BME-002

B.Tech. MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

Term-End Examination

⊏⊐⊑⊐⊒⊒ June, 2019

BME-002 : COMPUTER AIDED DESIGN

Time : 3 hours *Maximum Marks : 70*

*Note : Answer any **five** questions. Use of scientific calculator is allowed.*

1. (a) What is the function of frame buffer ? Compute the frame buffer size for CRT display terminal of a 640 × 480 resolution with 96 pixels per inch. 7

   (b) Draw the CMY color cube and briefly describe CMY color model. 7

2. (a) Compare B-splines and Bezier curves. 7

   (b) Fit a Bezier curve having the following control points : $P_0(1, 1)$, $P_1(3, 6)$, $P_2(5, 7)$ and $P_3(7, 4)$. Find out points at t = 0·4 and 0·6. 7

3. Calculate the mid point of Hermite cubic curve defined by $V_0(0) = [1, 1]$, $V_1(1) = [6, 5]$, $V_0^{'}(0) = [0, 4]$ and $V_1^{'}(1) = [4, 0]$. 14

4. (a) Explain constructive solid geometry for representation of solids. *7*

   (b) Compare b-rep and c-rep modelling techniques. *7*

5. (a) Describe the purpose of CAD/CAM data exchange standards. *6*

   (b) Explain any four standards. *8*

6. (a) State the purpose of synthetic surface. Give examples of synthetic surfaces. *7*

   (b) Create the boundary model of the solid shown below. *7*
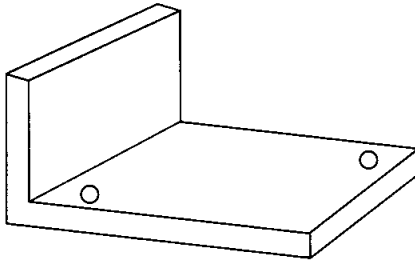
7. Name at least six methods of solid modelling. With the help of suitable sketch, describe surface mesh modelling. *14*