

Ex/PRN/PC/B/T/215/2024

Bachelor of Printing Engineering Examination, 2024
(2nd Year-1st Semester)
Paper Technology

Time : Three hours

Full Marks: 100

Group - I

Answer question no. 1 and any two from the rest. (50)

1. (a) If the Newsprint is kept for long time it becomes yellowish in color - Why? 1
(b) What are synthetic sizes? Where are they used in paper making? 2
(c) Paper made from all long fibers will be more porous than one made from short fibers- Justify. 2
(d) What happen if initial heating rate is high in hot acid process of digestion? 2
(e) Why the density of paper is called apparent density? 2
(f) What is Bulking number? 1
(g) Why curl is more pronounced with thin papers than thick paper? 2
(h) Paper produced with cotton fibers is better than those produced by wood fibers-Why? 2
(i) Write down the name of an internal sizing element uses in paper making. 1
(j) Uniform thickness is most important in printing papers - Justify. 2
(k) Binder for offset printing paper should resist water - why? 1
(l) Write down the brightness value of unbleached and bleached mechanical pulp. 2

2. (a) Define H-factor? How does it control quality of paper? 5
(b) Discuss about continuous digester with proper diagram. 6
(c) What are the functions of bleaching in paper making? 4

3. (a) What are the merits and demerits of the papers produced with mechanically grind pulp? 5
(b) Define permanganate number. Why it is necessary to determine? 3
(c) What happens in scrubber of chemical pulping process? 2
(d) Discuss about the functioning and problems of hydraulic grinder. How the problems can be resolved? 5

4. (a) Write down the addition, substitution and oxidation reaction of chlorine with lignin in chlorination process of bleaching. 5
(b) What are the factors on which the digestion time of pulp depends? 5
(c) Explain the functioning of rotary drum vacuum washer with proper diagram. 5

[Turn over

Ex/PRN/PC/B/T/215/2023

Group - II

Answer the following questions.

5. (a) What are the effects of beating on the paper? 4
 (b) What is reverse sizing? When is this reverse sizing done? 3
 (c) 'With most internal sizing methods (rosin or alkaline), hardwood pulps are much easier to size than softwood pulps'-Explain why? 3
6. (a) Describe the wet section of conventional Fourdrinier paper making machine with proper diagram. 5
 (b) Where cylinder type paper making machine is preferred? Why? 3
 (c) Explain trailing blade coater with proper diagram. 4
 (d) What is mottle problem? Which paper property causes this problem? 3

Group - III

Answer question no. 9 and any one from the rest.

7. (a) Write down the causes of two sidedness of paper. 5
 (b) How brightness of paper can be measured? 4
 (c) What is Critical Wax number? 1
8. (a) How oil and grease resistance of paper can be determined? 4
 (b) What are the factors affecting opacity of paper? Write the contrast ratio method of measuring opacity. 6
9. (a) What is internal bonding strength of paper? How can it be measured? 5
 (b) Define machine and cross direction of paper? How machine and cross direction of paper can be identified? 5
 (c) Paper is generally open or porous on wire side and closed or fine textured on felt side-Why? 3
 (d) What are the factors that affect tearing resistance of paper? 2