Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **14CS2006** | **Duration :** | **3hrs** |
| **Sub. Name :** | **COMPUTER GRAPHICS** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain the homogeneous coordinate system for 2-D basic transformation. | CO1 | 15 |
| b. | How will you convert the world coordinate system to the window coordinate system? | CO2 | 5 |
| (OR) | | | | |
| 2. | a. | Express the java 2-D syntax for the basic geometric objects. | CO1 | 10 |
| b. | Explain with diagram the 2-D composition transformation. | CO2 | 10 |
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| 3. | a. | Demonstrate the scenario for the Brons’ line drawing algorithm digramatically. | CO3 | 20 |
| (OR) | | | | |
| 4. | a. | Express and sketch the various cases of mid point circle drawing algorithm. | CO3 | 20 |
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| 5. | a. | Write about the alpha values for developing animations in java 3-D. | CO2 | 10 |
|  | b. | Draw a scenegraph with dynamic transformations for a *Super-Mario* game. | CO3 | 10 |
| (OR) | | | | |
| 6. | a. | Explain about the topological notion. | CO1 | 5 |
|  | b. | Explain the various 3-D modelling techniques. | CO2 | 15 |
|  |  |  |  |  |
| 7. | a. | Demonstrate the z-buffer (depth-buffer) algorithm with example. | CO2 | 10 |
|  | b. | Write short note on the following   1. Light sources 2. Reflection 3. Shadows 4. Transparency 5. Textures | CO1 | 10 |
| (OR) | | | | |
| 8. | a. | How do the *scanline technique for edges* improve the image precision? | CO3 | 10 |
|  | b. | Explain about *back-face culling* technique. | CO2 | 10 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | Explain about the *fog and particle systems.* What are the syntaxes in java 3-D to represent *fog*? | CO1 | 10 |
|  | b. | What is collision detection? Write the java 3-D syntaxes of collision detection. | CO2 | 10 |