RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

B.Sc. (General) Degree
Third Year – Semester I Examination - February/March 2013

PHY 3214 – GRAPHICAL PROGRAMMING FOR PHYSICS

Answer ALL questions   Time: 2 Hours

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1. Create a VI where two real numbers (double precision) between 0 and 200 are inputs via "Pointer slides" controls. Visualize the sum, the difference, the product and the quotient of these numbers. Show the results in four "Meters".

2. Create an array with 15 numbers from 100 to 200 (double precision) using the random number. Make a VI that calculates the minimum, maximum and average values of the array.

3. Create a square wave using *simulate signal VI* . Display it on the front panel. User should be able to change the frequency of the signal. Using *spectral measurements Express VI* determine the frequency of the signal. Add another two suitable signals to the spectrum and analyze it. Place the VI inside a while loop and use the *Time delay Express VI* to have a better demonstration from your VI.

4. Create a VI where a noise, produced by using the "Random Number" function, is summed with a sine formed signal. The amplitude of the signal is controlled in such a way that the ratio of the amplitude and noise level is varied between 10^{+1} and 10^{-2}. The user shall also be able to control the number of scans for the signal averaging. Present the averaged signal in a waveform graph.