Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code : 14EC2016** |  | **Duration :** | **3hrs** |
| **Sub. Name : CAD FOR ELECTRONICS ENGINEERS** |  | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain about Single, Multilevel and Multiple Inheritance with a MATLAB class program. Also explain the steps in checking its output in command window. | CO1 | 16 |
| b. | Identify the error in the following MATLAB program:  Class class\_name  method  functions a(x)  a.x=v; | CO1 | 4 |
| (OR) | | | | |
| 2. | a. | Make use of the concept of constructors, develop a object oriented program in MATLAB. Also explain the steps in checking its output in command window. | CO1 | 12 |
| b. | Explain the features of MATLAB Object oriented programming concepts. | CO1 | 8 |
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| 3. |  | Create an 1-D numeric array which consists of ten elements and rotate it ten times. For each rotation display the equivalent binary numbers of the first array element in the form of Boolean array. Also write down the steps to create 2D array in front panel. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | Create a sub VI that takes a number representing Celsius and convert in tonumber representing Fahrenheit. Build a sub-VI for conversion of Celsius to Fahrenheit. List down the steps to be followed in making front panel and block diagram. | CO2 | 20 |
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| 5. | a. | What statement and data type is used in dataflow & structural modelling with examples? | CO3 | 2 |
| b. | Explain Floor planning and their techniques in detail. | CO3 | 14 |
| c. | Explain Routing and their techniques in detail. | CO3 | 4 |
| (OR) | | | | |
| 6. | a. | Let x = [3 2 6 8]' and y = [4 1 3 5]' (NB. x and y should be column vectors). Add the sum of the elements in x to y.   1. Raise each element of x to the power specified by the corresponding element in y. 2. Divide each element of y by the corresponding element in x. 3. Multiply each element in x by the corresponding element in y, calling the result "z". 4. Add up the elements in z and assign the result to a variable called "w".   Compute x'\*y - w and interpret the result. | CO3 | 10 |
|  | b. | Implement a 1\*4 demux using behavioural modelling techniques. | CO3 | 10 |
| 7. |  | Portray the simulink model for Amplitude modulation and give a procedural description of the same. | CO1 | 20 |
| (OR) | | | | |
| 8. | a. | Portray the simulink model for Sampling theorem and give a procedural description of the same. | CO1 | 15 |
| b. | Create a vector **y**, with 40 equally spaced entries from 0 to 1.0. Create a vector **f,** with entries of sine evaluated at entries of 15\*pi\***x.** plot **f** as a function of **y**, using magenta line. | CO1 | 5 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain about the concept of Binary Search with an example program in MATLAB class. | CO1 | 10 |
| b. | Write the MATLAB script for Plotting two curves on the same graph: F = sin3\*pi\*x and F1 = cos5\*pi\*x | CO1 | 10 |