Q.25 Difference between crushing efficiency and mechanical efficiency?

Q.26 Explain the concept of classifier.

Q.27 Explain sedimentation with diagram.

Q.28 Write about crystallization.

Q.29 Discuss Double motion paste mixers.

Q.30 Write properties and uses of filter media.

Q.31 Explain the concept of material balances over screen capacity and screen effectiveness

Q.32 Discuss the about roll crusher

Q.33 With Diagram, discuss about Hydro-cyclone.

Q.34 Write about Gyrating screens.

Q.35 Explain Vacuum filters?

SECTION-D

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

Q.36 With construction and working, explain ball mill

Q.37 What is separation process. Explain the working of cyclone separator with diagram

Q.38 Write short note on any three:-

a) crusher
b) mixing
c) size reduction
d) centrifuge

3rd Sem / Chem, P&P, Chem Engg. (Spl. Paint Tech.), Chem Engg. (Spl. Polymer Engg.)
Subject:- Mechanical. Operations

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Which of the following is not used as filter aid?

a) Asbestos
b) Diatomaceous earth
c) Purified wood cellulose
d) Rice husk

Q.2 To get a fine talc powder from its granules, the equipment used is

a) Roller crusher b) Ball mill
c) Jaw crusher d) Gyratory crusher

Q.3 As particle size is reduced

a) Screening becomes progressively more difficult
b) Screening becomes progressively easier
c) Capacity and effectiveness of the screen is increased
d) None of these

Q.4 Particle size range in which dust catcher (gravity settling chamber) works most effectively and efficiently is_____microns.

a) < 5 b) 10 to 25
c) < 74 d) > 1000

Q.5 Separation of materials of the same density based on their sizes by using then different rates of flow is called
a) Sorting b) Sizing
c) Flucculation d) Elutriation

Q.6 Filtration capacity of a rotary drum vacumm filter depends upon the
a) Cake thickness
b) Characteristics of the feed slurry
c) Both (a) & (b)
d) Neither (a) nor (b) of the system

Q.7 Filtration of water in a paper mill is done by a/an _____ filter.
a) Open sand b) Plate and frame
c) Vacuum leaf d) Sparkler

Q.8 Convert 10 celcius into kelvin
a) 273 b) 283
c) 263 d) None of above

Q.9 In screen analysis, the notation + 5mm/-10 mm means particles passing through
a) 10 mm screen and retained on 5 mm screen
b) 5 mm screen and retained on 10 mm screen
c) Both 5 mm and 10 mm screens
d) Neither 5 mm nor 10 mm screen

Q.10 With increase in the capacity of screens, the screen effectiveness
a) Remains unchanged
b) Increases
c) Decreases
d) Decreases exponentially

SECTION-B

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

Q.11 Write one name of filter equipment used in industry.
Q.12 What is crushing?
Q.13 Define sedimentation.
Q.14 What is mixing.
Q.15 What is Mechanical Separation?
Q.16 What is particle.
Q.17 Name any two mixing equipments.
Q.18 Define crushing efficiency?
Q.19 Write a disadvantage of Batch process?
Q.20 Write formula of bonds law.

SECTION-C

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

Q.21 Difference between Rittinger's law and Kick's law?
Q.22 Write about size reduction.
Q.23 Classify filteration.
Q.24 Explain mechanism of filteration.