

Bachelor of Printing Engineering Examination, 2023
(2nd Year-1st Semester)
Paper Technology

Time : Three hours

Full Marks: 100

Group - I**Answer question no. 1 and any one from the rest. (50)**

1. (a) What are the raw materials used for paper manufacturing? What are the criteria of selecting the proportions of those raw materials for paper making? Describe each criterion briefly. 7
- (b) What the open center portion of fiber cross section is known as? 1
- (c) What is reverse sizing? When is this reverse sizing done? 2
- (d) Write down the function of multiple effect evaporators in chemical recovery of sulphate pulping. 2
- (e) 'Cellulose has many desirable properties for papermaking'- Explain. 5
- (f) 'Digester has an acid preventing lining inside'- Why? 2
- (g) Differentiate between RMP and TMP. 4
- (h) Differentiate between sulphite and sulphate pulping. 5
- (i) Write down the function of antichlor agent with one example. 2

2. (a) Describe the functioning of diffuser with proper diagram. 5
- (b) Write the difference between hot acid and cold acid sulphite pulping process. 4
- (c) What does the large amount of hydrochloric acid formed in chlorination of pulp stage indicate? 3
- (d) 'The use of chlorine dioxide as a bleaching agent has increased over the past several years'-why? 5
- (e) How sulphidity governs rate of pulping? Explain. 3

3. (a) What is internal sizing? Why internal sizing is done? How rosin size is prepared and used? 5
- (b) Discuss about the functioning problem of hydraulic grinder and how the problem can be resolved? 4
- (c) Explain working procedure of disk refiner. Write down its advantages. 6
- (d) Write down the advantages and disadvantages of multistage bleaching. 5

Group - II**Answer any one question. (10)**

4. (a) What are the characteristics the filler need to have to be used in paper manufacturing? Write down the name of any two inorganic filler. 6
- (b) What are synthetic sizes? Where and why are they used? Give one example. 4

5. (a) How recycling of paper is done? Explain briefly. 7
- (b) Why blue dye is added to the pulp? How does it work? 3

[Turn over

Group - III**Answer question no. 8 and any one from the rest. (15)**

6. Describe the wet section of twin wire former and cylinder paper making machine with proper diagram. 5
7. Explain Air knife coater with proper diagram. 5
8. (a) Why the top and bottom drying cylinders are not placed exactly one above other? 1
 (b) What are the differences between A1, RA1 and SRA1 sizes of paper? Why these three series are there? 3
 (c) Write short notes on breast roll and couch roll. 3
 (d) Write short notes on picking and piling problem. 3

Group - IV**Answer question no. 9 and any one from the rest. (25)**

9. (a) Paper is generally open or porous on wire side and closed or fine textured on felt side- Explain? 3
 (b) Why curl is more pronounced with thin papers than thick paper? 2
 (c) What are the factors that affect tearing resistance of paper? 3
 (d) What is Bulking number? 1
 (e) What is Critical Wax number? 1
10. (a) How brightness of paper can be measured? 5
 (b) What are the controlling factors of smoothness of paper? How smoothness can be measured? 5
 (c) What are the causes of dimensional instability of paper? Write down the operating factors of dimensional instability? 5
11. (a) Write short notes on Dennison wax test. 5
 (b) Uniform thickness is most important in printing papers-Justify. 3
 (c) What is contrast gloss? How can it be measured? What does it indicate? 5
 (d) Which are the two properties of paper that are used to study aging of paper? 2
12. (a) What is bursting strength? How can it be measured? What are the factors responsible for bursting strength of paper? 6
 (b) How water resistance of paper can be measured? 3
 (c) Why the density of paper is called apparent density? 2
 (d) What is the Breaking length of paper? Define Tensile Index. 4