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(2125)

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B. Tech 6th Semester Examination

Advanced Microprocessor & Microcontrollers (OS)

EC(ID)-6003

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 from each of sections A, B, C and D. Section E is compulsory.

SECTION - A

1. (a) Discuss RAM/ROM address decoding mechanism. (10)
(b) Draw the architecture of 8086 microprocessor. (10)
2. (a) Explain working of EU of 8086. (10)
(b) Explain in detail types of instructions available in 8086. (10)

SECTION - B

3. (a) Show the 8086 instruction or group of instructions which will Call a near procedure named "fixit", Return from the procedure and automatically increment the stack pointer by 8.
(b) Explain DB, DW and DD directives and their uses. (10+10=20)
4. (a) Use the DB directive to define the following list of numbers and name it array: 31h, 32h, 33h, 34h.
(b) Write a program that converts a string containing up to 256 lowercase characters to upper-case. (10+10=20)

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SECTION - C

5. (a) Explain the architecture of a 32-bit microprocessor. What are the various storage devices used here?
(b) Explain operating modes of 80386. (10+10=20)
6. (a) Describe the signal and system connection of 80286.
(b) What is the architecture of 80286? (10+10=20)

SECTION - D

7. (a) Describe the commands involved in D/A and A/D conversion of 8051.
(b) Describe usage of ORL and XRL instructions. (10+10=20)
8. (a) Describe the architecture of 8051 microcontroller.
(b) Write a small 8051 program to convert a byte into 3-digit decimal number. (10+10=20)

SECTION - E

9. (i) Explain comments and identifiers in assembly program.
(ii) Write a data declaration directive for a sequence of 500 16-bit words, each containing the value 1000h.
(iii) Show the 8086 instruction or group of instructions which will Save BX and BP at the start of the procedure and restore them at the end of the procedure.
(iv) What are RISC machines?
(v) What are the advantages of 80486?
(vi) Name the six general types of memory operands.
(vii) Discuss segment registers of 8086.
(viii) What is the working of TMOD register?
(ix) What is DPTR? Where is it used?
(x) Explain timer chip. (2×10=20)