

**AMIETE – ET/CS/IT {CURRENT & NEW SCHEME}**

Time: 3 Hours

**DECEMBER 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. A 32 bit microprocessor has the word length equal to  
(A) 2 byte (B) 32 byte  
(C) 4 byte (D) 8 byte
- b. ALE stands for:  
(A) Address latch enable (B) Address light enable  
(C) Address low enable (D) Address last enable
- c. MOV A, #56H  
MOV R1, #50H  
MOV 50H, # 45H  
XCHD A, @R1  
What is the result at A, and at RAM location 50H  
(A) 56H, 45H (B) 45H, 50H  
(C) 50H, 56H (D) 55H, 46H
- d. In 8085, the example for a non-maskable interrupt is  
(A) TRAP (B) RST 6.5  
(C) INTR (D) RST 5.5
- e. Which interrupts has highest Priority  
(A) INTR (B) TRAP  
(C) RST 7.5 (D) RST6.5
- f. The advantage of memory mapped i/o over mapped i/o is  
(A) Faster  
(B) Many instructions supporting memory mapped i/o  
(C) Require a bigger address decoder  
(D) All of the above
- g. RIM is used to check whether-----?  
(A) The write operation is done or not  
(B) The interrupt is masked or not  
(C) The read operation is done or not  
(D) Both (A) & (B)

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

- h. Interfacing devices for DMA controller, programmable interval timer are respectively...  
 (A) 8257, 8253 (B) 8253, 8257  
 (C) 8257, 8251 (D) 8251, 8257
- i. In 8255, under the I/O mode of operation, it has..... modes  
 (A) 3 (B) 2  
 (C) 4 (D) 1
- j. SP of 8051 is of \_\_\_ wide and it is loaded with the default value of \_\_\_ after reset.  
 (A) 2 byte, 08H (B) 8 bit, 07H  
 (C) 1 byte, 09 H (D) 8 bits, 06H

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

- Q.2** a. Draw pin diagram and signal group diagram of 8085 microprocessor. (8)  
 b. List out the various categories of the 8085 instructions. Give examples of the instructions for each group. (8)
- Q.3** a. Draw the functional block diagram of 8085 microprocessor. (8)  
 b. What is the need for input output ports in microcomputer systems? Discuss merits and demerits of i/o mapped with respect to memory mapped i/o in 8085. (8)
- Q.4** a. Write a program to convert a binary number stored at LOC X to its BCD equivalent and display it in the data/addr field. (Assume display subroutine is given to you) (8)  
 b. Write a program to find the largest number in an array of data using 8085 instruction set. (8)
- Q.5** a. Discuss the various types of interrupts in the order of lowest to highest priority. (8)  
 b. Explain the various operational modes of 8255 programmable peripheral interface? (8)
- Q.6** a. Write an 8085 assembly program to evaluate two 4-variables Boolean expression using logic controller interface. (8)  
 b. Explain the interfacing of 8085 microprocessor with seven segment display. (8)
- Q.7** a. What is the benefit of INTEL 8259A- programmable interrupt controller? Name the various operation command words to operate 8259A in various interrupt modes. (8)  
 b. Discuss the function of following pins in an 8257 DMA controller  
 (i) IOW (ii) HRQ (iii) HLDA (iv) AEN (8)
- Q.8** a. Explain Mode 4 and Mode 5 operation of 8253 timer? (8)  
 b. Draw and explain wave form on TXD & RXD in synchronous transmission & Reception. (8)
- Q.9** a. Discuss the various types of addressing modes available to the 8051 instruction set. Give atleast one example of each. (10)  
 b. Write a program to add two 8 bit BCD numbers using 8051 instructions set. (6)