



Roll No.

--	--	--	--	--	--	--	--	--	--

**ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)****B.E. / B. Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, MAY/JUNE 2024****PRINTING AND PACKAGING TECHNOLOGY  
PT5503 - INKS AND COATINGS  
(Regulation 2015/ 2019)**

Time:3hrs

Max. Marks: 100

CO1	Select suitable raw material for ink preparation.
CO 2	Comprehend the manufacturing process of Inks.
CO 3	Recognize the suitable ink drying mechanism
CO 4	Select the coating and surface modification methods.
CO 5	Follow the standards and rectify the problems used for testing of printing Inks

**BL – Bloom's Taxonomy Levels**

(L1-Remembering, L2-Understanding, L3-Appling, L4-Analysing, L5-Evaluating, L6-Creating)

**PART- A(10x2=20Marks)**

(Answer all Questions)

Q.No	Questions	Marks	CO	BL
1	Name any four additives used in printing inks	2	1	L1
2	How is the drying power of oils are calculated?	2	1	L2
3	Write the purpose of ball mill.	2	2	L2
4	State the ingredients for liquid ink vehicle.	2	2	L1
5	Differentiate leafing and non-leafing pigments properties.	2	3	L1
6	Clarify the working of photochromic inks	2	3	L2
7	List down the use of dyne solution.	2	4	L1
8	What are the factors considered for dip coting?	2	4	L2
9	Define- Gloss	2	5	L1
10	How the light-fastness is measured?	2	5	L2

**PART- B(5x 13=65Marks)**

(Restrict to a maximum of 2 subdivisions)

Q.No	Questions	Marks	CO	BL
11 (a) (i)	Discuss the significance of pigments used in inks and give the preparation of any one in detail.	8	1	L4
(ii)	Describe the types and features of solvents .	5	1	L3
<b>OR</b>				
11 (b) (i)	State the significant role of resin in printing inks and describe the salient feature of one Resin in detail.	8	1	L3
(ii)	Discuss the types and properties of dryers used in printing inks.	5	1	L4
12 (a)	With neat sketch discuss the production of offset inks with equipment required to manufacture it.	13	2	L4
<b>OR</b>				
12 (b)	With neat sketch discuss the parts and functions of various equipment required to manufacture flexographic ink	13	2	L4

(ii)	Describe the production of metallic pigments.	5	3	L3
<b>OR</b>				
13 (b) (i)	Discuss the features and types of thermochromics pigments in detail.	8	3	L4
(ii)	Differentiate cold set and moisture set ink drying mechanism.	5	3	L3
14 (a)	Explain the working principle of Roller coating and Hybrid coating machine.	13	4	L3
<b>OR</b>				
14 (a)	Describe the formulae and properties of any three types of Coatings.	13	4	L3
15 (a) (i)	What is ink rheology? Explain the types of fluid with graph.	7	5	L4
(ii)	Discuss the working of any one type of viscometer with diagram	6	5	L3
<b>OR</b>				
15 (b) (i)	Explain in detail about the ink related problems with respect to ink rheology along with their causes and remedies. ( each process three problems)	6	5	L4
(ii)	What is tack and how it is measured? Explain using a simple sketch.	7	5	L3

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

Q.No	Questions	Marks	CO	BL
16. (i)	Describe the principle and working of any one suitable plastic film surface treater with neat sketch.	10	4	5
(ii)	Discuss the difference and significance of ink drying and curing.	5	3	6

