**National College of Computer** **Studies**

**(NCCS-College of IT & Management)**

**Final Examination (2013)**

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| **BSc.CSIT/ Fourth Semester/ CSC 254: Computer Graphics** |

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

**Full Marks: 60**

**Pass Marks: 30**

**Time: 3 Hours**



**Set A**

**Attempt all questions: [6×10=60]**

1. What is a computer graphics? Explain in detail about the applications of computer graphics.
2. Explain the random scan display system with its advantages and disadvantages.
3. Explain about Cohen-Sutherland line clipping.
4. Derive the Mid-point circle drawing algorithm.
5. Explain the scan line algorithm for removing hidden surfaces.
6. Derive the window to viewport transformation coefficient matrix.
7. Explain about Virtual Reality and its applications.
8. Define the following terms ( any two.)
9. Touch panels
10. Polygon Mesh
11. Graphics software and software standards.
12. Liqud Crystal Displays
13. Consider 256 pixel X 512 scan lines image with 24- bit true color. If 20 minutes video is required to capture, calculate the total memory required?
14. Explain in detail about Diffuse Reflection model.

OR

Explain about Phong Shading.

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**Set B**

**Attempt all questions: [6×10=60]**

1. What is a computer graphics? Explain in detail about the application of computer graphics.
2. Explain the raster scan display system with its advantages and disadvantages.
3. Derive Bresenham’s line drawing algorithm.
4. Why homogeneous coordinates are used for transformation computations in computer graphics.
5. Differentiate between periodic B-spline curves with non-periodic B-spline curves.
6. Explain the z- buffer algorithm for removing hidden faces.
7. Derive the transformation matrix for oblique parallel projection.
8. Define the following terms (any two).
9. Digitizer
10. Persistence and resolution
11. Retrace and interlaced refresh procedure.
12. Polygon tables.
13. Consider 256 pixel X 256 scan lines image with 24- bit true color. If 10 minutes video is required to capture, calculate the total memory required?
14. Explain in detail about Phong Specular Reflection model.

OR

Explain about Gouraud Shading.