

C 44413

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**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, JUNE 2013**

IT 09 701 – COMPUTER GRAPHICS

(2009 Scheme – Supplementary)

Time : Three Hours

Maximum : 70 Marks

**Part A**

*Answer all questions.*

- I. (a) Define scaling of an object.  
(b) What is meant by type face? Give examples.  
(c) Differentiate interpolation and approximation splines.  
(d) Define principal vanishing point.  
(e) Give the operations involved in general perspective-projection transformation.

(5 × 2 = 10 marks)

**Part B**

*Answer any four questions.*

- II. (a) Explain the process of translation of a polygon.  
(b) Discuss about the Sutherland-Cohen Line clipping algorithm in detail.  
(c) What are Bezier Curves? Explain the properties of it.  
(d) Discuss in detail about the transformation matrices used for translation of 3D objects.  
(e) Differentiate between Conics and Curves.  
(f) Explain the algorithm used to generate Bar charts.

(4 × 5 = 20 marks)

**Part C**

*Answer all questions.*

- III. (a) Explain the following :  
(i) Graphics workstations.  
(ii) Display processors.

(5 + 5 = 10 marks)

*Or*

- (b) Explain any two 2D transformation operation with an example.

**Turn over**

IV. (a) Explain the mid-point subdivision algorithm with an example.

*Or*

(b) Discuss in detail about the queue based seed fill algorithm.

V. (a) Discuss about the general properties of an ellipse. Explain how to generate Ellipse through transformation of circles.

*Or*

(b) Explain in detail about the Beta splines and rational splines.

VI. (a) Discuss about parallel projection of objects in 3D graphics.

*Or*

(b) Explain any *one* method for eliminating hidden surfaces from a scene.

(4 × 10 = 40 marks)