SECTION-D

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

Q.23 Explain the construction, working, advantages and disadvantages of vapour compression refrigeration cycle with the help of diagram.   (CO3)

Q.24 Explain the construction, working, advantages and disadvantages of plug flow reactor along with diagram.   (CO4)

Q.25 Write short notes on the following-   (CO1)

a)   State function and path function

b)   Homogeneous and Heterogeneous systems.

(Note : Course outcome/CO is for office use only)

3rd Sem / Chemical Engineering

Subject:- Chemical Thermodynamics and Reaction Engineering

Time : 3Hrs.   M.M. : 60

SECTION-A

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

Q.1   Work is a   (CO1)

a)   State function   b)   Path function

c)   Both a & b   d)   None of these

Q.2   Internal energy of an ideal gas depends only on   (CO1)

a)   Temperature   b)   Pressure

c)   Volume   d)   None of these

Q.3   Cannot cycle consist of _____ processes.   (CO3)

a)   One   b)   Two

c)   Three   d)   Four

Q.4   For an ideal gas, which of the following is true   (CO2)

a) $C_P + C_V = R$ b) $C_P - C_V = R$

c) $C_P / C_V = R$ d) $C_V / C_P = R$

Q.5 The half-life period of first order reaction is (CO4)

a) 0.693 x K   b) $6.93 \times K$

c) 693 / K   d) 0.693 / K

Q.6 Rate of reaction depends upon (CO4)

a) Temperature

b) Reactant concentration

c) Both a & b

d) None of these

SECTION-B

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

Q.7 Define extensive property. (CO1)

Q.8 Define heat engine. (CO3)

Q.9 Define internal energy of a thermodynamic system (CO1)

Q.10 Define isobaric process. (CO2)

Q.11 Write full form of CSTR. (CO4)

Q.12 Name any two methods to determine order of reaction. (CO4)

SECTION-C

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

Q.13 Define and explain zeroth law of thermodynamics. (CO1)

Q.14 Calculate the work done for ideal gas undergoing reversible isothermal process. (CO2)

Q.15 Define refrigeration and explain its coefficient of performance. (CO3)

Q.16 Explain various types of system. (CO1)

Q.17 Derive ideal gas law. (CO1)

Q.18 Differentiate between elementary and non elementary reaction. (CO4)

Q.19 Explain the factors affecting the rate of reaction. (CO4)

Q.20 Explain the differential method for determining the order of reaction. (CO4)

Q.21 Explain Le-chatelier's principle and factors affecting chemical equilibrium in brief. (CO4)

Q.22 Explain first law of thermodynamics. (CO2)