

Code No: **R31055**

**R10**

**Set No. 1**

**III B.Tech I Semester Supplementary Examinations, May/June - 2015**

**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) Explain the different assembly programming development tools used in 8086 [8]  
microprocessor with examples.  
b) Draw the register organization of 8086 microprocessor and explain operation of each [7]  
register.
- 2 a) Explain difference between if-then and multiple if-then-else syntaxes in assemble [8]  
language program of 8086 microprocessor with examples.  
b) Write the simple program using repeat-until statements and explain its importance in [7]  
8086 microprocessor assemble programming.
- 3 a) Explain the difference between Procedure and Macros used in 8086 microprocessor [8]  
assemble language program with examples.  
b) List out the different string instructions used in 8086 microprocessor and explain each [7]  
one.
4. Explain the following Assembler directives in detail [15]  
(i) OFFSET (ii) PROC (iii) GROUP (iv) ORG.
- 5 a) Define interrupt and explain different interrupts presented in 8086 microprocessor with [8]  
example  
b) Write an assemble language program to find the sorting of an array, if the length of [7]  
array is five 16-bit numbers.
6. Write an assemble language program to convert packed BCD to unpacked BCD [15]  
conversion and also give theoretical example.
- 7 a) Draw the internal architecture of 80286 CPU and explain its operation in detail. [8]  
b) Draw the flag register of 80286 CPU and explain the function of each flag. [7]
- 8 a) Explain in detail about core duo basic characteristics and also explain its specifications. [10]  
b) Define Branch prediction unit of Pentium processor and explain its operation. [5]

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**(Computer Science and Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

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- 1 a) Define Queue and explain the need for the queue in 8086 microprocessor. [5]  
b) Explain the procedure for execution of a three instruction program of 8086 microprocessor with example. [10]
- 2 a) Explain the different conditional jump instruction presented in 8086 microprocessor with example. [8]  
b) Explain the procedure to find timing and delay loops of assembly language program of 8086 microprocessor. [7]
- 3 Explain the following instructions with examples [15]  
(i)MOVSW (ii)LODSB (iii)REPNZ (iv)STOSW
- 4 a) Explain the terms even-align and even memory address of a assembler directives in 8086 microprocessor. [8]  
b) Explain the ASSUME assembler directive in a simple program of 8086 microprocessor with example. [7]
- 5 a) Explain different hard ware and software interrupts presented in 8086 microprocessor with example. [8]  
b) Explain the nested interrupt concept of 8086 microprocessor and give one example for it. [7]
- 6 a) Write an assemble language program to find largest number in an array, if the array length is five 8-bit numbers. [8]  
b) Explain the procedure for signed number arithmetic operations with examples. [7]
- 7 a) Explain the concept of Protected mode in 80286 processor. [8]  
b) Briefly give the differences between 80286 CPU and 80386 CPU. [7]
- 8 a) Explain the difference between dual core and core duo processor in terms of basic characteristics [8]  
b) Explain the salient features of dual core processor in detail. [7]

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**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) Draw the internal architecture of 8086 microprocessor and explain its operation in detail. [8]
- b) Explain different programming development steps used in 8086 microprocessor with examples. [7]
- 2 a) Explain the standard programming structure in 8086 assemble language with flow chart. [8]
- b) Define near jump and fare jump in 8086 assemble language with one simple example. [7]
- 3 a) Explain the call and return instructions used in procedure along with one example. [8]
- b) Briefly explain differences between Stack and Procedure used in 8086 microprocessor. [7]
- 4 a) Define assembler directive and explain different assembler directives used in 8086 microprocessor. [8]
- b) Explain different instruction descriptions used in 8086 microprocessor with examples. [7]
- 5 a) Give the priority interrupt concept of 8086 microprocessor and explain software interrupt applications in detail. [8]
- b) Draw the interrupt response mechanism flow of 8086 microprocessor and explain its procedure. [7]
- 6 Write an assemble language program to find the sorting of an array, the length of array is five 16-bit numbers. [15]
- 7 a) Draw the EFAG register of 80386 CPU and explain function of each flag. [8]
- b) Define Paging and explain paging mechanism of 80386 processor. [7]
- 8 a) Draw the data and instruction cache of Pentium processor and explain its operation. [10]
- b) Explain the concept of fast floating point unit of Pentium processor in detail. [5]

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**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) Draw the microcomputer structure and explain its operation in detail. [6]  
b) Draw the Flag register of 8086 microprocessor and explain the function of each flag with examples. [9]
- 2 a) Explain the procedure to find the delay loops in assembly language programming of 8086 microprocessor. [7]  
b) Draw the while-do programming syntax in assembly language and write a simple programming for it. [8]
- 3 a) Define Macro and explain its importance in 8086 microprocessor assemble language program with example [8]  
b) Explain the procedure how to using the local directive in macros and also give the nested macro concept. [7]
- 4 Explain the following Assembler directives in detail [15]  
(i)ENDP (ii)INCLUDE (iii)ENDS (iv)SHORT.
- 5 a) Explain different hard ware interrupts in 8086 microprocessor and also explain its applications in detail. [8]  
b) Draw the Interrupt vector table of 8086 microprocessor and explain its operation. [7]
- 6 a) Write an assemble language program to find the sum of the cubes of first five numbers. [8]  
b) Explain the High level programming constructs presented in assemble language of 8086 microprocessor. [7]
- 7 a) Explain the enhanced features of 80486 microprocessor in detail. [8]  
b) Explain the concept protected virtual addressing mode of 80386 CPU. [7]
- 8 a) Justify how Pentium processor architecture called superscalar architecture. [8]  
b) Define Branch prediction unit of Pentium processor and explain its operation. [7]

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