

DiplETE – ET/CS (NEW SCHEME)

Time: 3 Hours

JUNE 2012

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. In Intel's 8085 microprocessor, the range of operating frequency is _____.

- (A) 500 Hz to 3 MHz (B) 500 KHz to 3 MHz
(C) 50 KHz to 3 MHz (D) 5 KHz to 3 MHz

b. Intel's 8085 microprocessor has _____ address lines and can address a maximum of _____ memory.

- (A) 8, 64 KBytes (B) 16, 8 KBytes
(C) 32, 64 KBytes (D) 16, 64 KBytes

c. Intel's 8085 microprocessor has instruction size ranging from _____ to _____.

- (A) 0 to 4 bytes (B) 0 to 3 bytes
(C) 1 to 3 bytes (D) 1 to 6 bytes

d. In Intel's 8255, the specialty of Port-C is _____.

- (A) BSR mode and two 4-bit ports (B) BSR mode and two 8-bit ports
(C) BSR mode and Bidirectional I/O (D) None of the above

e. In Intel's 8253, the following statement is FALSE.

- (A) Operating frequency ranges from 0 Hz to 2 MHz
(B) The three timers T1, T2 and T3 are independently controlled
(C) 6 modes of operation including Mono-shot and square wave generation
(D) None of the above

Code: DE60/DC68

Subject: MICROPROCESSORS & MICROCOMPUTERS

f. In Intel's 8259, the INT signal is generated based on the inputs available from _____.

- (A) ISR, IMR, IRR and Priority resolver
- (B) IMR and, IRR only
- (C) Priority resolver alone
- (D) ISR, IMR and Priority resolver, but not IRR

g. Intel's 8051 MC can be interfaced with a maximum _____ data memory and _____ code memory.

- (A) 64 Kbytes, 64 Kbytes
- (B) 16 Kbytes, 64 Kbytes
- (C) 64 Kbytes, 32 Kbytes
- (D) 8Kbytes, 64 Kbytes

h. In Intel's 8051 MC status register, 'F0' bit is _____ and 'Ov' bit is _____.

- (A) not used, over flow flag
- (B) over flow flag, not used
- (C) general purpose flag, over flow flag
- (D) general purpose flag, not used

i. In Intel's 8051 MC, size of SP register is _____ and PC register is _____.

- (A) 16 bits, 16 bits
- (B) 16 bits, 8bits
- (C) 8bits, 16 bits
- (D) 8bits, 8bits

j. In Intel's 8051 MC, the following statement is TRUE regarding the two Timers.

- (A) T1 is an up-counter and T2 is a down-counter
- (B) Both T1 and T2 have 4 modes of operation
- (C) T1 is a down-counter and T2 is an up-counter
- (D) T1 has 4 modes of operation and T2 has 3 modes of operation

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

- Q.2**
- a. What are the salient features of the INTEL's-8085 microprocessor? Explain with a neat block diagram. (10)
 - b. What are the functions of the following pins of INTEL's-8085? (6)
 - (i) READY
 - (ii) SID and SOD
 - (iii) HOLD and HLDA

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- Q.3** a. What are the addressing modes available in INTEL's-8085? Explain with an example for each. (8)
- b. What are the different instructions types available in INTEL's-8085? Explain with an example for each. (8)
- Q.4** a. Correct the following instructions if necessary and indicate its addressing mode. (8)
- (i) MOV B, B
 - (ii) OUT 1234h
 - (iii) LDAX, 1234h
 - (iv) PUSH A
- b. Using 8085 instructions, write an assembly language program to interchange the contents of two arrays of bytes starting from locations "x" and "y". Write necessary comments. (8)
- Q.5** a. When interrupted by an external interrupt what happens to the program execution in INTEL's-8085? Explain. (8)
- b. What are the interrupt related instructions available in INTEL's-8085? Explain (8)
- Q.6** a. What are the modes of operation for INTEL's-8255? Explain. (8)
- b. Interface a logic controller to MP-8085 and write an assembly language program to realize a full adder. Write necessary comments. (8)
- Q.7** a. Using a neat block diagram explain the internal architecture of INTEL's-8259. (8)
- b. What is a DMA? Explain Burst mode and cycle stealing methods briefly. (8)
- Q.8** a. Using a neat block diagram explain the internal architecture of INTEL's-8253. (10)
- b. What are the features of INTEL's – 8251 USART? (6)
- Q.9** a. What are the salient features of 8051 micro-controller? Explain with a neat block diagram. (8)
- b. Write an assembly language program to interchange two blocks of data bytes using 8051 instructions. Write necessary comments for the same. (8)