

B.Sc. Semester - 2 (NEP-2020) Examination**MARCH/APRIL-2026****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.

Que.1 Answer the following question. (10)

- (1) Give the preparation method of Na_2CO_3 and give its uses.
- (2) Discuss diagonal relationship of Li with Mg.

OR

Que.1 Answer the following question.

- (1) Explain polarizing power and metallic character of s-block elements.
- (2) Discuss anomalous behavior of Li.

Que.2 Answer the following question. (10)

- (1) Explain Saytzeff's rule with suitable example.
- (2) Compare E1 and E2 reactions.

OR

Que.2 Answer the following question.

- (1) Discuss ozonolysis of alkene with suitable examples and write name of all the products.
- (2) Write electrophilic addition reactions of alkyne (any four)

Que.3 Answer the following question. (10)

- (1) Describe the relationship between K_a and K_b and also describe the ionic product of water.
- (2) Describe dissociation constant of weak acid and weak base.

OR

Que.3 Answer the following question.

- (1) Define buffer solution and discuss its types with suitable examples.
- (2) Derive the equation for pH of salt of strong acid and weak base.

Que.4 Answer the following question. (10)

- (1) Give preparation and uses of plaster of Paris.
- (2) Write note on Diels Alder reaction.

OR

Que.4 Answer the following question.

- (1) Discuss oxymercuration-demercuration reaction with suitable example and mechanism
- (2) Discuss uses of s-block elements.

Que.5 Answer the following question. (10)

- (1) Discuss Markownikov rule with suitable example and mechanism.
- (2) Derive Henderson Hasselbalch equation for buffer solution.

OR

Que.5 Answer the following question.

- (1) Write note on common ion effect.
- (2) Explain: Formation of alkynes.
