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BIME-018**B.TECH. VIEP - MECHANICAL ENGINEERING
(BTMEVI)****Term-End Examination, 2019****BIME-018 : COMPUTER AIDED DESIGN****Time : 3 Hours]****[Maximum Marks : 70**

Note : Answer any five questions. All questions carry equal marks. Use of scientific calculator is permitted.

1. (a) How do you integrate CAD/CAM ? Discuss the necessity and its importance. [7]
- (b) What is direct view storage tube ? How do you differentiate Random scan display from Raster scan display ? [7]
2. (a) What are the input devices used in CAD system ? Explain any two with neat sketches. [7]
- (b) Explain the functions of graphic software with suitable examples. [7]

3. (a) What is the function of frame buffer ? Compute the frame buffer size for a CRT display terminal of 640×480 resolution with 96 pixels per inch. [7]
- (b) What does IGEs represent in a CAD system ? Elaborate. [7]
4. (a) Consider a line AB whose position vectors of end points are $[A] = [1, 2]$, $B = [3, 4]$ [7]

The translations in x and y directions

$$[T_x, T_y] = [2, 3]$$

Calculate the end points of the translated line. Draw the neat sketches of the original line and translated line.

- (b) Explain constructive solid geometry (CSG) and Boundary representations with suitable examples. [7]
5. (a) Describe in brief the bicubic surface method of a surface modelling. [7]

- (b) What are Bezier curves ? Write their properties. [7]
6. (a) What is meant by solid modelling ? How do you differentiate between wireframe and solid modelling ? [7]
- (b) Discuss the following terms with suitable examples : [7]
- (i) Windows and Clipping
- (ii) 3D Transformations
7. (a) Find the real root of the equation by using bisection method : $x_3 - 4x - 9 = 0$ [7]
- (b) What do you understand by the finite element method ? Write down the steps involved in the finite element procedure in analysis of any Machine Member. [7]
8. Write short notes on following : [4×3.5=14]
- (a) B-spline Curves
- (b) Sweep representation

(c) Colour Models Application

(d) Types of Elements

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