

## 11089 : Pulp &amp; Paper Technology-VI : 8 PT 01

P. Pages : 2

Time : Three Hours



AW - 3511

Max. Marks : 80

- Notes :
1. Due credit will be given to neatness and adequate dimensions.
  2. Assume suitable data wherever necessary.
  3. Diagrams and chemical equations should be given wherever necessary.
  4. Illustrate your answer necessary with the help of neat sketches.
  5. Discuss the reaction, mechanism wherever necessary.

## SECTION - A

1. a) What do you understand by crowning of calender rolls? How would you maintain desired crown? 6
- b) Draw a neat diagram of shear cut winder and explain the working of rewinder. 5
- c) What do you understand by ream of writing printing paper? 3

OR

2. a) What do you understand by short grain and long grain sheet? 4
- b) How is chilled calender roll manufactured? 5
- c) Explain how combination cutter is able to cut sheet in two different sizes? 5
3. a) Explain the spray application of starch as surface sizing chemical. 4
- b) How is wet soak paper manufactured? 4
- c) Explain the lamination of plastic on the paper. 5

OR

4. a) List the various factors which affect surface sizing of paper. 4
- b) What is the effect of viscosity, solid content and temperature on surface sizing of paper? 5
- c) During coating of paper what is the role played by casein? Explain in brief manufacturing of casein. 4
5. a) What procedure would you follow to measure the tensile strength of paper? 5
- b) Why testing of paper is necessary? Write down the various benefits which the company accrues due to testing. 5
- c) What do you understand by fluorescence in paper? How would you remove it during brightness measurement? 3

OR

6. a) How would you measure tearing strength of paper? Which factors would affect tearing strength? 5
- b) What do you understand by surface strength of paper? How would you measure it? 5
- c) List the various tests you would use to measure bleach requirement of unbleach pulp. 3

**SECTION - B**

7. a) Write down the flow rates and waste water characteristics of large integrated paper mill. 4
- b) What are the benefits of recycling water in the paper industry? Explain the working of Marx conical saveall. 5
- c) What problems would paper technologist face if condensate from evaporator is recycled. 5

**OR**

8. a) How is odorous gaseous by products form in Kraft pulping process? What steps would you take to minimise its formation? 8
- b) Explain the working of aeration tank of activated sludge process. 6
9. a) Write down the raw material used and properties of class A insulation boards. 5
- b) How would you use a typical fourdrinier paper machine to manufacture insulation boards? 8

**OR**

10. a) Explain the use of Asplund Defibrator to produce pulp for hard board manufacture. 5
- b) In the manufacturing of particle board which binder would you use? Write down in details the furnish used and binder percentage added. 5
- c) How would you finish class C-Roof Insulation boards? 3
11. a) Explain the formation of paper in a hard mode vat. 5
- b) Which type of boards would you use to package confectionery products? Write down the characteristics of such boards. 5
- c) Discuss the various strategies you would follow to conserve steam during evaporation of black liquor in evaporator. 3

**OR**

12. a) How would you water mark hard mode papers? 5
- b) Write down the characteristics of liquid packaging boards. 4
- c) To conserve energy during pulp refining what strategies would you follow. 4

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