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



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

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **17MT2032** | **Duration :** | **3hrs** |
| **Sub. Name :** | **VR TECHNOLOGIES AND APPLICATIONS** | **Max. Marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Outline the history of virtual reality from its early inception to the present state of the art. | CO1 | 20 |
| **(OR)** | | | | |
| 2. | a. | Explain the working of Sub-conscious and Consciousness in human beings. | CO3 | 6 |
| b. | List and explain the parts of the human Visual System (Sight). | CO3 | 14 |
|  |  |  |  |  |
| 3. | a. | With an example, define the Uncanny Valley in CGI. | CO3 | 5 |
| b. | Describe Passive and Active Haptics with examples. | CO2 | 10 |
| c. | Describe Saccades in the Eye with its application. | CO3 | 5 |
| **(OR)** | | | | |
| 4. | a. | Explain Visceral, Behavioral, Reflective, and Emotional  Processes of human cognition and reaction. | CO3 | 16 |
| b. | Describe Tele-presence with an application where it can be used. | CO1 | 4 |
|  |  |  |  |  |
| 5. |  | Summarize the working of Hearing, Touch, Smell and Taste in a  human being. | CO3 | 20 |
| **(OR)** | | | | |
| 6. | a. | Describe Degree of Freedom. | CO4 | 4 |
| b. | Outline any 2 depth cues that is used by humans to understand depth. | CO3 | 4 |
| c. | Explain the process of collision detection between 2D objects. | CO3 | 8 |
| d. | List down 2 real world applications of Virtual Reality. | CO1 | 4 |
|  |  |  |  |  |
| 7. | a. | Explain how humans perceive the passage of time. | CO3 | 6 |
| b. | Summarize the applications of tracking and also list down the demands of an Ideal Tracking System for Virtual Reality. | CO5 | 14 |
| **(OR)** | | | | |
| 8. | a. | Describe the basic working of inertial measurement unit with its applications. | CO5 | 6 |
| b. | List and explain the various patterns used in VR to move around, select and manipulate. | CO5 | 14 |
|  | | **Compulsory**: |  |  |
| 9. | a. | List and summarize the factors that make a user to have VR sickness. | CO4 | 12 |
| b. | State the steps for creating a basic VR game in any game engine of your choice. | CO5 | 8 |