



**Module-5**

- 9 a. Define RTD and explain the pulse input experiment for RTD measurement. (10 Marks)
- b. The data given below represent a continuous response to a pulse input into a closed vessel which is used to be as a chemical reactor. Calculate the mean residence time of fluid in the vessel  $\bar{t}$  and tabulate and construct E curve.

t min	0	5	10	15	20	25	30	35
Epulse g/l (tracer output concentration)	0	3	5	5	4	2	1	0

(10 Marks)

**OR**

- 10 a. Discuss the different states of aggregation of the flowing material and early and late mixing of fluid. (10 Marks)
- b. Derive the expression for RTD in a plug flow reactor. (10 Marks)

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