

[Total No. of Questions - 9] [Total No. of Printed Pages - 3]
(2064)

14719

B. Tech 6th Semester Examination
Advance Microprocessor and Controller
EC-6012

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, selecting one question each from section A, B, C & D. All the subparts of Section E are compulsory.

SECTION - A

1. List three major advancements that the 80386 microprocessor has over 80286. Describe how the real mode operation of an 80286 is different from protected mode operation. Also list the four major processing units in 80286 microprocessor and briefly describe the function of each. (20)
2. Briefly describe the two types of scheduling commonly used in multiuser/multitasking operating systems. Discuss some important features and relative merits and demerits of batch processing, multiprocessing and time sharing systems (20)

SECTION - B

3. What do you mean by assembler directives? Give some examples. Write an 8086 program to find out the number of even and odd numbers from a given series of 16-bit hexadecimal numbers. (20)

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[P.T.O.]

4. (a) Explain the function of following 8086 instructions:
- (i) XLAT
 - (ii) WAIT
 - (iii) LOCK-prefix
 - (iv) INC BYTE PTR 4243 [BP] [SI]
 - (v) RET 12D (10)
- (b) Draw the block diagram of 8086 and explain the multiprocessing features available. (10)

SECTION - C

5. Discuss the PSW of 8051 microcontroller. Explain various applications of microcontrollers as dedicated controllers. (20)
6. Draw the architectural block diagram of 8051 microcontroller and explain the function of each block. (20)

SECTION - D

7. (a) What are the advantages of PLCs over Hard Wired Relay? (10)
- (b) What are the different components in PLC? Explain. (10)
8. Explain in detail, the architecture of programmable logic controller. (20)

SECTION - E

9. Attempt the following :
- (a) What determines whether a microprocessor is considered an 8-bit, a 16-bit or a 32-bit device?
 - (b) Differentiate between instruction pointer and stack pointer.

- (c) Why has 8086 microprocessor two ground pins?
- (d) Draw the vector address structure of interrupts of 8051.
- (e) What addressing mode is used in the instruction `MOV BX, [SI + DI + d8]`?
- (f) List various flags of 8086.
- (g) Explain the concept of segmented memory.
- (h) Enlist some important features of 8051 family of microcontrollers.
- (i) Name various jump instructions of 8086.
- (j) How does 80286 bus cycle function decoded?
(2×10=20)