Roll No. | | | | | | | | | | | | |

Total No. of Pages : 01

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M.Tech. (Emb Sys) (2016 & Onwards) (Sem.–2)

ADVANCED MICROPROCESSOR AND MICROCONTROLLER

Subject Code : MTED-203

Paper ID : [74270]

Time : 3 Hrs. Max. Marks : 100

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

Q1) a) With a neat sketch explain the ADC architecture of a PIC microcontroller. (10)

b) Write a program to control the speed of a motor using PWM of PIC microcontroller. (10)

Q2) a) Explain the addressing modes of an ARM processor. Describe implementation of branch, call and return instructions in ARM instruction set. (12)

b) Write a program to find product of two numbers. (8)

Q3) a) Discuss the interrupt handling schemes of ARM processor. (10)

b) Explain register organization for Cortex M3 Processor. (10)

Q4) Describe the instruction set of PIC microcontroller and explain the programming of PIC microcontroller with suitable examples. (20)

Q5) a) Explain in detail : (12)

i. 3-stage pipelined ARM Organization.

ii. 5-stage pipelined ARM Organization.

b) Write in brief about SPI Protocols. (8)

Q6) a) Describe JTAG boundary scan test architecture. (10)

b) Write C/ Assembly programming to display room temperature on LCD using temperature sensor and ADC. (10)

Q7) a) Write a code to control LED brightness using PWM for PIC 18. (10)

b) Explain with block diagram and program flowchart to switch on/ off a 220 volt fan using a PIC18, relay and keypad. (10)

Q8) Write short notes on :

a) Interrupt handing in PIC micro controller. (10)

b) DS1306RTC Interfacing. (10)