

AU – 2555

Third Semester B. Tech. (Food, Pulp and Paper, Oil and Paint, Petro Tech.)
Examination

APPLIED ORGANIC CHEMISTRY

Paper – 3 CT 01

(USC – 11001)

P. Pages : 4

Time : Three Hours]

[Max. Marks : 80

- Note : (1) Separate answer book must be used for each section in the subject Geology, Engineering material of civil branch and Separate answer book must be used for Section A and B in Pharmacy and Cosmetic Tech.
- (2) All question carry marks as indicated.
- (3) Answer **Three** questions from Section A and **Three** questions from Section B.
- (4) Diagrams and Chemical equations should be given wherever necessary.

SECTION A

1. (a) Explain the following reactions of pyrrole :—
- (i) Sulphonation
- (ii) Halogenation 4
- (b) What is Friedel Craft's reaction ? Explain acylation of naphthalene. 4
- (c) Explain the following reactions of benzene :—
- (i) Catalytic hydrogenation
- (ii) Substitution with halogens.
- (iii) Addition with halogens. 6

OR

2. (a) Explain basic character of pyridine. 4
- (b) Discuss reduction processes of furan, thiophene and pyridine. 6

AU-2555

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- (c) Explain the following reactions of Furan : -
- (i) Acylation
 - (ii) Bromination. 4
3. (a) What are phenols ? Classify with examples. 3
- (b) How will you obtain the following :—
- (i) Phenolphthalene from phenol
 - (ii) Cateshol from dichlorobenzene.
 - (iii) Aniline from phenol. 6
- (c) Give any one method for preparation of the following:—
- (i) Cresol
 - (ii) Cetyl alcohol. 4
- OR**
4. (a) Explain the following reactions of phenol :—
- (i) Schotten Baumann reaction
 - (ii) Kolbe reaction. 4
- (b) How will you obtain the following ?
- (i) O-hydroxy benzaldehyde from phenol
 - (ii) Picric acid from phenol
 - (iii) Phenol from coal tar. 6
- (c) Discuss the applications of Lauryl alcohol. 3
5. (a) What is diazotization? Give a method for the preparation of benzene diazonium chloride. 3
- (b) How will you obtain the following from aniline ?
- (i) N-methyl aniline

(ii) Acetanilide. 4

(c) Explain the following reaction aniline :—

(i) Coupling with diazonium salt

(ii) Oxidation

(iii) Carbylamine reaction. 6

OR

6. (a) How will you synthesize the following from acetoacetic ester :—

(i) Methyl uracil

(ii) Crotonic acid

(iii) Ethyl methyl ketone. 6

(b) How will you obtain the following from benzene diazonium chloride ?

(i) Thiophenol

(ii) Nitrobenzene. 4

(c) What is active methylene group ? Give two example with their structure ? 3

SECTION B

7. (a) Discuss nitration of benzene with fortified spent acid (HNO_3) by continuous nitration process. Draw flow diagram. 6

(b) Explain the construction and working of Batch sulphonation kettle. 4

(c) What is aromatic nitration ? Explain the various nitrating agents. 4

OR

8. (a) Discuss the technical process for nitration of naphthalene. 6

(b) What is sulphonation? Explain its kinetics and mechanism. 6

(c) Give the list of various nitrating agents. 2

9. (a) What is halogenation ? List various reagents used for chlorination, bromination, iodination and fluorination. 4
- (b) How will you obtain
- (i) Teflon ?
- (ii) P.V.C. ? 6
- (c) Give the classification of polymers on the basis of structure. 3

OR

10. (a) Discuss the various steps involved in the manufacture of bakelite. Give schematic representation. 7
- (b) Discuss the technical preparation of vinyl chloride. 6
11. (a) What are terpenes ? How are they classified ? 3
- (b) Describe industrial application of the following : -
- (i) Starch
- (ii) Sucrose. 4
- (c) Discuss the extraction, properties and uses of alpha - pinene. 6

OR

12. (a) Discuss the various preservatives used in food products. 4
- (b) What are antioxidants ? Explain the applications of antioxidants. 3
- (c) What are carbohydrates ? Explain the classification of carbohydrates with suitable examples. 4
- (d) Write the structures of isomers of pinene and glucose. 2

