**20EI504**

**Hall Ticket Number:**

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| **III/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **January, 2024** | **Electronics and Instrumentation Engineering** | | |
| **Fifth Semester** | **Virtual Instrumentation** | | |
| **Time:** Three Hours | | **Maximum:** 70 Marks | |
| ***Answer question 1 compulsory.*** | | | **(14X1 = 14Marks)** |
| ***Answer one question from each unit.*** | | | **(4X14=56 Marks)** |
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|  |  |  | CO | BL | M |
| 1 | a) | What are the main parts of Labview? | CO1 | L1 | 1M |
|  | b) | List floating palattes? | CO1 | L1 | 1M |
|  | c) | What is front panel? | CO1 | L1 | 1M |
|  | d) | What is SubVI? | CO1 | L1 | 1M |
|  | e) | What is the use of Tunnel? | CO2 | L1 | 1M |
|  | f) | What is the use of shift Registers in loops? | CO2 | L1 | 1M |
|  | g) | What are the advantages using loops? | CO2 | L1 | 1M |
|  | h) | Write the differences between arrays and clusters? | CO2 | L1 | 1M |
|  | i) | What is the use of Math script node? | CO3 | L1 | 1M |
|  | j) | List the important functions in cluster. | CO3 | L1 | 1M |
|  | k) | List out different sequence structures. | CO3 | L1 | 1M |
|  | l) | What are the common applications of strings? | CO4 | L1 | 1M |
|  | m) | What is the purpose of a case selector in the case structure? | CO4 | L1 | 1M |
|  | n) | List any two file I/O functions. | CO4 | L1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Draw a block diagram of a typical embedded system software and hardware design flow and compare with stream-lined development flow with graphical system design. | CO1 | L1 | 7M |
|  | b) | Draw and explain the basic difference between the traditional instruments and software-based virtual instruments. | CO1 | L1 | 7M |
| **(OR)** | | | | | |
| 3 | a) | Draw and explain the layers of virtual instrumentation software and the software role. | CO1 | L1 | 7M |
|  | b) | Compare text-based programming and graphical programming. | CO1 | L1 | 7M |
| **Unit-II** | | | | | |
| 4 | a) | Explain the procedure to create SUBVI using an example. | CO2 | L1 | 7M |
|  | b) | Create a VI to find the sum of n(5) natural numbers using for loop. Draw front panel and block diagram. | CO2 | L2 | 7M |
| **(OR)** | | | | | |
| 5 | a) | Explain types of while loops with an examples. | CO2 | L1 | 7M |
|  | b) | Create a VI to find the factorial of n(5) natural numbers using for loop with feedback node. Draw front panel and block diagram. | CO2 | L2 | 7M |
| **Unit-III** | | | | | |
| 6 | a) | Explain the creation of 1-d and 2-d arrays and features of them. | CO3 | L1 | 7M |
|  | b) | Draw the vi program to find minimum and maximum in the following array elements A= [12,7,89,4. | CO3 | L2 | 7M |
| **(OR)** | | | | | |
| 7 | a) | With the help of an example explain assembling and disassembling clusters. | CO3 | L1 | 7M |
|  | b) | Build a VI to plot a circle in the *XY* graph using a For Loop by generating waveforms. | CO3 | L2 | 7M |
| **Unit-IV** | | | | | |
| 8 | a) | Discuss about different sequence structures. | CO4 | L1 | 7M |
|  | b) | Build a VI using a formula node to find the square root of the given number. | CO4 | L2 | 7M |
| **(OR)** | | | | | |
| 9 | a) | Explain any three string functionswith programming examples. | CO4 | L1 | 7M |
|  | b) | Write about low level FILE I/O VIs. | CO4 | L1 | 7M |

