Question Paper

Exam Date & Time: 25-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-II [ICH 232]

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

Answer 5 out of 8 questions.

1)		Describe the various sources of fats and oils. How are they extracted?	(8)
	A)		
	B)	Discuss the classification of polymers based on source and structure.	(6)
	C)	Explain the following: i) Isotactic polymers ii) Atactic polymer iii) Syndiotactic polymer	(6)
2)		Write the structure and characteristic of natural rubber and describe the following:	(8)
	A)	i) Processing of latex ii) Crepe rubber iii) Smoked rubber	
	B)	Write a note on the following: i) Functionality of polymers ii) Slipping power of polymers iii) Chemical resistance	(6)
	C)	Explain the process of the vulcanization of isoprene units mention its significance.	(6)
3)		Explain the steps involved in the free radical polymerization mechanism of addition polymerization of a polymer.	(8)
	A)		
	B)	Discuss in detail the manufacturing of Vanaspati with a labelled diagram.	(6)
	C)	With a suitable example, explain the role of the following ingredients during the compounding of rubber. i) Pigments ii) Plasticizers iii) Accelerators	(6)
4)		Discuss in detail suspension and emulsion polymerization techniques.	(8)

	A)		
	B)	Explain the preparation properties and uses of the following: i) Butyl rubber ii) Silicon rubber	(6)
	C)	Give reasons for the following and explain the following mechanism: i) Oils are liquid, and fats are solids ii) Soaps can,t be used in hard water	(6)
5)		Write a detailed note on biopolymers, explain each classification in detail with examples.	(8)
	A)		
	B)	Describe the structure, manufacture, and any two sources of cellulose.	(6)
	C)	What are petrochemicals? Give the synthetic route to produce vinyl chloride and butadiene from the components of petroleum. Write any two applications of each.	(6)
6)		Write a note on the following: i) Viscose (Rayon)	(8)
	A)	ii) Regenerated cellulose iii) Cuprammonium Rayon iv) Methylcellulose	
	B)	Calculate the number average and weight average molecular weight of a polymer, polyethylene, from the following data. Mol. Mass of repeating unit, - CH_2 - CH (CH_3) - is 42, D.P. = 400 is 15 %; D.P. = 300, 35 % and D.P.= 250, 50%.	(6)
	C)	Give an account of pharmaceuticals chemistry.	(6)
7)		Discuss the structure and mode of action of Streptomycin and Tetracyclines.	(8)
	A)		
	B)	Explain three methods of catalytic reforming, giving the main reactions involved in it.	(6)
	C)	Draw and explain the Ittner process of the manufacturing of soaps.	(6)
8)		Explain the principle and experimental determination of the molecular weight of polymers by the viscosity method.	(8)
	A)		
	B)	Write a neat diagram and explain the refining of crude petroleum using bubble cap distillation column. Mention the important fractions.	(6)
	C)	How to determine the iodine number and saponification number. Mention two of its significance.	(6)

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