

AMIETE – CS (Current Scheme)

Time: 3 Hours

DECEMBER 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. Intel 8282 is an _____
 (A) On-chip charge (B) Clock Generator
 (C) Latch (D) Decoder
- b. In variable port addressing, address of the port is implied to be the contents of
 (A) AL Register (B) AX Register
 (C) BX Register (D) None of these
- c. Decimal 39 in packed BCD notation representation is _____
 (A) 1100 1001 (B) 1001 1100
 (C) 0011 1001 (D) 1001 0011
- d. The TEST input of 8086 and Busy output of 8087 are used for _____
 (A) Testing ports of 8087 (B) Synchronizing
 (C) Local Bus Cycle Status (D) Both (B) and (C)
- e. Conditional jump instruction JBE which branches only when _____
 (A) CF=1 or ZF=0 (B) DF=1 or ZF=1
 (C) DF=1 or CF=0 (D) CF=1 or ZF=1
- f. The linker converts the .OBJ file to _____
 (A) .COM file (B) .EXE file
 (C) .ASM file (D) .HEX file
- g. The concept of Virtual Memory and Memory Management are supported in ____
 (A) 80286 (B) 8088
 (C) 8086 (D) 8087
- h. The BIOS services are stored in _____
 (A) Flash Memory (B) SRAM
 (C) DRAM (D) ROM
- i. By what factor does the 8284A clock generator divide the crystal oscillator's output frequency?
 (A) One (B) Two
 (C) Three (D) Four

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- j. A buffer is used to _____
 (A) Increase the output current (B) Increase the output voltage
 (C) Decrease the output current (D) None of these

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

- Q.2** a. Explain the action of 8086 when NMI and INTR pins are activated. (8)
 b. Explain with examples indirect addressing modes available in microprocessor 8086. (8)
- Q.3** a. Explain following instructions in 8086 family and their effect on flag. (12)
 (i) CWD
 (ii) IDIV
 (iii) AAS
 (iv) SAR
 (v) LOOP
 (vi) SAHF
 (vii) BOUND
 (viii) IMUL
- b. Explain with examples LDS and LES instructions. (4)
- Q.4** a. Explain with examples conditional jump instructions which perform a jump based on the value of a single flag. What is the change needed in the code to branch anywhere in the segment based on a condition? (8)
 b. Enlists the different steps results in the execution of an INT3 instruction. (8)
- Q.5** a. Explain the 8087 instructions to load special constants. (8)
 b. Describe the programmer's view of tag register and exception pointer of 8087. (8)
- Q.6** a. Write a Program in assembly language to find the largest of n numbers stored in the memory. (8)
 b. Discuss the following assembler directives with example (8)
 (i) DWORD
 (ii) OFFSET
 (iii) SEGMENT
 (iv) MACRO
- Q.7** a. Write an 8086 assembly language program to search for a given 8 bit value using linear search in an array of 8 bit numbers. (8)
 b. Write an 8086 assembly language program to rename a file, if it exists, using DOS interrupt. Otherwise display on error message. (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. 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)
- Q.9** a. Explain the Architecture of 80486. (8)
 b. Explain the register organization of 80286. (8)