**18EID51**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **April,2023** | **Electronics & Instrumentation Engineering** | | |
| **Eighth Semester** | **Virtual Instrumentation** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer Question No. 1 Compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer* ***ANY ONE*** *question from each Unit.* | | | (4X10=40 Marks) |

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| 1. | a) | Define Virtual Instrumentation? | CO1(BL2) | |  |
|  | b) | Name the three parts of LabVIEW? | CO1(BL1) | |  |
|  | c) | What is the use of Sub VI? | CO2(BL3) | |  |
|  | d) | Write the syntax of While Loop? | CO2(BL3) | |  |
|  | e) | List the uses of shift registers? | CO2(BL2) | |  |
|  | f) | Mention different debugging processes in LabVIEW? | CO1(BL2) | |  |
|  | g) | Define Code Width in error cluster. | CO3(BL2) | |  |
|  | h) | What is the difference between data acquisition and data logging? | CO3(BL1) | |  |
|  | i) | List the toolboxes available in LabVIEW for signal analysis? | CO4(BL2) | |  |
|  | j) | What are the functions available in LabVIEW to compute the power spectrum? | CO4(BL3) | |  |
| **Unit - I** | | | | | |
| 2. | a) | List the advantages of Virtual Instrumentation and write a brief note on pallets of LabVIEW? | CO1(BL2) | **5M** | |
|  | b) | Draw the architecture of Virtual Instrument and compare it with the traditional Instrument? | CO1(BL2) | **5M** | |
|  |  | **(OR)** |  |  | |
| 3. | a) | With a neat sketch explain the Graphical System Design Model? | CO1(BL2) | **5M** | |
|  | b) | Explain the role of Hardware and Software in Virtual Instrumentation? | CO1(BL2) | **5M** | |
| **Unit - II** | | | | | |
| 4. | a) | What is modular programming? Explain how to create a SUB VI and how to use it? | CO2(BL2) | **5M** | |
|  | b) | Create a VI to find the factorial of the given number using For Loop and Shift Registers. | CO2(BL3) | **5M** | |
|  |  | **(OR)** |  |  | |
| 5. | a) | Define an array in LabVIEW. Where might it be used? What is an array indexing? | CO2(BL2) | **5M** | |
|  | b) | Draw and explain how to get single and multiple plots on Waveform Charts? | CO2(BL3) | **5M** | |

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| **Unit - III** | | | | |
| 6. | a) | With a neat sketch explain the building blocks of data acquisition card? | CO3(BL2) | **5M** |
|  | b) | Explain the process of configuring a data acquisition card? | CO3(BL2) | **5M** |
|  |  | **(OR)** |  |  |
| 7. | a) | Describe 5 important characteristics of ADC /DAC with typical values and necessary graphs | CO3(BL2) | **5M** |
|  | b) | Explain various modes of connecting sensor with data acquisition card? | CO3(BL2) | **5M** |
| **Unit - IV** | | | | |
| 8. | a) | What is the difference between auto correlation and cross correlation? Explain how they can be used in signal analysis? | CO4(BL2) | **5M** |
|  | b) | Explain the development of VI to generate various basic signals? | CO4(BL3) | **5M** |
|  |  | **(OR)** |  |  |
| 9. | a) | Discuss simulation of Level control with block diagram and front panel vi | CO4(BL4) | **5M** |
|  | b) | Write a detailed note on how control system applications can be designed in LabVIEW environment? | CO4(BL3) | **5M** |

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