



SCHOOL OF MECHANICAL ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
FALL SEMESTER 2025-2026

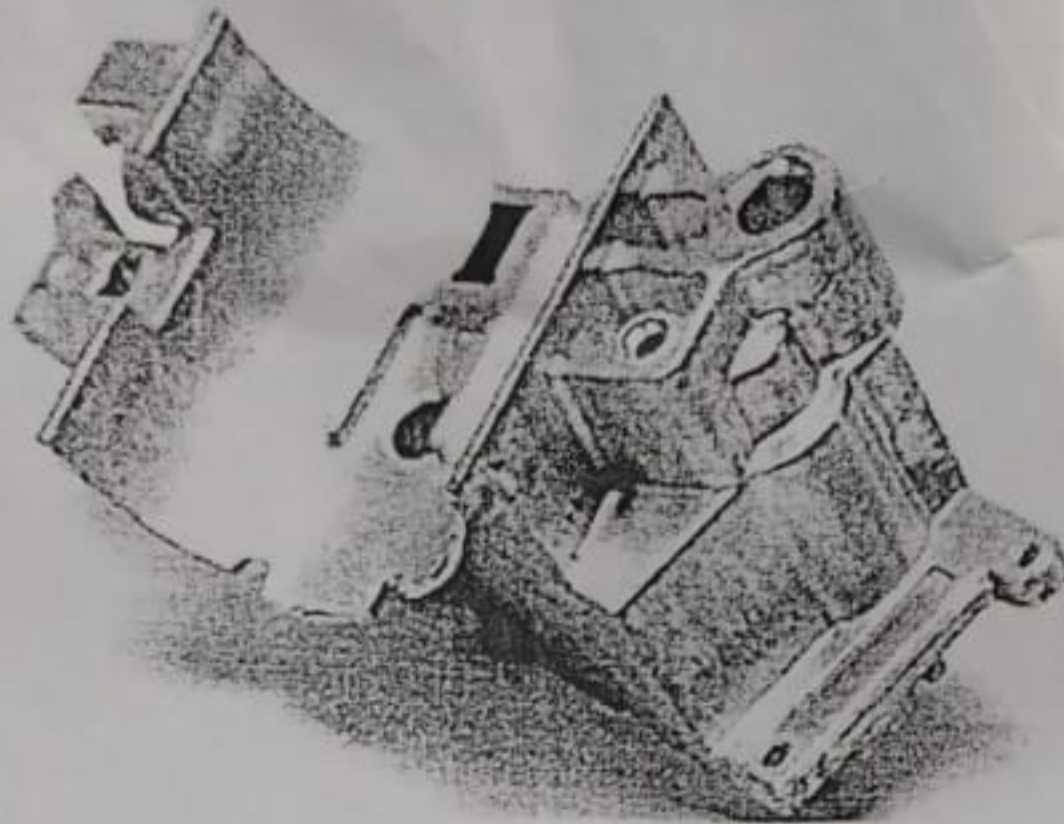
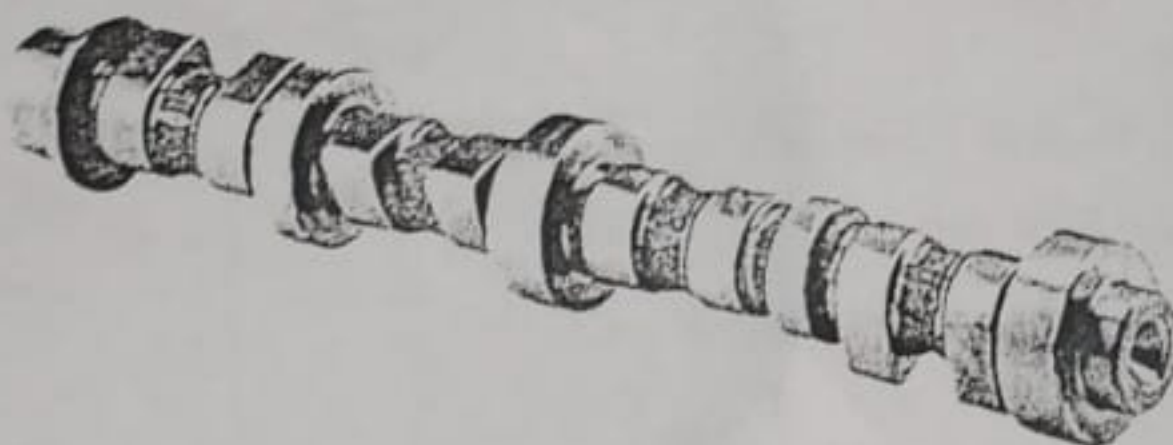


Figure. 1) a) Aircraft Brackets



b) Cam Shaft

5.	a) Elaborate the significance of open architecture used in CNC machine tools. (5 marks) b) Describe the needs of multitasking CNC machines. (5 marks)	10	CO2	BL2
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VIT

Vellore Institute of Technology

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SLOT: A1

REG. NO.:

Programme Name & Branch	B.Tech & Mechanical
Course Code	BMEE401L
Course Name	Computer Integrated Manufacturing
Faculty Name(s)	Prof. Raja K, Prof. Oyyaravelu R, Prof. Deepa A, Prof. Venkatesan S, Prof. Muralidharan B
Class Number(s)	VL2025260102218, 2209, 2206, 2207, 2208
Date of Examination	17 August 2025
Exam Duration	90 minutes
Maximum Marks: 50	

General instruction(s):

- Answer All Questions
- M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyse, 5 - Evaluate, 6 - Create)
- Course Outcome Statements:
 - CO 1: Differentiate the concepts of automation, CIM, CAD, and CAM
 - CO 2: Develop CNC part programs

Q. No	Question	M	CO	BL
1.	Classify the basic elements of an automated system in manufacturing operations	10	CO1	BL1
2.	Interpret the integration of Product Lifecycle Management with enterprise systems like ERP, MES, and CRM to support cross-functional collaboration throughout the product's journey.	10	CO1	BL3
3.	Discuss the closed-loop control system in CNC machines utilizing the real-time feedback from encoders and sensors to maintain positional accuracy, and mention the implications for machining tolerance and surface finish.	10	CO2	BL2
4.	Select a suitable axis of CNC machine required to machine complex products shown in the figure 1 with neat sketch mentioning its constructional details. The part needs multi-axis rotation and three-directional tool movement.	10	CO2	BL4