

Advanced Pharmaceutical Chemistry**(Revised Scheme 4)****Q.P. CODE: 9346**

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary. Answer any ten questions.

LONG ESSAY (Answer any TEN)**10 X 10 = 100 Marks**

1. Explain the formation, stability and reactivity of carbanions and discuss the mechanism involved in aldol condensation reaction.
2. Explain the mechanism involved in pinacol-pinacolone and trans-annular rearrangement reaction.
3. Comment on the reactivity of carbenes with suitable examples and explain their role in ring expansion reaction. Add a note on the substitution reaction involving free radicals as intermediate.
4. Explain the formation, structure and stability of nitrenes and enumerate the reaction and mechanism of Curtius rearrangement.
5. What is phase transfer catalysis? Explain the mechanism of phase transfer catalysts with examples and discuss on the use of phase transfer catalysis in epoxide formation and reduction reactions with examples.
6. What is sono chemistry? Enumerate the synthetic applications and limitations of microwave synthesis in organic chemistry and add a note on green reagents.
7. Give an account of combinational chemistry with special emphasis to its applications in drug discovery and discuss on combinatorial library in solution.
8. Explain the use of polymer in the generation of combinatorial libraries and add a note on the solid phase synthesis using macro beads.
9. Explain the use of synthon technology in the synthesis of trimethoprim and ciprofloxacin. With suitable example, explain the disconnection of strategic bonds in heterocyclic rings.
10. Illustrate protection and deprotection reactions of amino and carboxyl groups and explain regioselective reactions with suitable examples.
11. a) Define polymorphism. Give examples, study of polymorphism in Chloramphenicol.
b) Explain the basic rules in disconnection of strategic bonds in Carbocyclic rings as biomimetic approach.
12. Explain Reimer-Tiemann reaction with mechanism. Add a note on free radical intermediates.

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