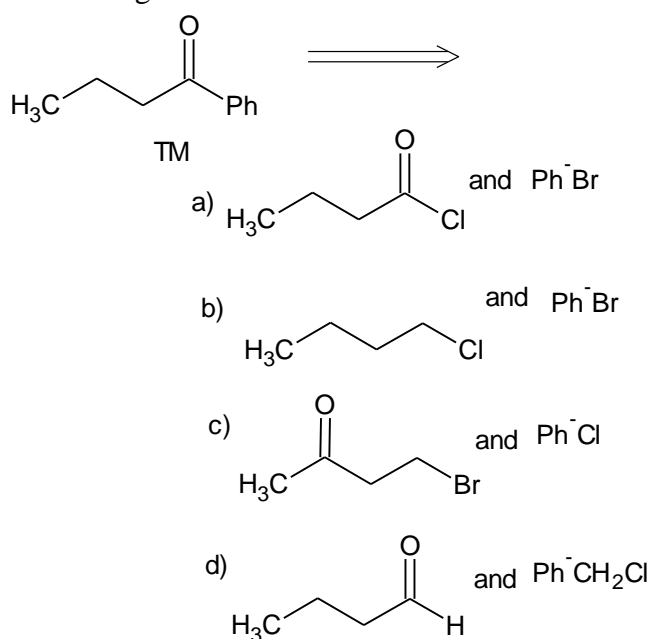


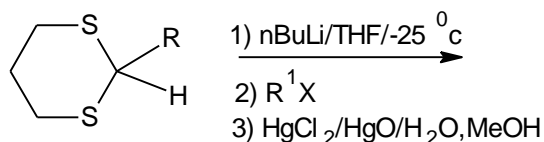
**M.Sc. Part-II**  
**Semester-IV, Paper-II-Synthetic Organic Chemistry**  
**SAMPLE QUESTIONS SET**

1. Reaction in which one of the two identical groups reacts then it is known as
  - a) Enantioselective reaction
  - b) Regioselective reaction
  - c) Chemoselective reaction
  - d) Stereospecific reaction
2. Which of the following is true?
  - a) If a consonant pattern is present in a molecule, a simple synthesis may often be achieved
  - b) If dissonant pattern is present in a molecule, a simple synthesis may often be achieved
  - c) If a consonant pattern is present in a molecule, a simple synthesis is not achieved
  - d) If a consonant pattern is present in a molecule, a retro-synthesis may often be achieved
3. Which of the following is an example of Enantioselective reaction?
  - a) Michael reaction
  - b) Sharpless asymmetric epoxidation
  - c) Diel Alder reaction
  - d) Mannich reaction
4. Michael reaction products in which more stable C=O bond is preserved and weaker C=C bond reacts is an example of
  - a) Chemoselective reaction
  - b) Regioselective reaction
  - c) Stereoselective reaction
  - d) Stereospecific reaction
5. Which of the following statements best describes a synthon?
  - a) Molecule to be synthesised.
  - b) A key intermediate in a reaction sequence
  - c) A transition state involved in a reaction mechanism
  - d) An idealised fragment, usually cation or anion or neutral molecule resulting from disconnection.
6. Why S of dithiane is acidic?
  - a) Sulfur like phosphorus had 3d orbitals capable of accepting electrons: violating octet rule
  - b) Sulfur like phosphorus had 3p orbitals capable of accepting electrons: violating octet rule
  - c) Sulfur like phosphorus had 3d orbitals capable of donating electrons: violating octet rule
  - d) Sulfur like phosphorus had 3p orbitals capable of donating electrons: violating octet rule

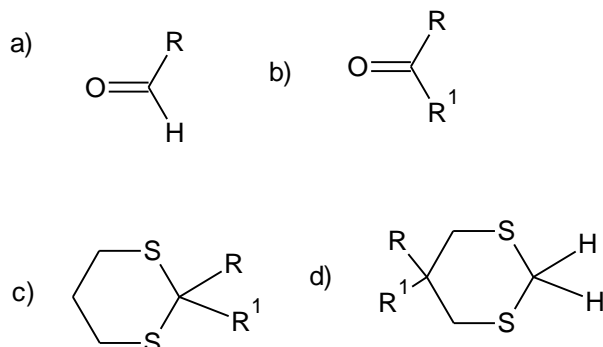
7. When portions of target molecule are synthesised separately and are assembled together at later stage is known as
- Linear synthesis
  - Asymmetric synthesis
  - Convergent synthesis
  - Simple synthesis
8. -----can be used for acetal deprotection
- $H^+/H_2O$
  - $H_2/Pt$
  - DDQ
  - TMS
9. TMS is used to protect which of the following functional group?
- Carboxylic acid
  - Aldehyde
  - Amino
  - Hydroxy
10. Which of the following is false
- Ylides are common donor Synthons
  - Cyanides are common donor synthons
  - enolate are common donor synthons
  - Aryl cation is common donor synthon
11. Which of the following best describes synthetic equivalent?
- Actual substrate use for the forward synthesis
  - Fragment resulting from disconnection
  - Target molecule to be synthesized
  - None of the above
12. Which of the following combination of synthetic equivalent are required for the target molecule given in reaction below?



13) Predict the products formed in the reaction given below



Ans:-



14. The -----is the nucleophilic addition of a carbanion or another nucleophile to an  $\alpha,\beta$ -unsaturated carbonyl compound containing an electron withdrawing group.

- a) Saeguse-Ito oxidation
- b) Kolbe reaction
- c) Stille reaction
- d) Michael reaction

15. Kolbe electrolysis, in which two carboxylic acids decarboxylates, and then formation of - ----

- a) Alkynes
- b) Alkyl halide
- c) Alkanes
- d) Alkenes

16. -----are cyclic chemical compounds that consist of a ring containing several ether groups.

- a) catenanes
- b) cryptands,
- c) Crown ethers
- d) cyclodextrins

17. In Shono oxidation reaction Amides can be oxidized to -----

- a) N- carbonium ion
- b) N-acyliminium ions
- c) Carboxylate ion
- d) N-carbanion ion

18. Stille reaction is -----catalyzed cross coupling reaction.

- a) Molybdenum
- b) palladium
- c) Zinc
- d) Copper

19. In non-Kolbe reaction when a heteroatom (nitrogen or oxygen) is present at the  $\alpha$ -position. The intermediate oxonium ion is trapped by a -----

- a) Electrophile
- b) nucleophile
- c) free radicals
- d) Carbication

20. -----are three-dimensional analogues of crown ethers.

- a) cyclodextrins
- b) catenanes
- c) micelles
- d) Cryptands

21. Negishi coupling is a ----- reaction.

- a) Cycloaddition
- b) Electrocyclic
- c) Sigmatropic
- d) Group Transfer

22. When alkali metal ions are complexed with the cyclic ether 18-crown-6, the most stable complex is formed with:

- a)  $\text{Li}^+$
- b)  $\text{Na}^+$
- c)  $\text{K}^+$
- d)  $\text{Rb}^+$

23. Cyclodextrins are a family of cyclic -----consisting of a macrocyclic ring of glucose subunits joined by  $\alpha$ -1,4 glycosidic bonds

- a) Polysaccharides
- b) Oligosaccharides
- c) Monosaccharides
- d) Disaccharides

24. Which of the following contain N atom?

- a) Cryptands
- b) Crown ether
- c) Cyclodextrin
- d) Polysaccharides

25. 18-crown-6-KMnO<sub>4</sub> in benzene is called?

- a) Red benzene
  - b) Yellow benzene
  - c) Purple benzene
  - d) Orange benzene
-