

DiplETE – ET/CS

Time: 3 Hours

JUNE 2014

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 digital computer is a multipurpose, programmable machine that

- (A) Reads binary instructions from its memory
- (B) Accepts binary data as input
- (C) Processes data according to those instructions
- (D) All of these

b. The system bus is a communication path between

- (A) The microprocessor and the peripherals
- (B) Only peripherals
- (C) Microprocessors
- (D) None of these

c. In 8085, the program counter register deals with the operation of

- (A) Arithmetic and Logic
- (B) Test for the conditions
- (C) Store data temporarily during the execution
- (D) None of these

d. The 8085 has a pin called HOLD. This pin is used by external devices to gain control of

- (A) The Buses
- (B) The ALU's
- (C) The SFR's
- (D) Both (B) and (C)

e. The register indirect addressing mode instructions are

- (A) MOV A,M; ADD M
- (B) MOV A,B; ADD B
- (C) CMA; RAR
- (D) ADD M;ADD B

- f. The function of XTHL instruction is to
- (A) Exchange stack – top with H-L
 (B) Exchange H-L with L-H
 (C) Exchange stack – top with BP
 (D) Move the contents of H-L pair to stack pointer
- g. The longest instruction of the 8085 is the
- (A) Conditional CALL instruction (B) Un- Conditional CALL instruction
 (C) Conditional JMP instruction (D) Un- Conditional JMP instruction
- h. When the 82C55 is reset, its I/O ports are all initializes as
- (A) Output port using mode 0 (B) Input port using mode 1
 (C) Output port using mode 1 (D) Input port using mode 0
- i. The 8253 contains three independent pre-settable 16 – bit down counters are
- (A) Negative edge triggered (B) Positive edge triggered
 (C) Level sensitive (D) None of these
- j. In 8051 micro-controller, SBUF register used solely for
- (A) A/D Conversion (B) Comparison
 (C) Serial Communication (D) Parallel Communication

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

- Q.2** a. Explain the pin diagram of 8085. **(10)**
- b. Explain all the rotate instruction of 8085. **(6)**
- Q.3** a. Describe & draw the neat diagram to interface 2K×8 memory chip with 8085 microprocessor. **(8)**
- b. Explain peripheral or externally initiated operations in 8085. **(8)**
- Q.4** a. Write an assembly language program for addition of two 8 bit numbers and its sum is 16 bits. **(8)**
- b. Write an assembly language program to find the largest number in a data array. **(8)**
- Q.5** a. Describe the action taken by 8085 when INTR is activated. **(8)**
- b. Explain EI & DI instruction with example. **(8)**

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- Q.6** a. What are the different modes in which 8255 programmable peripheral interface can operate? **(8)**
- b. Write an 8085 ALP to implement a decimal counter using logic controller interface. **(8)**
- Q.7** a. What is meant by DMA? Explain the various DMA modes. Describe in brief the steps that take place during a DMA write cycle. **(10)**
- b. Explain the different priority modes used in PIC 8259. **(6)**
- Q.8** a. Explain the mode-0 operation of the 8253 Timer with example. **(8)**
- b. Explain various pins used in 8251. **(8)**
- Q.9** a. How stacks are accessed in 8051? **(6)**
- b. Write PUSH instruction to push the contents of the registers on stack after the execution of the following set of instructions? **(10)**
- (i) MOV SP, #4FH
 - (ii) SETB PSW.3
 - (iii) MOV R0, #25H
 - (iv) MOV R1, #0CH
 - (v) MOV R2, #05H
 - (vi) MOV A, #0CEH