

ASSIGNMENT NO:2,
DIPLOMA (CHEMICAL ENGG) , V SEM
PROGRAMME: DIPLOMA (CHEMICAL ENGG) , V SEM ,
CHEMICAL REACTION ENGG, DCHE-353

ASSIGNMENT NO:2

Due date of submission: 23.10.2017

Instructions

- 1. Write the response to the assignment in your own handwriting.**
- 2. Submit the response to your HOD within the due dates**
- 3. Write your name, programme and enrolment No. clearly at top of the page.**

Q.1

- a) Define integral rate expression for second order reaction.
- B) Explain plug flow reactor.

Q.2

- a) Decomposition of a gas is second order reaction when the initial concentration of gas is 5×10^4 mol/litre. It is 40% decomposed in 50 minutes. Calculate the value of rate constant.
- b) The half life period for a certain first order reaction is 2.5×10^3 seconds. How long will it take 1/4 of the reactant to be left behind?

PROGRAMME: DIPLOMA (CHEMICAL ENGG) , V SEM ,

MASS TRANSFER OPERATIONS,DCHE-352

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Q.1

- a) Explain Fick's law and Mass Transfer Coefficient.
- b). Explain Description and construction of Tray dryer.

Q.2

- a) Discuss in brief simple distillation and differential distillation.
- b) Explain Diffusion in the gas phase-Equimolecular counters diffusion.

PROGRAMME: DIPLOMA (CHEMICAL ENGG),Vth SEM,

FUEL AND MATERIAL TECHNOLOGY, DCHE-351

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Q.1

- a) Make classification of polymer.
- b) Explain in detail Fuel Oil, Gasoline, Diesel Fuels, and Kerosene.

Q.2

- a) Explain and experimental determination by bomb calorimeter.
- b) Write advantages and disadvantages of liquid fuels.

**PROGRAMME: DIPLOMA (CHEMICAL ENGG) , V SEM ,
AUTOMATIC PROCESS CONTROL, DCHE-354**

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Q.1

- A). Explain i^{st} order system for a mixing process.
- B). Explain cascade control.

Q.2

- A). Derive overall transfer functions for a single loop system.
- b). what is elements of proportional control system and explain in detail integral control, proportional-integral control.