

Code: AE66/AC66/AT66 Subject: MICROPROCESSORS & MICROCONTROLLERS
AE108/AC108/AT108

AMIETE – ET/CS/IT (Current & New Scheme)

Time: 3 Hours

JUNE 2015

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2×10)

- a. The address lines of 8085 processor ____ bits.
(A) 8 (B) 16
(C) 4 (D) 20
- b. When control unit of 8085 processor sends out logic 1 on both S0 and S1 pins simultaneously, then the operation is
(A) HALT (B) WRITE
(C) READ (D) FETCH
- c. Which of the flag is not present in 8085 processor?
(A) TP (B) Z
(C) CY (D) S
- d. Which of the following is non-maskable interrupt in 8085?
(A) RST6.5 (B) TRAP
(C) RST7.5 (D) INTR
- e. The instructions used for Stack operation are
(A) RD and WR (B) LDA and STA
(C) JMP and RETURN (D) PUSH and POP
- f. Timer 8253 will have ____ number of counters.
(A) 4 (B) 3
(C) 2 (D) 6
- g. There are ____ types of the input/output modes in 8255.
(A) 3 (B) 2
(C) 1 (D) 4

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- h. The instruction XTHL will perform the following operation
(A) Exchange H & L with D & E
(B) Load HL contents in Accumulator
(C) Exchange Accumulator contents with memory contents
(D) Exchange Top of Stack with H & L
- i. The programmable interrupt controller 8259 can handle ____ levels of interrupts
(A) Four (B) Six
(C) Eight (D) Ten
- j. The processor 8085 have _____ hardware interrupt pins.
(A) Three (B) Five
(C) Four (D) six

**Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.**

- Q.2** a. Write the Pin Diagram of the 8085 microprocessor and explain the function performed by each pin. (10)
- b. Explain with suitable examples the 8085 Addressing modes. (6)
- Q.3** a. What are the functions performed by these instructions? Explain with example.
(i) INRM (ii) CMA
(iii) EXHG (iv) XRAA (8)
- b. Explain different branching operations performed in 8085 (4)
- c. Write the timing diagram of MVI B, 43H. (4)
- Q.4** a. Write an Assembly Language Program to exchange N number of data's which are stored starting from Location X with data's which are stored starts at location Y. (8)
- b. Let array of N numbers are stored starting from Location X, write an Assembly Language Program to find the largest number in the array and store the same at location Y. (8)
- Q.5** a. What is an interrupt? Explain the functions performed by SIM and RIM instructions for interrupt operations. (8)
- b. Explain the working of 8255 Programmable Peripheral Interface. (8)
- Q.6** a. With neat block diagram explain the function performed by Programmable Keyboard/Display Interface – 8279 (10)

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- b. Explain how an ADC 0808 can be interfaced to microprocessor using 8255.(6)
- Q.7** a. Write the ICW1 (Initialization Command Word One), ICW2, ICW3 and ICW4 of 8259. (8)
- b. What is DMA? Which are pins of 8085 are used for this operation? Explain the operation performed by DMA Controller 8257. (8)
- Q.8** a. Mention different modes of operations of 8253 and explain in detail mode 2 and mode 3 operations. (10)
- b. Briefly discuss Asynchronous mode of operation using 8251 (6)
- Q.9** a. Explain the architecture of 8051 with neat diagram. (10)
- b. Explain the interrupt structure of 8051. (6)