U1722021

9/3/21

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ST. ALBERT'S COLLEGE (AUTONOMOUS), ERNAKULAM

B.Sc. DEGREE END SEMESTER EXAMINATION

SEMESTER IV - MARCH 2021 (Supplementary – 2017 | 2018 Admission)

CSC4CMT0117 - MICROPROCESSOR AND ASSEMBLY LANGUAGE PROGRAMMING

Time: 3 hours

Maximum Marks: 80

PART A

*Answer any **ten** questions. Each question carries **2** marks.*

1. Discuss in detail partitioning methods of clustering.
2. Why stack pointer is decremented by 2 in 8086 Stack PUSH Operation?
3. Define bit, byte and word.
4. Briefly explain why procedures is called as memory saving.
5. What is an address buffer?
6. Explain how parameters are passed via stack in procedures.
7. Name the three input pins of 8086 interrupts.
8. How are task in 80386 protected from each other?
9. Define ALU.
10. What is an In-service register (ISR)?
11. Give the basic blocks of 8085 microprocessor.
12. Explain software interrupt.

(10 x 2 = 20)

PART B

*Answer any **six** questions. Each question carries **5** marks.*

13. List the segment registers and give the functions of each segment register in 8086.
14. What are the disadvantages of machine level programming?
15. What is an OVERFLOW interrupt?
16. Explain the series of major actions by 8086 when an interrupt is been requested.
17. Briefly compare the EISA and MCA methods of arbitrating bus requests.

PTO

18. How can operating system kernel procedures and data be protected from access by application programs in 80386 system?
19. What do you mean by recursive procedures.
20. Explain RET instruction in detail.
21. Compare memory mapped I/O and peripheral mapped I/O.

(6 x 5 = 30)

PART C

*Answer any **two** questions. Each question carries **15** marks.*

22. Explain the 8086 instruction set in detail.
23. a) Explain defining and calling a macro without parameter.
    b) Explain how parameters are passed to macros
24. Describe the functional block diagram of 80286 Microprocessor.
25. a) Explain the basic block diagram of DMA Controller.
    b) Explain DMA Transfer in detail.

(2 x 15 = 30)

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U1621820

17/6/2020

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ST. ALBERT'S COLLEGE (AUTONOMOUS), ERNAKULAM

B.Sc. DEGREE END SEMESTER EXAMINATION

SEMESTER IV - JUNE 2020 (Supplementary)

CSC4CRT02 - MICROPROCESSORS AND ASSEMBLY LANGUAGE

Time : 3 hours

Maximum Marks : 80

PART A

*Answer **all** questions. Each question carries **1** mark.*

1. What are pointer registers?
2. What are general purpose registers?
3. What is the role of Execution Unit in 80286?
4. What is an internal interrupt?
5. What do you mean by divide by zero interrupt?
6. Why procedures are called as memory saving?
7. What is the maximum memory size possible for a 8086 based system?
8. What is zero flag?
9. What is a string?
10. Explain PUSH Operation in 8086 Stack.

(10 x 1 = 10)

PART B

*Answer any **eight** questions. Each question carries **2** marks.*

11. List out the advantages of working in DMA mode.
12. What do you mean by reentrant procedures?
13. How is EISA bus different from the ISA Bus?
14. What you mean by pipelining in 8086 processor?
15. Define increment and decrement address latch.
16. What are the functions of segment register?
17. What are the two major ways to detect and respond to an overflow error in a program in 8086?

PTO

18. What is an instruction decoder?
19. List down the major ways by which procedure can send parameters.
20. What is an assembler directive?
21. What is an address buffer?
22. What is cycle stealing mode?

(8 x 2 = 16)

PART C

Answer any ***six*** questions. *Each question carries* ***4*** *marks.*

23. Define the terms interrupt, exception, fault and trap.
24. Explain the internal data operations in 8085 microprocessor.
25. What are the advantages of segmented memory?
26. Compare memory mapped I/O and peripheral mapped I/O.
27. What is the use of 8259A priority interrupt controller?
28. Discuss in detail about the four operations performed by microprocessors.
29. What are the advantages of segmented memory?
30. What do you mean by recursive procedures?
31. Explain PUSH and POP operation in 8086 Stack.

(6 x 4 = 24)

PART D

Answer any ***two*** *questions. Each question carries* ***15*** *marks.*

32. Explain the addressing modes of 8085 with example.
33. Discuss in detail on 8086 Internal Architecture with the help of a neat internal block diagram.
34. Describe the functional block diagram of 80286 Microprocessor.
35. Discuss in detail how parameters are passed to and from Procedures.

