

**AMIETE – CS (CURRENT SCHEME)**

Time: 3 Hours

**JUNE 2015**

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 8086 IP hold a memory address of

- |             |                  |
|-------------|------------------|
| (A) 16 bits | (B) 20 bits      |
| (C) C8 bits | (D) Both A and B |

b. Intel 8089 is an

- |                    |                   |
|--------------------|-------------------|
| (A) Co-Processor   | (B) Clock Divider |
| (C) DMA Controller | (D) I/O Processor |

c. In 8086, MOV DS,25H , instruction causes

- |                                  |                                  |
|----------------------------------|----------------------------------|
| (A) Moves 0025H into DS register | (B) Moves FF25H into DS register |
| (C) Moves 25H into DS register   | (D) None of the above            |

d. Unpacked BCD notation of decimal 39 is

- |                          |                         |
|--------------------------|-------------------------|
| (A) 1111 0011 0000 10001 | (B) 0000 0011 0000 1001 |
| (C) 0000 1001 0000 0011  | (D) 1001 0000 0000 1001 |

e. The PCI bus is the important bus found in all the new Pentium systems because

- (A) It has plug and play characteristics
- (B) It has ability to function with a 64 bit data bus
- (C) Any Microprocessor can be interfaced to it with PCI controller or bridge
- (D) All of the above

f. The mnemonic STD is used to

- |                      |                         |
|----------------------|-------------------------|
| (A) Set the IE flag  | (B) Set & Clear DF flag |
| (C) Both (A) and (B) | (D) None of these       |

**Code: AC78**

**Subject: ADVANCED MICROPROCESSORS**

- g. In JA instruction, if CF=1 and ZF=1 then execution continues with
- (A) Labeled Specified (B) Next Instruction after JA  
(C) Labeled Specified Above JA (D) Labeled Specified Below JA
- h. Which ROM BIOS routine checks the complete hardware once the computer is switched on
- (A) INT (B) POST  
(C) PT. (D) RST
- i. A .COM program can have maximum size of
- (A) 8 K Bytes (B) 16 K Bytes  
(C) 64 K Bytes (D) 32 K Bytes
- j. The 80286 is able to address ..... of virtual memory per task
- (A) 1 M byte (B) 1 K bytes  
(C) 16 M bytes (D) 1 G byte

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

- Q.2** a. Draw the functional pin diagram of 8086, briefly explain the pins of 8086. (8)
- b. Describe the need for templates in instruction coding of 8086 and explain the various fields used in template for data transfer between a registers. (8)
- Q.3** a. Explain the working of WAIT and LOCK instruction in 8086. (8)
- b. Explain SCAN STRING (SCAS) instruction with example. Also describe the use of REPE and REPNE prefixes in this instruction. (8)
- Q.4** a. Describe the various types of exceptions we may come across while executing 8086 instructions. (8)
- b. Explain the flag status under which the branch takes place for the following instructions. (8)
- (i) JBE and JNBE  
(ii) JLE and JNLE  
(iii) JL and JNL
- Q.5** a. What is the need for an arithmetic co-processor in a micro-computer system? With a functional pin diagram of 8087, describe the functions of various pins.(8)
- b. Explain the data transfer group instructions of 8087. (8)

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- Q.6** a. Write an 8086 assembly language program to sort in descending order, using selection sort algorithm, a given set of 8 bit unsigned numbers in memory. **(8)**
- b. Write an 8086 assembly language program which checks whether the printer is online. If it is on line, print a message on the printer using DOS interrupt, else display printer status on CRT. **(8)**
- Q.7** a. Write an assembly language program by using 8087 instructions to compute the hypotenuse of a right angled triangle. **(8)**
- b. Write an 8086 assembly language program to find the square root of a real number. **(8)**
- Q.8** a. Using DOS function call, write a C program to obtain the size of given file. Message should be displayed on the screen indicating the size in hexadecimal and decimal format. If the file is not found suitable error message should be displayed. **(8)**
- b. Write a C program to display the attributes of a file using DOS interrupt. If the file does not exist, display an error message on the screen. **(8)**
- Q.9** a. Give the architecture and signal description of 80386 microprocessor. **(8)**
- b. Compare and contrast the addressing modes of 80486 and 80586 microprocessor. **(8)**