

B.Pharm. Third Semester (CBS) Examination
PHARMACEUTICAL CHEMISTRY–III (Organic)

Paper—2

Time : Three Hours]

[Maximum Marks : 80

N.B. :— (1) Question No. 1 is compulsory.

(2) Attempt any four questions out of remaining.

(3) Discuss the reaction, mechanism wherever necessary.

1. Solve any **five** of the following :

(a) Benzene gives substitution reaction rather than addition. Justify.

(b) Write about keto-enol tautomerism.

(c) How will you differentiate 1°, 2° and 3° amines ?

(d) Carboxylic acids are stronger acids than phenols, explain.

(e) Explain Satzeff's and Markonikov's rule with suitable example.

(f) Why Carbonyl compounds gives nucleophilic addition reactions ?

(g) Addition of HBr to propene in the presence of peroxide yields n-propyl bromide, Explain.

4×5=20

2. Give a detailed account of electrophilic aromatic substitution reaction including mechanism, reactivity and orientation. 15

3. Depict and discuss the mechanism of following reactions (any three) :

(a) 2 moles of Acetaldehyde + sod.hydroxide → ?

(b) Propane + Chlorine + UV light → ?

(c) Benzene + Nitric acid + Sulfuric acid → ?

(d) Phenol + Chloroform + Aq. NaOH → ?

(e) Isobutylene + Isobutane + Conc. H₂SO₄ → ?

5×3=15

4. What are Aliphatic nucleophilic substitution reactions ? Discuss in detail SN¹ and SN² reactions. 15

5. How will you plan for the following synthesis, starting from benzene (any **three**) ?

(a) Phenyl acetic acid

(b) 1-phenyl-azo-2-naphthol

(c) 3-bromo-4-amino toluene

(d) M-nitrobenzophenone

(e) Salicylaldehyde

5×3=15

6. (A) What are organometallic compounds ? Discuss in detail about their preparation and synthetic applications. 10

(B) Enlist the various methods of preparation of aldehydes and ketones. 5

7. Write short notes on any **three** of the following :

(a) Functional derivatives of carboxylic acids

(b) Benzyl radical and its stability

(c) Hoffman degradation of amides

(d) E₂ reaction

(e) Aromaticity.

5×3=15