Q.25 Write short note on:

a) Shell and tube heat exchanger

b) Pitot-tube

Roll No. .....

3rd Sem / Branch : Plastic Technology
Sub.: Basics of Chemical Engineering

Time : 3Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 A manometer is used to measure_____.

a) Atmospheric pressure

b) Pressure in pipes and channels

c) Pressure in venturimeter

d) Difference of pressures between two points

Q.2 Heat transfer by _____ may not necessarily require the presence of a medium.

a) Conduction b) Natural convection

c) Forced convection d) Radiation

Q.3 Stefan's block body radiation law can also be derived from _____ law.

a) Kirchhoff's b) Planck's

c) Fourier's d) None of these

Q.4 Stefan-Boltzmann law applies to _____ body.

a) Black b) White

c) Grey d) Any colour

Q.5 Which of the following works on principles of compression and impact?

a) Jaw crusher b) Gyratory crusher

c) Fine crusher d) Tramp crusher

Q.6 Reciprocating pump is a _____.

a) Negative displacement pump

b) Positive displacement pump

c) Diaphragm pump

d) Emulsion pump

SECTION-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

Q.7 If the fluid particle moves in a uniform manner, the flow is called_____.

Q.8 Bernoulli's theorem is based on _____ principle.

Q.9 For small discharge at high pressure _____ pump is preferred.

Q.10 Differential manometer measures _____ two points.

Q.11 Barometer is used to measure_____.

Q.12 Define isolated system.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Explain Beronoulli's theorem and its applications.

Q.14 Name different types of flow in liquids.

Q.15 Write working principle of centrifugal pump.

Q.16 Explain working of cycle separator with neat sketch.

Q.17 Explain manometer and its types.

Q.18 Explain Fourier law of heat conduction for single conductive wall.

Q.19 Discuss thermodynamic system and surroundings.

Q.20 Explain construction and working of ball mill.

Q.21 Discuss the concept of Thermodynamic processes.

Q.22 Write short note on:

a) Butterfly valve b) Ball valve

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Discuss :

a) Explain various head losses in the pipe.

b) Concept of Gibbs free energy

Q.24 Explain filtration principle and various filtration equipments.