Q.23 Define the principle of ball mill and give its use.

Q.24 Draw the sketch of cycle separator explains it's working.

Q25 Write the various difference between crushing and grinding operation.

Q.26 Write a short note on Binary distillation.

Q.27 Explain Isothermal process of thermodynamics.

Q.28 Explain Fourier's law of heat Conduction.

Q.29 Explain Blake Jaw crusher with neat sketch.

Q.30 Explain the concept of Gibbs free energy.

Q.31 Define screening, give its importance.,

Q.32 Explain homogenous and heterogeneous system with example.

Q.33 Explain the working of vibrating screens.

Q.34 With a neat sketch, explain the working of Roll mill.

Q.35 State Kick's law and Bonds law of crushing.

Section-D

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

Q.36 Define Entropy and second law of thermodynamics with suitable example.

Q.37 Describe the simple and steam distillation processes?

Q.38 Explain principle, working and use of Ball mill with neat sketch.

4th Sem. Branch : Plastic Engineering
Subject : Fundamentals of Chemical Engineering/ Unit operation

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 Which of the following works on the principle of compression and impact?

a) Fine crusher b) Jaw crusher

c) Tramp crusher d) Gyratory

Q.2 Which of the following is a type of thermodynamic system?

a) Open system

b) Closed system

c) Thermally isolated system

d) All of the mentioned

Q.3 Fourier law is related to Mass Transfer Operation

a) True b) False

Q.4 Which of the following involves vibrations?

a) Hammer mill b) Ball mill

c) Roll mill d) Grizzly screen

Q.5 Joule was the first to prove that heat is a type of energy, laying the ground work for the fundamental law of thermodynamics.

a) False b) True

Q.6 What is the unit of diffusion coefficient in mass Transfer?

a) m^2 b) S

c) m^2/s d) m/s

Q.7 An isolated system is one in which_____

a) Mass does not cross boundaries of the system, through energy may do so

b) Neither mass nor energy crosses the boundaries of the system

c) Both energy and mass cross the boundaries of the system.

d) Mass crosses the boundary but not the energy

Q.8 Joule was the first scientist to prove that heat is a type of energy, which work on the fundamental law of thermodynamics.

a) True b) False

Q.9 Which of the following laws is applicable for the behaviour of perfect gas_____?

a) Boyle's law b) Charles's law

c) Gas-Lussac law d) All of the above

Q.10 Which is a Mass Transfer operation?

a) Crushing b) Grinding

c) Humidification d) Size enlargement

Section-B

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

Q.11 Define Forced convection.

Q.12 Define Fourier's law.

Q.13 Define Open system in thermodynamics.

Q.14 Define work in thermodynamics.

Q.15 Define mesh number.

Q.16 Define conductivity.

Q.17 Define crushing.

Q.18 Define adiabatic process.

Q.19 Define Thermodynamics.

Q.20 Define Enthalpy.

Section-C

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

Q.21 Explain Fick's law of diffusion.

Q.22 Describe the first law of thermodynamics.