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**CL—10—2019**

**FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY**

**D Pharm. (First Year) EXAMINATION**

**MARCH/APRIL, 2019**

**PHARMACEUTICAL ORGANIC CHEMISTRY**

**(Monday, 29-4-2019)**

**Time : 10.00 a.m. to 1.00 p.m.**

*Time—3 Hours*

*Maximum Marks—70*

*N.B. :—* (i) Figures to the right indicate full marks.

(ii) Draw chemical structures and write chemical reactions wherever necessary.

1. Solve any *five* of the following : 5×2=10

- (a) Give reason : Phenol is more acidic than alcohol.
- (b) What is Markonikov's rule ?
- (c) Write medicinal uses of Vanillin.
- (d) Define solubility and B.P.
- (e) What is dehydration of alcohol ? Write any *one* example.
- (f) What is mechanism of benzoin condensation ?
- (g) Define oxidizing and reducing agents with suitable example.

2. Answer any *two* of the following : 2×6=12

- (a) Write definition, mechanism and applications of Hofmann rearrangement reaction.
- (b) Explain in detail Lewis theory and Lowry-Bronsted theory of acid and bases.
- (c) Write method of preparation, assay procedure and uses of aspirin.

P.T.O.

3. Solve any *two* of the following :

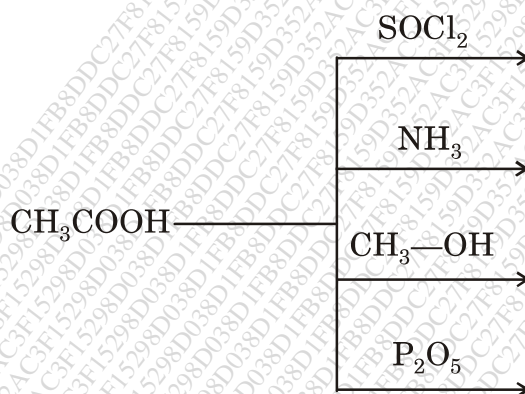
2×6=12

- What are free radicals ? Explain the mechanism of free radical chain reactions.
- Explain mechanism and stereochemistry of S<sub>N</sub>1 reactions.
- Explain directive, activating and deactivating influence of substituents on benzene ring.

4. Answer any *two* of the following :

2×6=12

- Explain in detail stability of carbocations.
- Complete the following reactions :



- Write mechanism of nitration and sulphonation reaction.

5. Answer any *two* of the following :

2×6=12

- Explain Bayer-Strain theory in detail.
- Write mechanism of crossed aldol condensation and Cannizzaro reaction.
- Match the following pairs :

#### Types of isomers

- Nuclear
- Position
- Metamerism
- Functional
- Geometrical
- Optical

#### Examples

- methyl propyl ether and diethyl ether
- crotonic acid and isocrotonic acid
- diethyl ether and butyl alcohol
- (+) & (–) tartaric acid
- n*-butane and isobutane
- o*-xylene and *p*-xylene

6. Answer any *two* of the following :

2×6=12

- (a) What is basicity of amines ? Explain effect of substituents on basicity of amines.
- (b) Write addition reactions and free radical reactions of dienes.
- (c) Write IUPAC names of the following organic compounds :

