

AMIETE – CS (Current & New Scheme)

Time: 3 Hours

JUNE 2017

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. Which 8086 μ P interrupt is having the highest priority
(A) Single Step Interrupt
(B) INTR
(C) Non Maskable Interrupt (NMI)
(D) Divide by Zero
- b. The BIOS services are stored in _____
(A) ROM
(B) SRAM
(C) DRAM
(D) Flash Memory
- c. A .COM program can have maximum size of
(A) 8 K Bytes
(B) 16 K Bytes
(C) 32 K Bytes
(D) 64 K Bytes
- d. In the minimum mode operation of 8086 microprocessor, the pin MN / MX is connected to
(A) Logic 0
(B) Logic 1
(C) GND
(D) High Impedance
- e. The Pentium Processor is based on
(A) CISC
(B) DOS
(C) EISA
(D) RISC
- f. 8087 works on ----- bit internally, called as temporary real format
(A) 80
(B) 40
(C) 60
(D) None of these
- g. Intel 8086 microprocessor operates at a frequency of
(A) 1MHz and 50% duty cycle
(B) 10MHz and 33% duty cycle
(C) 3MHz and 25% duty cycle
(D) 10MHz and 66% duty cycle

- h. Direction flag is used with _____
 (A) Branch Instruction (B) Stack Instruction
 (C) String Instruction (D) Arithmetic Instruction
- i. The 8284 CLK generator also generates
 (A) ALE (B) Test
 (C) Ready (D) None of these
- j. Which type of JMP instruction assembles if the distance is 0020 h bytes?
 (A) short (B) far
 (C) near (D) None of these

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

- Q.2** a. Explain the architecture and various flags of 8086. (10)
 b. What are the different addressing modes supported by 8086? Explain each of them with suitable examples. (6)

- Q.3** a. Explain the working of WAIT and LOCK instruction in 8086. (8)
 b. Explain AAA and DAA instructions with example. (4)
 c. Describe the working of MOVS and CMPS instructions. (4)

- Q.4** a. Complete the following table. Assume content of AL register be AB, i.e., (AL) = 10101011, and CL= 03, i.e. , 00000011 and initial flag value stored at Carry Flag CF is 1 for all instructions. (8)

S.No	Instruction	Before Execution		After Execution	
		AL	CF	AL	CF
1	SHL AL, CL				
2	SAL AL, CL				
3	SHR AL, CL				
4	SAR AL, CL				

- b. When interrupted by an external interrupt what happens to the program execution in INTEL's-8086? Explain. What is the role of IRET instruction? (8)
- Q.5** a. Explain the 8087 instructions to load special constants. (8)
 b. Explain the control register and status register of 8087. (8)
- Q.6** a. Write an assembly language program to generate Fibonacci series and also write necessary comments. (8)

- b. Discuss the following assembler directives with example: (2×4)
(i) DWORD (ii) OFFSET
(iii) SEGMENT (iv) MACRO
- Q.7** a. Explain the various methods of accessing IBM PC hardware. (4)
- b. What are assembler directives? Explain various PTR directives used in 8086. (4)
- c. Write an assembly language program to search a key in an array of elements using LINEAR SEARCH method. (8)
- Q.8** a. Using BIOS routines, write a C program to display a suitable message on CRT in the middle of the screen, after clearing the screen first. (8)
- b. Mention any four 8087 co-processor instruction. Give an illustration to compute square root. (4+4)
- Q.9** a. Mention the various addressing modes available in 80386 microprocessor. (8)
- b. Write a C program to read a string from keyboard with DOS interrupt and print the same on the printer, if it is on line. Display a suitable message on the screen if the printer is off. (8)