

1

Max Marks: 80

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Code :R7420305

2

IV B.Tech II Semester(R07) Regular Examinations, April 2011
COMPUTER ORGANIZATION & ARCHITECTURE
(Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) Explain how floating-point division is done?
(b) Perform the following division operations?
 - i. $110/111$
 - ii. $0011/1011$
2. (a) Write about shift micro operations ?
(b) Design a 4-bit combinational circuit decremter using four full-adder?
3. (a) In detail explain about 'Stack organization'?
(b) Explain in detail about RISC?
4. Explain in detail about Design of control unit?
5. (a) Explain Memory hierarchy in a computer system?
(b) Discuss various address mappings in cache memory?
6. (a) Explain the following:
 - i. Dairry chaining priority interrupt
 - ii. Parallel priority interrupt.
(b) Explain about serial communication protocol IEEE 1394?
7. (a) Explain about parallel processing?
(b) Explain in detail about pipe line processing?
8. (a) Write about cache conference?
(b) Explain Dynamic Arbitration algorithms?

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Answer any FIVE questions
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1. (a) Explain about various functional units of a computer?
(b) How the multiprocessors are different from multicomputer?
(c) Discuss the procedure to subtract two unsigned memories with example?
2. (a) Explain about indirect and direct addresses with diagrams?
(b) Explain about arithmetic logic shift unit?
3. (a) Discuss about the following:
 - i. Program interrupt
 - ii. Interrupt cycle
(b) Explain in detail about RISC?
4. (a) Discuss about control memory?
(b) Explain about conditional branching?
5. Explain the following?
 - (a) Main-memory
 - (b) Cache memory
 - (c) Virtual memory.
6. (a) Discuss various modes of data transfer?
(b) Explain about DMA?
7. (a) Explain about instruction pipeline with example?
(b) Write about Array processors?
8. (a) Discuss about interprocessor synchronization?
(b) Write about shared memory multiprocessors?

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Answer any FIVE questions
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1. Discuss about the performance of a computer.
2. (a) Explain about Arithmetic logic shift unit in detail?
(b) Discuss about instruction cycle with example.
3. (a) Explain about various memory reference instructions?
(b) Write about "stack organization" in detail?
4. (a) Write a short notes on:
 - i. Micro instruction format.
 - ii. Micro operation
 - iii. Micro program
 - iv. Micro code.
(b) With diagram explain about control memory?
5. What is Virtual memory and explain in detail?
6. (a) Explain in detail about DMA?
(b) Explain about serial communication protocol RS232?
7. (a) Design a six-segment instruction pipeline for a computer specify the operations to be performed in each segment?
(b) Discuss about Array processors?
8. (a) Discuss the differences between Loosely coupled and Tightly coupled multiprocessors?
(b) Explain the following:
 - i. Multistage switching networks
 - ii. Hypercube system.
