K. K. Wagh Institute of Engineering Education & Research, Nashik

(An Autonomous Institute From A.Y. 2022-23)

WINTER-2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:II
Class:FY	Program:B.Tech
Branch Code:FYE	Pattern:2023
Name of Course:Introduction to Chemical Engineering	Course Code:2300118B
Max. Marks:60	Duration:2.30 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 two 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 of the Question/sub-question.

		Marks	CO
Question No. 1			
1a)	Define Chemical Engineering. Describe roles of chemical engineer.	(6)	CO1
Question No. 2			
2a)	4 grams of NaOH are dissolved in water to obtain 100 ml solution. Find the normality and molarity of the solution.	(6)	CO1, CO2, CO5
Question No. 3			
3a)	Explain about unit operations. Give its utility. State the salient features of unit operations.	(8)	CO1, CO2, CO3
	OR		
3b)	Explain mode of heat transfer with suitable examples of each.	(8)	CO1, CO2, CO3
3c)	Define size reduction operations with reasons. List out equipments for size reduction. Explain crusher and grinder in details.	(8)	CO1, CO2, CO3
	OR		
3d)	Describe screening operation. Mention the utility of it. Explain the following a) Sedimentation b) Filtration	(8)	CO1, CO2, CO3
Question No. 4			
4a)	Explain sulfonation and oxidation unit processes with suitable examples.	(8)	CO1, CO2, CO4
	OR		

4b)	Explain nitration with suitable examples.	(8)	CO1, CO2, CO4
4c)	Define chlorination. Explain chlorination of methane and benzene with reactions.	(8)	CO1, CO2, CO4

OR

4d)	Explain Reduction and hydration unit processes with suitable examples.	(8)	CO1, CO2, CO4

Question No. 5

5a)	Describe temperature scale. Explain briefly a mercury in glass thermometer with a neat sketch.	(8)	CO1, CO2, CO3

OR

5b)	Describe pressure measurement. Explain U-tube manometer with neat sketch.	(8)	CO1, CO2, CO3
5c)	Explain viscosity. Describe Redwood viscometer with neat sketch.	(8)	CO1, CO2, CO3

OR

5d)	Describe about flow measurement. Give details about rotameter.	(8)	CO1, CO2, CO3

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