

Seat No. : _____

DF-112

December-2022

B.Sc., Sem.-III

CC-201 : Chemistry

Time : 2½ Hours]

[Max. Marks : 70

- Instructions :**
- (1) All questions carry equal marks in Section-I.
 - (2) Figures shown on R.H.S. indicate marks.
 - (3) Question No. 5 is compulsory in Section-II.

SECTION-I

1. Answer the following questions :

- (i) Write a note on Killiani-Fischer synthesis. 7
- (ii) Explain Gabriel-Phthalamide synthesis of amino acid. 7

OR

- (i) Define Epimer and give conversion of Glucose to Mannose. 7
- (ii) Write a note on Iso-electric effect. 7

2. Answer the following questions :

- (i) Explain Nitration of Benzene with mechanism. 7
- (ii) Discuss Oxidation-Reduction reactions of Naphthalene. 7

OR

- (i) Explain that -OH group is O/P directing group with mechanism. 7
- (ii) Explain Howarth synthesis of Naphthalene. 7

3. Answer the following questions :

- (i) Explain Pyridine is more basic than Pyrrole. 7
- (ii) Give conversions : 7
 - (i) EAA → Crotonic acid
 - (ii) Malonic ester → Valeric acid

OR

- (i) Give synthesis of Pyrrole and Furan. 7
- (ii) Define 'Reactive Methylene Group'. Explain synthesis of EAA. 7

4. Answer the following questions :

- (i) Formic acid is more acidic than acetic acid. Explain. 7
(ii) Draw resonating structures of Aniline and Phenoxide ion. 7

OR

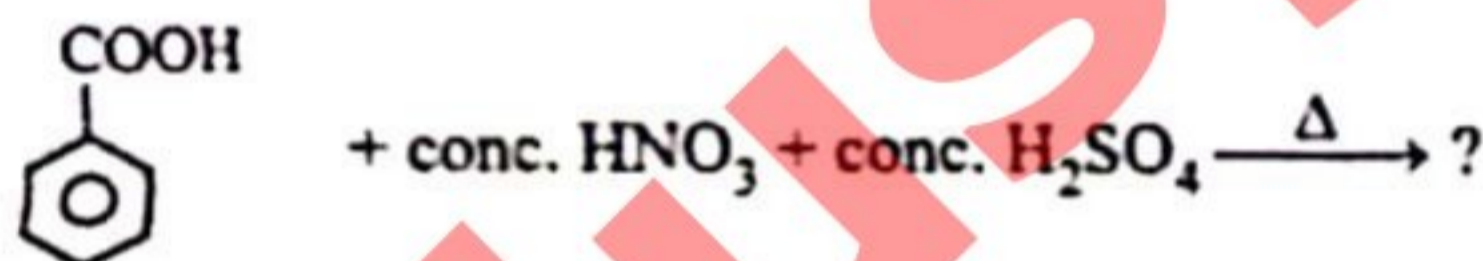
- (i) p-nitro aniline is more basic than aniline. Discuss.
(ii) Write a note on 'Tautomerism'.

SECTION-II

5. Answer in brief : (Any Seven)

14

- (1) Define Anomers.
(2) - Name any one Disaccharide.
(3) - Name any two Neutral amino acids.
(4) - Give M.F. of Naphthalene.
(5) - Complete the reaction & name the product :



- (6) - Benzene on reaction with n-propyl bromide in presence of anhydrous AlBr₃ yields _____.
(7) - Define 'Heterocyclic compounds'.
(8) - Does pyridine gives F & C reaction ? Yes or No ?
(9) Draw the structure of Acetyl Acetone.
(10) Give the conjugate base of methane & ethane.
(11) Calculate PK_a value of 1 N aq. solution of acetic acid (K_a = 1.76 × 10⁻⁵).
(12) Draw the structure of Guanidine.