ASSIGNMENT NO: 1

B.TECH (CHEMICAL ENGG), 5TH SEM

COURSE: B.TECH (CHEMICAL ENGG), 5TH SEM ,**Computer based Numerical Methods, ECHE-351**

Assignment No: 1

Due date of submission: 10.11.2016

Instructions

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
3. Write your Name, Programme and Enrollment No. clearly at the top of page.

Q.1

a) Solve the following equations by Gauss elimination method.

$x + y + z = 6$

$2x – y + z = 3$

$2x + 2y + 2z = 12$

b) Find the value of $\int_0^1 \frac{dx}{1+x^2}$ by Simpson's 1/3rd rule if h = 0.25.

Q.2

a) Use the Gauss – seidal method to approximate the solution of the following system of linear equations.

$5x - 2y + 3z = -1$
$-3x + 9y + z = 2$
$2x – y – 7z = 3$

b) Solve the equations $e^x – 4x = 0$ using Newton Raphson i.

COURSE: B.TECH (CHEMICAL ENGG), 5TH SEM,. **CHEMICAL REACTION ENGG.-II, ECHE-353**

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Q1)

a) Explain batch reactor with construction, advantage and disadvantage.
b) Write down material balance (mole basis) and energy balance for an element of the reactor volume.

Q.2)

a) Differentiate between holding time and space time for flow reactor.

b) Design a steady state plug flow reactor.

COURSE: B.TECH (CHEMICAL ENGG), 5TH SEM, **MASS TRANSFER OPERATIONS-I, ECHE-352**

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Q1)

a) Define diffusion.
b) Define dry bulb temperature. Define dew point

Q.2
a) Define wet bulb temperature. What is humidification?

b) What is drying?What is molal absolute humidity?

COURSE: B.TECH (CHEMICAL ENGG), 5TH SEM, CHEMICAL TECHNOLOGY-II, ECHE-354

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Q.1)

a) Give chemical composition of Portland cement.

b) Give chemical composition of oleum

Q.2)

A) Give chemical composition of Soda-Ash. Write the reaction involving the formation of phosphoric acid by HCL leaching.

B) Write the reaction to produce ammonia.

COURSE: B.TECH (CHEMICAL ENGG), 5TH SEM, PROCESS INSTRUMENTATION, ECHE-355

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Q1)

a) What do you mean by measurement and measurand. What do you mean by transducer?
b) What do you mean by error? What do you mean by thermometer?

Q2)

a) What do you mean by precision? Define indicated value?
b) Define absolute pressure and vacuum pressure.