



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

InSem Examination-I Winter2024	
Exam Seat No.:	
Academic Year: 2024-2025	Semester: III
Class: SY	Program: B.Tech
Branch Code: MEC	Pattern: 2023
Name of Course: Manufacturing Processes	Course Code: 2305201
Max. Marks:30	Duration: 1:15Hrs.

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 01 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.

Question No. 1 Attempt following Question

- 1 a) Given a complex-shaped component with intricate internal cavities, Explain the casting process with figure would you recommend to manufacture it. (7) CO1

Question No. 2 Attempt following Question

- 2 a) Explain the types of device used for making internal cavities or hollow parts in the casting? (4) CO1
2 b) Explain the defects which occurs due to the faulty mould. (4) CO1

Group OR

- 2 c) A cube-shaped casting of 50 mm side took 155 sec to solidify. Determine the value of the mold constant using Chvorinov's rule. (4) CO1
2 d) A foundry needs to cast a metal part with a complex shape and precise dimensions. Identify and describe any two types of patterns that can be used for this casting. (4) CO1

Question No. 3 Attempt following Question

- 3 a) Explain the extrusion process in which metal flows in the opposite direction to the movement of ram. (7) CO2

Question No. 4 Attempt following Question

- 4 a) Determine the draft and maximum possible draft for cold rolling a 400 mm flat slab of 20 mm thick which is reduced to 17 mm with coefficient of friction, $\mu = 0.12$ and roll. (4) CO2
4 b) Explain the process which uses a mandrel to control the internal diameter and wall thickness of tube. (4) CO1, CO2

Group OR

- 4 c) Explain the difference between direct and indirect extrusion process. (4) CO2
4 d) Explain the different types of rolling mills generally used for cold rolling process. (4) CO1, CO2

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