Question Paper

Exam Date & Time: 22-Nov-2019 (02:00 PM - 05:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENES
END SEMESTER THEORY EXAMINATIONS- NOV 2019
III SEMESTER B.Sc.(Applied Sciences) IN ENGINEERING
ORGANIC CHEMISTRY-I [ICH 231 - S2]

Marks: 100 **Duration: 180 mins.**

Answer 5 out of 8 questions.

1)		Explain the three preparations and three chemical properties of alkanes. Justify: Decrease in boiling point with an increase in branching in alkanes.	(8)
	A)		
	B)	Give the reactions of alkyl halides to form the following: i) Methyl alcohol ii) Ethylamine iii) Ethyl cyanide iv) Diethyl ether v) PropyneEthylene	(6)
	C)	Write a note on the following: i) Fluorescent brightening agents ii) The modern theory of dyes	(6)
2)		Explain the classification of dyes based on the structure.	(8)
	A)		
	B)	Explain the following methods of preparation of aldehydes i) Rosenmund reduction ii) Oxo process iii) Wacker process	(6)
	C)	Give an explanatory note on N-terminal and C-terminal residue analysis of peptide.	(6)
3)		Write and explain two electrophilic substitutions of benzene. Explain the influence of substituents on further electrophilic substitution reaction in mono-substituted benzene.	(8)
	A)		
	B)	Explain the preparation, structure, and applications of cellulose.	(6)
	C)	Discuss in detail the structure of glucose for open chain, configuration, and Haworth representation.	(6)
4)		Explain in detail with diagram the sucrose manufacturing from cane sugar.	(8)

	A)		
	B)	Discuss the concepts of Zwitterion and Isoelectric point of amino acids.	(6)
	C)	Discuss the structure of lactose, maltose, and sucrose.	(6)
5)		Give Reasons:	(8)
	A)	i) Amines are more basic than ammonia ii) Aldehydes are more reactive than Ketones. iii) Aldehydes but not ketones give the positive tests with Tollen's reagent. iv) Alcohols have higher boiling points than alkanes of comparable molecular weights.	
	B)	Write a note on the aromaticity of pyrrole, furan, and pyridine with the help of its molecular orbital structure.	(6)
	C)	Explain two methods of preparation of a mixture of primary, secondary, and tertiary amines.	(6)
6)		Give one method each for the preparation for the following:	(8)
	A)	i) Ethylamine ii) Dimethylamine iii) Trimethylamine iv) Quaternary ammonium salt.	
	B)	Give two tests with reactions to distinguish primary, secondary, and tertiary alcohols.	(6)
	C)	Explain the one synthesis of pyrrole, furan, and thiophene.	(6)
7)		Discuss the following:	(8)
	A)	i) Direct dyes ii) Vat dyes iii) Mordant dyes iv) Disperse dyes	
	B)	How is acetaldehyde prepared from the following? i) Ethyl alcohol ii) Acetylene iii) 1,1-Dichloroethane	(6)
	C)	Explain Chromophores and Auxo- chromophores theory of dyes.	(6)
8)		Discuss the primary, secondary, tertiary, and quaternary structure of proteins.	(8)
	A)		
	B)	Explain in detail three-color tests and their inference of proteins.	(6)
	C)	Write a note on the following: i) Killiani Fisher synthesis ii) Ruff degradation	(6)

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