



JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY

B. Tech. in Mechanical Engineering,

3rd Year (5th Semester)

Term-III Examination, Dec, 2021

Course No. : ME1212
Course Title : Computer Integrated Manufacturing(CIM)
Nature of Exam : On Campus
Weightage : 30%
Max Marks : 60
Duration : 180 Minutes

No. of Pages = 03

No. of Questions = 06

Roll No: _____

Note:

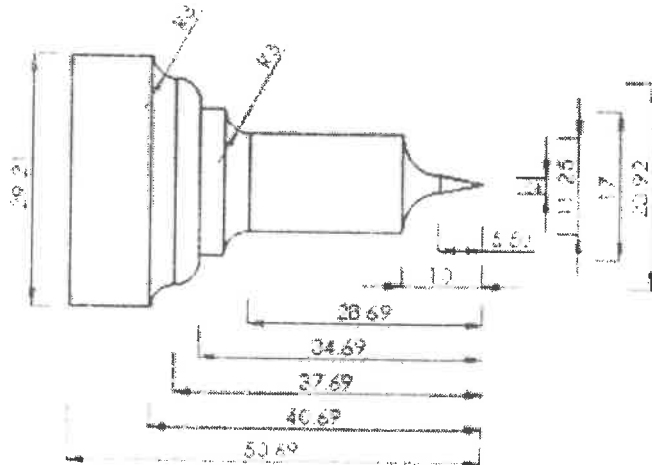
1. Draw neat diagrams using pencil (if required).
2. All questions are compulsory and carry equal marks.
3. Assume data as and when required
4. Write only Roll No in Question Paper

- 1 Draw a complete product design process for a mobile stand used in four wheelers, also explain the how CIM "Computer Integrated Manufacturing System" helpful for the same.

CO 1

- 2 Write CNC program of a given figures for Fanuc lathe

CO 2

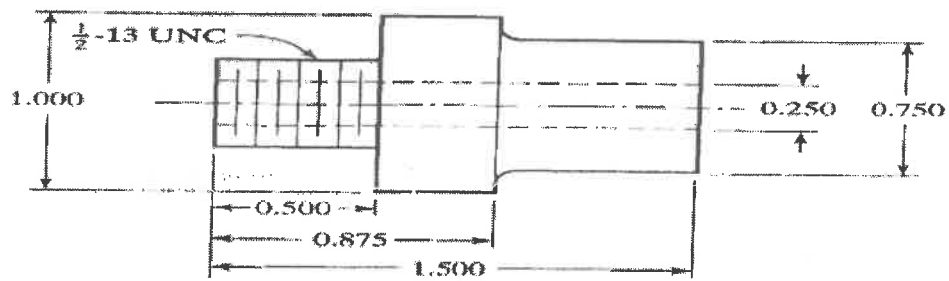


- 3 Draw a neat diagram to explain the Rank Order Clustering technique for grouping parts and machines in Group Technology for Ice-cream Manufacturing Industry.

CO 3

- 4 Generate Code for Given Figure in an Optiz part coding system. Take a reference of the chart attached with question paper.

CO 3



5 Follow the Hierarchical structure for coding the Shoes in a Shoes manufacturing Industries.

CO 3

6 Discuss the role of AGV in beverage industries

CO 4

Chart for Digits (1-5) for Rotational parts in the Opitz System

Digit 1			Digit 2				Digit 3			Digit 4		Digit 5			
Part class			External shape, external shape elements				Internal shape, internal shape elements			Plane-surface machining		Auxiliary holes and gear teeth			
0	$L/D \leq 0.5$	Rotational parts	0	Smooth, no shape elements	Stepped to both ends	0	No hole, no break through	Smooth or stepped to one end	0	No surface machining	0	No auxiliary hole	No gear teeth	All others	
1	$0.5 < L/D < 3$		1	No shape elements		1	No shape elements		1	Surface plane and/or curved in one direction, external	1	Axial, not on pitch circle diameter			
2	$L/D \geq 3$		2	Thread		2	Thread		2	External plane surface related by graduation around a circle	2	Axial on pitch circle diameter			
3			3	Functional groove		3	Functional groove		3	External groove and/or slot	3	Radial, not on pitch circle diameter			
4		4	No shape elements	Stepped to both ends	4	No shape elements	Stepped to both ends	4	External spline (polygon)	4	Axial and/or radial and/or other direction	With gear teeth	All others		
5		5	Thread		5	Thread		5	External plane surface and/or slot, external spline	5	Axial and/or radial on PCD and/or other directions				
6		6	Functional groove	Stepped to both ends	6	Functional groove	Stepped to both ends	6	Internal plane surface and/or slot	6	Spur gear teeth	With gear teeth	All others		
7		7	Functional cone		7	Functional cone		7	Internal spline (polygon)	7	Bevel gear teeth				
8		8	Operating thread	Stepped to both ends	8	Operating thread	Stepped to both ends	8	Internal and external polygon, groove and/or slot	8	Other gear teeth	With gear teeth	All others		
9		9	All others		9	All others		9	All others	9	All others			9	All others