(2 x 15 = 30)

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ST. ALBERT'S COLLEGE (AUTONOMOUS), ERNAKULAM

B.Sc. DEGREE END SEMESTER EXAMINATION

SEMESTER IV - MARCH 2020 (Regular / Supplementary)

CSC4CRT0217 - MICROPROCESSOR AND ASSEMBLY LANGUAGE PROGRAMMING

Time : 3 hours

Maximum Marks : 80

PART A

*Answer any **ten** questions. Each question carries **2** marks.*

1. What is instruction decoder?
2. Explain the use of ALE signal in 8085 microprocessor.
3. How is EISA bus different from the ISA Bus?
4. What is queue? How queue is implemented in 8086?
5. Explain how parameters are passed via registers in procedures.
6. Explain the use of Interrupt Mask Register (IMR).
7. What is the role of bus unit in 80286?
8. Explain why procedures is called as memory saving.
9. List out the various signals in signal group INTERRUPTS of 80386.
10. What is the maximum memory size possible for a 8086 based system?
11. What do you mean by software interrupt?
12. What is a microprocessor?

(10 x 2 = 20)

PART B

*Answer any **six** questions. Each question carries **5** marks.*

13. What are the disadvantages of machine level programming?
14. Explain OVERFLOW interrupt.
15. Briefly compare the EISA and MCA methods of arbitrating bus requests.
16. List out the disadvantages of DMA mode.
17. What do you mean by an effective address? How the physical address is calculated?

PTO

18. Explain reentrant procedure in detail.
19. Explain the internal data operations in 8085 microprocessor.
20. What is memory mapping?
21. Briefly explain the terms interrupt, exception, fault and trap.

(6 x 5 = 30)

PART C

*Answer any **two** questions. Each question carries **15** marks.*

22. What do you mean by stack? Discuss in detail on PUSH and POP to save register contents.
23. Explain the 8254 counter modes and applications in detail.
24. Explain various registers used for data operations in 8085.
25. Discuss in detail on 8086 internal architecture with the help of a neat internal block diagram.

(2 x 15 = 30)

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ST. ALBERT'S COLLEGE (AUTONOMOUS), ERNAKULAM

B.Sc. DEGREE END SEMESTER EXAMINATION

SEMESTER IV - MARCH 2019

CSC4CRT0217 - MICROPROCESSOR AND ASSEMBLY LANGUAGE PROGRAMMING

Time : 3 hours

Maximum Marks : 80

PART A

*Answer any **ten** questions. Each question carries 2 marks.*

1. What are the functions of general purpose register?
2. Discuss in detail density-based methods of clustering.
3. Explain the use of data bus in microprocessor.
4. What are the functional units of 8086?
5. What do you mean by reentrant procedures?
6. Explain the use of interrupt request register.
7. What is the function of direction flag?
8. What is the use of LMSW instruction in 80286 operation?
9. What is the role of descriptor table in 80386 protected mode operations?
10. What is an interrupt mask register?
11. List down the major ways by which procedure can send parameters.
12. How does task in 80386 protected from each other?

(10 x 2 = 20)

PART B

*Answer any **six** questions. Each question carries **5** marks.*

13. Explain the steps followed by processor to execute a procedure in far memory.
14. Explain PUSH and POP operation in 8086 stack.
15. Explain the series of major actions by 8086 when an interrupt is been requested.
16. List the major features characteristics of a RISC based computer and describe how each of these features helps produce faster execution.

PTO

17. Explain memory mapping.
18. What do you mean by an effective address? How is the physical address calculated?
19. What is the use of 8259A priority interrupt controller?
20. Discuss the various operations performed by microprocessors.
21. What are the disadvantages of machine level programming?

(6 x 5 = 30)

PART C

*Answer any **two** questions. Each question carries **15** marks.*

22. Discuss the functional block diagram of 80286 microprocessor.
23. Describe the addressing modes of 8085 with example.
24. Briefly explain the 8086 instruction set in detail.
25. Explain the 8254 counter modes and applications in detail.

(2 x 15 = 30)

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ST. ALBERT'S COLLEGE (AUTONOMOUS), ERNAKULAM

B.Sc. DEGREE END SEMESTER EXAMINATION

SEMESTER IV - MARCH 2019 (Supplementary)

CSC4CRT02 - MICROPROCESSORS AND ASSEMBLY LANGUAGE

Time : 3 hours

Maximum Marks : 80

PART A

*Answer **all** questions. Each question carries **1** mark.*

1. What is the role of execution unit in 80286?
2. What is a string?
3. Why real address mode of 80286 is referred to as real?
4. What is an internal interrupt?
5. Why data bus is bi-directional?
6. What is the main function of EU in 8086?
7. Why procedures are called as memory saving?
8. What is an external interrupt?
9. What are interrupt service routines?
10. What is parity flag?

