

**VINAYAKA MISSION'S RESEARCH FOUNDATIONS, SALEM  
(Deemed to be University)**

**Pharm.D DEGREE EXAMINATION - February 2020  
First Year**

**PHARMACEUTICAL ORGANIC CHEMISTRY**

Time: Three hours

Maximum: 70 marks

I. Write essays on any **TWO** questions: (2 x 15 = 30)

1. Explain the mechanisms of following name reactions.  
a) Wittig reaction b) Benzoin condensation c) Cannizzaro reaction
2. a) Explain the nucleophilic substitution reaction with suitable examples (10)  
b) Describe the effect of substituent groups on aromatic nucleus. (5)
3. Explain the preparation of alcohol with special reference to reduction of carbonyl compounds, acids and esters.

II. Write short answers on any **SIX** questions: (6 x 5 = 30)

4. Diazotization and coupling reactions of amines.
5. Preparation, assay and uses of methyl salicylate.
6. Important chemical properties of aldehydes.
7. Schotten- bauman reaction.
8. Sandmeyer's reaction with suitable examples
9. Markownikoff's rule and peroxide effect.
10. Bayer's strain theory.
11. Oxidation- reduction reaction with examples.

III. Write short notes on any **FIVE** question: (5 x 2 = 10)

12. Preparation and medicinal uses of a) salicylic acid b) Vasillin
13. Phase transfer catalysis.
14. Fries rearrangement.
15. Kolbe reaction.
16. Diels alder reaction.
17. Riemer- Tiemann's reaction.

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