



GENERAL INSTRUCTIONS TO THE CANDIDATES

- Candidates are instructed to answer the questions as per Bloom's Taxonomy knowledge level (K_1 to K_6)
- Candidates are strictly instructed not to write anything in the question paper other than their roll number.
- Candidates should search their pockets, desks and benches and handover to the Hall Superintendent/ Invigilator if any paper, book or note which they may find therein as soon as they enter the examination hall.
- Candidates are not permitted to bring electronic watches with memory, laptop computers, personal systems, walkie-talkie sets, paging devices, mobile phones, cameras, recording systems or any other gadget / device /object that would be of unfair assistance to him / her.
- Corrective measures as per KCT examination policies will be imposed for malpractice in the hall like copying from any papers, books or notes and attempting to elicit the answer from neighbours.

B.E DEGREE EXAMINATIONS: DEC 2015

(Regulation 2014)

Third Semester

COMPUTER SCIENCE AND ENGINEERING

U14CST303: Computer Graphics

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Matching List I with List II and select the correct answer for the table given below:

CO2 [K₂]

List I (Scaling factors)	List II (Results in)
A. $S_x=1, S_y=1$	i. Dimishing
B. $S_x=S_y>1$	ii. Enlarging
C. $S_x=S_y<1$	iii. No change
D. $S_x=S_y=0$	iv. Collapsing

- | | A | B | C | D |
|----|-----|-----|-----|-----|
| a) | iv | iii | i | ii |
| b) | ii | iv | iii | i |
| c) | iii | ii | i | iv |
| d) | iv | i | ii | iii |

2. _____ is the smallest element of an image that can be individually processed in a video display system

CO1 [K₂]

- a) Bit
- b) Byte
- c) Pixel
- d) Element

3. Functions in graphic packages that are used to describe various picture components are called_____ CO1 [K₂]

- a) pixels
- b) frames
- c) primitives
- d) Scan lines

4. Assertion (A): In Cohen-Sutherland's line clipping algorithm, any line that is completely outside the window edges has a region code values of 0000 for both the end points. CO3 [K₃]

Reason (R): These lines can be completely eliminated

- a) Both are A and R are individually true and R is the correct explanation of A
- b) Both are A and R are individually true and R is not the correct explanation of A
- c) A is true bur R is false
- d) A is false but R is true

5. Which of the following statements are correct? CO2 [K₂]

- i. Aspect ratio of an image describes the proportional relationship between its width and its height.
- ii. Picture definition is stored in a memory called frame buffer
- iii. In 2-D transformations, reflection with respect to x-axis is obtained by negating the x coordinate

- a) ii, iii
- b) i, ii
- c) All the three
- d) ii only

6. By performing _____ transformation, a square can be converted into a rectangle. CO2 [K₂]

- a) Shearing
- b) Scaling
- c) Rotation
- d) None of the above

7. Assertion (A):The depth information in a 3D scene can be indicated with wire frame displays CO3 [K₂]

Reason (R): The brightness of line segments can be varied according to their distances from the viewing position

- a) Both are A and R are individually true and R is the correct explanation of A
- b) Both are A and R are individually true and R is not the correct explanation of A
- c) A is true but R is false
- d) A is false but R is true

8. A process with the help of which images or pictures can be produced in a more realistic way is called _____ CO5 [K₂]

- a) morphing
- b) clipping

22. (i) Scale the given triangle ABC, with the scaling factors $S_x=2$, $S_y=0.5$. Rotate the resultant object by 90 degrees (Anticlockwise). A(2,2), B(2,8),c(5,5) (7) CO2 [K₂]
- (ii) Explain about CRT monitors working using diagram. (7) CO2 [K₂]
23. Give the matrix representations for any three 3- dimensional transformations and explain about them using examples. CO3 [K₂]
24. Explain the two basic projection methods in three dimensional spaces. CO4 [K₂]
25. i. Summarize the steps involved in designing the animation sequence. (7) CO5 [K₂]
ii. What are color models? Explain any two in detail. (7)
26. Explain about 2D line clipping algorithm with suitable example. CO2 [K₂]
