

Time: 3 Hours

JUNE 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. If the ready signal is still zero at the end of wait state, then _____ more wait state is introduced.

- (A) 2 (B) 1
(C) 3 (D) none of these

b. For accessing a data memory location, using a register to provide the EA, in operation other than string operation, _____ register provide the segment base value.

- (A) ES (B) CS
(C) SS (D) DS

c. PUSH 83H[SI], is a

- (A) 2 byte instruction (B) 3 byte instruction
(C) 4 byte instruction (D) none of these

d. 8087, sets its own queue length of _____ bytes if the CPU is 8086 and _____ bytes if CPU is 8088.

- (A) 4,4 (B) 6,4
(C) 4,6 (D) none of these

e. 8087 works on ----- bit internally, called as temporary real format

- (A) 60 (B) 40
(C) 80 (D) none of these

Code: AC78

Subject: ADVANCED MICROPROCESSORS

- f. 8284 is a
- (A) coprocessor (B) bus controller
(C) clock controller (D) interrupt controller
- g. NIMIT of 8087 stands for _____
- (A) no wait prefix, initialise (B) non interrupt mask test
(C) no interrupt mask initialise (D) none of these
- h. The control register of 8087 has ZM flag placed at _____ position.
- (A) zero (B) first
(C) second (D) none of these
- i. After loading the .COM program DOS initialises IP to _____
- (A) 1000H (B) 0000H
(C) 0100H (D) 1111H
- j. Whenever DOS loads a program for running, it first reserves an area for memory for program called ____.
- (A) Base segment (B) Reserve area
(C) Program segment (D) None of these

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

- Q.2** a. Explain the following pins of 8086 (6)
(i) ALE
(ii) Ready
- b. Explain with the help of an example various flags of 8086. (10)
- Q.3** a. Explain with the help of an example LDS and LES instructions of 8086 (8)
- b. Explain two types of addressing I/O ports in brief with example. (8)
- Q.4** a. Explain how iterative instructions of 8086 provides a loops in a program. (8)
- b. Explain with example intra and inter segment CALL instruction. (8)
- Q.5** a. Explain the status register of 8087. (6)
- b. Explain any two compare instructions used in 8087 instruction bit. (10)

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- Q.6** a. Why do we need assembler directives and explain the following assembler directives. (6)
(i) .DB
(ii) ALIGN
(iii) END
- b. Write a program in assembly language to sort in ascending order using bubble sort algorithm. (10)
- Q.7** a. Explain the various methods of accessing IBM PC hardware. (8)
(i) using BIOS services (ii) using DOS services
- b. Write an 8086 assembly language to compute nCr , given n and r , using recursion. Display result using DEBUG. (8)
- Q.8** a. Explain the pipeline organisation of Pentium processors. (8)
- b. Write and explain the flag register of 80386. (4)
- c. Explain with the help of example the various addressing modes of 80386 processor. (4)
- Q.9** a. 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 program. (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)