Q.28 Explain in brief gyratory screen with neat and clean diagram.

Q.29 Explain the working of hydro-cyclone.

Q.30 Write a note on vacuum filters.

Q.31 Explain dodge crushers in detail.

Q.32 Explain the mechanism of filtration.

Q.33 Draw a neat laballed diagram of fluid energy mill.

Q.34 Discuss in detail above two arm kneader with neat diagram.

Q.35 Draw the flow sheet for closed circuit grinding and describe briefly.

SECTION-D

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

Q.36 Write short note on any two of the following:

a) Shell and leaf filters.

b) Dodge crusher.

c) Rittinger's law, Bond's law, and kick's law

Q.37 Explain the construction, working and advantages of ball mill with neat and clean diagram

Q.38 With neat and labelled sketch explain the construction and working of plate and frame filter press.

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 Crushers works on the principle of_____

a) Impact b) Compression

c) Gravity d) None

Q.2 Which of the following is used for very fine crushing?

a) jaw crusher b) Hammer Mill

c) Ball Mill d) Dodge crusher

Q.3 Solid particles of different densities are separated by

a) Filters b) Thickener

c) Cyclones d) sorting classifier

Q.4 The energy consumed by ball mill depends on

a) Its speed

b) Its ball load

c) Density of the material

d) All of these

Q.5 Sphericity of a special particle is_____.

a) Zero b) One

c) Infinite d) None

Q.6 Increasing the capacity of a screen____ the screen effectiveness.

a) Decreases b) Increases

c) Does not effect d) None of the above

Q.7 The fluid energy mill involves_____

a) Pressure b) temperature

c) Fluid d) Density

Q.8 Diving force used in filter press is_____.

a) Pressure b) gravity

c) Temperature d) None

Q.9 Which of the following works on the principle of impact?

a) Gyratory Mill b) Jaw crusher

c) Ball Mill d) Roll crusher

Q.10 Size of coarse particles is greater than fine particles

a) True b) False

SECTION-B

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

Q.11 Define Crushing Efficiency.

Q.12 Write name of any one grinder.

Q.13 What is mesh number..

Q.14 Name two types of settings.

Q.15 Efficiency of ideal screen is_____ percent.

Q.16 Write names of any one ultrafine grinders.

Q.17 What is mesh number.

Q.18 Crusher works on the principle of_____ (Impact / Compression)

Q.19 Name any one material used for making screens.

Q.20 Give the name of any two grinder.

SECTION-C

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

Q.21 Explain working of cyclone separator in detail with neat diagram.

Q.22 Explain settling.

Q.23 Write a note on ball mill.

Q.24 Write down the difference between screen capacity and screen effectiveness.

Q.25 Write a note on filteration, filter media and filter aid.

Q.26 Write a brief note on particle shape.

Q.27 Derive the relationship for screen effectiveness.