

**F.Y.B.SC. SEM – I (2014 Course) : WINTER - 2018**  
**SUBJECT : CHEMISTRY : ORGANIC & INORGANIC CHEMISTRY (C – 12)**

Day : Wednesday

Time : 12.00 NOON TO 02.00 PM

Date : 10/10/2018

**W-2018-0770**

Max. Marks : 40

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SAME** answer book.

**SECTION – I [Organic Chemistry]**

**Q.1** Attempt **ANY TWO** of the following: **[10]**

- a) What are carbonium ions? Discuss their generation and stability.
- b) What is nitration? Discuss the mechanism of nitration of benzene.
- c) Write a note on: Resonance effect.

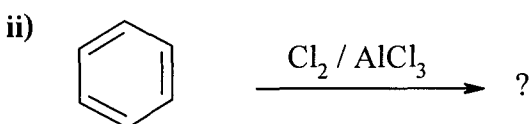
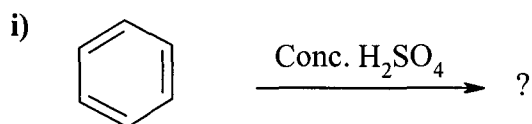
**Q.2** Attempt **ANY TWO** of the following: **[10]**

- a) What is acylation? Discuss the Friedel – Craft acylation of benzene. What are its important features?
- b) Explain the following:
  - i) Aniline is a much more weaker base than cyclohexyl amine.
  - ii) Formic acid is a stronger acid than acetic acid.
- c) Write a note on: Grignard's reaction.

**Q.3** **A)** Attempt **ANY ONE** of the following: **[05]**

- a) What are aldehydes and ketones? How will you carry out the following conversions?
  - i) Acetaldehyde to ethyl alcohol.
  - ii) Benzaldehyde to cinnamic acid.

b) Predict the product /s and suggest the mechanism:



**SECTION – II [Inorganic Chemistry]**

**Q.3** **B)** Attempt **ANY ONE** of the following: **[05]**

a) Draw a rough sketch of periodic table and show the position of alkaline earth metals. Discuss the trends in atomic size, ionic size, ionization potential and reactivity of these elements.

b) Lithium shows diagonal relationship with magnesium. Explain.

**Q.4** Attempt **ANY FIVE** of the following: **[10]**

- a) Write electronic configuration of Na and  $\text{K}^+$  (Atomic nos. Na = 11, K = 19).
- b) The common oxidation state shown by alkali metals is +1. Explain.
- c) Give one example of oxide and peroxide of s-block elements.
- d) Mention any two applications of compounds of s-block elements.
- e) What are crown ethers?
- f) Alkali metals are highly reactive. Why?
- g) Mention the difficulties in isolation of alkali metals.

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