SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | | **Total number of pages:[2]**

B.Tech. || ME || 5th Sem

Computer Aided Design and Manufacturing

Subject Code: BTME-502

Time allowed: 3 Hrs **Max Marks: 60**

Important Instructions:

1) **All questions are compulsory**
2) **Assume any missing data**
3) **Additional instructions, if any**

PART A (10x 2marks)

Q. 1. Short-Answer Questions:

(a) What are the various functions of a graphics package?
(b) List any two applications of geometric transformations.
(c) Define simulation?
(d) Define absolute and relative positioning?
(e) Differentiate between scaling and zooming?
(f) Name any two cursor control devices.
(g) State the benefits of CAPP?
(h)What is the role of design attributes of the part in preparation of part family?
(i) Why G codes are called preparatory codes?
(j)Explain the terms: concatenation and ruled surface?

PART B (5×8marks)

Q. 2. a) What do you understand by geometric transformation? Explain any three common transformations used in computer graphics. (4) CO1,2

b) Differentiate between CAD/CAM and automation. (4) CO1,2

OR

a) How computer is helpful in designing the component? Explain in detail by taking suitable example.(4) CO1,2

b) Describe translation and rotation in relation to 3-D transformation.(4)

Q. 3. a) What do you mean by polygon surface? Draw one polygon surface (4) CO 2,3

b) Write short terms on : i) Parametric curves, ii) Parametric surfaces(4) CO 2,3

OR

a) Distinguish between properties of Bezier and B-spline surfaces.(4) CO 2,3

b) Describe constructive solid geometry technique of geometric

modeling.(4)

Q. 4. a) What criteria you will follow for the selection of FEM module?(4) CO 4,5

b) Discuss the NC motion control systems.(4)

OR

a) What are recent advancements in FEM. Write principles of FEA software? (4) CO 4,5

b) Explain methods to improve the accuracy of Numerical Control Machines.(4)

Q. 5. a) What is a part family in Group Technology? Name three parts classification and coding systems commonly used in Group Technology .(4) CO 5,6

b) Distinguish between retrieval and generative process planning(4)

OR

Describe in detail, the purpose of process planning, what is the role of implementing computers in process is planning.(8) CO 5,6

Q. 6. List down the benefits of FMS. What are different types of data associated with FMS. Discuss the relevance of FMS from the point of view of work centre utilization (8) CO 6

OR

a) What is CIM? Mention various elements of CIM.(4) CO 6

b) Why is a Flexible Manufacturing System capable of producing a wide range of lot sizes? Explain(4)