Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

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

END SEMESTER EXAMINATIONS, JUNE 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.	Describe the graphical system design model.	5
1B.	Draw and explain the layers of virtual instrumentation software and role of the software.	3
1C.	Distinguish text based programming and graphical programming	2
2A.	With suitable example explain front panel and block diagram objects.	5
2B.	What is auto indexing? Explain stacking of shift registers with an example.	3
2C.	Analyze the 2 loops given in Fig. 2B for which Boolean switch is initially false and VI starts running. After sometime the Boolean switch is made true. Comment on the conditions for both the loops	2

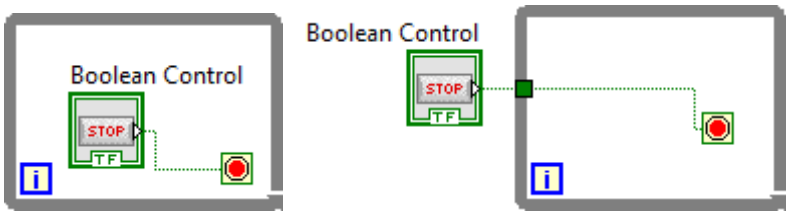

Fig. 2B

3A.	Discuss (i) case selector values and data types, (ii) input and output tunnels, with respect to case structure.	4
3B.	When are the following used, (i) text files, (ii) binary files and (iii) datalog files	3
3C.	Describe error handling and error clusters in LabVIEW.	3
4A.	Explain different types of graphs available in LabVIEW.	5
4B.	Briefly explain RS 232 and RS 485 and list their advantages.	5
5A.	Explain image processing and analysis techniques in LabVIEW.	5
5B.	Differentiate low level and high level file I/O. Explain the types of high level file I/O's available in LabVIEW.	3
5C.	Explain digital current loop with a diagram.	2

6A.	Explain about USB and VISA.	4
6B.	Explain Interchangeable Virtual Instruments architecture with a neat diagram.	4
6C.	Explain analog and digital signals.	2

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