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### **BSCHE - MJ304**

# B.Sc. DEGREE EXAMINATION, NOV/DEC. - 2024 (THIRD SEMESTER) CHEMISTRY

Inorganic and Physical chemistry (Major) (w.e.f. 2023-24 Admitted Batch)

Time: 3 Hours

Max. Marks: 75

#### **SECTION - A**

Answer any five of the following

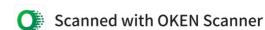
 $[5\times 5=25]$ 

- 1. Explain structural isomerism in complexes.
- 2. Write about Labile and Inert complexes.
- 3. Explain chelate effect.
- 4. Give the classification of organo metallic compounds.
- 5. Write relation between heat capacities derive the relation between heat capacities.
- 6. Explain about Trans effect.
- 7. Write about third Law of Thermodynamics.
- Write about Jahn Teller distortion.

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[P.T.O.



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#### **SECTION - B**

## Answer all of the following:

 $[5\times 10=50]$ 

9. a) Explain valence bond Theory.

OR

- b) Explain crystal field Theory with examples.
- 10. a) Explain SN¹ and SN² substitution reactions in square planar complexes.

OR

- b) Explain transition state, intermediate and activated complex with examples.
- 11. a) Explain Job's method.

OR

- b) Explain factors affecting stability of complexes.
- 12. a) Explain methods of preparation of mono and binuclear carbonyls.

OR

b) Explain Joule Thomson effect and kirchoff's equation.

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13. a) Explain carnot cycle and its efficiency.

OR

b) Explain and derive Helmtoltz and Gibb's equation.

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