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



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

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| **Code :** | **14CS3058** | **Duration :** | **3hrs** |
| **Sub. Name :** | **VIRTUAL REALITY TECHNOLOGY** | **Max. Marks :** | **100** |

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

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Illustrate the uniqueness of virtual reality and show how it differs from augmented reality and telepresence. | CO1 | 20 |
| **(OR)** | | | | |
| 2. |  | Describe various core components available in conventional VR systems. Relate its necessity in developing commercial VR devices. | CO1 | 20 |
|  |  |  |  |  |
| 3. | a. | Explain the working methodology of the Head-Mounted Display (HMD) integration in a VR system. | CO1 | 10 |
| b. | Discuss the working of pinch data glove. | CO1 | 10 |
| **(OR)** | | | | |
| 4. |  | Elaborate on various gesture interfaces required for interacting with virtual reality systems. Mention its unique operations. | CO1 | 20 |
|  |  |  |  |  |
| 5. | a. | What is temperature feedback? Describe how temperature feedback is realized using temperature feedback glove. | CO2 | 10 |
| b. | Describe the working of speaker-based 3D audio systems by highlighting key properties associated with human hearing model. | CO2 | 10 |
| **(OR)** | | | | |
| 6. |  | Define rendering. Analyse the various stages of graphics rendering pipeline to provide immersive VR. | CO2 | 20 |
|  |  |  |  |  |
| 7. | a. | Examine the priority of scene graph in VR programming. | CO3 | 5 |
| b. | Categorize various object-based programming tool kits available in developing VR product. Mention the operational structure of GHOST. | CO3 | 15 |
| **(OR)** | | | | |
| 8. |  | Explain the various features involved in the design of physical modeling of objects in virtual reality environment. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Identify the various cause and effects of cyber sickness in handling VR products by extending your view on the safety solutions need to offer along with VR products. | CO2 | 10 |
| b. | Analyze various factors that are considered in evaluating user performance studies while interacting with the virtual world. | CO2 | 10 |