

B.Sc. Semester - 3 (CBCS) Examination
December. -2020 [OLD COURSE]
CHEMISTRY (CORE)

Time: 1:30 Hours

Marks: 42

Instructions:

1. Figure to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any three of the following questions.
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Q. 1 (A) Give any two postulates of wave mechanics. [04]

Q. 1 (B) Answer the following (Any Two) [10]

- (1) Explain: sp - hybridization.
- (2) What is eigen function and eigen value. Explain with examples.
- (3) Give any three differences of BMO and ABMO.

Q. 2 (A) Answer the following: [04]

- (1) Give the atomic number, symbol and name of lanthanide elements.

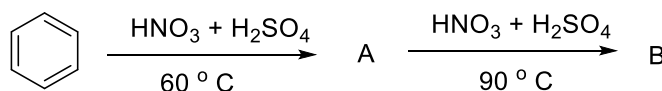
Q. 2 (B) Answer the following (Any Two) [10]

- (1) Give the uses of lanthanides.
- (2) Complete the following reactions.

(a)

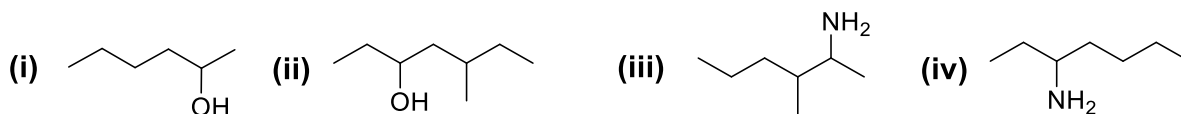


(b)



- (3) Discuss: Fitting reaction with mechanism and applications.

Q. 3 (A) Give the IUPAC name of each of following molecules. [04]



Q. 3 (B) Answer the following (Any Two) [10]

- (1) Write note on: Hinsberg Reaction
- (2) Give the synthesis of alcohol from the reduction of aldehyde, ketone, carboxylic acid and ester.
- (3) Give any three preparations amine.

Q. 4 (A) Answer the following:

[04]

Complete the following reactions.



Q. 4 (B) Answer the following (Any Two)

[10]

- (1) Explain: Kolbe-Schmitt reaction with mechanism and application.
- (2) Explain: Sulphur system by phase diagram.
- (3) Explain: water system by phase diagram.

Q. 5 (A) Give the limitations of Henry's Law.

[04]

Q. 5 (B) Answer the following (Any Two)

[10]

- (1) State and explain Raoult's Law.
- (2) Give any three applications of Distribution law.
- (3) Explain: Nernst distribution law with limitations.
