**EXPERIMENT 2: WAVEFORM GENERATION**

**Objective**: To generate sinusoidal, triangular and square waves using Scilab.

**Pre Session test**:

1. The Taylor series expansion for sin(x) is
2. X+X^2+X^3+….
3. X-X^3+X^5-+…..
4. X+X^3+X^5+…
5. X-X^2+X^3-+……
6. Integration of a square wave results in a
7. Square wave
8. Sine wave
9. Triangular wave
10. Cosine wave
11. Conversion of sine wave to square wave is achieved through
12. Integrator
13. Differentiator
14. Schmitt Trigger
15. None of the above

**Procedure**:

Log on to the system. Book a slot. Answer all the questions in the pre session test. If all the answers are correct, a link will be activated to access the system.

Once the link is active,

* Load the sine.sce file in Scilab.
* Go to Execute->Load into Scilab or press Ctrl-L
* Enter the amplitude of the sine wave which needs to be produced.

E.g.:

Enter the amplitude of the sine wave 2 (Enter the desired amplitude here)

A = 2

A should print the value of the amplitude requested by the user.

* A graphical representation of the sine wave appears on the plot window.



* Next, load the square.sce file in Scilab.
* Execute the code.
* Enter the desired amplitude for the square wave.

E.g.:

Enter the amplitude of the square wave 2 (Enter the desired amplitude here)

A = 2

A should print the value of the amplitude requested by the user.

* A plot of square wave appears on the plot window.
* Rotate the waveform to get a good representation of the square wave.



* Repeat the procedure with triangle.sce.
* You will get a triangular wave on the graphic window.



**Post Session work**

1. Generate a waveform which is a combination of sine, square and triangle i.e. the wave should be 1 cycle of sine followed by 1 cycle of square followed by 1 cycle of triangle. Repeat the experiment by having the square wave and triangular wave as the first signal.
2. Generate a sinc waveform using Scilab.