

- Q.29 Give the classification of filtration.
- Q.30 What are clarifying filters?
- Q.31 Write a note on Sorting classifiers.
- Q.32 What is nozzle discharge centrifuge?
- Q.33 Define cyclone separator.
- Q.34 What is the process of change can mixer?
- Q.35 Define kneader and disperser blade.

SECTION-D

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

- Q.36 Explain in detail the characterization of solid particle.
- Q.37 Explain separation based on the motion of particle through fluid.
- Q.38 Write short notes on any 2 of the following :
- Fluid Energy Mill
 - Material balances over screen capacity
 - Kick's law
 - Rotary drum vacuum filter

No. of Printed Pages : 4
Roll No.

**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 _____ are used at the bottom of the blades.
- a) Spikes b) Serrations
- c) Doctor knife d) Both A & B
- Q.2 What is the average particle size of ultra-fine grinders
- a) 1-20 mm b) 4-10 mm
- c) 5-200 mm d) 9-10 mm
- Q.3 Which of the following gives total volume of the particles?
- a) M_v/P_p b) M_v/D_p
- c) D_p/P_p d) M/P_p
- Q.4 Which circuit resides more energy?
- a) Open b) Closed
- c) Bypass d) Bilateral

- Q.5 Which mixer is used for cohesive solids?
- a) Disperser b) Tumbling mixer
c) Ribbon blender d) Impact wheels
- Q.6 Which size reduction equipment is commonly used in industry?
- a) Impact wheel b) Roller mill
c) Kneader d) None
- Q.7 Which mill is used for small sized particles?
- a) Colloid b) Roller
c) Ball d) Hammer
- Q.8 Which of the following involves vibrations?
- a) Hammer mill b) Ball mill
c) Grizzly screen d) Roll mill
- Q.9 _____ is used for rough & rubber type materials
- a) Exhausting b) Multi whipping
c) Seeking d) Multi scraping
- Q.10 Which works on the principle of impact?
- a) Ball mill b) Jaw crusher
c) Roll mill d) None

SECTION-B

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

- Q.11 Which mixture is called homogenous mixture?
- Q.12 Which particle is irregular particle?

- Q.13 Name any one crushing law.
- Q.14 Write any one name of ultra-fine grinders.
- Q.15 Write unit of pressure.
- Q.16 How many jaw are there in jaw crusher and which jaw is fixed in jaw crusher?
- Q.17 Screening is used for separation of which type of solution?
- Q.18 Name any 2 filter aids.
- Q.19 What is the formula for sphericity for non spherical particle?
- Q.20 Which is best filter used for waste treatment?

SECTION-C

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

- Q.21 Explain particle shape for characterization of solid particles.
- Q.22 Write the formula for finding the number of particles in mixture.
- Q.23 Draw neat sketch of ball mill.
- Q.24 Define Rittinger's law
- Q.25 List various types of size reduction equipment.
- Q.26 Make a flow sheet for closed circuit grinding.
- Q.27 Define Tyler standard screen series.
- Q.28 Describe Gyrotory screen.