A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 53902

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

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. A nitrating mixture is known as _____. CO1- R

   (a) $HNO_3 + H_2SO_4$ (b) $HNO_3 + HCl$ (c) $HNO_3 + HF$ (d) $HCl + H_2SO_4$

2. What will be the product for the given reaction? CH3OH + CO →? CO1- R

   (a) Ethyl formate (b) Methyl formate (c) Ethyl acetate (d) Methyl acetate

3. Which of the following statements regarding electrophilic aromatic substitution is wrong? CO2- R

   (a) Friedel-Crafts alkylation of benzene can be reversible.

   (b) Friedel-Crafts alkylation with primary alkyl chloride may involve rearrangement

   (c) Friedel-Crafts acylation of nitrobenzene readily gives a meta substitution product.

   (d) None of the above

4. The alkylating agent used in friedel-crafts alkylation is CO2- R

   (a) acid chlorides (b) alkyl halide

   (c) alkyl chlorides (d) acid anhydrides

5. The other name for the branched chain alkanes is CO3- R

   (a) Paraffins (b) Iso-Paraffins (c) Neo Paraffins (d) Napthenes

6. Which is the structure of 3-chloro-1-propene? CO3- R

   (a) Cl_2-CH_2-CH=CH_2 (b) CH_2-CH=CH-CH_2

   (c) Cl_2-CH-CH=CH_2 (d) CH_2-CH=CH-Cl_2

7. An azo dye is formed by a interaction of aromatic diazonium chloride with CO4- R

(a) Phenol (b) Benzene

(c) Nitrous acid (d) An aliphatic primary amine

8. Oxidation of leuco base with lead peroxide followed by treatment with hydrochloric acid yields CO4- R

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

9. Which of the following is an essential amino acid? CO5- R

(a) Cysteine (b) Asparagine (c) Glutamine (d) Phenylalanine

10. Sulphur containing amino acids are CO5- R

(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. CO1- R

12. Write free radical reaction. CO2- R

13. What is meant by allylic halogenation? CO3- R

14. What is congo dye? Give its uses. CO4- R

15. Define peptide linkage. Draw the structure of dipeptide CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) Explain nitration and halogenation reactions with suitable mechanisms. CO1-U (16)

Or

(b) (i) Discuss about the esterification reaction with example CO1-U (8)

(ii) Give two examples for oxidation and reduction reaction and explain. CO1-U (8)

17. (a) Explain in details about the mechanism of the friedel-crafts reactions. CO2-U (16)

Or

	(b)	Explain the following (i) Benzion condensation (ii) Addition HBR on Alkene in presence of peroxide	CO2-U	(16)
18.	(a)	Explain allylic bromination in the presence and absence of NBS.	CO3-U	(16)
		Or		
	(b)	Explain the estimation procedure of following (i) Phenol (ii) Glucose	CO3-U	(16)
19.	(a)	Write briefly about the synthesis and classification of Azo dyes.	CO4- U	(16)
		Or		
	(b)	Write the synthesis and uses of melachite green and methyl orange.	CO4- U	(16)
20.	(a)	Explain in detail about peptide linkage and end group analysis.	CO5- U	(16)
		Or		
	(b)	(i) Write a short note on color reaction of proteins	CO5- U	(8)
		(ii) Explain any two synthetic methods for amino acids.	CO5- U	(8)