Question Paper

Exam Date & Time: 28-Apr-2018 (09:30 AM - 12:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES
END SEMESTER THEORY EXAMINATION - APRIL 2018
IV SEMESTER B. S. (ENGG)
Date: 28.04.2018
Time: 9.30 A. M. TO 12.30 P.M.
Bio Organic Chemistry [CH 243]

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

Answer 5 out of 8 questions.

Missing data, if any, may be suitably assumed

1)		Explain the following with suitable examples Chain isomerism, functional isomerism and position isomerism.	(6)
	A)		
	B)	Compare the acidity of carboxylic acids, alcohols, phenols and substituted phenols with examples.	(6)
	C)	What are aliphatic bases? Give an account of their basicity and chemical properties.	(8)
2)		Explain the preparation of diethyl malonate with mechanism.	(6)
	A)		
	B)	Describe the meta directing effect of substituents on acidity.	(6)
	C)	Give an account of chemical properties of mono and dicarboxylic acids.	(8)
3)		Explain the nature of reaction intermediates.	(6)
	A)		
	B)	Give reasons - Methyl amine is stronger base than ammonia - Haloarenes are less reactive than haloalkanes - Dimethylamine is stronger base than trimethylamine	(6)
	C)	Explain the classification of amino acids and proteins.	(8)
4)		Describe the chemical properties of phenols. Add a note on inductive effect.	(6)
	A)		

	B)	Explain the geometrical isomerism in 5, 6 membered rings with suitable examples.	(6)
	C)	Explain the preparation, physical and chemical properties of formic acid.	(8)
5)		Give reasons	(6)
	A)	- ethanol is weaker acid than water but stronger than acetylene - acetaldehyde forms cyanohydrin faster than acetone - acetamide is very slowly hydrolysed with water but rapidly in the presence of an acid or an alkali.	
	B)	Give an account of synthesis of polypeptides.	(6)
	C)	Explain the following Hyperconjugation, isoelectric point, alpha halogenation, syn and antiforms.	(8)
6)		Give an account of colour tests of proteins.	(6)
	A)		
	B)	Give an account of aromaticity and basicity of heterocyclic compounds.	(6)
	C)	Explain the structure, preparation and properties of pyrrole.	(8)
7)		Explain the mechanism of Fridel crafts reaction and nitration in benzene.	(6)
	A)		
	B)	Give reasons - Acetylene is more acidic than ethylene - The boiling points of isomeric alkanes decrease with the increase in the branching of the chain. - Benzene undergoes electrophilic substitution reactions.	(6)
	C)	Give an account of synthetic applications of active methylene compounds.	(8)
8)		Describe the process of electrophoresis and its application.	(6)
	A)		
	B)	Explain the structure of quinoline and its preparation.	(6)
	C)	Explain the following - Pyridine is more basic than pyrrole - Pyridine is less basic than aliphatic amines - Pyrrole can act as weak acid - Thiophene shows aromatic properties.	(8)

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