Code: AC78   **Subject: ADVANCED MICROPROCESSORS**

AMIETE – CS

Time: 3 Hours   **DECEMBER 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. The maximum memory that can be connected to Intel's 8086 microprocessor is

   (A) 1 KB   **(B)** 2 KB
   (C) 1 MB   **(D)** 2 MB

b. The contents of SS and EA are 15AlH and ABCOH respectively. The physical address is

   (A) 205DOH   **(B)** 308DOH
   (C) 405EOH   **(D)** 505EOH

c. The machine code for MOV CH, BL is

   (A) 77EEH   **(B)** 88DDH
   (C) 99BBH   **(D)** AABBH

d. In the minimum mode operation of 8086 microprocessor, the pin MN / $\overline{\text{MX}}$ is connected to

   (A) Logic1   **(B)** Logic 0
   (C) GND   **(D)** High Impedance

e. How many software interrupts of 8086 microprocessor are there?

   (A) 256   **(B)** 128
   (C) 64   **(D)** 32

f. The addressing mode of the instruction MOV AX, [5000] is

   (A) Immediate   **(B)** Direct
   (C) Register   **(D)** Register Indirect

g. Which of the following is numeric co-processor?

   (A) 8085   **(B)** 8086
   (C) 8087   **(D)** 8088

h. Alphabetical string that gives hints to the assembler is known as

   (A) Mnemonics   **(B)** Compiler
   (C) Assembler directives   **(D)** Linker

i. The Label is a

   (A) Identifier   **(B)** Mnemonics
   (C) Op code   **(D)** Operand

j. The Pentium Processor is based on

   (A) CISC   **(B)** RISC
   (C) EISA   **(D)** DOS

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

Q.2 a. Explain BIU and EU of 8086 microprocessor.   **(6)**

b. Describe the various segments register of 8086 microprocessor.   **(6)**

c. Generate the machine code for MOV CH, BL using instruction templates. **(4)**

Q.3 a. Explain the following instructions of 8086 microprocessor:
(i) XLAT (ii) XCHG (iii) DAA (iv) STD (v) LOCK   **(10)**

b. Explain PUSH and POP instructions in detail.   **(6)**

Q.4 a. Describe various software interrupts of 8086 in brief. Give the sequence of interrupt execution.   **(10)**

b. Explain the unconditional jump instructions of 8086.   **(6)**

Q.5 a. Explain the features and architecture of 8087.   **(10)**

b. Explain the various data transfer instructions of 8087.   **(6)**

Q.6 a. Explain various assembler directives available in 8086.   **(8)**

b. Write an assembly language program to generate Fibonacci series and also write necessary comments.   **(8)**

Q.7 a. Explain the approach methodology to clear screen using BIOS Interrupt.   **(8)**

   b. Write an 8086 assembly language program to clear / scroll the screen and position of the cursor.   **(8)**

Q.8 a. Write the instructions for 8087 coprocessor and give an illustration to compute the square root.   **(8)**

   b. Write a C-program to create a subdirectory if it does not exist, using DOS interrupt. A suitable message should be displayed on CRT depending on the success or failure of the operation.   **(8)**

Q.9 a. What are the important features of 80286? Describe its internal architecture.
                                                                                       (10)

   b. Mention the various addressing modes available in 80386 microprocessor. **(6)**