

## **Assignment-I**

Program Name – M.TECH (Chemical Engg)

Semester: 2

Course Name- Advanced Transport Phenomena

Last date of submission-11/3/2017

Course Code- MT-CHE-121

**Instructions: 1. Write the response to the assignment in your own handwriting.**

**2. Submit the response to your HOD within the due date.**

**3. Write your Name, Programme, and Enrolment no. clearly at the top of the page.**

Q.1 (a) what is Shell balance approach for stress distribution and velocity profiles?

(b) What is Prediction of viscosity and its dependence on temperature, pressure and composition?

Q.2 (a) what is Equation of continuity and their applications in fluid flow?

(b) Explain unsteady state momentum transport.

### Assignment-I

Program Name – M.TECH (Chemical Engg)

Semester: 2

Course Name- **PROCESS DYNAMIC CONTROL**

Last date of submission-11/3/2017

Course Code- MT-CHE-122

**Instructions: 1. Write the response to the assignment in your own handwriting. 2. Submit the response to your HOD within the due date. 3. Write your Name, Programme, and Enrolment no. clearly at the top of the page.**

Q.1 (a) . Explain Root locus Analysis to determine the stability of a process?

(b) . Derive expression for dynamic behaviour of purely integrator?

Q.2 (a). What are under damped, critically damped and over damped system?

(b) Explain types of feedback controller?

## ASSIGNMENT NO-1

PROGRAMME: - M.TECH (CHEMICAL ENGG)

(SEM-2,)

COURSE: - **Mathematical Methods in Chemical Engineering (MT-CHE-123)**

Date of submission: - March 11, 2017

### Instructions

- a) Write the response to the assignment in your own handwriting.
- b) Submit the response to your HoD within the due date.
- c) Write your name, Programme and Enrolment No. clearly at the top of the page.

### Q.1

- a) Solve  $y' = -e^x y$ .  $y(0) = 1$ .
- b) Discuss Cauchy Problem for the Heat Equation

### Q.2

- a) Describe Duhamel's Principle for the Inhomogeneous Heat Equation
- b) Let  $g \in C(\mathbb{R})$  be bounded, and let  $u(x, t)$  be given by the formula. Then prove  $u$  is

$C^\infty$  in  $(x, t)$  for  $t > 0$ ;

### **Assignment-I**

Program Name – M.TECH (Chemical Engg)

Semester: 2

Course Name- Advanced Chemical Reacion Engg.

Last date of submission-11/3/2017

Course Code- MT-CHE-124

**Instructions: 1. Write the response to the assignment in your own handwriting.**

**2. Submit the response to your HOD within the due date.**

**3. Write your Name, Programme, and Enrolment no. clearly at the top of the page.**

Q.1 (a) Explain catalytic and non-catalytic reaction with examples.

(b) Differentiate between reversible irreversible reactions with examples.

Q.2 (a) Explain factors affecting the rate of reaction.

(b) Differentiate between Elementary and non-elementary reaction.