

B. Voc Automotive Manufacturing**Subject: Computer Aided Design (CAD)****Subject Code: BBME-201****Semester- 3rd****Theory (External): 35****Time: 03 hours****Instructions to the Students**

1. This Question paper consists of two Sections. All sections are compulsory.
2. **Section A** comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 mark.
3. **Section B** comprises 6 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number

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SECTION -A (OBJECTIVE TYPE QUESTIONS)

(10x1=10 Marks)

1. What do you understand absolute zero point?
2. What are the requirements of transformation?
3. What do you understand by coordinate system?
4. Differentiate between orthographic and isometric projection.
5. What are the use of curve interpolation and curve fitting methods in curve design?
6. What is surface modelling?
7. What are the advantages of B-rep?
8. What do you understand by geometry and topology?
9. Define homeomorphism.
10. What are closed up surfaces?

SECTION -B (ESSAY TYPE QUESTIONS)

(5x5=25 Marks)

1. Rotate a point $P(x, y, 1)$ in the x-y plane by an angle θ about the z-axis to a position $P_1(x_1, y_1, 1)$ followed by a translation by $v(p, q)$ to a position $P_2(x_2, y_2, 1)$.
2. How a scaling matrix can be extended from 2D to 3D. Explain with example?

3. Explain B-spline curves and its characteristics.
4. Explain boundary representation and sweep representation in solid modelling.
5. Explain the Bezier surface with its properties.
6. Construct the winged edge data structure for a cube as a B-rep solid.

****END OF PAPER****