Q.26 Define and discuss the thickening factor in brief?
Q.27 Discuss the basic principles of generation vacuum?
Q.28 What is the importance of dilution of pulp?
Q.29 What is displacement rate? Discuss its significance?
Q.30 Discuss working of a pressure diffuser in brief?
Q.31 How feed consistency affect the screening operation?
Q.32 Describe the different types of solid pulp impurities removed by selective contaminant removal through screening operation?
Q.33 What is difference between pulp screening and pulp cleaning?
Q.34 Discuss the working of a hydrocyclone used in paper industry?
Q.35 What are the main objectives of screening operation?

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Discuss the different variables affecting the efficiencies of a brown stock washer in detail?
Q.37 Explain the setup and procedure of continuous digester washing operation with the help of a neat diagram?
Q.38 Describe the principle and working of pressure screen with the help of a neat diagram?

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3rd Sem / Chem. P & P
Subject:- Pulp Washing and Cleaning

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 What is the outcome of inefficient brown stock washing?
a) Higher effluent colour
b) Higher chemical oxygen demand
c) Higher biochemical oxygen demand
d) All of the above

Q.2 Which of the following sequence of pulp washing is usually used in the industry?
a) Multistage counter-current
b) Multistage co-current
c) Multistage cross-current
d) Single stage cross-current

Q.3 The entrained liquor from the wood fibers is removed through which of the following processes?
a) Elution b) Diffusion
c) Fusion d) Corrosion

Q.4 What are units of displacement ratio?
a) kg b) s
c) kg/s d) No units

Q.5 Drum speed during washing should vary as function of which of the following variable?

a) Temperature
b) Concentration of liquor
c) Level
d) Pressure

Q.6 Which of the following equipment is used for brown stock washing?

a) Rotary crusher b) Rotary vacuum drum
c) Rotary compressor d) Rotary blower

Q.7 Which of the following factors govern the selection of screening equipment?

a) Temperature b) Type of fiber
c) Pressure d) None of the above

Q.8 The amount of which chemical used in washing is calculated through dilution factor?

a) Acid b) Base
c) Water d) Salt

Q.9 The ratio of reject consistency to the feed consistency is described by which term?

a) Displacement Rate b) Production Rate
c) Thickening Factor d) Dilution Factor

Q.10 What is speed range of belt filters used in washing operation?

a) 0 to 3.5 m min^{-1} b) 3.5 to 35 m min^{-1}
c) 35 to 350 m min^{-1} d) 350 to 3500 m min^{-1}

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Define the washing?
Q.12 What is main objective of centrifugal cleaning?
Q.13 What is dispersing?
Q.14 Write the expression for calculation of dilution factor?
Q.15 Why the dissolved solids in the waste effluent from pulp industry are not acceptable?
Q.16 Define the dilution factor?
Q.17 What is principle of multistage brown stock washer?
Q.18 What is brown stock in pulp and paper industry?
Q.19 Define the screen efficiency?
Q.20 What is the effect of screen aperture on overall performance of the screen?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Discuss the problems associated with carryover of solids due to poor brown stock washing?
Q.22 What is the importance of washing operation in paper industry?
Q.23 What is difference between dilution and extraction?
Q.24 Explain the diffusion in context of pulp washing operation.
Q.25 Why stock inlet consistency is very important in washing?