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

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**End Semester Examination – Nov/Dec – 2018**

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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. |  | Differentiate between virtual reality and Augmented reality.  Explain the mechanism of magnetic trackers as input devices in virtual reality? Classify the AC and DC magnetic trackers and compare their working mechanism in detail. | CO1 | 2+18 |
| (OR) | | | | |
| 2. |  | Draw the schematic representation of Inside-looking-out laser BIRD optical tracker and explain its working. | CO2 | 20 |
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| 3. | a. | List and discuss about the performance parameters that are used to evaluate the efficiency of various 3D trackers. | CO1 | 5 |
| b. | Outline the importance of gestures input devices. Discuss the working of 5DT data glove. | CO1 | 5 |
| c. | Define navigation interface devices. Enumerate the important features of various navigational interface devices. | CO3 | 10 |
| (OR) | | | | |
| 4. | a. | With neat block diagram illustrate the working principle of monitor based large volume display. | CO2 | 10 |
| b. | Discuss about the most distinguishing primary variables that are used to determine the sound source location in the human auditory system. | CO3 | 10 |
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| 5. | a. | What is temperature feedback? Describe how temperature feedback is realized using temperature feedback glove. | CO2 | 10 |
| b. | How does the working of touch feedback is different from the force feedback. Describe how vibrotactile feedback is provided to the user. | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | Is there any relationship between scene complexity and refresh rate? What happens to the refresh rate when a computer renders a complex model? | CO3 | 5 |
| b. | Define rendering. With neat block diagram explain the stages of graphics rendering pipeline. | CO3 | 15 |
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| 7. | a. | Define gunlock. What are the various ways to synchronize graphics pipeline used in side-by-side displays? Which one works better? Make a drawing and explain. | CO3 | 10 |
| b. | Briefly discuss the measures needed to be taken for the optimizing the performance of graphics pipeline. | CO1 | 10 |
| (OR) | | | | |
| 8. | a. | Explain about the technique in which a combination of techniques help the VR engine to render the scene at predefined interactive rates. | CO2 | 10 |
| b. | Discuss in detail about the technique which is used to model object’s physical characteristics such as weight and inertia. | CO2 | 10 |
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|  | | **Compulsory**: |  |  |
| 9. |  | List the various factors that are considered in evaluating user performance studies while interactions with the virtual world. | CO2 | 20 |