TRIBHUVAN UNIVERSITY

FACULTY OF MANAGEMENT

Office of the Dean

April - May 2017

Full Marks: 40

Time: 2 hrs.

BIM / Fifth Semester / IT 221: Computer Graphics

Candidates are required to answer all the questions in their own words as far as practicable.

Group "A"

1. *Brief Answer Questions:* ***[10 × 1 = 10]***

i. List the disadvantages of using light pen.

ii. Write the application of computer graphics.

iii. Differentiate between raster scan display and random scan display.

iv. Why do you need clipping?

v. What is buffered image in java 2D?

vi. Differentiate between HSV and RGB color model.

vii. Write the final result of two successive scaling.

viii. Write differences between parallel and perspective projection.

ix. Write the reflection of 3-D object about Z-axis.

x. What do you mean by key frame specifications?

Group "B"

Exercise Problems: ***[5 × 4 = 20]***

2. Write Java program to draw thick line and dashed line.

3. Using Cohen-Sutherland algorithm clip the line segment with coordinates A(-4, 2) and B(-1, 7) against window whose lower left corner is at (-3, 1) and upper right corner is at (2, 6).

4. Digitize the line with end paths A (11, 5) and B (5, 13) using Bresenham's line drawing algorithm.

5. How 3-D object information is kept in computer graphics packages? Explain with example.

6. Reflect a triangle whose vertices are A(-1, 0), B(0, -2) and C(1, 0) on y = 6 axis and then rotate with rotation angle -90° about (1, 4).

Group "C"

Comprehensive Questions: ***[2 × 5 = 10]***

7. Define ambient light and intensity attenuation. Explain gouraud shading with its advantages and disadvantages.

8. How does the Z-buffer algorithm determine which surfaces are hidden?

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