

DiplETE – ET/CS (Current & New Scheme)

Time: 3 Hours

DECEMBER 2018

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 microprocessor contains

(A) ALU and Control unit on a single chip	
(B) ALU and Memory on a signal chip	
(C) ALU, Register unit and Control unit on a single chip	
(D) ALU, Register unit and I/O device unit on a single chip	

- b. The clock frequency of 8085 A is

(A) 3MHz	(B) 5MHz
(C) 6MHz	(D) 8MHz

- c. LDA is a _____ instruction.

(A) 2-byte	(B) 3-byte
(C) 4-byte	(D) 5-byte

- d. Which of the following is not a conditional instruction.

(A) JC	(B) JPO
(C) JZ	(D) JMP

- e. RST0-RST7 are the _____ in 8085.

(A) Software interrupts	(B) Hardware interrupts
(C) Logical interrupts	(D) Conditional interrupts

- f. The interrupt having highest priority is _____

(A) INTR	(B) RST 7.5
(C) RST 6.5	(D) TRAP

- g. How many 16-bit special purpose registers are present in 8085 microprocessor.

(A) 3	(B) 2
(C) 6	(D) 5

- h. The pin that clears the control word register of 8255 when enabled is

(A) CLEAR	(B) SET
(C) RESET	(D) CLK

- i. The feature of mode 2 of 8255 is
(A) Single 8 bit Port A
(B) Both inputs and outputs are latched
(C) Port C is used for generating handshake signals
(D) All of these
- j. which of the following is not mode of data transmission.
(A) Simplex (B) Duplex
(C) Semi duplex (D) Half Duplex

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

- Q.2** a. Describe the flags available in 8085. (6)
b. Explain the following instructions of 8085 with examples. (2+4+2+2)
(i) ANA R (ii) CMC & STC (iii) RLC (iv) RAR
- Q.3** a. Explain unconditional CALL and RETURN instructions of 8085. (5+3)
b. Explain the importance of ALU and Timing and control unit in 8085 architecture. (8)
- Q.4** a. Write a program for 8085 to add two multi-byte numbers and also draw the flow chart. (8)
b. Write an 8085 ALP to search for a given byte in an array of bytes using linear search algorithm. (8)
- Q.5** a. Explain RST7.5, RST6.5, RST5.5 and TRAP interrupts of 8085. (3+3+3+3)
b. Explain Interrupt-driven data transfer scheme. (4)
- Q.6** a. Explain mode0, mode1, mode2 operations of 8255 ports. (8)
b. With a neat diagram explain the functioning of logic controller interface. (8)
- Q.7** a. Draw the functional pin diagram of 8259 and explain the function of CAS₂₋₀ and INTA* pins of 8259. (4+4)
b. Describe the need for a DMA controller in a microcomputer system. (8)
- Q.8** a. Briefly describe the functions of each pins of 8253 Timer. (8)
b. Explain the function of C/D* and Clock pins of 8251 USART. (5+3)
- Q.9** a. Explain the following register of 8051. (4+4)
(i) PSW (ii) Accumulator
b. Explain the Data transfer group and Bit processing instructions of 8051 with examples. (4+4)