



A-1735
B.Sc. (I.T.) (Sem. V) Examination
March / April – 2015
Computer Graphics

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

<p>नीचे दशावेक निशानीवाणी विगतो उत्तरवही पर अवश्य लखवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : B.SC. (I.T.) (SEM. V)</p> <p>Name of the Subject : COMPUTER GRAPHICS</p> <p>Subject Code No. : 1 7 3 5 Section No. (1, 2,...): Nil</p>	<p>Seat No. : <input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; text-align: center; width: 100%;">Student's Signature</div>
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(2) Draw the Figure and give example whenever necessary.

1 Answer the following questions: 14

- (a) What is bitmap and pixmap?
- (b) What do you mean by scan conversion? List the scan conversion method.
- (c) What is meant by refreshing of the screen?
- (d) Explain shearing.
- (e) What is polygon? Explain its type.
- (f) What do you mean by emissive and non-emissive displays?
- (g) List out merits and demerits of DVST.

2 Answer the following questions:

- (a) Explain the Bresenham's circle drawing algorithm 7
with all necessary derivations. Consider start position as (-r, 0) and move in clockwise direction.

OR

- (a) List the line clipping algorithms. Explain any one 7
line clipping algorithm in detail.
- (b) Differentiate raster scan display and random scan display. 7

- 3** Answer the following questions: **14**
- (a) Explain scan line fill algorithm and also explain all data structures used in algorithm.
 - (b) Applying Bresenham's line drawing algorithm to draw a line from (4,4) and end point is (-3,0).
- OR**
- (a) Explain the pipeline for transforming a view of a world-coordinate scene to device coordinates.
 - (b) Enlist and explain character generation methods..
- 4** Answer the following questions:
- (a) What is projection? Enlist and explain types of projection. **6**
 - (b) Explain boundary fill and flood fill algorithms. **4**
- OR**
- (b) What is transformation? Generate matrix for anticlockwise rotation. **4**
 - (c) Perform a 90 degree rotation of a triangle A(0, 0) B(6, 0) c(3, 3) about an arbitrary points (3,3). **4**
- 5** Do as directed.
- (a) What is segment? Explain segment table in detail. **6**
 - (b) Explain fundamental steps required in digital image processing. **4**
 - (c) Write 2 X 2 transformation matrix for each of the following about the origin: **4**
 - (a) Scale the image by to be half of the original.
 - (b) Shift the image by 2 units to the left and 4 units to the down.
 - (c) The x direction 3 times as large and y direction unchanged.
 - (d) Rotate clockwise by theta.
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