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Model Question Paper: Final Semester Examination
B.Sc. Semester-VI, DSE-4 (Organic Synthesis)
Section- IV Reagent in Organic synthesis
MCQ (2- Marks)

1. Braking one of these: C-O, C-N, C-X and increasing electron density on carbon atom is called an/a:
   a) Oxidation reaction **b)** Reduction reaction **c)** Both a and b **d)** None
2. The reagent in which, two methylene bridges (-CH2- units) are replaced by sulfur centers are known as:
   a) Lithium dialkyl copper reagent b) Hydride reagent
   c) Dithiane reagent d) CrO3 reagent
3. 1,3-Dithianes reagent is used for the protection of:
   a) carbonyl compounds b) aldehydes c) Ketones d) all
4. Lithium diisopropylamide regent is abbreviated as:
   a) LDAA b) LDO c) LDE d) LDA
5. Hydrogen peroxide when react with benzoyl chloride in presence of a base it produces:
   a) Benzoyl peroxide b) Benzyl peroxide c) Benzyloxy peroxide
   d) none
6. Tributyltin hydride is an:
   a) Organo-Cu compd. b) Organotin compd. c) Organozinc compd. d) None

Short Answer type Questions (5-Marks)

Q-1. Depict the structure of 1, 3-propanedithiol? Describe the chemistry of 1,3-Dithianes reagent.
Q-2. Describe the use of LDA in organic synthesis.
Q-3. How can you prepare lithium diorganocopper reagent? Propose its coupling mechanism with an alkyl halide.
Q-4. Write short notes on:
a) Wilkinson's catalyst b) Phase transfer catalyst

Long answer type questions (12.5)

Q-1. How can you prepare KMnO4 Reagent in the laboratory? Propose the mechanism of dihydroxylation of olefins using KMnO4.
Q-2. How can you prepare Osmium Tetroxide Reagent in the laboratory? Propose the mechanism of dihydroxylation of olefins using OsO4.