

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5735

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Unique Paper Code : 2513042006

Name of the Paper : Virtual Instrumentation Techniques and Applications

Name of the Course : **B.Sc. (H) Instrumentation (DSE)**

Semester : IV

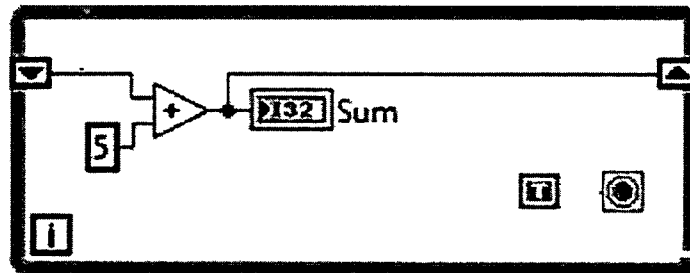
Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** questions in all. Question No. 1 is compulsory.
3. All questions carry equal marks.

1. (a) Name the three parts of LabVIEW. (2)
- (b) Mention the characteristics and advantages of VI. (2)
- (c) What will be the value displayed in the Sum indicator after the following code executes? (2)



- (d) Define Local & Global variables. (2)
- (e) What is shift register and stacked shift register? (2)
- (f) List LabVIEW applications in process control. (2)
2. (a) Draw and explain the architecture of VI. (6)
- (b) What is G programming? Compare Graphical programming with Text based programming. (6)
3. (a) Create a VI to find the factorial of the given number using While Loop and feedback node. (6)

P.T.O.

- (b) Explain the function performed by each of the following elements (6)



(a)



(b)



(c)

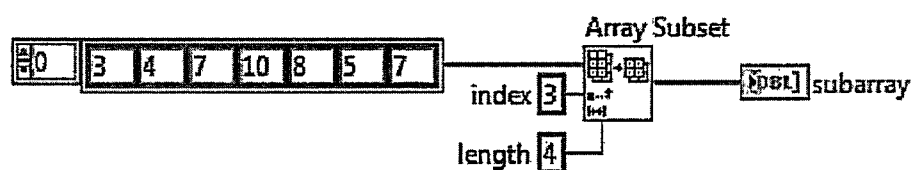
4. (a) Write a program in LabVIEW to read a positive number n and to generate the following number series using a For Loop. (6)

$$1, 2^2, 3^2, 4^2, \dots, n^2$$

- (b) Explain serial port communication in Lab VIEW. Compare RS232, RS422 and RS485. (6)

5. (a) Describe in detail about various types of waveform chart and graphs. How can single and multiple traces be obtained on a graph? (6)

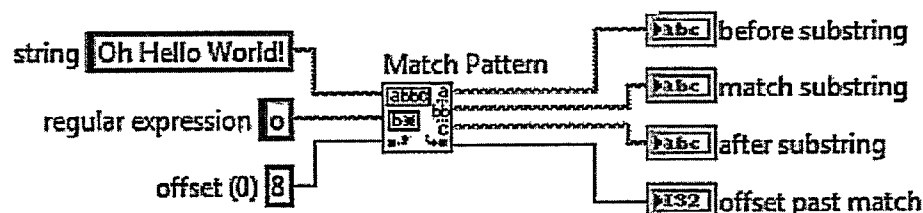
- (b) What is array initialization? What is the result in subarray after the following code executes? (6)



6. (a) Explain the different functions of Signal conditioning system. How the Signal conditioning system is chosen to a transducer. (6)

- (b) Explain Components of Speed control/motion control system. (6)

7. (a) What is the output in before substring, match substring, after substring and offset past match upon completion of the following code? (6)



- (b) What is VISA? Mention the various types of instruments that can be controlled by VISA. (6)