Code No: V0522 **R07** SET - 1

II B. Tech II Semester, Supplementary Examinations, December – 2012
COMPUTER ORGANIZATION
(Com. to CSE, IT, ECC)

Time: 3 hours Max. Marks: 80

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1. a) List the differences between multi processors and multi computers.
   b) Explain about sign magnitude and 2's complement approaches for representing the fixed point numbers. Why 2's complement is preferable?

2. a) What are register transfer logic languages? Explain about RTL statement for branching with their actual functioning.
   b) Identify different types of instructions and describe their formats with their constituent fields. Mention which factors influence the size of the fields.

3. a) Why do we need some bits of current microinstruction to generate address of the next microinstruction? Support with a live example
   b) Support the statement "Instruction Set Architecture has impact on the processors micro architecture ".

4. a) Draw a flowchart which explains multiplication of two signed magnitude fixed point numbers.
   b) Multiply 10111 with 10011 using booths algorithm.

5. What are the different types of mapping techniques used in the usage of Cache Memory? Explain.

6. a) Explain the concept of daisy chaining priority.
   b) Briefly explain the standards of RS-232.

7. Draw the flow chart for point addition and subtraction for pipeline operations. Explain with an example.

8. What is Flynn's classification? Explain each stream of the Flynn's classification with an example.
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Code No: V0522 **R07** SET - 2

II B. Tech II Semester, Supplementary Examinations, December – 2012
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Time: 3 hours Max. Marks: 80

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1. a) With the help of a flow chart, explain the addition and subtraction for signed 2's complement data.
   b) Explain the necessity of error detection codes in detail

2. Briefly explain arithmetic logic shift unit with help of a functional table?

3. Explain designing of control unit in detail with necessary block diagrams?

4. Divide -145 by 13 in binary 2's complement notation, using 12 - bit words. Explain division procedure with necessary algorithm.

5. a) Compare RAM and ROM. Give invariants of ROM in detail.
   b) How the Associative Memory is mapped? Explain with diagram and example.

6. Explain various Interrupt – Initiated I/O methods for data transfer. Give a brief sketch of Daisy Chaining Priority

7. What is vector processing? List its application and explain matrix multiplication with an example.

8. a) What are the different physical forms available to establish an inter-connection network? Give the summary of those.
   b) Explain system bus structure for multiprocessors.
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Code No: V0522 **R07** SET - 3

II B. Tech II Semester, Supplementary Examinations, December – 2012
COMPUTER ORGANIZATION
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Time: 3 hours Max. Marks: 80

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1. a) Draw the block diagram of a computer system and describe each of its parts along with their functions.
   b) Distinguish between error detection and correction codes. What do you understand by odd parity and even parity?. What is odd function and even function? To calculate odd and even parity values which functions can be used?

2. a) Discuss arithmetic shift instruction with suitable examples
   b) Explain about different addressing modes. Why do we need so many addressing modes? Is the instruction size influenced by the number of addressing modes which a processor supports? State whether the number of addressing modes will be more in RISC or CISC?

3. a) What are the major design considerations in microinstruction sequencing? Explain?
   b) Why do we need subroutine register in a control unit? Explain.

4. a) Explain the addition of numbers using 2's complement notations.
   b) Give the 2's complement notation for the following signed decimal numbers for 8 bit word
      i) +1 ii) +127 iii) -1 iv) -64.

5. What is virtual memory? Define and differentiate logical address and physical address. What is the necessity of memory management?

6. a) What are the different modes of data transfer? Explain each mode in detail.
   b) What is PCI? Briefly describe the working of PCI.

7. a) What is pipeline? Explain space-time diagram for Pipeline.
   b) Compare RISC and CISC characteristics.

8. Describe the following terminology associated with multi processors
   a) Mutual exclusion. b) Semaphore.
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Code No: V0522 **R07** SET - 4

II B. Tech II Semester, Supplementary Examinations, December – 2012
COMPUTER ORGANIZATION
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Time: 3 hours Max. Marks: 80

Answer any **FIVE** Questions
All Questions carry **Equal** Marks
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1. a) Write a detail note on bus Structures?
   b) Obtain the 1's and 2's complement of the following:
   i) 10101110 ii) 10000001 iii) 10000000 iv) 10101010.

2. Explain about stack organization used in processors. What do you understand by register stack and memory stack? Write microoperations for PUSH and POP

3. a) What is meant by writable control memory? Explain micro program control organization with necessary diagrams.
   b) Hardwired control unit is faster than micro programmed control unit. Justify this statement.

4. a) Briefly explain booth's division algorithm with an example.
   b) Draw a flow chart which explains multiplication of two signed magnitude fixed point numbers.

5. a) What are the performance considerations for cache memory?
   b) What is memory hierarchy?

6. a) What is parallel priority interrupt method? Explain with neat sketch.
   b) What is Direct Memory Access? Explain the working of DMA. What are the different kinds of DMA transfers? Explain.

7. a) What is pipelining? Discuss different pipeline hazards in detail.
   b) Explain three segment instruction pipeline. Show the timing diagram.

8. a) Explain the organization of tightly coupled multiprocessor system with a generic block diagram.
   b) Explain system bus structure for multiprocessors with a neat sketch.
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