Code No: R31055 **R10** **Set No: 1**

III B.Tech. I Semester Supplementary Examinations, June/July - 2014

MICROPROCESSORS AND MULTICORE SYSTEMS

(Computer Science and Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
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1. a) What is a microcomputer? Explain different parts of a microcomputer.
   b) List and discuss different segment registers of 8086 microprocessor. (8+7)

2. Write instructions to evaluate the arithmetic expression 5 +(6-2) leaving the result in AX register using (i) 1 register (ii) 2 registers (iii) 3 registers (15)

3. What is a string? List and explain the different string instructions of 8086 microprocessor with two examples for each. (15)

4. Explain the following assembler directives with two examples each
   i) DW ii) EVEN iii) LENGTH iv) ENDS v) EQU vi) SEGMENT vii) ORG (15)

5. a) Differentiate between maskable and nonmaskable interrupts?
   b) Draw and explain the interrupt vector table of 8086 microprocessor. (5+10)

6. a) List and discuss the advantages of assembly language programming over machine language programming.
   b) Write an assembly language program to find out the number of even and odd numbers from a given series of 16-bit hexadecimal numbers. (5+10)

7. a) List the salient features of Intel 80286 microprocessor.
   b) Draw and explain the flag register of 80286 microprocessor. (8+7)

8. Draw and discuss the architecture of a Pentium processor. Also discuss its memory organization. (15)

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Code No: R31055 **R10** **Set No: 2**

III B.Tech. I Semester Supplementary Examinations, June/July - 2014

MICROPROCESSORS AND MULTICORE SYSTEMS

(Computer Science and Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. List the main features of 8086 microprocessor. Also draw and discuss the internal architecture of 8086 microprocessor. (15)

2. a) Write an assembly language program for the addition of a series of 8-bit numbers. The series contains 100 numbers.
   b) Explain the implementation of if-then-else condition in assembly language programming with an example. (10+5)

3. a) With examples explain MOVSB, MOVSW and CMPS instructions.
   b) What is a macro? How to define a macro? Explain with examples. (8+7)

4. a) What are the assembler directives? Explain their use.
   b) Explain the following assembler directives with examples
   ii)DQ ii) ENDP iii) EQU iv) EXTRN v) OFFSET (5+10)

5. What is an interrupt? What are different interrupts available in 8086? Draw and discuss interrupt structure of 8086 microprocessor. (15)

6. a) Write an assembly language program in 8086 to find out the number of positive numbers and negative numbers from a given series of signed numbers.
   b) Write an assembly language program to convert a BCD number into binary equivalent number. (8+7)

7. With a neat diagram, explain the internal architecture of 80286 microprocessor. (15)

8. a) List the salient features of Pentium processor.
   b) Bring out the architectural differences between 80486 and Pentium processors. (8+7)

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Code No: R31055 **R10** **Set No: 3**

III B.Tech. I Semester Supplementary Examinations, June/July - 2014
MICROPROCESSORS AND MULTICORE SYSTEMS
(Computer Science and Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. a) What is a microprocessor? Discuss the evolution of microprocessors.
   b) What is memory segmentation? What are its advantages? Discuss the memory segmentation in 8086 microprocessors. (5+10)

2. a) With an example program, discuss the implementation of while-do loop in assembly language programming.
   b) Write an assembly language program to find out the number of even and odd numbers from a given series of 16-bit hexadecimal numbers. (5+10)

3. a) Explain SCAS, LDOS and CMPS string instructions with examples.
   b) With an example, explain defining of a macro. Also explain passing parameters to a macro. (8+7)

4. What are assembler directives? What are their uses? List and discuss different assembler directives of 8086 micro processor. (15)

5. a) What are hardware interrupts and software interrupts? Explain.
   b) Explain the interrupt response sequence of 8086 microprocessor. (8+7)

6. a) Write an assembly language program to move a string of data words from offset 3000H to offset 4000H. The length of the string is 0FH.
   b) Write an assembly language program to convert a 16 bit binary number into equivalent BCD number. (8+7)

7. Discuss in detail the real mode and protected modes of operation of 80386 microprocessor. (15)

8. a) What is meant by superscalar execution? Explain.
   b) Write a short note on “FPU in Pentium processor”. (8+7)

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Code No: R31055 **R10** **Set No: 4**

III B.Tech. I Semester Supplementary Examinations, June/July - 2014
MICROPROCESSORS AND MULTICORE SYSTEMS
(Computer Science and Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
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1. a) What is physical address? Explain the physical address computation in 8086 microprocessor.
   b) Discuss the program development steps for assembly language programming with an example. (15)

2. Write an assembly language program to arrange a given series of hexadecimal bytes in descending order. Also draw the flow chart and discuss the instructions used. (15)

3. a) What is REP prefix? What is its use? Explain.
   b) What is a procedure? What is the difference between NEAR and FAR procedures? Explain. (6+9)

4. a) Discuss the ASSUME, END, NAME and OFFSET assembler directives with examples.
   b) Explain the functions of PTR, ORG, SHORT, and LENGTH assembler directives. (8+7)

5. a) Discuss the interrupt priority in 8086 microprocessor.
   b) What are the interrupt vector addresses of the following interrupts in 8086
   i) INTO ii) NMI iii) INT 20H iv) INT 55H (7+8)

6. a) Write an assembly language program to arrange a given series of hexadecimal bytes in ascending order.
   b) Write an assembly language program to display the message "JNTUK" on the CRT screen of a microcomputer. (7+8)

7. a) What is paging? Explain.
   b) List and discuss the salient features of 80486 microprocessor. (7+8)

8. a) Discuss the additional features of Pentium processor over 80486.
   b) What are Dual core processors? Discuss their characteristics. (8+7)

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