T.E(I)(CBSS) (I.T.).
CG & VR

19/5/15

Q.P. Code : 3408

(3 Hours) **[Total Marks : 80**

N.B. : (1) Question **No. 1** is **compulsory**.
(2) Attempt **any three** out of **remaining** questions.
(3) **Figures** to the **right** indicate **full marks**.

1. (a) Expalin Besenham's line drawing algorithm with suitable example. **10**
   (b) Explain bitmap and vector based graphics. **5**
   (c) Compare CMYK and RGB colour model. **10**

2. (a) Explain sutherland - Hodgeman polygone clipping algorithm with suitable example. **10**
   (b) What are the different types of projections? Derive the matrix representation for perspective transformation in xy plaine and on negative z axis. **10**

3. (a) Compare mesh and features based wraping method. **10**
   (b) Explain in detail any VR toolkit. **10**

4. (a) Explain Flood Fill Algorithm using 8 connected approach. What are its advantages over Boundary Fill Algorithm. **10**
   (b) Derive mathematical representation of Bezier curve. State their properties. **10**

5. (a) Describe Halftoning, Thresholding and Dithering in detail with application in real world. **10**
   (b) Explain B-spline curve. **10**

6. (a) What are diffrent applications of computer graphics. **5**
   (b) Advantages of 3D marphing over 2D marphing. **5**
   (c) Explain even-odd method for inside test of polygon. **5**
   (d) Explain collision detection in VR. **5**
