Code No: R05221901 **R05** **Set No. 2**

**II B.Tech II Semester Examinations,December 2010**
**COMPUTER ORGANISATION**
**Common to Instrumentation And Control Engineering, Electronics And Computer Engineering**

**Time: 3 hours** **Max Marks: 80**

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

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1. What are the different modes of data transfer? Explain each mode in detail. [16]
2. Explain the following:
   (a) Daisy chain
   (b) Parallel arbitration
   (c) Dynamic arbitration algorithms [5+5+6]
3. (a) Support or oppose the statement "If we want to add a new machine language instruction to a processors instruction set, simply write a C program and compile and store the resultant code in control memory".
   (b) Why do we need subroutine register in a control unit? Explain. [8+8]
4. (a) If cache access time is 70 ns, memory acess time is 700ns.
      i. Compute the formula for average acess time
      ii. Compute hit and miss ratios if the average acess time is 140ns.
   (b) What is RAID? What are the advantages of using this technique.
   (c) Show the memory hierarchy and give the brief explanation. [6+6+4]
5. (a) Explain about loosely and tightly coupled microprocessors.
   (b) Support or oppose the statement "Every efficient serial program is efficient parallel program". [8+8]
6. Design a circuit for parallel load operation into one of the four 4-bit registers from a bus. Mention clearly control/selection bits and selection logic. Assume JK flip-flops. [16]
7. (a) Explain single precision and double precision calculations. In general how many bytes are uses for both and what is the precision we get. Give some examples where double precision calculations are needed.
   (b) Explain booths algorithm with its theoretical basis. [8+8]
8. What is Vector Processing? Explain with an example of matrix multiplication. [16]

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Code No: R05221901 **R05** **Set No. 4**

**II B.Tech II Semester Examinations,December 2010**
**COMPUTER ORGANISATION**
**Common to Instrumentation And Control Engineering, Electronics And Computer Engineering**

**Time: 3 hours** **Max Marks: 80**

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

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1. (a) Explain single precision and double precision calculations. In general how many bytes are uses for both and what is the precision we get. Give some examples where double precision calculations are needed.
   (b) Explain booths algorithm with its theoretical basis. [8+8]
2. What is Vector Processing? Explain with an example of matrix multiplication. [16]
3. (a) If cache access time is 70 ns, memory acess time is 700ns.
      i. Compute the formula for average acess time
      ii. Compute hit and miss ratios if the average acess time is 140ns.
   (b) What is RAID? What are the advantages of using this technique.
   (c) Show the memory hierarchy and give the brief explanation. [6+6+4]
4. Design a circuit for parallel load operation into one of the four 4-bit registers from a bus. Mention clearly control/selection bits and selection logic. Assume JK flip-flops. [16]
5. What are the different modes of data transfer? Explain each mode in detail. [16]
6. (a) Support or oppose the statement "If we want to add a new machine language instruction to a processors instruction set, simply write a C program and compile and store the resultant code in control memory".
   (b) Why do we need subroutine register in a control unit? Explain. [8+8]
7. (a) Explain about loosely and tightly coupled microprocessors.
   (b) Support or oppose the statement "Every efficient serial program is efficient parallel program". [8+8]
8. Explain the following:
   (a) Daisy chain
   (b) Parallel arbitration
   (c) Dynamic arbitration algorithms [5+5+6]

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Code No: R05221901 **R05** **Set No. 1**

**II B.Tech II Semester Examinations,December 2010**
**COMPUTER ORGANISATION**
**Common to Instrumentation And Control Engineering, Electronics And Computer Engineering**

**Time: 3 hours** **Max Marks: 80**

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

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1. (a) Support or oppose the statement "If we want to add a new machine language instruction to a processors instruction set, simply write a C program and compile and store the resultant code in control memory".
   (b) Why do we need subroutine register in a control unit? Explain. [8+8]
2. What is Vector Processing? Explain with an example of matrix multiplication. [16]
3. What are the different modes of data transfer? Explain each mode in detail. [16]
4. Explain the following:
   (a) Daisy chain
   (b) Parallel arbitration
   (c) Dynamic arbitration algorithms [5+5+6]
5. (a) Explain single precision and double precision calculations. In general how many bytes are uses for both and what is the precision we get. Give some examples where double precision calculations are needed.
   (b) Explain booths algorithm with its theoretical basis. [8+8]
6. Design a circuit for parallel load operation into one of the four 4-bit registers from a bus. Mention clearly control/selection bits and selection logic. Assume JK flip-flops. [16]
7. (a) If cache access time is 70 ns, memory acess time is 700ns.
      i. Compute the formula for average acess time
      ii. Compute hit and miss ratios if the average acess time is 140ns.
   (b) What is RAID? What are the advantages of using this technique.
   (c) Show the memory hierarchy and give the brief explanation. [6+6+4]
8. (a) Explain about loosely and tightly coupled microprocessors.
   (b) Support or oppose the statement "Every efficient serial program is efficient parallel program". [8+8]

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Code No: R05221901 **R05** **Set No. 3**

**II B.Tech II Semester Examinations,December 2010**
**COMPUTER ORGANISATION**
**Common to Instrumentation And Control Engineering, Electronics And Computer Engineering**

**Time: 3 hours** **Max Marks: 80**

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

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1. Design a circuit for parallel load operation into one of the four 4-bit registers from a bus. Mention clearly control/selection bits and selection logic. Assume JK flip-flops. [16]

2. (a) If cache access time is 70 ns, memory acess time is 700ns.
   i. Compute the formula for average acess time
   ii. Compute hit and miss ratios if the average acess time is 140ns.
   (b) What is RAID? What are the advantages of using this technique.
   (c) Show the memory hierarchy and give the brief explanation. [6+6+4]

3. What is Vector Processing? Explain with an example of matrix multiplication. [16]

4. Explain the following:
   (a) Daisy chain
   (b) Parallel arbitration
   (c) Dynamic arbitration algorithms [5+5+6]

5. (a) Support or oppose the statement "If we want to add a new machine language instruction to a processors instruction set, simply write a C program and compile and store the resultant code in control memory".
   (b) Why do we need subroutine register in a control unit? Explain. [8+8]

6. What are the different modes of data transfer? Explain each mode in detail. [16]

7. (a) Explain single precision and double precision calculations. In general how many bytes are uses for both and what is the precision we get. Give some examples where double precision calculations are needed.
   (b) Explain booths algorithm with its theoretical basis. [8+8]

8. (a) Explain about loosely and tightly coupled microprocessors.
   (b) Support or oppose the statement "Every efficient serial program is efficient parallel program". [8+8]

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