

DipIETE – CS (Current Scheme)

Time: 3 Hours

JUNE 2016

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2×10)

- a. Types of computer graphics are

(A) Vector and Raster	(B) Scalar and Raster
(C) Vector and Scalar	(D) None of these
- b. Raster images are commonly called as

(A) pixmap	(B) bitmap
(C) palette	(D) none of these
- c. The quality of an image depend on

(A) no of pixels used by image	(B) no of lines used by image
(C) no of objects used in image	(D) none of these
- d. _____ is used to regulate the flow of electrons in CRT.

(A) Electronic Gun	(B) Focusing Electrode
(C) Control Electrode	(D) All of these
- e. Raster is a synonym for the term

(A) Frame	(B) Matrix
(C) Model	(D) All of these
- f. Choose the correct statement

(A) Random scan monitors draw a picture by plotting one line at a time.	(B) The components line of a random scan picture must be refreshed in a particular order.
(C) Random scan method is well suited for displaying shading and color areas.	(D) None of these
- g. A circle, if scaled only in one direction becomes a

(A) Parabola	(B) Hyperbola
(C) Ellipse	(D) Does not change
- h. Visual change in a scene with respect to time is known as

(A) Animation	(B) Morphing
(C) Half toning	(D) None of these

- i. The amount of light emitted by the phosphor coating depends on the
 (A) Number of electrons striking the screen.
 (B) Speed of electrons striking the screen.
 (C) Distance from the cathode to the screen.
 (D) None of these
- j. An orthographic projection is a
 (A) perspective projection (B) parallel projection
 (C) projection of curved surface (D) none of these

**Answer any FIVE Questions out of EIGHT Questions.
 Each question carries 16 marks.**

- Q.2** a. Explain the working of CRT and also explain random scan and raster scan. (10)
 b. Briefly explain different components of GUI. (6)
- Q.3** a. Explain an algorithm to plot symmetric circle. Write method to generate a circle using parametric form of circle. (10)
 b. Discuss scan line algorithm to fill a polygon. (6)
- Q.4** a. Give the transformation matrix of reflection about the line $y = -x$ (6)
 b. Give the transformation matrix in homogenous co-ordinates of rotation about a point (x_r, y_r) . (10)
- Q.5** a. Explain Cohen-Sutherland line clipping algorithm. (10)
 b. Explain the steps involved in window to view port transformation. (6)
- Q.6** a. Derive the expressions of Bernstein polynomials for cubic Bezier curves. (8)
 b. Explain orthographic projection and isometric projection. (8)
- Q.7** a. Explain Z – buffer algorithm for visible surface detection. (8)
 b. Explain different hidden line removal methods. (8)
- Q.8** a. Explain the following video formats :
 (i) NTSC Format (ii) PAL Format
 (iii) SECAM Format (iv) RGB Format (8)
 b. Explain three real time animation techniques. (8)
- Q.9** a. Describe MPC specification for a multimedia PC. (4)
 b. Differentiate between WAV and MP3 file format. (6)
 c. Write short note on multimedia storage. (6)