

dJK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular/Backlog), December 2018

B. Tech in Mechanical Engineering, Semester - VII

Roll No.....

ME 802: CAD/CAM

Time: 3 hours

Max. Marks: ~~100~~
80

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

Q.1	Objective type multiple choice questions (4 questions @ 2.5 mark)	4×2.5
i	Define the product life cycle with neat sketch.	
ii	Discuss the benefits of computer integrated manufacturing.	
iii	Classify the different types of automation followed by neat sketch.	
iv	Differentiate between conventional process planning and computer aided process planning.	
Q.2A	What is CIM? Discuss the CAD/CAM module in detail which are employed in manufacturing industry.	1+4
Q.2B	What is direct numerical control machine? How DNC is differ from CNC? Explain with the help of suitable example.	1+4
Q.3A	What are the different phases of CAD/CAM? Discuss the advantage and disadvantage of CNC machine (Any 4)	2+3
Q.3B	What is FMS? Discuss the advantage of FMS over conventional manufacturing system. (Any 4)	1+4
Q.4A	What is group technology (GT)? Discuss the role of GT in computer aided manufacturing.	1+4
Q.4B	What is AGVs? Discuss the types of material handling system employed in manufacturing industry.	1+4
Q.5	What is CAQC? Differentiate between traditional quality control and computer aided quality control. Discuss the contact or non-contact method of inspection with suitable example.	1+4+5
Q.6	What is CAPP? Discuss the role of CAPP in the manufacturing industry. Discuss various types of CAPP with help of suitable example.	1+5+4
Q.7	Define the transformation? Discuss the properties the Translation, Reflection and Rotation with the help of suitable example.	1+3+3+3

OR

Q.7 Given that P(3, 1), Q(6, -1) and R(-3, 3m) are three points in the x-y plane and that m is a constant, find: 3+4+3

(a) $\vec{PQ}$

(b) The value of m if $\vec{PR} = \begin{bmatrix} -6 \\ 5 \end{bmatrix}$

(c) $\vec{OP} + \vec{OQ} + \frac{1}{3}\vec{OR}$

Q.8 A linear transformation T maps A(1, 2) to A1(-4, 6) and B(6, 3) to B1(3, 0). Find each of the following: 5+5

(a) Transformation Matrix, [T].

(b) The image of the point K (-5, -2) under transformation.

OR

Q.8 Determine the equation of the line $3x - 5y - 15 = 0$ under the following linear transformations: 5+5

(a) A translation by the vector $\begin{bmatrix} -2 \\ 3 \end{bmatrix}$

(b) A 270° anticlockwise rotation.