B.Tech. Fourth Semester (Chem. / Poly / Food / Pulp / Oil / Petro.) (Old)

Organic Chemistry: 4 SCE 2

P. Pages : 2 | AU - 3116

Time : Three Hours | Max. Marks : 80

Notes :
1. All question carry equal marks.
2. Answer **three** question from Section A and **three** question from Section B.
3. Due credit will be given to neatness and adequate dimensions.
4. Diagrams and chemical equations should be given wherever necessary.
5. Illustrate your answer necessary with the help of neat sketches.
6. Discuss the reaction, mechanism wherever necessary.

SECTION - A

1. a) What are heterocyclic compounds? Classify. **3**

b) Explain the acedic properties of Pyrrole. **3**

c) Discuss the following chemical reactions of Naphthalene:- **8**
i) Sulphonation ii) Oxidation
iii) Nitration iv) Chlorination

OR

2. a) How will you prepare the followings from benzene? **4**
i) Acetophenone ii) Cyclohexane

b) Explain the basic character of Pyridine. **2**

c) How will you prepare the followings? **any two.** **4**
i) Furan from mucic acid ii) Furfural from Furan
iii) Pyrrolidine from pyrrole

d) Discuss any two methods for the preparation of Anthracene. **4**

3. a) How will you obtained the followings? **6**
i) Bakelite from Phenol
ii) Fluorescein from resorcinol
iii) Acetic acid from malonic acid

b) How will you prepare the followings from malonic ester? **4**
i) Succinic acid ii) Adipic acid

c) Describe the synthetic uses of Acetoacetic ester. **3**

OR

4. a) How will you obtained the followings? **6**
i) Picric acid from phenol ii) Catechol from o-dichlorobenzene
iii) Benzoic acid from salicylic acid

b) Explain the acidity of carboxylic acid. **3**

c) Give the synthesis of Acetoacetic ester from ethyl acetate and Phenol from cumene. **4**

5. a) What are terpenes? Classify. **3**

b) Explain the following reactions of Aniline. **10**
i) Sulphonation ii) Nitration
iii) Alkylation iv) Oxidation
v) Coupling reaction

OR

6. a) What is diazotisation ? Discuss the laboratory preparation of Benzene diazonium chloride. **5**

b) Give the industrial applications of starch and Glucose. **4**

c) Give any two preparation of Aniline. **4**

SECTION - B

7. a) Discuss the technical preparation of nitronaphthalene. **7**

b) What is aromatic nitration? Explain the mechanism. **4**

c) List the various nitrating agents. **3**

OR

8. a) Discuss the technical preparation of nitrobenzene. **6**

b) What are nitrating agents? Discuss the kinetics of nitration. **5**

c) Explain the diagram and working of Biazzi nitrator. **3**

9. a) Discuss the aromatic sulphonation. Explain the mechanism. **5**

b) Describe the sulphonation of Caster oil. **6**

c) Explain the Thermodynamics of sulphonation process. **2**

OR

10. a) Discuss the sulphonation of Naphthalene. **7**

b) Explain the sulphonation of dimethyl ether. **6**

11. a) Discuss the technical preparation of followings- **10**
i) Poly Vinyl chloride ii) Poly isocynates

b) What are polymers? Explain the classification with suitable examples. **3**

OR

12. a) What is polymerization? Explain with suitable examples. **4**

b) Discuss the technical preparation of the followings. **6**
i) Polyvinyl Acetate ii) Polystyrene

c) Differentiate Thermoplastic and Thermosetting Polymers. **3**

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