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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec– 2017**

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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. | a. | Draw the virtual reality system architecture. | CO1 | 4 |
| b. | Explain the basic parameters used to measure the performance of virtual reality systems. | CO2 | 8 |
| c. | Discuss the working principle of mechanical trackers and list out its pros and cons in virtual reality environment. | CO2 | 8 |
| (OR) | | | | |
| 2. | a. | Demonstrate the Logitech ultrasound head tracker with the neat diagram and also the methodology by which it works. | CO2 | 12 |
| b. | What is optical tracker? How inside-looking-out laser bird optical tracker works? | CO2 | 8 |
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| 3. | a. | Discuss the various navigation and manipulation interfaces used in the virtual reality devices. | CO2 | 12 |
|  | b. | Explain pinch glove with the block diagram and mention its advantages. | CO2 | 8 |
| (OR) | | | | |
| 4. |  | Explain the mechanism of hybrid inertial trackers as input devices in virtual reality? | CO1 | 20 |
|  |  |  |  |  |
| 5. | a. | What is graphics display? Describe how head mounted display device produce the output display in virtual reality. | CO2 | 12 |
|  | b. | List the advantages of floor supported display devices. Draw the architecture of boom3c floor supported display. | CO1 | 8 |
| (OR) | | | | |
| 6. |  | Mention the uses of large volume displays. Explain how projector based display works with the block diagram. | CO2 | 20 |
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| 7. | a. | Discuss the basic principles of human auditory system with the necessary attributes involved in measuring the clarity of the audio in VR system. | CO1 | 12 |
|  | b. | What is temperature feedback? Describe how temperature feedback is realized using temperature feedback glove. | CO2 | 8 |
| (OR) | | | | |
| 8. | a. | What is rendering? Explain the various functional stages of graphics rendering pipeline with the neat block diagram. | CO1 | 10 |
|  | b. | List out the various bottlenecks in graphics pipeline and how optimization can be carried out in graphics pipeline. | CO3 | 10 |
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|  | | **Compulsory:** |  |  |
| 9. | a. | Explain the modelling technique used to describe the shape and appearance of the virtual objects in the virtual reality system. | CO2 | 10 |
|  | b. | Discuss the various ways of physical modelling techniques used for the integration of objects physical characteristics. | CO1 | 10 |