

M.Tech. 1st Semester (ME) CBCS Scheme

Examination, December-2018

**COMPUTER AIDED DESIGN AND
MANUFACTURING**

Paper- MTME 21C2

Time allowed : 3 hours]

[Maximum marks : 100

Note: Attempt four questions from Section-I to IV selecting atleast one question from each Section. These question shall carry equal marks each. Section-V is compulsory and each question in this Section shall carry 5 marks.

Section-I

1. Derive the transformation matrices of translation, shearing and rotation in 3-D. Derive transformation matrix to scale a unit cube twice uniformly w.r.t. origin.
2. Explain in detail combined transformation, orthographic, axonometric, oblique and perspective projections.

Section-II

3. Define Bezier curve. Also give their properties. Find equation of Bezier curve which passes through point $(0,0)$ and $(-2,1)$ and is controlled through points $(7, 5)$ and $(2, 0)$.
4. What is blending function? Explain in detail. Also give their properties.

Section-III

5. Explain in brief Numerical control system. Give the type of Numerical control system with figure. Also explain the CNC tooling Machine Tools.
6. Explain in detail the various components of CAM in detail with its Applications and Advantages.

Section-IV

7. Define Flexible Manufacturing System. Also give objectives and limitations of FMS.
8. Explain in detail Computer Aided Process Planning and Automated Material handling system.

Section-V

9. Explain the following:
 - (i) APT language
 - (ii) Lofted surfaces
 - (iii) 2-D Translation.
 - (iv) Automated Material handling.