

AMIETE – ET/CS/IT (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 Synchronous data Transfer type both Transmitter and Receiver will operate in

- (A) Same Clock pulse (B) Different Clock pulse
(C) None of the above (D) Both (A) & (B)

b. The term PSW Program Status word refers

- (A) Accumulator & Flag register
(B) H and L register
(C) Accumulator & Instruction register
(D) B and C register

c. Repeated addition is one way to do multiplication; programmed multiplication is used in most microprocessors because

- (A) that ALU's can only add and subtract
(B) this saves on memory
(C) a separate set of instructions is needed for the two
(D) None of the above.

d. Interaction between a CPU and a peripheral device that takes place during input and output operation is known as

- (A) Handshaking (B) flagging
(C) relocating (D) subroutine

e. Addressing in which the instructions contains the address of the data to the operated on is known as

- (A) Immediate addressing (B) implied addressing
(C) register addressing (D) direct addressing

- f. 8085 has ___ software RST and ___ hardware RST
- (A) 10, 5 (B) 8,4
(C) 7,5 (D) 6,6
- g. Serial input data of 8085 can be loaded into bit 7 of the accumulator by
- (A) Executing a RIM instruction (B) executing RST1
(C) using TRAP (D) none of the above
- h. The address to which a software or hardware restart branches is known as
- (A) Vector location (B) SID
(C) SOD (D) TRAP
- i. How many outputs are there in the output of a 10-bit D/A converter?
- (A) 1000 (B) 1023
(C) 1024 (D) 1224
- j. What is the direction of address bus?
- (A) Uni - directional into microprocessors
(B) Uni - directional out of microprocessors
(C) Bi - directional
(D) mixed direction is when lines into micro processor and some other out of microprocessors.

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

- Q.2** a. List the internal registers in 8085 microprocessor and their abbreviations and size. Describe the primary function of each register. (10)
- b. Draw the block diagram of a microprocessor based computer system showing the address, data and control bus structure. (6)
- Q.3** a. Draw and explain the various blocks of architecture of 8085. (8)
- b. Explain with example of addressing modes available in 8085. (8)
- Q.4** a. Write an assembly program to find greatest number among number stored in consecutive memory location starting from 2000H. (8)
- b. Explain all types of interrupts available in 8085. (8)
- Q.5** a. Discuss mode -2 (bi-directional mode) of 8255 (Programmable Peripheral Interface). (8)

- b. Differentiate between
(i) EI and DI (ii) RIM and SIM. (8)
- Q.6** a. Explain cascading of multiple PIC 8259. (8)
- b. Explain the operation of 8279. Explain the following terms:
(i) N key Roll over.
(ii) Key board debounce.
(iii) FIFO RAM. (8)
- Q.7** a. What is the function of 8253 Programmable Interval Timer? Discuss any one of its applications in detail. (10)
- b. Discuss DMA definition and operation in brief. (6)
- Q.8** a. Draw & explain functional pin diagram of 8251 USART. (8)
- b. With respect to serial communication define the following:
(i) Baud rate. (ii) Asynchronous communication.
(iii) Parity. (iv) Half duplex. (8)
- Q.9** a. Draw and explain the architecture of 8051 microcontroller and explain the SFR's. (8)
- b. Write the Instruction to explain immediate, Register direct and Register indirect addressing mode. (3)
- c. Write a program to add 45H four times not using arithmetic Instruction. (5)