

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2017

Course Code: IT367

Course Name: COMPUTER GRAPHICS AND MULTIMEDIA (IT)

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

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|---|--|-------|
| 1 | a) Compare DDA line drawing algorithm with Bresenham's algorithm. | (3) |
| | b) Explain H.261 Compression technique. | (5) |
| | c) Illustrate Bresenham's line drawing algorithm with endpoints (20,10) and (30,18) | (7) |
| 2 | a) Derive the decision parameter in midpoint circle drawing algorithm and write the algorithm. | (8) |
| | b) Explain with figure JPEG compression technique. | (7) |
| 3 | a) Explain Boundary fill polygon filling algorithm. | (5) |
| | b) What is DVI? What are the basic techniques used for motion video encoding? | (5) |
| | c) Classify different types of source/entropy & hybrid coding techniques. | (5) |

PART B

Answer any two full questions, each carries 15 marks.

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|---|---|-----|
| 4 | a) With a neat sketch explain the working principle of CRT. | (6) |
| | b) Translate the square ABCD whose coordinates are A (0,0) B(3,0) C(3,3) and D(0,3) by 2 units in both directions and then scale it by 1.5 units in x-direction and 0.5 units in y-direction. | (6) |
| | c) Write short notes on E-Paper displays. | (3) |
| 5 | a) Write the basic transformations with homogeneous matrix representations. | (8) |
| | b) Explain OLED Displays. How it differs from LED? | (7) |
| 6 | a) Show that transformation matrix for reflection about $y=x$ is equivalent to reflection relative to y axis followed by counterclockwise rotation of 90 degrees. | (4) |
| | b) Magnify the triangle with vertices A(0, 0) B (1, 1) C (5, 2) to twice its size while keeping C (5, 2) fixed. | (5) |
| | c) Differentiate between LCD and PLASMA displays. | (6) |

PART C

Answer any two full questions, each carries 20 marks.

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| 7 | a) What is clipping? Describe Cohen Sutherland line clipping algorithm. | (10) |
| | b) What is image segmentation? | (4) |
| | c) Compare Z Buffer algorithm and A-Buffer algorithm. | (6) |
| 8 | a) Describe Sutherland Hodgeman Polygon clipping algorithm with an example. | (10) |
| | b) What is the histogram equalization? | (5) |
| | c) Explain the depth buffer method. | (5) |
| 9 | a) Write an example of 3D composite transformation. | (4) |
| | b) Write down the homogeneous matrix representations of 3D reflection and shear. | (6) |
| | c) Explain the following | (10) |
| | i) Painter's algorithm. | |
| | ii) Scan line algorithm. | |
