

PC-517
(564) M.Sc. COMPUTER SCIENCE (FOURTH SEMESTER)
Examination JUNE 2020
Compulsory/Optional
Group -B
Paper - II
COMPUTER GRAPHICS AND MULTIMEDIA

Time:- Three Hours]

Maximum Marks : 80
Minimum Passing Marks: 29

नोट : दोनों खण्डों से निर्देशानुसार उत्तर दीजिए। प्रश्नों के अंक उनके दाहिनी ओर अंकित हैं।

Note: Answer From Both the Section as Directed. The Figures in the right-hand margin indicate marks.

Section -A

1. Answer the following questions: -

1X10 = 10

- (a) Random- scan system mainly designed for:-
 - (i) Pixel drawing application (ii) Line drawing application
 - (iii) Realistic shaded screen (iv) None of these
- (b) Display card is used for the purpose of:-
 - (i) Sending graphics data to input unit (ii) Receiving graphics data from output unit
 - (iii) Sending graphics data to output unit (iv) both (i) & (ii)
- (c) The algorithm used for filling the interior of a polygon is called.
 - (i) Flood fill algorithm (ii) Boundary fill algorithm
 - (iii) Scan line polygon fill algorithm (iv) None of these
- (d) The techniques to minimizing aliasing are:-
 - (i) Increased number of resolution (ii) Modify pixel intensities
 - (iii) Super sampling (iv) All of these
- (e) In two dimensional viewing we have:-
 - (i) 3D Window & 2D Viewport (ii) 3D Window & 3D Viewport
 - (iii) 2D Window & 2D Viewport (iv) 2D Window & 3D Viewport
- (f) Which type of arithmetic is used in Liang barsky algorithm?
 - (i) Simple arithmetic operations (ii) Flooring point arithmetic
 - (iii) Fixed point arithmetic (iv) Logarithmic operations
- (g) The Intersection of primary CMYK colour produces?
 - (i) White color (ii) Cyan color
 - (iii) magenta color (iv) Black color
- (h) The transformation in which an object can be shifted to any coordinate position in three dimensional planes are called.
 - (i) Translation (ii) Scaling (iii) Rotation (iv) Shearing
- (i) Which of the following is a technique to blend two or more images to form a new image?
 - (i) Modelling (ii) Animating (iii) anty-aliasing (iv) Morphing
- (j) MPEG stand for?
 - (i) Movie protocol experts group (ii) Movie protocol experimentation group
 - (iii) Motion picture experts group (iv) Movie and protocols engineering group

2. Answer the following short - any were type questions:-

2x5 = 10

- (a) Write the application area of computer graphics
- (b) What are the side effects of bresenhains line drawing algorithm?
- (c) Differentiate between window port and viewport
- (d) What is oblique projection.
- (e) Differentiate between JPEG and GIF image.

Section -B

Answer the following long - answer type questions:-

12x5 = 60

UNIT - I

3. Explain the following:-

- (a) Colour CRT monitor (b) Flat panel display

Or

What is raster scan and random scan display? Explain in detail.

UNIT - II

4. Explain midpoint circle drawing algorithm. Find the coordinates of pixels that lie on the boundary of circle with radius 10 and center as (4,4) using this algorithm.

Or

What is polygon filling algorithm? Explain boundary fill algorithm using 4 Point connectivity.

UNIT - III

5. Explain the Cohen-Sutherland algorithm for line clipping, with example.

Or

Explain two dimensional transformations with example.

UNIT - IV

6. Explain parallel and perspective projections. Derive the matrix for perspective projection.

OR

Explain RGB and CMY colour model. Write the procedure to convert HSV model into RGB model.

UNIT - V

7. Write short notes on:-

(a) Morphing (b) Shading (c) Anti-aliasing. (d) Multimedia authoring system

OR

Explain the following.

(a) JPEG image compression standards (b) Method of MPEG video compression.