Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Winter Examination-2018

Subject Name : Computer Graphics

Subject Code : 4TE06CGR1 **Branch:** B.Tech (CE)

Semester : 6 **Date :** 19/10/2018 **Time :** 02:30 To 05:30 **Marks :** 70

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 Attempt the following questions:

a) What is Computer graphics? **(01)**

b) List down the properties of pixel. **(01)**

c) What is concave polygon? **(01)**

d) What is aliasing? **(01)**

e) What is aspect ratio? **(01)**

f) List down the name of methods which are used for color CRT. **(01)**

g) What is persistence? **(01)**

h) What is data glove? **(01)**

i) What is perspective projection? **(01)**

j) The process of extracting a portion of a picture inside or outside with specified region is called **(01)**
a) Transformation b) Projection c) Clipping d) Mapping

k) The purpose of refreshing a CRT is **(01)**
a) To avoid flickering b) To maintain steady picture
c) To avoid fading of pixels d) All of the above

l) The simplest output primitive is _____ **(01)**
a) Straight line b) Straight line segment c) Point d)Circle

m) What do you mean by maximum number of pixels reside on screen without overlapping? **(01)**
a) Resolution b) Dot Pitch c) Pixel Depth d) ppi

n) Weiler Arthton algorithm works well for _____ **(01)**
a) Concave polygon b) Convex polygon c) Smooth curves d) Both a and b

Attempt any four questions from Q-2 to Q-8

Q-2 Attempt all questions

(a) Explain various character generation methods. **(07)**

(b) Explain DDA line drawing algorithm with suitable example. **(07)**

Q-3 Attempt all questions

(a) Explain RGB color model and CMY Color model. **(07)**

(b) What is projection? Explain the Parallel projection techniques **(07)**

Q-4 Attempt all questions

(a) Derive all necessary formulas for Midpoint Ellipse drawing algorithm. Write pseudo code for it. **(07)**

(b) Explain 3D Translation and 3D Scaling technique. **(07)**

Q-5 Attempt all questions

(a) What is polygon filling process? Explain Seed filling method. **(07)**

(b) What is reflection operation? Explain 2D reflection with its types. Use suitable example for explanation. **(07)**

Q-6 Attempt all questions

(a) Draw a line using Bresenham's algorithm for given co-ordinates A[1,2] to B[6,5]. Write a pseudo code of Bresenham's algorithm. **(07)**

(b) Draw an circle using Midpoint circle drawing algorithm for radius r = 5. **(07)**

Q-7 Attempt all questions

(a) Explain Cohen Sutherland Line clipping algorithm with suitable example. **(07)**

(b) What is printer? Explain it with its types. **(07)**

Q-8 Attempt all questions

(a) Explain Sutherland -Hodgeman polygon clipping with example. **(07)**

(b) Explain polygon inside test with suitable example. **(07)**