

Code: ME6T6FE-E, CS6T5FE-F

**III B.Tech - II Semester – Regular/Supplementary Examinations
AUGUST 2021**

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) Discuss any four advantages of Harvard architecture.
- b) Define microcontroller and give one example.
- c) What is the meaning of ‘maximum 10 bit-resolution’ of PWM?
- d) List any four differences between the microprocessor and microcontroller.
- e) Draw the mode control word formats of 8251 USART.
- f) Summarize the modem control signals in USART .
- g) Recall the functions of SPSR register in ARM.
- h) List any four features of ARM-Cortex.
- i) Define CISC.
- j) List any two properties of Thumb.
- k) List four features of any 8 bit microcontroller.

PART – B

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

3 x 16 = 48 M

2. a) Distinguish 8 bit and 16 bit microcontrollers. 8 M
- b) Discuss the advantages of microcontroller over microprocessor in control applications. 8 M
3. a) If the two requests of interrupts are received simultaneously, how those are handled in 8051 microcontroller. 8 M
- b) Explain interrupt handling mechanism in microcontroller. 8 M
4. a) Explain the following. 8 M
i) I2C ii) SPI communication interface
- b) Explain the following USART pins. 8 M
i) \overline{CS} ii) \overline{DSR} iii) TXE iv) \overline{RD}
5. a) Explain the following ARM7 core interface signals. 8 M
i) Clock control signals ii) JTAG Control signals
- b) Illustrate the concept of pipeline operation in ARM9. 8 M
6. a) Explain the THUMB instruction set. 8 M
- b) List and explain the development tools. 8 M