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

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

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| **Code :** | **14EC2030** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ARM PROCESSORS** | **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. | ARMxyzTDMIEJFS  Interpret the nomenclature of Arm mentioned above. | CO1 | 10 |
| b. | Compare ARM with other microprocessor or controller. | CO1 | 10 |
| (OR) | | | | |
| 2. |  | With a neat diagram, Explain 3 stage pipeline ARM organization and also elaborate about the modes, registers in ARM. | CO2 | 20 |
|  |  |  |  |  |
| 3. | a. | Explain in detail about ARM instruction set. | CO2 | 12 |
|  | b. | Write a ALP to find the largest of given array of numbers. | CO2 | 8 |
| (OR) | | | | |
| 4. |  | Describe the concept of Thumb’s programming model and its related instruction set. | CO1 | 20 |
|  |  |  |  |  |
| 5. | a. | Write the assembly code for the following syntax,  X=(a+b)-c.  Note: Get the values from memory. | CO1 | 5 |
|  | b. | What will be the output for the following code?  Mem32[0x9000]=0x12345678  R0=0x00000000  R1=0x11112222  R2=0x00009000  SWP R0,R1,[R2] | CO2 | 5 |
|  | c. | Write a program to add 128 bit numbers together, placing the result in registers r0 to r3. The first operand should be placed in registers r4-r7, and second operand should be in r8-r11. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Translate the following C code to assembly  Sum=0;  for(i=0;i<6;i++)  {  Sum+=a[i];  } | CO2 | 10 |
|  | b. | Write the assembly syntax for branching statements. | CO2 | 10 |
|  |  |  |  |  |
| 7. | a. | What is the significance of cache memory in embedded application, sketch with a neat architectural block. | CO1 | 10 |
|  | b. | Give the significance of interfacing input and output pheripherals with ARM processor. | CO1 | 10 |
| (OR) | | | | |
| 8. | a. | Explain the importance of memory management unit in ARM. | CO1 | 10 |
|  | b. | ARM supports protection unit. Justify your answer. | CO1 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain how memory is interfaced with ARM core. | CO1 | 10 |
|  | b. | With a neat block diagram , Explain one application in Agricultural environment using ARM processor. | CO3 | 10 |