

- Q.17 Discuss the effect of temperature and pH on pulp bleaching.
- Q.18 How entrained air in the pulp and liquor affect efficiency of pulp washing?
- Q.19 What are the advantages of press washing?
- Q.20 Discuss the basic setup for bleaching stage in brief.
- Q.21 Define and discuss the thickening factor in brief.
- Q.22 Explain the concept of prebleach in brief.

#### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

- Q.23 Discuss the multi-stage bleaching process with the help of neat flow diagram in detail.
- Q.24 Discuss the different variables affecting the efficiencies of a brown stock washer in detail.
- Q.25 Explain the agitators used for bleaching of pulp in detail with the help of neat diagram.

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### 3rd Sem. / Chemical (Pulp & Paper)

#### Subject : Pulp Washing and Bleaching

Time : 3 Hrs.

M.M. : 60

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (6x1=6)

- Q.1 The entrained liquor from the wood fibers is removed through which of the following processes?
- a) elution                      b) diffusion  
c) fusion                        d) corrosion
- Q.2 What is brightness level of fully bleached sulfite (dissolving) pulps?
- a) 85% ISO                      b) 90% ISO  
c) 95% ISO                      d) 100% ISO
- Q.3 Which of the following bleaching agents is generally used for prebleach?
- a)  $\text{Cl}_2$                               b)  $\text{ClO}_2$   
c)  $\text{O}_3$                                 d)  $\text{H}_2\text{O}_2$

Q.4 Which of the following is not equipment used for brown stock washing?

- a) blower
- b) rotary vacuum drum
- c) displacement drum
- d) compaction baffle

Q.5 In bleach plant operations, pulp predominantly occurs in \_\_\_\_\_?

- a) single-phase system    b) two-phase system
- c) three-phase system    d) four-phase system

Q.6 The maximum theoretical washing effect is given by which of the following terms?

- a) filtrate flow/inlet flow
- b) inlet flow/filtrate flow
- c) filtrate flow x inlet flow
- d) none of the above

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## SECTION-B

**Note:** Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 What is full form of ECF in pulp bleaching?

Q.8 Discuss the brightness.

Q.9 Which unit is used for the measurement of soda loss?

Q.10 Define the screen efficiency.

Q.11 Why alkali used in pulp bleaching operation?

Q.12 What is effect of temperature on washing efficiency?

## SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Describe the operation of chlorine dioxide used in the bleaching of pulp.

Q.14 Discuss the concept of screening and cleaning efficiency.

Q.15 What is bleachability? How it is measured?

Q.16 What is difference between pulp screening and pulp cleaning?

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