Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY
Manipal University

SIXTH SEMESTER B.Tech. (I & C E) DEGREE END SEMESTER EXAMINATION
May/June 2016
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. Draw the block diagram of layers of virtual instrumentation software and explain the role of hardware and software in virtual instrumentation.

1B. Differentiate between text based and graphical programming.

1C. List any four advantages of LabVIEW.

(5+3+2)

2A. What do you mean by modular programming? With an example explain the steps involved in creating, saving and retrieving subVI.

2B. Describe different block diagram objects.

2C. "LabVIEW follows data flow models" Justify with suitable example.

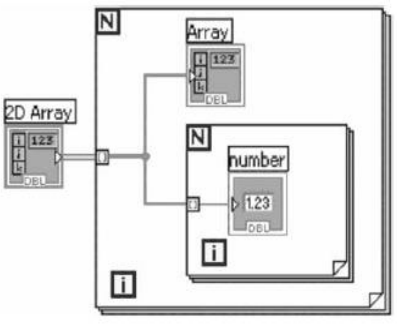
(4+3+3)

3A. Explain different ways auto indexed array connected to a FOR loop sets the count terminal. Consider the block diagram and content of 2D array shown in Fig (Q3A). How many times the loops executes and show the content of Array and Number indicator for each iteration.

3B. Sketch the output of the block diagram shown in Fig (Q3B).

3C. Specify the need for initializing the shift registers and feedback nodes.

(5+3+2)



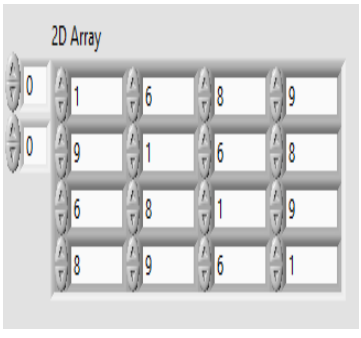


Fig (Q3A)

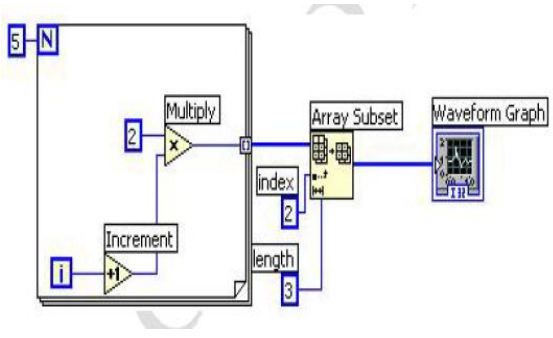


Fig (Q3B)

4A. Analyse the working of the VI shown in Fig (Q4A) and find the result in Array for each iteration.

4B. With suitable input, find the output of VI shown in Fig (Q4B).

4C. What are the different options for configuring a string control or indicator?

(4+3+3)

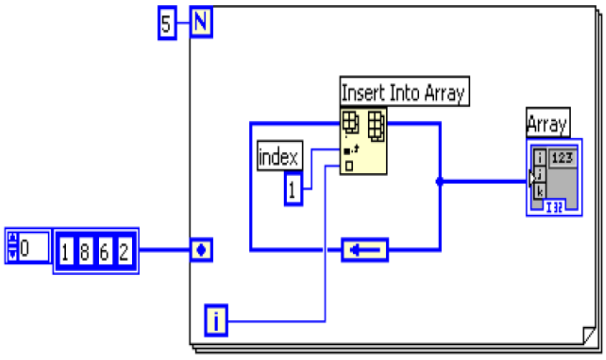


Fig (Q4A)

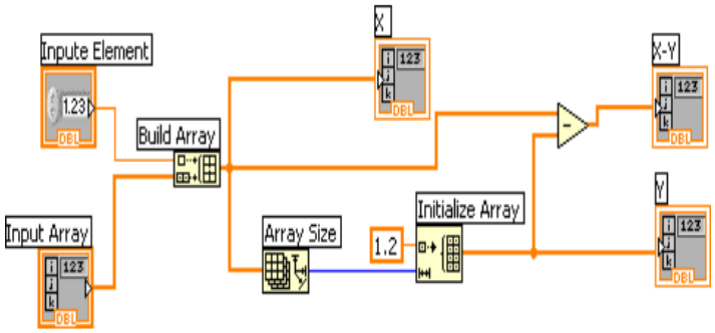


Fig (Q4B)

5A. With suitable example explain the need of ordering the cluster elements. Explain the application of error cluster.

5B. List the File I/O formats available in LabVIEW. Mention their features and applications.

5C. Differentiate between While Loop and Timed Loop structure.

(4+4+2)

6A. With the help of neat diagram explain the concept of VISA in LabVIEW.

6B. Explain the components of a GPIB system. List the advantages and features of GPIB communication.

6C. Explain the concept of parallelism and how it is implemented in LabVIEW.

(3+4+3)