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Question Paper Code: 41437

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2016

Fourth Semester

Computer Science and Engineering

14UEC423 - MICROPROCESSORS AND MICROCONTROLLERS

(Common to Information Technology)

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. *SUB B* instruction in 8085 microprocessor
 - (a) resets the carry and sign flag
 - (b) sets the zero and parity flag
 - (c) sets the zero and carry flag
 - (d) can modify all flags according to result
2. When a *CALL* instruction is executed, the stack pointer register is
 - (a) decremented by two
 - (b) incremented by two
 - (c) decremented by one
 - (d) incremented by one
3. The 8086 has a
 - (a) 16-bit data bus and 20-bit address bus
 - (b) 8-bit data bus and 20-bit address bus
 - (c) 16-bit data bus and 16-bit address bus
 - (d) 8-bit data bus and 16-bit address bus
4. Which of the following instruction is a logical instruction?
 - (a) DIV AB
 - (b) TEST
 - (c) CALL
 - (d) AAM

5. The 8087 coprocessor operate in _____ with an 8086 processor and with the same instruction_____
- (a) series, byte (b) parallel, byte
(c) series, bits (d) parallel, bits
6. The synchronization between processor and coprocessor can be done by _____ connection and the _____ instruction.
- (a) RQ/GT₀ and RQ/GT₁, FWAIT (b) INT and NMI, WAIT
(c) BUSY and TEST, FWAIT (d) S₀ and QS₀, WAIT
7. How many address lines are required to access 1 MB RAM using microprocessor?
- (a) 16 (b) 8 (c) 20 (d) 12
8. The 8279 is a
- (a) DMA controller (b) programmable keyboard display interface
(c) counter (d) interrupt controller
9. Which of the following registers can be used as two individual 8-bit registers?
- (a) DPTR (b) PC (c) SBUF (d) PSW
10. What will be the output after execution of the following instruction?
MOV A, #55
ANL A, #67
- (a) 54 (b) 45 (c) 55 (d) 67

PART - B (5 x 2 = 10 Marks)

11. Classify the signals of 8085.
12. List out the flags present in 8086.
13. Compare closely coupled and loosely coupled configurations of co-processor.
14. Highlight the method used to transfer large blocks of data between external device and memory at high speed.
15. Draw the format of PSW of 8051.

PART - C (5 x 16 = 80 Marks)

16. (a) Draw and explain the architecture of 8085 microprocessor. (16)

Or

- (b) (i) Write an ALP to convert binary to decimal number using 8085. (10)
(ii) Write various instruction set of 8085. (6)
17. (a) (i) Explain the various addressing modes of 8086. (12)
(ii) Describe assembler directives. (4)

Or

- (b) Explain in detail about Interrupt Service Routine (ISR) of 8086 processor. (16)
18. (a) Draw the architecture of 8087 numeric data processor and explain each block. (16)

Or

- (b) Explain the architecture of 8089 I/O processor with a diagram. (16)
19. (a) Apply 8085 microprocessor for interfacing stepper motor control system and write an assembly language program for speed control. (16)

Or

- (b) Describe the block diagram of IC 8237 DMA controller. (16)
20. (a) Draw the architecture of 8051 microcontroller and explain each block. (16)

Or

- (b) Explain the interfacing of ADC and DAC with 8051 microcontroller. (16)
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