

Reg. No.

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B.E./ B.TECH. DEGREE EXAMINATIONS, MAY 2023

Eighth Semester

CH18024 – PULP AND PAPER TECHNOLOGY*(Chemical Engineering)***(Regulation 2018)****TIME:3 HOURS****MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Identify the importance of paper industry with their applications.	3
CO 2	Explain the basic characteristics of the raw materials for paper making.	2
CO 3	Apply the knowledge about various unit operations in pulping processes.	3
CO 4	Interpret the processes involved in the manufacture of paper.	5
CO 5	Explain the various testing and evaluation procedures for different types of paper.	5

PART- A (10x2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Classify the Indian paper industry based on chemical weekly magazine.	1	2
2.	Define: Pulping	1	1
3.	Mention the average fiber length and chemical composition in different wood types.	2	1
4.	Differentiate hardwood pulp and softwood pulp.	2	2
5.	List the commonly used burr patterns for sharpening pulp stones.	3	1
6.	Outline the bleaching agents used in various pulping process.	3	2
7.	Compare internal sizing and external sizing of paper.	4	2
8.	Indicate the principal steps involved in the conversion of fiber suspension into paper.	4	2
9.	Mention the testing standards used in the bleached chemical pulp.	5	1
10.	Give four examples for Specialty paper.	5	1

PART- B (5x14 = 70 Marks)

		Marks	CO	RBT LEVEL
11. (a)	(i) Explain in detail about historical background of paper making machines.	(7)	1	3
	(ii) Illustrate the importance of paper industry with their applications.	(7)	1	3

(OR)

(b)	(i) Explain in detail about pulp, paper and paper board.	(7)	1	3
	(ii) Summarize about the importance of paper.	(7)	1	3
12. (a)	Classify some important vegetable fibers used for paper manufacturing and discuss its characteristics and composition.	(14)	2	3
	(OR)			
(b)	Outline the mechanical operations involved in wood preparation for pulping process.	(14)	2	3
13. (a)	(i) Explain in detail about the important grinding variables used in mechanical pulping process.	(7)	3	3
	(ii) With neat sketch explain about stone ground wood process.	(7)	3	3
	(OR)			
(b)	Draw a neat flow sheet of kraft pulping process and discuss it in detail.	(14)	3	3
14. (a)	Explain the types of refiner and various designs of refiner plates.	(14)	4	4
	(OR)			
(b)	Discuss about working of Fourdrinier machine with neat diagram.	(14)	4	4
15. (a)	List and explain the various properties of pulp and paper and their testing methods.	(14)	5	4
	(OR)			
(b)	Categorize the general grades of paper and its applications.	(14)	5	4

PART- C (1x10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	(i) Interpret the base metals used in Sulfite pulping process.	(5)	3	5
	(ii) Explain the steps involved in recovery of cooking chemicals from spent cooking liquors.	(5)	3	5
