



RollNo.

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

# ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, NOV / DEC 2024

PRINTING AND PACKAGING TECHNOLOGY

PT5403 PAPER AND BOARD TECHNOLOGY

(Regulation 2019)

Time: 3hrs

Max. Marks: 100

CO1	Summarize the various sources for paper and board manufacturing process
CO2	Appraise the various Properties and testing of papers and paper board
CO3	Follow the standards used for testing of paper and board
CO4	Rectify the paper related problems in printing and packaging
CO5	Recognize the need, importance of corrugated box in printing and packaging applications.

**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	What are the constituents of paper?	2	1	1
2	What is the role of beating in paper manufacturing?	2	1	2
3	How to incorporate watermark in paper manufacturing process?	2	5	2
4	Differentiate between reeling and winding.	2	5	4
5	List down the paper sizes of B3, B4, B5, B6.	2	3	1
6	What is deinking and how it is done?	2	3	2
7	What can be inferred from ash content of paper and paperboard?	2	2	4
8	Differentiate between fold endurance and stiffness.	2	2	4
9	Differentiate between picking and hickies.	2	4	4
10	Differentiate between slurring and doubling.	2	4	4

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

Q.No.	Questions	Marks	CO	BL
11 (a)	Explain in detail about chemical pulping process.	13	1	2
OR				
11 (b)	Explain in detail about the sources of wood fibers and the debarking process.	13	1	2
12 (a)	With neat diagram explain the functioning of paper making machine.	13	5	2
OR				
12 (b)	With neat diagram explain the process of board manufacturing.	13	5	2
13 (a)	With neat diagram explain the metallisation process.	13	3	2
OR				
13 (b)	With neat diagram explain the types and techniques for coating on paper	13	3	2

14 (a)	Explain in detail about the role of grain direction in the properties of paper	13	●	4
<b>OR</b>				
14 (b)	Explain the method for assessing the porosity and smoothness of paper and paper board.	13	2	4
15 (a)	Analyse the reasons for ink related print problems occurring due to paper and paper board properties.	13	4	4
<b>OR</b>				
15 (b)	Analyse the reasons for the problems arising in a web-offset press due to the variations in paper and paper board.	13	4	4

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

Q.No.	Questions	Marks	CO	BL
16.	Explain based on what properties you would assess and select a paper/paper board for packaging of frozen food.	15	4	6

