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## **Question Paper Code: 53902**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Third Semester

## **Chemical Engineering**

### 15UCH302 - ORGANIC CHEMISTRY

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which gives a *meta* nitro compound as the main product upon nitration with a nitric acid-sulfuric acid mixture



2. Which one of the following catalyst is present, when mono-carboxylic acid is heated with an alcohol

(a) carboxylic acid	(b) mineral acids
(c) oxalic acid	(d) formic acid

3. The alkylating agent used in friedel-crafts alkylation is

(a) acid chlorides	(b) alkyl halide
(c) alkyl chlorides	(d) acid anhydrides

4. When benzaldehyde is heated with aqueous ethanolicNaCN it dimerizes to form an

(a) $\beta$ -hydroxy ketone	(b) $\beta$ -hydroxy ester
(c) α– hydroxy ketone	(d) $\alpha$ -hydroxy ester

5. Which is the structure of 3-chloro-1-propene?

(a) $Cl_2$ - $CH_2$ - $CH=CH_2$	(b) CH <sub>2</sub> -CH=CH-CH <sub>2</sub>
(c) $Cl_2$ -CH-CH=CH <sub>2</sub>	(d) $CH_2$ - $CH=CH-Cl_2$

6. Melting point of phenol is

(a) $55^{\circ}$ C (b) $43^{\circ}$ C (c) $25^{\circ}$ C	(d) 15°C
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7. Conversion of primary aromatic amines into diazonium compounds by treatment with sodium nitrite in excess

- (a) HCl (b)  $Al_2O_3$  (c)  $H_2SO_4$  (d) NaCl
- 8. Oxidation of leuco base with lead peroxide followed by treatment with hydrochloric acid yields

(a) Bismark brown (b) malachite green (c) congo red (d) resorcin yellow

9. Which one of the following is essential amino acid?

(a) Lysine (	b) cystine	(c) alanine	(d) proline
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#### 10. Sulphur containing amino acids are

(a) Cysteine & methionine	(b) Methionine & threonine
(c) Cysteine & threonine	(d) Cysteine & Serine

#### PART - B (5 x 2 = 10 Marks)

- 11. What is an esterification reaction? Give the reaction.
- 12. What is an electropilic reaction.?
- 13. What is meant by allylic halogenation?
- 14. What is meant by triphenyl methane dye with examples?
- 15. Define peptide linkage. Draw the structure of dipeptide.

### PART - C (5 x 16 = 80 Marks)

16.	Exp	plain nitration and halogenation reactions with suitable mechanisms.	(16)
		Or	
	(b)	Write the mechanism of the following reaction (i) Esterification (ii) Nitration.	(16)
17.	(a)	Explain in details about the mechanism of the friedel-crafts reactions.	(16)
		Or	
	(b)	Describe the mechanism of the following: (i) Aldol condensation (ii) Be condensation.	enzion (16)
18.	(a)	Explain allylic bromination in the presence and absence of NBS.	(16)
		Or	
	(b)	(i) Describe the estimation procedure for glucose	(8)
		(ii) Write the mechanism of oxidation and reduction reaction of alkanes.	(8)
19.	(a)	Write briefly about the synthesis and classification of Azo dyes.	(16)
		Or	
	(b)	Write briefly about the synthesis and classification of Triphenyl methane dyes.	(16)
20.	(a)	Explain the reaction involve in the following functional group:	
		(i) carboxyl group	(8)
		(ii) Amino group	(8)
		Or	
	(b)	Explain in detail about peptide linkage and end group analysis.	(16)

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