MCA

SEMESTER-V

COMPUTER GRAPHICS

MCA-501

Duration: 3 Hrs.   Marks: 70

PART : A (OBJECTIVE)   = 20
PART : B (DESCRIPTIVE) = 50

[PART-B : Descriptive]

Duration: 2 Hrs. 40 Mins.   Marks: 50

[Answer question no. One (1) & any four (4) from the rest]

1. Define the different input devices used in computer graphics.   10

2. What is Projection? Describe the all categories of projection.   2+8=10

3. Write the midpoint circle drawing algorithm. Draw a circle with radius 5.   5+5=10

4. Write DDA line drawing algorithm. Draw a line using bresenham's algorithm.   4+6=10

5. Define the basic 2-D transformation with examples. Describe about the shear and reflection.   6+4=10

6. Describe window to viewport transformation. Write the Cohen-Sutherland line clipping algorithm.   4+6=10

7. What is Hidden surface? Write about the 3 different algorithm to remove hidden surface.   10

8. *Write short notes on any two:*   5x2=10
    a) CRT display
    b) Segments
    c) Flood Fill and Boundary Fill algorithm
    d) B-spline and BEZIER curve

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[PART-A : Objective]

Choose the correct answer from the following :   1X20=20

1. Good graphics programming avoids the use of floating point operations because
   a. Large memory space required to store floating point value
   b. Floating point operations slow down the system
   c. Floating point operations slow down the system
   d. None of these

2. Following is not a part of the raster scan CRT
   a. Control electrode
   b. Electron gun
   c. Deflection yoke
   d. Vertical polarizer

3. Horizontal retrace means
   a. The path electron beam takes when at the end of each refresh cycle
   b. The path electron beam takes when returning to left side of the CRT
   c. The path electron beam follows only one column of the at once
   d. None of these

4. The term bitmap is applicable to
   a. 1-bit/pixel bi-level systems
   b. Multiple bit/pixel system
   c. For any graphical system
   d. None of these

5. scan conversion means
   a. Transforming frame buffer content to display form
   b. Transforming pixels into bits
   c. Converting objects in world coordinate system to screen coordinate system
   d. All of these

6. GKS stands for
   a. Geographical Kernel System
   b. Graphical kits system
   c. Graphical kernel system
   d. None of these

7. Following is an algorithm for line clipping
   a. Cohen-Sutherland algorithm
   b. Z-buffer algorithm
   c. Bresenham's algorithm
   d. None of these

8. Projection means
   a. Scan converting 2D images
   b. Transformation of points in a coordinate system of dimension n into points in a coordinate system of dimension less than n
   c. Transformation of points in a coordinate system of dimension less than n into points in a coordinate system of dimension n
   d. None of the above

9. Curves are represented by
   a. Control points and end points
   b. Control points and tangent to control points
   c. End points and tangents
   d. None of these

10. A line drawn in the background color is
    a. Visible
    b. Invisible
    c. Visible or Invisible
    d. Partially visible

11. If the slope magnitude is 1, then circles, ellipse and other curves will appear
    a. Thick
    b. Thinnest
    c. Big
    d. Rough

12. With 3 bits per pixel, we can accommodate 8 gray levels. If we use 8 bits per pixel then what is the value of gray levels?
    a. 18 gray levels
    b. 128 gray levels
    c. 256 gray levels
    d. No color

13. The translation distances (dx, dy) is called as
    a. Translation vector
    b. Shift vector
    c. Both a and b
    d. Neither a nor b

14. The two-dimensional translation equation in the matrix form is
    a. P'=P+T
    b. P'=P-T
    c. P'=P*T
    d. P'=p

15. The rotation axis that is perpendicular to the xy plane and passes through the pivot point is known as
    a. Rotation
    b. Translation
    c. Scaling
    d. Shearing

16. The color information can be stored in
    a. Main memory
    b. Secondary memory
    c. Graphics card
    d. Frame buffer

17. An ellipse can also be rotated about its center coordinates by rotating
    a. End points
    b. Major and minor axes
    c. Only a
    d. None

18. For 2D transformation the value of third coordinate i.e. h=?
    a. 1
    b. 0
    c. -1
    d. Any value

19. Raster graphics are composed of
    a. Pixels
    b. Paths
    c. Palette
    d. None of these

20. The subcategories of orthographic projection are
    a. Cavalier, cabinet, isometric
    b. Cavalier, cabinet
    c. Isometric, diametric, trimetric
    d. Isometric, cavalier, trimetric

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UNIVERSITY OF SCIENCE & TECHNOLOGY, MEGH A

[PART (A) : OBJECTIVE]

Duration : 20 Minutes

Course : _____

Semester : _____   Roll No : _____

Enrollment No : _____   Course code : _____

Course Title : _____

Session : _____ 2017-18 _____   Date : _____

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Instructions / Guidelines

➢ The paper contains twenty (20) / ten (10) questions.

➢ Students shall tick (✓) the correct answer.

➢ No marks shall be given for overwrite / erasing.

➢ Students have to submit the Objective Part (Part–A) to the invigilator just after completion of the allotted time from the starting of examination.

Full Marks	Marks Obtained
20	

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Scrutinizer's Signature   Examiner's Signature   Invigilator's Signature