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06EC62

**Sixth Semester B.E. Degree Examination, Dec.2017/Jan.2018**  
**Microprocessor**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting  
atleast TWO questions from each part.**

**PART – A**

- 1 a. Explain the functions of the following registers in 8086 microprocessor:
  - (i) Data Registers (ii) Flag registers (06 Marks)
- b. What is an addressing mode? Explain the types of addressing modes. (08 Marks)  
Give that (BX) = 0158, (DI) = 10A5, Displacement = 1B57, (DS) = 2100.
- c. Determine effective and physical address resulting from these registers in different addressing modes. (06 Marks)
- 2 a. Describe the operating of the following instructions with an example:
  - (i) LOOP (ii) NEG (iii) CBW (06 Marks)
- b. Explain shift and rotate instructions with suitable example. (08 Marks)
- c. What are Assembler Directives? Explain the significance of the following directives:
  - (i) ASSUME (ii) PUBLIC (iii) MODEL. (06 Marks)
- 3 a. Write an assembly language program to move ten data bytes from memory location 2200h to 2300h using
  - (i) LOOP Instruction with MOVSB (ii) REP Instruction with MOVSB. (10 Marks)
- b. Compare PROCEDURE with MACRO with suitable example. (05 Marks)
- c. Write a brief note on Number format conversion required for inputting or outputting decimal numbers. (05 Marks)
- 4 a. What is the purpose of interrupts? Explain the operation of software interrupt instructions INT, INTO, INT3 and BOUND. (10 Marks)
- b. Explain a simple method for generating interrupt vector type number FFH in response to INTR. (05 Marks)
- c. Write a brief note on Hardware Interrupts. (05 Marks)

**PART – B**

- 5 a. Explain the 8-digit LED display interface to 8086 microprocessor through 8255. (08 Marks)
- b. Explain the circuit diagram that can drive stepper motor interfaced to 8255. (06 Marks)
- c. Explain with a neat diagram a 4x4 matrix connected to an 8086 microprocessor through 8255. (06 Marks)
- 6 a. Explain the Architecture of numeric data processor 8087. (08 Marks)
- b. Explain the different data types of Numeric data processor. (08 Marks)
- c. Describe the operation of following instructions :
  - (i) FXTRACT (ii) FLDPI (04 Marks)
- 7 a. What are the purpose of MN/ $\overline{\text{MX}}$  signal? Explain the 8086 system when MN/ $\overline{\text{MX}}$  is strapped to +5 Volts. (10 Marks)
- b. Explain the features of PCI Bus and universal serial bus. (10 Marks)
- 8 a. Explain the operation of 80486 cache memory. (10 Marks)
- b. Explain the extended Registers found in 80386 microprocessors. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.