Code: ME6T6FE-E, CS6T5FE-F

III B.Tech - II Semester – Regular/Supplementary Examinations March 2020

MICROCONTROLLERS
(Common for ME, CSE)

Duration: 3 hours   Max. Marks: 70

PART – A

Answer *all* the questions.   All questions carry equal marks

$$11x\ 2 = 22\ M$$

1.

a) Compare the features of RISC & CISC Processors.

b) List the difference among 8051, 8351, 8751, 8951, 8031 microcontrollers.

c) What are the features of Harvard Architecture and Princeton Architecture?

d) Write about the program memory and data memory in a microcontroller?

e) What is the advantage of having the program memory and data memory at Unified address space in Princeton Architecture?

f) List out the development tools of ARM processors.

g) List out data processing instructions of ARM instruction set.

h) What are the synchronous serial port and Asynchronous serial port?

i) What is the reason location of PWM unit in place of on chip DAC?

j) Name the Special function Registers available in 8051 microcontroller?

k) Write any 4 features of ARM 7?

PART – B

Answer any *THREE* questions. All questions carry equal marks.

$$3 \text{ x } 16 = 48 \text{ M}$$

2. a) What is RISC? Draw and explain the RISC architecture of microcontroller in detail.   8 M

   b) List out the features of 8051 microcontroller. Draw and explain program status register of 8051.   8 M

3. a) Explain the mode-1 programming of 8051 timers.   6 M

   b) Write an ALP to generate square wave with $T_{ON} = 3$ ms $T_{OFF} = 10$ ms on all pins of port 0 with system clock 22 MHz using TIMER- 0 in Mode-1.   10 M

4. a) Write the sequence of steps to be performed for serial data examination.   6 M

   b) Write an ALP to transfer letter C serially at 9600 baud rate continuously. Assure clock freq. 11.0592 MHz.   10 M

5. a) Explain the ARM 7 Processor Architecture.   8 M

  b) Explain about ARM Cortex.   8 M

6. a) Describe and compare thumb instructions subset with that of ARM. How does the interworking between the two instructions take place?   8 M

  b) Differentiate between MOV, MVN, LDR and STR instructions. Show their uses.   8 M