

Bachelor of Printing Engineering Supplementary Examination, 2017
(2nd Year-1st Semester)
Paper Technology

Time: Three hours

Full Marks: 100

Answer any five questions.

1. (a) Write down the addition, substitution and oxidation reaction of chlorine with lignin in chlorination process of bleaching. 6
 (b) What happens in scrubber of chemical pulping process? 3
 (c) Cellulose has many desirable properties of papermaking-Explain. 5
 (d) What are synthetic sizes? Where they are used? Why? 6

2. (a) What are the effects of beating on the paper? 5
 (b) The use of chlorine dioxide as a bleaching agent has increased over the past several years-why? 5
 (c) What are the purposes of bleaching of pulp? 5
 (d) Discuss in brief the effect of fillers on brightness and strength of paper. 5

3. (a) What are the raw materials generally used for paper making? Write down their functions. 7
 (b) Define machine and cross direction of paper? How machine and cross direction of paper can be identified? 7
 (c) What are the causes of dimensional instability of paper? Write down the operating factors of dimensional instability? 7

4. (a) What happen if initial heating rate is high in hot acid process of digestion? 3
 (b) Write down the function of antichlor agent with one example. 3
 (c) Describe the wet section of conventional fourdrinier machine with proper diagram. 10
 (d) What are the factors on which the digestion of pulp depends? 4

5. (a) Describe hot acid sulphite pulping process. 5
 (b) Write down the causes of two sidedness of paper. 5
 (c) Explain sulphate pulping process with proper block diagram. 10

6. (a) Give a brief overview of the total paper making system. 10
 (b) Explain continuous stock preparation process with apparatus diagram. 10

7. (a) What are the different types of additives added during stock preparation process? Discuss in brief. 10
 (b) 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
 (c) Write difference between hardwood and softwood. 4

8. Write short notes on: 5 x 4
 - (a) RMP & TMP
 - (b) Hollander Beater
 - (c) Semicchemical pulping
 - (d) Multi knife disc type chipper
 - (e) Jordan refiner