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

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**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 - 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **EE270 / 12EE237** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **VIRTUAL INSTRUMENTATION** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | What are the steps involved in prototyping of GSD. | (1) |
| 2. | Virtual Instrumentation can be used in Mobile Phones-True/False. | (1) |
| 3. | LabVIEW stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | (1) |
| 4. | SubVI is equivalent to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in C program. | (1) |
| 5. | \_\_\_\_\_\_\_\_\_\_\_\_ combines mixed data type in to logical structure. | (1) |
| 6. | The While Loop Contains two terminals namely \_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_. | (1) |
| 7. | Signals can be classified into two groups namely \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_. | (1) |
| 8. | *\_\_\_\_\_\_\_\_* refers to the minimum and maximum analog signal levels that the ADC can digitize. | (1) |
| 9. | Measurement and Automation explorer allows you to configure the \_\_\_\_\_\_\_\_\_\_\_\_. | (1) |
| 10. | Serial Data communication is achieved using \_\_\_\_\_\_\_\_\_\_ in LabVIEW | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | Discuss briefly about Data flow programming in LabVIEW. | (3) |
| 12 | Explain shift register in loops. | (3) |
| 13 | What are the three methods that DAQ devices can be grounded? | (3) |
| 14 | Discuss briefly about Counters. | (3) |
| 15 | What are three terminology which are common to VISA and instrument driver VIs | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. | a. | What does Virtual Instrumentation mean? Compare Virtual Instrumentation with conventional programming and list down the advantages | (15) |
| (OR) | | | |
| 17. | a. | With a neat block diagram, explain graphical system design model. |  |
| 18. | a. | Explain the difference between arrays and clusters. | (8) |
| b. | Write a VI program to simulate the draining of a tank whose maximum level is 1000 liters. Drain up to a 400 liters using for loop for an interval of 250 ms. | (7) |
| (OR) | | | |
| 19. | a. | What is case structure? Describe the steps followed to create a case structure. | (8) |
| b. | What is sequence structure? Describe the types of sequence structure. | (7) |
| 20. | a. | Explain the operation of FOR loop and WHILE loop in LabVIEW with neat diagrams | (15) |
| (OR) | | | |
| 21. | a. | Describe the software and hardware installation for DAQ. | (15) |
| 22. | a. | What is a plug-in DAQ device? Draw and explain the various functions in the DAQ device. | (9) |
| b. | Explain how acquired data can be stored and logged to disk. | (6) |
| (OR) | | | |
| 23. | a. | Explain in detail about the Data acquisition process. | (15) |
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| 24. | a. | Explain the architecture of VXI and how its interfaced with the PC. | (8) |
|  | b. | What are the features of SCXI and VXI? List the advantages of PXI. | (7) |
| (OR) | | | |
| 25. | a. | What is Instrument control? Draw and explain the working of GPIB and how it is used in Instrument Control. | (15) |

ALL THE BEST