

Total No. of Questions : 12]

SEAT No. :

P805

[4659] - 218

[Total No. of Pages : 2

B.E.(Information Technology) (Semester - II)

C : ADVANCED GRAPHICS (Elective - III)

(2008 Pattern)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer Q1 or Q2, Q3 or Q4 and Q5 or Q6 from Section - I and Q7 or Q8, Q9 or Q10 and Q11 or Q12 from Section - II.*
- 2) *Answer 3 questions from Section - I and 3 questions from Section - II.*
- 3) *Answer to the two sections should be written in separate answer books.*
- 4) *Neat diagrams must be drawn wherever necessary.*
- 5) *Figures to the right indicate full marks.*
- 6) *Assume suitable data, if necessary.*

SECTION - I

- Q1)** a) Explain B-Spline technique for generating curves with an example. [8]
b) Write in brief on Quadric surfaces. List and explain the elements in the quadric surfaces. [8]

OR

- Q2)** a) What is Bezier curve? Discuss the properties of Bezier curve. [8]
b) Discuss in detail the parallel and perspective projection. [8]

- Q3)** a) What is animation? Explain different types of softwares used for it. [8]
b) Discuss any four types of animators used in animation. [8]

OR

- Q4)** a) Discuss in brief the design steps of animation sequence. [8]
b) What are the main categories of animation tools? Name and explain any four animation tools. [8]

- Q5)** a) Explain the methods for implementing CSG (Constructive Solid Geometry) operations when objects are described with boundary representations. [10]
b) Classify between Octrees and Quadtrees. [8]

OR

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- Q6)** a) Discuss in brief the construction of three-dimensional objects using sweep representations. [10]
b) What is Constructive Solid Geometry (CSG)? Which operations are carried out in Constructive Solid Geometry? [8]

SECTION - II

- Q7)** a) Explain HSV and HLS colour models. [8]
b) Compare RGB with HVS model and CMY color models. [8]

OR

- Q8)** a) Explain CIE chromaticity diagram. Also discuss any two RGB to CMY conversion methods. [8]
b) Explain YIQ color model. Also explain the following illumination models: Phong shading. [8]

- Q9)** a) How ray tracing works? Draw and explain tracing rays from light source to eye. [8]
b) What is surface rendering? Explain Gourads shading. [8]

OR

- Q10)** a) What is Shading? Compare: Gourad and Phong's method of shading. [8]
b) Define Illumination model. Discuss the basic components of illumination model. [8]

- Q11)** a) Explain in brief various issues with design and implementation of a VR system. [10]
b) Discuss the various aspects of virtual reality applications. Discuss any one in detail. [8]

OR

- Q12)** a) What is VRML? Describe the basic structure of a VRML file. [8]
b) Discuss the virtual reality applications in Manufacturing and Architecture field and in Robotics field. [10]

