

Reg. No.

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B.E./ B.TECH. DEGREE EXAMINATIONS, MAY 2024

Eighth -Semester

CH18024 - PULP AND PAPER TECHNOLOGY*(Chemical Engineering)***(Regulation 2018/2018A)****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.	5
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=20Marks)

(Answer all Questions)

	CO	RBT LEVEL
1. Compare papyrus and parchment.	1	2
2. Mention the three main components of pulp.	1	2
3. Differentiate long fiber pulp and short fiber pulp.	2	2
4. Outline the important properties of the wood that are important for pulping.	2	2
5. Classify the four broad categories of pulping processes.	3	2
6. Enlist the burr patterns used for sharpening the pulp stones for stone groundwood production.	3	2
7. Summarize about functional additives.	4	2
8. Mention the significance of dandy roll.	4	2
9. Outline the testing methods used for brightness reversion of bleached chemical pulps.	5	2
10. Relate pulp viscosity to average chain length of cellulose.	5	2

PART- B (5x 14=70Marks)

	Marks	CO	RBT LEVEL
11. (a) Explain in detail about the Industrial revolution of the 18th and 19th centuries which brought about significant changes in paper manufacturing technology?	(14)	1	3

(OR)

(b) Explain briefly about the developments of paper industry in India.	(14)	1	3
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- 12. (a) (i)** Draw a neat sketch of barking drum and explain its working. (7) 2 4
(ii) Classify fibers and summarize its fiber length, cellulose, hemicellulose and lignin content. (7) 2 4

(OR)

- (b) (i)** Compare hardwood pulp and softwood pulp. (7) 2 4
(ii) List the properties of wood that are important for pulping. (7) 2 4

- 13. (a)** Analyze modifications involved in the Kraft pulping process with neat sketch. (14) 3 4

(OR)

- (b)** Examine the process of cooking chemicals recovered from spent cooking liquors with neat flow sheet. (14) 3 4

- 14. (a)** Examine the parts of paper machine and explain its working. (14) 4 4

(OR)

- (b)** Compare various types of press rolls used in paper industry and recommend the press section used on paper machines producing heavy paper grades. (14) 4 4

- 15. (a)** Categorize the general grades of paper and its applications. (14) 5 4

(OR)

- (b)** List and explain the various properties of pulp and paper and their testing methods. (14) 5 4

PART- C (1x 10=10Marks)

(Q.No.16 is compulsory)

- | | | Marks | CO | RBT LEVEL |
|----------------|--|------------|----------|-----------|
| 16. (i) | Interpret the importance of pulping variables for wood and wood chips. | (5) | 2 | 5 |
| (ii) | Assess the reasons for non-wood items are used as a raw material. | (5) | 2 | 5 |