(10 x 1 = 10)

PART B

*Answer any **eight** questions. Each question carries **2** marks.*

11. How parameters are passed via general memory in procedures?
12. What is an instruction register?
13. Explain processor extension request and processor extension acknowledge signals.
14. How are task in 80386 protected from each other?
15. What is an Instruction Decoder?
16. What is a macro? When is it used?
17. What is the role of descriptor table in 80386 protected mode operation?
18. What is the need for segmentation?
19. Define increment and decrement address latch?

PTO

20. List down the major ways by which procedure can send parameters.
21. Define OFFSET address.
22. What is an address buffer?

(8 x 2 = 16)

PART C

Answer any ***six*** questions. *Each question carries **4** marks.*

23. What are the disadvantages of machine level programming?
24. What are the advantages of segmented memory?
25. Discuss in detail about the four operations performed by microprocessors.
26. Compare memory mapped I/O and peripheral mapped I/O.
27. Explain PUSH and POP operation in 8086 Stack.
28. Explain 8086 RET instruction in detail.
29. What do you mean by recursive procedures?
30. Explain OVERFLOW interrupt.
31. Briefly describe the functions of major processing units in 80286.

(6 x 4 = 24)

PART D

*Answer any **two** questions. Each question carries **15** marks.*

32. Describe the 8085 microprocessor and its architecture in detail.
33. Explain memory organisation in 8086.
34. a) Explain how a macro can be defined and called without parameter?
    b) Explain how parameters are passed to macros?
35. a) Explain the basic block diagram of DMA controller.
    b) Explain DMA transfer in detail.

(2 x 15 = 30)

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ST. ALBERT'S COLLEGE (AUTONOMOUS), ERNAKULAM

B.Sc. DEGREE END SEMESTER EXAMINATION

SEMESTER IV - MARCH 2018

CSC4CRT02 - MICROPROCESSORS AND ASSEMBLY LANGUAGE

Time : 3 hours

Maximum Marks : 80

PART A

*Answer **all** questions. Each question carries **1** mark.*

1. What is an Interrupt Request Register (IRR)?
2. What is the use of adder in BIU?
3. What is the function of microprocessor in a system?
4. Explain PUSH operation in 8086 Stack.
5. State the relation between the number of address pins and physical memory space.
6. Why Macros are called as time saving method?
7. What are interrupt service routines?
8. What is the use of LMSW instruction in 80286 operation?
9. What do you mean by Divide by Zero interrupt?
10. List down the signals in signal group BUS ARBITRATION of 80386.

(10 x 1 = 10)

PART B

*Answer any **eight** questions. Each question carries **2** marks.*

11. What are the two major ways to detect and respond to an overflow error in a program in 8086?
12. How are parameters passed via pointers in procedures?
13. How are task in 80386 protected from each other?
14. List out the advantages of working in DMA mode.
15. How is EISA Bus different from the ISA Bus?
16. Give the flag format of 8086.

17. What is the role of descriptor table in 80386 Protected Mode Operation?

18. What you mean by pipelining in 8086 processor?

19. What is Cycle Stealing Mode?

20. List down the major ways by which procedure can send parameters.

21. What is a Macro and when is it used?

22. What is an Address Buffer?

(8 x 2 = 16)

PART C

Answer any ***six*** questions. *Each question carries **4** marks.*

23. Explain BREAKPOINT Interrupt.

24. Briefly describe the functions of major processing units in 80286.

25. List out the disadvantages of DMA mode.

26. List the major features characteristics of a RISC based computer and describe how each of these features helps produce faster execution.

27. Compare memory mapped I/O and peripheral mapped I/O.

28. Explain the internal data operations in 8085 microprocessor.

29. What do you mean by Recursive Procedures.

30. How can operating system kernel procedures and data be protected from access by application programs in 80386 system?

31. Explain the difference between segment register and general -purpose register.

(6 x 4 = 24)

PART D

*Answer any **two** questions. Each question carries **15** marks.*

32. Explain 80386 32-Bit Microprocessor Architecture Pins and Signals.

33. Discuss in detail Reentrant and Recursive Procedures.

34. Explain various registers used for data operations in 8085.

35. Explain the 8254 counter modes and applications in detail.

(2 x 15 = 30)

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