

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 2289788

Roll No. 

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## B.TECH.

### Regular Theory Examination (Odd Sem - V), 2016-17 MICROPROCESSOR & ITS APPLICATIONS

*Time : 3 Hours*

*Max. Marks : 100*

#### SECTION - A

1. Attempt all questions from this section. Each question carries equal marks. (10×2=20)
- a) What are general purposes registers in 8086 microprocessor?
  - b) What is stack memory? Explain
  - c) What is flag? Discuss in brief.
  - d) How many types of interrupts in 8086? Give its significance.
  - e) What is SIM and RIM instruction? Explain with example.
  - f) What is meant by cross-compiler?
  - g) What is the position of the stack Pointer after the POP instruction? Discuss it.
  - h) Why there are two ground pins in 8086? Explain.

- i) Logic calculations are done in which type of registers? Describe write neat diagram Explain.
- j) Which Segment is used to store interrupt and subroutine return address registers?

**SECTION - B**

**2. Attempt any three questions from this section. Each question carries equal marks. (3×10=30)**

- a)
  - i) Explain the addressing capability of 8085 and 8085 microprocessor. How 20 bit address of memory is addressed.
  - ii) Explain the function of externally initiated signals of 8085.
- b) Explain the flags of 8085 microprocessor. Give the flag status when following additions are performed.
  - i)  $51H+A9H$
  - ii)  $2EH+5AH$
  - iii)  $76H+A4H$
- c) Differentiate between data addressing and branch addressing in 8086. Explain the branch addressing modes with example.
- d) Draw and explain the internal architecture of 8259 interrupt controller. Also describe its initialization command words.
- e) Draw and explain the internal architecture of 8255 parallel I/O peripheral device. Also describe the bits of control word.

SECTION - C

**Note : Attempt all questions from this section. Each question carries equal marks. (10×5=50)**

**3. Attempt any one part**

- a) Explain instruction formats of 8086. Also explain the function of special bits used in instruction format
- b) Explain the architecture of 8085 microprocessor in brief, with the help of neat diagram”

**4. Attempt any one part.**

- a) Explain the data addressing modes of 8085 with example.
- b) Develop an assembly language programme for 8085 to add 5 numbers of 8 bits, whose sum is of more than 8 bits. The numbers are stored from 8501 to 8505. The result is to be stored in 8601 and 8602.

**5. Attempt any one part.**

- a) Explain the following instructions in 8086 with example.
  - i) LDS
  - ii) SBB
  - iii) MUL
  - iv) IDIV
  - v) ADC
  - vi) CMPS
  - vii) TEST
  - viii) XOR
  - ix) RCR

- b) Develop a programme to add two numbers of 8 byte long whose result is more than 8 byte. The first number is stored from 7501 to 7508 and second number is stored from 8501 to 8508 and result is to be stored from 9501 to 8509.

**6. Attempt any one part**

- a) Explain the interrupts sequence and types of interrupts in 8086.
- b) Draw explain the memory and I/O read cycle of 8085.

**7. Attempt any one part**

- a) Interface an 8255 with 8086 to work as an I/O port. Initialize port A as output port. Port B as input port and port C as output port. The address of port A, Port B, Port C and CWR is 0760, 0762, 0764 and 0766 respectively. Write a programme to sense switch positions ( 10110101) connected at port B. The sensed pattern is to be displayed on port A, to which 8 LEDs are connected, while port C lower displays number of on switches out of the total eight switches.
- b) Discuss the mode of operation of 8253 programme, internal times with its control format.