

B.Sc. Semester - 4 (CBCS) Examination
July-2025 [OLD COURSE]
CHEMISTRY(CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Que.1(A) Answer the following question. (04)
(1) Give the classification of organometallic compounds based on nature of M-C bond.
- Que.1(B) Answer the following questions. (Any two) (10)
(1) Explain toxicity of Arsenic and Mercury.
(2) Discuss bonding and structure of Ferrocene in details.
(3) Explain role of hemoglobin in biological system.
- Que.2(A) Answer the following question. (04)
(1) Give only synthesis of Valeric acid from Ethyl acetoacetate.
- Que.2(B) Answer the following questions. (Any two) (10)
(1) Explain Claisen condensation with reaction mechanism.
(2) Discuss structure of XeF_6 .
(3) Explain application of noble gases.
- Que.3(A) Answer the following question. (04)
(1) Write note on Tollens oxidation.
- Que.3(B) Answer the following questions. (Any two) (10)
(1) Discuss Rosenmund and Stephen's method for synthesis of aldehyde.
(2) Discuss acidic and basic hydrolysis of ester.
(3) Explain Hell-Volhard-Zelinsky reaction.
- Que.4(A) Answer the following question. (04)
(1) Write note on Parachor.
- Que.4(B) Answer the following questions. (Any two) (10)
(1) Discuss application of dipole moment.
(2) Explain Beckmann rearrangement with mechanism.
(3) Discuss Ostwald's viscometer.
- Que.5(A) Answer the following question. (04)
(1) Write note on Joule – Thomson Effect.
- Que.5(B) Answer the following questions. (Any two) (10)
(1) Define Heat capacity. Derive $C_p - C_v = R$.
(2) Discuss various types of thermodynamic systems.
(3) Explain Zeroth law of thermodynamics.
