

NRJ/KW/17/4268

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PHARMACEUTICAL CHEMISTRY-III (Organic)

Paper-2

Time : Three Hours]

[Maximum Marks : 80

 $4 \times 5 = 20$

 $5 \times 3 = 15$

 $5 \times 3 = 15$

5

- **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.

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

- 3. Depict and discuss the mechanism of following reactions (any three) :
 - (a) 2 moles of Acetaldehyde + sod.hydroxide \rightarrow ?
 - (b) Propane + Chlorine + UV light \rightarrow ?
 - (c) Benzene + Nitric acid + Sulfuric acid \rightarrow ?
 - (d) Phenol + Chloroform + Aq. NaoH \rightarrow ?
 - (e) Isobutylene + Isobutane + Conc. $H_2SO_4 \rightarrow ?$

4. What are Aliphatic nucleophilic substitution reactions? Discuss in detail SN^1 and SN^2 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
- 6. (A) What are organomettalic compounds ? Discuss in detail about their preparation and synthetic applications.
 - (B) Enlist the various methods of preparation of aldehydes and ketones.
- 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) E_2 reaction
 - (e) Aromaticity.

5×3=15