



**K. K. Wagh Institute of Engineering Education & Research, Nashik**  
(An Autonomous Institute From A.Y. 2022-23)

InSem Examination-II Summer2025	
Exam Seat No.:	
Academic Year: 2024-2025	Semester: VI
Class: TY	Program: B.Tech Chemical Engineering
Branch Code: CHE	Pattern: 2022
Name of Course: Process Intensification	Course Code: CHE223021
Max. Marks: 30	Duration: 1.15 Hrs.

**Instructions:** Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 1 page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

**Marks CO**

**Question No. 1**

- 1 a) What are the different methods used for process intensification. (7) CO1

**Question No. 2**

- 2 a) Differentiate between active and passive techniques. (8) CO1

**OR**

- 2 b) Demonstrate how PI enhances productivity and reduces energy and environmental impact in a chosen industry. (8) CO1

**Question No. 3**

- 3 Explain the basic geometrical concept of compactness in the context of compact heat exchangers. (7) CO2

**Question No. 4**

- 4 a) Briefly explain all passive heat transfer enhancement techniques. (8) CO2

**OR**

- 4 b) Write short notes on: (8) CO2

(a) Microchannel Heat Exchanger

(b) Matrix Heat Exchanger

..... End of question paper.....