

Code: 13A04601

B.Tech III Year II Semester (R13) Regular &amp; Supplementary Examinations May/June 2017

**MICROPROCESSORS & MICROCONTROLLERS**

(Common to EEE, ECE and EIE)

Time: 3 hours

Max. Marks: 70

**PART – A**

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

- (a) What is the need for ALE signal in 8085 microprocessor?
- (b) Define instruction cycle and machine cycle.
- (c) List the flags of 8086 microprocessor.
- (d) Define pipelining.
- (e) Discuss 8086 instructions used for ASCII and BCD arithmetic.
- (f) What are called assembler directives?
- (g) What is key bouncing?
- (h) List advantages and disadvantages of parallel communication over serial communication.
- (i) What is the function of DPTR register?
- (j) What are register banks in 8051 microcontroller?

**PART – B**

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

**UNIT – I**

2 Describe functional block diagram of 8085 microprocessor.

**OR**

- 3 (a) Draw and explain the timing diagrams for the following instruction with appropriate control and status signal: CALL 8000.
- (b) What is meant by PSW?

**UNIT – II**

4 Explain about the register organization of 8086 processor in detail.

**OR**

- 5 Describe about the signals involved in minimum mode operation of 8086 microprocessor based system with the timing diagram.

**UNIT – III**

6 Explain different addressing modes in 8086 microprocessor and discuss each mode with an example.

**OR**

- 7 (a) Explain about the following assembler directives: END P, EQU, EVEN, EXTRN with examples.
- (b) Write an assembly language program in 8086 to generate Fibonacci series.

**UNIT – IV**

8 Draw the complete block diagram of 8279 keyboard display interface and explain the functions of each block.

**OR**

- 9 What is DMA? Explain DMA based data transfer using 8257 DMA controller.

**UNIT – V**

10 Explain in detail about the I/O ports of 8051 microcontroller.

**OR**

- 11 Explain memory organization and SFR area of 8051 microcontroller.

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