

B.Sc. Semester - 4 (CBCS) Examination
March/April-2023 [OLD COURSE]
CHEMISTRY(CORE)

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

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

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