

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -2 EXAMINATIONS- 2023
B.Tech-I Semester (BT/BI)

COURSE CODE (CREDITS):18B11BT314 (3)

MAX. MARKS: 25

COURSE NAME: GENERAL CHEMISTRY

COURSE INSTRUCTORS: Dr. Gopal Singh Bisht

MAX. TIME: 1 Hour 30 Minutes

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

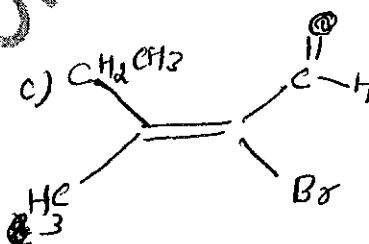
(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q1 Answer the following questions. [CO II]

- How will you prepare 3-hydroxy 3-methyl pentane using appropriate Grignard reagent?[2]
- Rotating any C-3 and C-4 bonds identify the lowest energy conformation and highest energy conformation. [2]



- Give IUPAC names of the followings [3]



- Explain the formation of thermodynamic and kinetic product formations.[1]
- Compare Nucleophilicity and Basicity with suitable examples. Give any two examples of each strong base and strong nucleophile [2]
- Compare stereo specific reactions with stereoselective reactions. [1]
- Why is it necessary to consume O₂ for radical chain reactions? [1]
- How glutathione is biosynthesized in liver. Explain why an overdose of acetaminophen is fatal? How NAC act as an antidote for an acetaminophen overdose. [2]

Q2. Differentiate between SN1 and SN2 reaction pathway of nucleophilic substitution reactions in context of a) kinetics of reactions, b) stereo chemical output, c) Transition state d) Energy profile of reactions. [3] [COIII]

Q3. Draw, explain and compare E1, E2 and E1cb pathway for elimination reactions. [3] [COIII]

Q4. Explain mechanistically why an ionic mechanism results in markonikov addition product and a radical mechanism results in antimarkonikov addition product. [3] [COIII]

Q5. Draw and explain mechanism of following reactions. [2] [COIII]