SECTION-D

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

Q.23 Explain in detail about Hess's law of constant heat summation

Q.24 2500kg of wet solids containing 70% solids by weight are fed to a tray dryer where it is dried by hot air. The final product obtained is found to contain 1% moisture by weight calculate

i) kg of water removed from wet solids

ii) kg of product obtained

Q.25 Write short note on any two of the following :

a) Sensible Heat b) Latent Heat

c) Theoretical Air d) Excess Air

3rd Sem / Chemical Engg., Chem(P&P)
Subject:- Chemical process calculation

Time : 3Hrs. M.M. : 60

SECTION-A

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

Q.1 100 cm is expressed as

a) 10mm b) 10dm

c) 100m d) 100km

Q.2 standard temperature in Degree Celsius is Equal to

a) 298.15 degree Celsius b) 273.15 degree

c) 25 degree Celsius d) 0 degree Celsius

Q.3 Units of Density are

a) kg b) cm

c) kg/m^3 d) kelvin

Q.4 10 dm is expressed as

a) 100 mm b) 100 cm

c) 100 m d) 100 km

Q.5 1^0 C=.....k

a) 10 b) 274.15

c) 373.15 d) 0

Q.6 C_V is the heat capacity at

a) Constant velocity b) Clear volume

c) Constant volume d) None

SECTION-B

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

Q.7 Explain MKS

Q.8 10 newton=_____ dyne

Q.9 Convert 36 HP into Watts

Q.10 Draw the labeled diagram of pure stream

Q.11 Define normality

Q.12 Write the full form of c_p

SECTION-C

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

Q.13 Describe the concept of bypass stream with the help of neat diagram

Q.14 Write the steps to be followed for energy balance calculation

Q.15 define heat of reaction and head of formation

Q.16 Prove mole%=pressure%=volume%

Q.17 A natural gas has the following composition by volume CH_4=80%, C_2H_6=12%, n-butane-3% and rest N_2. Calculate the composition by weight

Q.18 Explain the concept of gram mole and atom in detail

Q.19 70gm of NAOH are dissolved in water to prepare 500ml solution. Find the normality and molarity of the solution

Q.20 Derive the relation between C_p and C_v

Q.21 With the help of neat diagram explain the recycle stream of material balance

Q.22 Define the terms Molarity and Molality with their Mathematical relations