

B.Sc. Semester - 2 (NEP-2020) Examination

JUNE – 2024

CHE: Foundation in Chemistry (Major-3)

Time: 2:00 Hours

Marks: 50

Instructions:

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

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- Que.1 Answer the following questions. (10)
(A) Discuss: Diagonal relationship of Beryllium with Aluminium.
(B) Explain Anomalous behaviour of Lithium & its uses.
OR
- Que.1 Answer the following questions.
(A) Give preparation & physical properties of Na_2CO_3 .
(B) Write a note on Inert pair effect & relative stability of different oxidation state of s-block elements.
- Que.2 Answer the following questions. (10)
(A) Write a note on E^1 elimination reaction with mechanism.
(B) Explain: Saytzeff and Hofmann reaction in detail.
OR
- Que.2 Answer the following questions.
(A) Write a note on E^2 elimination reaction with mechanism.
(B) Explain: Hydroboration oxidation & Catalytic reduction of Alkenes.
- Que.3 Answer the following questions. (10)
(A) Derive the equation to determine the P^{H} of hydrolysis of salt of Weak acid & Strong base.
(B) Describe the Degree of dissociation & Factors affecting on it.
OR
- Que.3 Answer the following questions.
(A) Derive the equation to determine the P^{H} of Weak acid.
(B) What is Buffer solution? Explain the mechanism of Buffer solution.
- Que.4 Answer the following questions. (10)
(A) Explain: Diagonal relationship of Lithium with Magnesium.
(B) Explain Formation of Alkenes by.....
(i) Dehalogenation of Vicinal dihalides &
(ii) Dehydrohalogenation of Alkyl halides.
OR
- Que.4 Answer the following questions.
(A) Explain: the tendency of Ionisation potential & Atomic radii of group-I elements of s-block.
(B) Explain following Electrophilic Addition Reaction of Alkynes.....
(i) Hydro-halogenation & (ii) Hydroboration
- Que.5 Answer the following questions. (10)
(A) Discuss: Formation of Alkynes by.....
(i) Dehydrohalogenation of Vicinal dihalides &
(ii) Dehalogenation of tetrahalides.
(B) Derive the equation to determine the P^{H} of hydrolysis of salt of Weak base & Strong acid.
OR
- Que.5 Answer the following questions.
(A) Explain: Markownikoff's Rules for Alkenes with mechanism.
(B) Derive the equation to determine the P^{H} of Weak base.
