

**R7**

Code: R7420305

**B.Tech IV Year II Semester (R07) Supplementary Examinations March/April 2013****COMPUTER ORGANIZATION AND ARCHITECTURE**

(Mechanical Engineering)

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 explain each of its parts along with their functions.  
(b) Explain about fixed point and floating point representations, with example.
- 2 (a) What are register transfer logic languages? Explain few RTL statements for branching with their actual functioning.  
(b) Distinguish between logic micro operations and shift micro operations.
- 3 Define instruction cycle, explain the fetch and decode cycles for a memory transfer statements. Show how the memory transfer statements are implemented in the bus system. Draw the flowchart for instruction cycle.
- 4 (a) List and briefly explain applications of microprogramming.  
(b) Explain the selection of address for control memory.  
(c) Define the following:  
(i) Micro instruction.  
(ii) Micro program.
- 5 (a) Explain different levels of RAID.  
(b) What is virtual memory? What are the issues behind the usages of this technique?
- 6 (a) Explain programmed I/O in detail.  
(b) Explain the following:  
(i) Asynchronous serial transfer.  
(ii) Asynchronous communication interface.
- 7 (a) What is pipelining? Explain.  
(b) Explain the following related with vector processing:  
(i) Super computers.  
(ii) Vector operations.  
(iii) Matrix multiplication.
- 8 (a) What is cache coherence problem? Discuss about different cache coherence approaches.  
(b) Briefly explain applications of microprocessors.

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