

B.Tech III Year II Semester (R15) Regular Examinations May/June 2018
MICROPROCESSORS & MICROCONTROLLERS
 (Common to EEE, ECE & EIE)

Time: 3 hours

Max. Marks: 70

PART – A
 (Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- What does the pin MN/MX do in 8086 processor?
 - Give the format of the flag register in 8086 processor.
 - What is the use of PUSH in 8086?
 - Define immediate addressing mode of 8086 microprocessor with example.
 - Differentiate between RISC and CISC processors.
 - Which are the low power operating modes of MSP430?
 - List clock circuit and registers used to control function of clock module of MSP430.
 - Write an ALP to check whether the content of the register R4 of MSP430 is even/odd.
 - Give the format of asynchronous serial data communication.
 - Mention the purpose of CC3100.

PART – B
 (Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 Explain the functional block diagram of 8086 microprocessor with neat diagram.

OR

- 3 Draw the complete schematic of 8086 processor memory interface in minimum mode with the following specifications.
- 16 k of EPROM.
 - 32 k OF RAM.

UNIT – II

- 4 Clearly explain the addressing modes of the 8086 processor with suitable instruction examples.

OR

- 5 Write an 8086 program to perform unpacked BCD division. (e.g 75/2) (operands are stored in the memory).

UNIT – III

- 6 Sketch the functional block diagram of MSP430 microcontroller and briefly explain its architecture.

OR

- 7 (a) Show the memory map of F2013 MSP430 and explain it briefly.
 (b) Briefly explain about the 16 registers of MSP430 CPU.

UNIT – IV

- 8 Explain the clock system of MSP430 with the help of its simplified block diagram.

OR

- 9 Interface a push button switch and a simple LED to MSP430 and write a C program to switch on the LED whenever the button is pressed.

UNIT – V

- 10 Explain briefly about the communication peripherals that are available in MSP430.

OR

- 11 (a) Explain serial communication SCI & SPI, compare the same.
 (b) Explain CAN features and protocols.