Code: 9A05406 R09

II B. Tech II Semester (R09) Supplementary Examinations, November/December 2011

COMPUTER ORGANIZATION

(Common to Electronics & Computer Engineering, Computer Science & Engineering)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) Explain the basic operational concepts of a computer.
(b) Define Bus in a computer and describe the bus structures of a computer.
(c) Define parity bit: and give the importance of a parity bit in binary codes.

2 (a) A digital computer has a common bus system for 16 registers of 32 bits each. The bus is constructed with multiplexers.
(i) How many selection inputs are there in each multiplexer?
(ii) What size of multiplexers are needed?
(iii) How many multiplexers are there in the bus?
(b) With example explain about addressing modes.

3 (a) What is the difference between a microprocessor and a microprogram? Is it possible to design a microprocessor without a micro program?
(b) Explain the address sequencing capabilities for control memory.

4 Show the step - by step multiplication process using Booth algorithm for following numbers.
i) (+15)× (-13)
Assume 5-bit registers that hold signed numbers.

5 (a) With a block diagram explain about associative memory and also explain the match logic, read operation and write operation.
(b) Define RAM and how many 128×8 RAM chips are needed to provide a memory capacity of 2048 bytes.

6 (a) What is the difference between isolated I/O and memory-mapped I/O? What are the advantages and disadvantages of each?
(b) Define an interrupt and design parallel priority interrupt hardware for a system with 4 interput sources.

7 With example explain about vector processing.

8 (a) Discuss the difference between tighly coupled multiprocessors and loosely coupled multiprocessors.
(b) Briefly explain about interprocessor communication and synchronization.

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