ROLL NO. _____

Code: AE66/AC66/AT66 Subject: MICROPROCESSORS & MICRO LLERS

AMIETE – ET/CS/IT (NEW SCHEME)

Time: 3 Hours **JUNE 2012** **Max. Marks: 1**

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)**