**18EID51**

**Hall Ticket Number:**

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| **IV/IV B. Tech ( Regular ) DEGREE EXAMINATION** | | | |
| **May, 2022** | **Electronics & Instrumentation Engineering** | | |
| **Eighth Semester** | **Virtual Instrumentation** | | |
| **Time:** Three Hours | | **Maximum:** 50 Marks | |
| *Answer Question No.1 compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer ONE question from each unit.* | | | (4X10=40 Marks) |
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| 1. | a) | What are the advantages of virtual instrument? |  |
|  | b) | List the differences between Text based programming vs Graphical programming? |  |
|  | c) | What is the use of Tunnel? |  |
|  | d) | Differentiate waveform chart and waveform graph? |  |
|  | e) | Write the differences between arrays and clusters? |  |
|  | f) | What is the use of Math script node? |  |
|  | g) | Define datalogging? |  |
|  | h) | What is aliasing? |  |
|  | i) | What is the use of power spectrum? |  |
|  | j) | List the advantages of controls and simulation toolkit in LabVIEW? |  |
| **Unit -I** | | | |
| 2. | a) | Explain the block diagram of virtual instrument? | 5M |
|  | b) | Write a brief note on role of hardware and software in development of virtual instrument? | 5M |
|  |  | **(OR)** |  |
| 3. | a) | List the advantages of Graphical programming? | 5M |
|  | b) | Write a brief note on data flow programming with examples? | 5M |
|  |  | **Unit -II** |  |
| 4. | a) | Write a short note on While loop and For loop? | 5M |
|  | b) | Write a program to generate a sum of N natural numbers? | 5M |
|  |  | **(OR)** |  |
| 5. | a) | Write a detailed note on case structures with example? | 5M |
|  | b) | Write a detailed note on bundle and unbundle of clusters? | 5M |
| **Unit -III** | | | |
| 6. | a) | Explain the block diagram of PC based instrumentation. | 5M |
|  | b) | Describe 5 important characteristics of ADC /DAC with typical values and necessary graphs | 5M |
|  |  | **(OR)** |  |
| 7. | a) | Write a detailed note on how to configure the data acquisition card? | 5M |
|  | b) | Write a short note on sampling of multichannel analog inputs? | 5M |
|  |  | **Unit -IV** |  |
| 8. | a) | Find Write brief note on functions used to perform the Fourier analysis in LabVIEW? | 5M |
|  | b) | Define autocorrelation and cross correlation and describe correlation and power spectrum built in function in LabVIEW? | 5M |
|  |  | **(OR)** |  |
| 9. | a) | Define FFT and windowing concept and show time domain plot of different windows and frequency response windows. | 5M |
|  | b) | Discuss simulation of PID control with block diagram and front panel VI? | 5M |

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