

B.Tech III Year II Semester (R15) Supplementary Examinations December/January 2018/19

**MICROPROCESSORS & MICROCONTROLLERS**

(Common to EEE, ECE &amp; EIE)

Time: 3 hours

Max. Marks: 70

**PART – A**

(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- What is the basic clock frequency and maximum memory capacity of 8086?
  - List out the interrupts and DMA control lines in 8086.
  - What are macros & procedures?
  - Which instruction mnemonics are used for multiplication and division of 8086?
  - Write any four applications of MSP430G2XX family.
  - Why BOR & WDT are used in MPS430?
  - Explain about pull-up and pull-down resistors.
  - Write any four differences between FRAM and FLASH.
  - Explain half duplex and full duplex communication with example.
  - Write any four features of CC3100.

**PART – B**

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

**UNIT – I**

- 2 (a) Explain about each bit in flag register of 8086.  
(b) Describe the architectural features of 8086.

**OR**

- 3 (a) Discuss the memory organization of 8086.  
(b) Explain about registers in 8086.

**UNIT – II**

- 4 Discuss the addressing modes of 8086 with examples.

**OR**

- 5 (a) Write an ALP for finding the length of the string 'MICROPROCESSOR'.  
(b) Write an ALP for sorting all the even numbers from 1 to 20 in ascending order.

**UNIT – III**

- 6 Explain in detail about the on-chip peripherals of MSP430X5XX with applications.

**OR**

- 7 Explain about the GPIO register sets of MSP430.

**UNIT – IV**

- 8 (a) Explain about the low power modes of MSP430.  
(b) Explain about modes of operation of Timer\_A.

**OR**

- 9 Explain about the ADC10 interfacing in MSP430 with diagram.

**UNIT – V**

- 10 Write short notes on:

- UART protocol.
- I2C protocol.

**OR**

- 11 (a) Explain the implementation of SPI interface in MSP430.  
(b) Explain about USCI\_A in MSP430.

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