

Roll No. :

Total No. of Questions : 16]

[Total No. of Printed Pages : 3

SEMC-412

M.Sc. (IVth Semester) Examination, 2022

COMPUTER SCIENCE

Paper - MCS-401(b)

(Computer Graphics and Multimedia)

Time : 1½ Hours]

[Maximum Marks : 40

Note :- The question paper contains three Sections.

Section-A

(Marks : 1 × 10 = 10)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **1** mark.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer *five* questions by selecting at least *one* question from each Unit. Answer should not exceed **200** words. Each question carries **3** marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer *three* questions by selecting *one* question from each Unit. Answer should not exceed **500** words. Each question carries **5** marks.

Section-A

1. (i) Define Pixel. How is it represented in a Computer Screen ?
- (ii) What do you understand by Animation ?

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SEMC-412 P.T.O.

- (iii) Write a note on colour model.
- (iv) Give an account on applications of Computer Graphics.
- (v) Define Clipping.
- (vi) What is Homogeneous coordinate system ? Why is it used in Computer Graphics ?
- (vii) Explain how we can give glossy effects on an object in Blender.
- (viii) Write steps to subdivide and join meshes in Blender.
- (ix) What is ambient light ? Define.
- (x) Write a program snippet to draw a pixel in OpenGL.

Section–B

Unit–I

- 2. Explain cathode ray tube its architecture.
- 3. What is composite transformation ? Explain.
- 4. Give applications of computer graphics.

Unit–II

- 5. Differentiate between orthographic and parallel projection.
- 6. Write a note on modelling and texturing.
- 7. Write transformation matrix for 3D translation, rotation and scaling.

Unit–III

- 8. Explain ambient occlusion.
- 9. What do you understand by layer in Blender ? Why layers are used ? Write steps to add layers in Blender.
- 10. Explain steps and various options available for snapping in Blender.

Section–C

Unit–I

- 11. (a) Write DDA algorithm for scan conversion of a line.
- (b) Scan convert a line from points (10, 50) to (100, 100).

12. (a) Explain Random and Raster scan systems.
- (b) Find composite matrix for successive translation and scaling.

Unit-II

13. Explain Hidden surface removal in detail.
14. What is Keyframes ? Explain principles of animation.

Unit-III

15. How we can create mesh primitives in Blender ? Also explain available tools for extrusions.
16. How we can edit animations in graph editor ? Explain in detail.