

DipIETE – ET/CS (Current & New Scheme)

Time: 3 Hours

JUNE 2017

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. Which of the following is a non-vectored interrupt?

(A) TRAP	(B) INTR
(C) RST 7.5	(D) RST 6.5
- b. The instruction STAX rp occupies _____ in memory.

(A) 2 bytes	(B) 1 bytes
(C) 3 bytes	(D) 4 bytes
- c. Vectored Address for RST 3 is

(A) 0020H	(B) 0028H
(C) 0018H	(D) 0038H
- d. Which of the following instruction is not a Conditional Jump instructions?

(A) JMP	(B) JM
(C) JC	(D) JNC
- e. Which of the following register is a 16-bit register of 8085.

(A) A	(B) B
(C) Flag register	(D) SP
- f. RIM stands for “ Read Interrupt Mask “ is a _____ instruction.

(A) 1 byte	(B) 2 bytes
(C) 3 bytes	(D) 4 bytes
- g. In the asynchronous mode of transmission, the number of stop bits needed to be transmitted at the end of the character can be programmed to be

(A) 3 bits	(B) 2 bits
(C) 1.5 bits	(D) both (B) & (C)
- h. Intel 8259 is a _____

(A) Keyboard & Display Controller
(B) Programmable Peripheral Interface
(C) Programmable Interrupt Controller
(D) DMA Controller
- i. The internal on-chip data RAM and on-chip EPROM of 8051 is

(A) 256 bytes & 2 kilobytes	(B) 128 bytes & 4 kilobytes
(C) 128 bytes & 2 kilobytes	(D) 256 bytes & 4 kilobytes

- j. Intel 8253 is a _____ pin programmable IC.
 (A) 32 (B) 24
 (C) 40 (D) 28

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

- Q.2** a. What is a register? List the advantages of a register over a memory location in 8085. (4)
- b. Explain the following set of instructions with one example of each (12)
- (i) MOV r1, r2 (ii) MVI r, d8 (iii) LXI rp, d16
 (iv) STA a16 (v) LDAX rp (vi) SHLD a16
- Q.3a.** Draw the pin diagram of 8085 and explain the function of the following pins listed below (10)
- (i) Vcc and Vss (ii) I/O Signals
 (iii) ALE (iv) IO/M*
- b. Explain the role of the following registers in 8085. (6)
- (i) Program counter (ii) Stack and Stack pointer
 (iii) Instruction register
- Q.4** a. Write an 8085 Assembly Language Program to find the smallest of 'N' 1-byte numbers. The 'N' value is provided at location X, and the numbers are present from location X+1. Display the smallest number in the data field and its location in the address field. (8)
- b. Write an 8085 Assembly Language Program to perform block movement. The blocks are assumed to be non-overlapping. The block starting at location 'X' is to be moved to the block starting at 'Y'. The block size is provided in the location, SIZE. (8)
- Q.5** a. Explain the following vectored interrupts of 8085 (12)
- (i) RST 7.5 (ii) RST 6.5 (iii) RST 5.5 (iv) TRAP
- b. Explain the action taken by the 8085 when it gets interrupted. (4)
- Q.6** a. Draw the functional pin diagram of 8255 and discuss the functions of the following pins (10)
- (i) CS* (ii) D7-0 (iii) RD* (iv) A1, A0 (v) WR*
- b. Explain in brief Mode 0, Mode 1 and Mode 2 operations of 8255 (6)
- Q.7** a. Explain briefly the working and interfacing of 8259 PIC with 8085 microprocessor. (10)
- b. Discuss the functions of the following pins of Intel 8257 DMA controller. (6)
- (i) DRQ₃₋₀ (ii) DACK₃₋₀* (iii) MARK
- Q.8** a. Explain the Mode '0' operation of 8253 with neat waveforms. Describe the role of gate input in this mode. (8)
- b. Describe the format of interpretation of the bits of the control port in 8253. (8)
- Q.9** a. Describe the Internal RAM organisation of 8051. (10)
- b. Explain the various bits available in PSW registers of 8051. (6)