

- Q.30 Discuss anyone washer with diagram.  
Q.31 Define Ozone Bleaching.  
Q.32 Difference between agitator and mixer.  
Q.33 Discuss about pulp bleaching process.  
Q.34 Write general Principle on Bleaching  
Q.35 Write a Note on Post Color Number.

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**3rd Sem / Chemical Engineering, pulp and Paper  
Subject:- Pulp Bleaching**

Time : 3Hrs.      M.M. : 100

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory      (10x1=10)

- Q.36 Discuss method of preparation of calcium hydro chlorite in paper industry .  
Q.37 Write short note on:  
1. Washer  
2. Chlorine mixer  
Q.38 What are the various methods for measuring Bleachability. Explain in detail.
- Q.1 \_\_\_\_\_ removal in chemical pulp leads to high fiber bonding in pulp.  
a) Softwood      b) Hardwood  
c) Lignin      d) Pulp
- Q.2 Expand TCF.  
a) Total Carbon free  
b) Tetra chlorine fluoride  
c) Total Chlorine Free  
d) None
- Q.3 Which of the following is used as Bleaching chemical  
a) Hydrogen peroxide b) Ozone  
c) Chlorine dioxide d) All of these
- Q.4 Bleaching of chemical pulp is achieved by lignin addition.  
a) True      b) False

- Q.5 Choose the formula of Sulphuric acid  
a)  $\text{H}_3\text{NSO}_3$       b)  $\text{H}_2\text{SO}_4$   
c)  $\text{HNO}_3$       d)  $\text{H}_4\text{N}_2\text{SO}_2$
- Q.6 Choose the unit of consistency.  
a) kg      b)  $^{\circ}\text{C}$   
c) % age      d) None
- Q.7 Procedure of bleaching are  
a) Mixing      b) Washing  
c) Reaction      d) All of above
- Q.8 In which stage of bleaching NaOH is used?  
a) Hypo tower 1      b)  $\text{Cl}_2$   
c) Alkali tower      d) None
- Q.9 Brightness is a term used to describe the \_\_\_\_\_ of pulp or paper, on a scale from 0 to 100.  
a) Whiteness distribution  
b) Whiteness obstructiveness  
c) Colettes  
d) Bleach
- Q.10 Bleaching chemical characteristics are  
a) Selectivity      b) Efficiency  
c) Both      d) None

### SECTION-B

**Note:** Objective type questions. All questions are compulsory.  $(10 \times 1 = 10)$

Q.11 Define pulp.

- Q.12 Define ph.  
Q.13 Write Full Form of T C F.  
Q.14 Define Pulp Yield.  
Q.15 What is Moisture content of Pulp.  
Q.16 Explain C E H P D and C H E P D stages ?  
Q.17 Write Formula of ozone.  
Q.18 Define Consistency.  
Q.19 Name two bleaching agent?  
Q.20 Write equivalent weight of chlorine

### SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions.  $(12 \times 5 = 60)$
- Q.21 Write about the purpose of bleaching .  
Q.22 Define kappa and Copper Number .  
Q.23 Explain E C F bleaching  
Q.24 Difference Between peroxide and Oxygen bleaching.  
Q.25 Write effect of pulp consistency on Chlorination  
Q.26 Write about the characteristics of bleaching chemicals.  
Q.27 Define brightness. Which apparatus is used for measuring brightness?  
Q.28 Write note on total Chlorine free bleaching.  
Q.29 Write effect of pulp consistency on chlorination.