CONTROLLER OF EXAMINATIONS ★ ADDITIONAL
AU CHENNAI 600 025

RollNo. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APR / MAY 2025

Printing and Packaging Technology
Semester IV
CY23C04 - Chemistry for Printing Technology
(Regulation2023)

Time:3hrs Max.Marks: 100

CO1	To introduce the basic concepts of surface chemistry and colloids.
CO2	To impart knowledge on the properties of lubricants and understand the mechanism of adhesive action
CO3	To familiarize the preparation and properties of various commercial polymers, composite materials and foams
CO4	To facilitate the understanding t h e concepts of dye chemistry
CO5	To inculcate understanding of principle, instrumentation and data analysis of instrumental methods of analysis

BL – Bloom's Taxonomy Levels
(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)
(Answer all Questions)

Q.No.	Questions	Marks	CO	BL
1	The gold number of gelatin is 0.01 and that of starch is 25. Which has more protective power and why?	2	1	L4
2	What is Kraft temperature?	2	1	L1
3	On what basis grease is classified?	2	2	L4
4	List four theories of adhesion	2	2	L2
5	Suggest two polymers suitable for packaging applications	2	3	L2
6	Classify polymer based on Intermolecular forces	2	3	L3
7	Write any four dyes classified based on chemical composition	2	4	L1
8	What is a choromophore?	2	4	L3
9	What is the principle behind column chromatography?	2	5	L3
10	Write Bragg's equation with terms defined.	2	5	L4

PART- B(5x 13=65Marks)
(Restrict to a maximum of 2 subdivisions)

Q.No.	Questions	Marks	CO	BL
11 (a)	Outline with graphs, the five types of adsorption Isotherms.	13	1	L3
	OR			
11 (b)	Write notes on a) Electro dialysis b) Tyndall Effect c) Origin of charge on colloidal particles.	4+4+5	1	L3

12 (a)	What are the characteristics of a good lubricant? Any two properties and its method of determination for a good lubricant?	3+10	2	L2
	OR			
12 (b)	Discuss the development of adhesive strength. And also the physical and chemical factors influencing adhesive action.	13	2	L2
13 (a)	Discuss constitution, classification and applications of composite materials with special mention to fiber reinforced composites	13	3	L4
	OR			
13 (b)	Discuss the preparation, properties and uses of polyethylene, polyphenylene oxide and polycarbonate.	13	3	L4
14 (a)	Describe in detail the theories of colour and constitution.	13	4	L4
	OR			
14 (b)	Write the synthesis pathways of methyl red, methyl orange, congo red and malachite green.	13	4	L4
15 (a)	Compare and contrast SEM and TEM with neat diagram used for the morphological studies.	13	5	L4
	OR			
15 (b)	Discuss the principle, instrumentation (block diagram) and applications of TGA and DTA.	13	5	L4

PART- C(1x 15=15Marks)
(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16.	Compose the applications of 1. Surface Science 2. Lubrication and adhesive 3. Polymers and composite 4. Dyes 5. Instrumental methods of characterization For specific usage in printing and packaging technology. Describe each one with specific examples.	15	1-5	L6

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