**Karunya University**

**(Karunya Institute of Technology and Sciences)**

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

**Supplementary Examinations – June 2016**

**Subject Title: CAD FOR ELECTRONICS ENGINEERS Time : 3 hours**

**Subject Code: 14EC2016 Maximum Marks: 100**

**Answer ALL questions (5 x 20 = 100 Marks)**

**Note:-** 1. Include diagrams wherever necessary

2. Labeling of all the controls, indicator, functions is mandatory.

1. **Compulsory:**

Create the front panel and block diagram of the Main VI to show the trigonometric values (sine, cosine and tangent) of the given degree. This VI uses a subVI for finding the trigonometric values. The SubVI consists of functions for converting degree values to radians and functions to find the sine, cosine and tangent values separately. In LabVIEW the sine, cosine and tangent functions take input in radians. List down the procedures.

**2. a. Implement a 4\*1 MUX using 2\*1 MUX in using behavioral modelling. (10)**

**b. Implement full adder circuit using structural modelling. (10)**

**(OR)**

**3. a. Implement a 1\*4 demux using 1\*2 demux in structural modelling techniques. (10)**

**b. Implement a half adder circuit using behavioural modelling. (10)**

4. a. List out the features of object oriented programming language. (5)

b. Write a C++ program to get a data and to display the same. (7)

c. Write a program using MATLAB class including the following methods: (8)

i. Add a variable with 10.

ii. Subtract a variable from 100.

iii. Round-off a variable to the nearest point

iv. Multiply a variable by 2345.

Also give steps for displaying their outputs.

**(OR)**

5. Elaborate File handling using OOPs in MATLAB with relevant examples.

6. a. Write the MATLAB script to plot the function e-x/3sin(x) where 0≤x≤4π. (8)

b. Let x = [3 2 6 8]' and y = [4 1 3 5]' (NB. x and y should be column vectors). (12) i. Add the sum of the elements in x to y.

ii. Raise each element of x to the power specified by the corresponding element in y.

iii. Divide each element of y by the corresponding element in x.

iv. Multiply each element in x by the corresponding element in y, calling the result "z".

v. Add up the elements in z and assign the result to a variable called "w".

vi. Compute x'\*y - w and interpret the result.

**(OR)**

**7. Build a pulse code modulation scheme using Matlab-Simulink with necessary blocks. Graphically represent the results at intermediate stages.**

8. a. What is modular programming? (1)

b. Define Sub –VI in LabVIEW. (1)

c. Explain the need of icon and connector pane. (2)

d. What is default icon and custom icon? (2)

e. i. Create a VI to find the average of two numbers and convert a section of VI in to a sub VI. (10)

ii. List down the steps to be followed in above said Question (i). (4)

**[P.T.O]**

**(OR)**

9. a. What is a cluster? (1)

b. Difference between waveform chart and waveform graph. (1)

c. What is array initialization? (2)

d. Differentiate array and cluster. (2)

e. Create a sub VI that takes a number representing Celsius and convert in to number representing Fahrenheit. Build a sub-VI for conversion of Celsius to Fahrenheit. (14)