| Reg. No. | | | | | | | | | | |
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# MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

*A Constituent Institution of Manipal University*

## SIXTH SEMESTER B.TECH. (INSTRUMENTATION AND CONTROL ENGG.)

### END SEMESTER EXAMINATIONS, APRIL/MAY 2017

SUBJECT: VIRTUAL INSTRUMENTATION [ICE 312]

Time: 3 Hours MAX. MARKS: 50

**Instructions to Candidates:**

- Answer **ANY FIVE FULL** questions.
- Missing data may be suitably assumed.

| | | |
|---|---|---|
| 1A. | With a neat diagram explain the architecture of virtual instrument. | 5 |
| 1B. | Explain the role of virtual instrumentation in test, design and control. | 3 |
| 1C. | Distinguish traditional instruments from virtual instruments. | 2 |
| 2A. | Describe the types of graphs available in LabVIEW with suitable diagrams. | 5 |
| 2B. | Differentiate shift registers and feedback node. Is initialization necessary for them? Justify your answers with relevant example. | 3 |
| 2C. | What is cluster order? Why it is important? | 2 |
| 3A. | With example explain any 4 array functions available in LabVIEW. | 4 |
| 3B. | Explain sequence structure with example. | 3 |
| 3C. | What is auto-indexing? Explain with an example. Identify the number of times the loop runs for the block diagram shown in Fig. Q3C. Comment on your answer. | 3 |

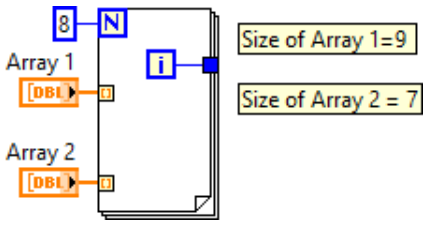


Fig. Q3C

| | | |
|---|---|---|
| 4A. | Explain any 5 string format functions with example. | 5 |
| 4B. | Explain the GPIB system with a neat diagram and mention their features. | 5 |
| 5A. | Explain the methods of increasing measurement quality. | 5 |
| 5B. | Illustrate the importance of grounding in measurement. | 5 |
| 6A. | Explain any 4 methods of signal conditioning. | 4 |
| 6B. | Explain VISA. | 3 |
| 6C. | What is DMA? Explain the different modes of operations in DMA | 3 |

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