

Roll No.

Total Pages : 4

1737/M

F-7/2050

**MODERN SYNTHETIC REACTION AND
REARRANGEMENT**

Paper-423

Semester-IV

Time allowed : 2 Hours] [Maximum Marks : 55

Attempt any four questions. All questions carry equal marks.

1. (a) Discuss the synthetic applications of crown ethers,
(b) Explain the Barton reaction with mechanistic details.
2. (a) What happens when olefinic alcohols are treated with hydroperoxides ?

- (b) Explain the formation of aldehydes from dihydro-1,3-oxazine with mechanism.
3. Describe the uses of different palladium compounds in organic synthesis with mechanistic details.
4. (a) How to protect one hydroxyl group in resorcinol ?
(b) Discuss two photocyclisation reaction of alkaloids.
5. (a) Discuss Wagner-Meerwein rearrangement involving bridged bicyclic systems.
(b) Provide a reaction that involve rearrangement having free radical intermediate in small ring compounds.
6. (a) Explain Demjanov rearrangement in bridged bicyclic systems.
(b) Discuss thermal rearrangements in cyclobutanes with importance.
7. (a) Explain Dienone-phenol rearrangement and its significance.

- (b) Discuss the rearrangements of methyl groups (C_9 and C_{19}) in steroids.
8. (a) Describe ring expansion and contraction in A and D rings in steroids.
- (b) How allylic disposition is carried out in steroids? Discuss with examples.
9. (a) Write the mechanism of oxidation of alcohols with LTA.
- (b) Write the photolysis product(s) of N-nitrosoamide.
- (c) How thallium(III)nitrate react with enolisable ketone in methanol?
- (d) Explain how the need of PTCs arrived at.
- (e) Briefly discuss Peterson reaction.
- (f) Give evidence in favour of intermediacy of carbene in a rearrangement?
- (g) Discuss the reaction conditions for formation of radicals from dibenzoylperoxide and AIBN.
- (h) Explain migratory aptitude amongst alkyl groups.
- (i) Give an example of ring expansion of B in steroids.
- (j) How structures of carbonium ion and carbocation differs.
- (k) Give an example of redistribution reaction.