers ?

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- (d) Name some ferrous alloys and give composition of any *one*.
- (e) What are fibre reinforced composites ?
- (f) Define photolithography.
- (g) What are conducting polymers ?
- (h) Define crystallinity.

### Unit I

- 2. Discuss in detail the designing and synthesis of co-receptors molecules and molecular recognition. 14
- 3. (a) What are switching devices ? Explain.
- (b) Discuss transport process and carrier design steps. 14

### Unit II

- 4. Describe Ceramics. Give their structure and discuss properties of it. 14
- 5. (a) Discuss ferrous alloy-stainless steel. Explain its properties.
- (b) What are non-ferrous alloys ? 14

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### Unit III

- 6. (a) What are refractories ? Discuss their properties and give their applications.
- (b) How are Langmuir-Blodgett films prepared ? 14

- 7. (a) Describe microscopic composites.
- (b) What is MOCVD ? Discuss. 14

### Unit IV

- 8. Discuss the molecular shape, structure and configuration of polymeric materials. 14
- 9. (a) Discuss the thermal behaviour of polymeric material.
- (b) Describe stress-strain behaviour of polymers. 14

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