Reg No.:_____ Name:_____

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

THIRD SEMESTER MCA (Second Year Direct) DEGREE EXAMINATION, DEC 2018

**Course Code: RLMCA387**

**Course Name: COMPUTER GRAPHICS**

Max. Marks: 60 Duration: 3 Hours

**PART A**

***Answer all questions, each carries 3 marks.*** Marks

| | | |
|---|---|---|
| 1 | List any three applications of computer graphics. | (3) |
| 2 | Write a short note on any two interactive graphic input devices. | (3) |
| 3 | Explain the two dimensional viewing pipeline. | (3) |
| 4 | Show that two successive two dimensional translations are additive. | (3) |
| 5 | What are the different three dimensional object representations? | (3) |
| 6 | What is a vanishing point? How do we determine the number of principal vanishing points in a projection? | (3) |
| 7 | What are splines? | (3) |
| 8 | What is meant by chromaticity of light? | (3) |

**PART B**

***Answer six questions, one full question from each module and carries 6 marks.***

**Module I**

| | | |
|---|---|---|
| 9 | Compare raster scan and random scan displays with neat diagrams. | (6) |

**OR**

| | | |
|---|---|---|
| 10 | With a suitable example explain Bresenham's line drawing algorithm. | (6) |

**Module II**

| | | |
|---|---|---|
| 11 | Explain two dimensional translation and rotation with the proper matrix equations. | (6) |

**OR**

| | | |
|---|---|---|
| 12 | How is window to viewport coordinate transformation performed? Explain the concept with equations. | (6) |

**Module III**

| | | |
|---|---|---|
| 13 | Why are polygon tables used? Explain with a suitable example. | (6) |

**OR**

| | | |
|---|---|---|
| 14 | Explain in detail any two quadric surfaces. | (6) |

**Module IV**

| | | |
|---|---|---|
| 15 | What is known as parallel projection? What are the different types of parallel | (6) |

projections?

**OR**

16 Explain some of the general considerations in structuring a user dialog. (6)

**Module V**

17 What are Bezier curves? What are the properties of Bezier curves? (6)

**OR**

18 How can we perform 3D scaling with respect to a selected fixed position $(x_f,y_f,z_f)$? Give the matrix representation for this transformation. (6)

**Module VI**

19 Explain in detail the z- buffer method with the help of an algorithm. (6)

**OR**

20 What is meant by ray- tracing? Explain the basic ray- tracing algorithm. (6)

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