B.Tech. (Sem. - 7ᵗʰ / 8ᵗʰ)
CAD / CAM
SUBJECT CODE : ME - 404
Paper ID : [A0839]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours   **Maximum Marks : 60**

Instruction to Candidates:

1)   Section - A is **Compulsory**.

2)   Attempt any **Four** questions from Section - B.

3)   Attempt any **Two** questions from Section - C.

Section - A

Q1)   *(10 x 2 = 20)*

a)   What is an ALU?

b)   What do you understand by computer memory? Name two types of computer memory.

c)   What are the functions of a Graphics package?

d)   What are B - spline curves?

e)   Define and explain Kinematics analysis.

f)   Differentiate between wireframe modelling and solid modelling.

g)   What do you understand by concatenation?

h)   Define CAM and briefly list down its advantages.

i)   Differentiate between CNC and DNC.

j)   What is a Machinability Data System.

$(4 \times 5 = 20)$

Q2) Draw the block diagram of Central Processing Unit and explain its various components.

Q3) What do you understand by Geometric transformation? Explain any three common transformations used in computer graphics.

Q4) Differentiate between retrieval type and generative type CAPP systems. List down the merits and de-merits of each type.

Q5) Discuss the two approaches used in adaptive control of machining systems. Give two limitations of adaptive control.

Q6) Explain the salient features of any two CAD / CAM softwares that are being currently used in the industry. Which factors influence the selection of a particular software?

Section - C

$(2 \times 10 = 20)$

Q7) What is a part family in Group Technology? Name three parts classification and coding systems commonly used in GT. Explain any one of them in detail with the help of suitable examples.

Q8) (a) What is rendering? What are the different stages of rendering an image?

(b) A rectangle has corner coordinates (10, 20), (40, 20), (40, 40) and (10, 40). This rectangle is rotated by 30° anti - clockwise about (i) origin and (ii) about the point (40, 20). Compute the new coordinates in both cases.

Q9) List down the benefits of FMS. What are the different types of data associated with FMS? Discuss the relevance of FMS from the point of view of work centre utilization.