

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: IMSc
BRANCH: MATH & COMP

SEMESTER : VII
SESSION : MO/19

SUBJECT: CS7103 COMPUTER GRAPHICS

TIME: 3:00 HOURS

FULL MARKS: 60

INSTRUCTIONS:

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
 2. Candidates may attempt any 5 questions maximum of 60 marks.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Describe Beam Penetration method for producing color display using CRT. [6]
Q.1(b) Compare roles of computer graphics and image processing. [6]
- Q.2(a) Describe Wiener-Atherton Polygon clipping algorithm. [6]
Q.2(b) Describe Bresenham's line drawing algorithm. [6]
- Q.3(a) Derive expression for 2D window to viewport transportation. [6]
Q.3(b) Perform scaling transformation of the triangle as given by the vertices (0,0), (1,1), (5,2) by factors 2 in both x axis and y axis respectively keeping vertex (5,2) fixed using homogenous coordinate system. [6]
- Q.4(a) Explain different types of Orthographic parallel projections. [6]
Q.4(b) Describe Beizer spline for curve design. [6]
- Q.5(a) Explain CMY color model in computer graphics. [6]
Q.5(b) Explain utilities of CIE Chromaticity diagram. [6]
- Q.6(a) Describe Area subdivision method for visible surface determination. [6]
Q.6(b) Describe Z-buffer method for visible surface determination. [6]
- Q.7(a) Derive an expression for diffuse reflection implementation. [6]
Q.7(b) Explain Normal vector interpolation shading for polygon rendering. [6]

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