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NEW SCHEME

Fourth Semester B.E. Degree Examination, July 2007
CS / EC / EE / IS / TE / IT
Computer Organization

Time: 3 hrs.] [Max. Marks:100

Note : ***Answer any FIVE full questions.***

1 a. Explain different functional units of a computer. Mention the function of the processor registers i) PC ii) MAR iii) IR **(08 Marks)**

b. What is a bus? Explain single bus and multiple bus structure used to interconnect functional units in computer system. **(08 Marks)**

c. Explain with an illustration multitasking. **(04 Marks)**

2 a. Explain how the performance of a computer can be measured. What are the measures to improve the performance of computers? **(06 Marks)**

b. Explain with illustration, the three systems of representing binary numbers, which system is most often used in computers? **(06 Marks)**

c. What is overflow in integer arithmetic? Explain how overflow can be detected, with an illustration. **(08 Marks)**

3 a. Explain
i) Byte addressability ii) Big-endian assignment iii) Little endian assignment. **(06 Marks)**

b. Mention four types of operations required to be performed by instruction in a computer. What are the basic types of instruction formats? Give an example for each. **(08 Marks)**

c. What do you mean by addressing mode? Explain any four addressing modes. Give one example for each type. **(06 Marks)**

4 a. Compare CISC and RISC systems. **(04 Marks)**

b. With neat block diagram, explain any two methods of handling multiple I/O devices. **(08 Marks)**

c. What is the necessity of DMA controller? Explain the methods of bus arbitration. **(08 Marks)**

5 a. What are functions of an I/O interface? Explain with a block diagram I/O interface between a keyboard and a processor. **(06 Marks)**

b. Explain serial port and a serial interface. **(05 Marks)**

c. What is USB? What are the objectives of USB? Explain USB architecture. **(09 Marks)**

6 a. Mention any two differences between static and dynamic RAMs. Explain the internal organization of a memory chip consisting of 16 words of 8 bit each. **(06 Marks)**

b. Explain with block diagram and timing diagram synchronous DRAM. **(08 Marks)**

c. What is secondary storage? Explain in brief magnetic hard disk. **(06 Marks)**

7 a. How do you design FAST ADDERS? Explain a 4 bit carry look ahead adder. **(06 Marks)**

b. Explain the sequential binary multiplier with the use of a block diagram. **(06 Marks)**

c. Explain the computational details of multiplying two 4 bit numbers 1 0 1 1 and 0 1 0 1 using Booths algorithm. Verify the result obtained. **(08 Marks)**

8 a. With a block diagram explain the general requirements of a microwave oven or a digital camera in embedded systems. **(10 Marks)**

b. Explain the concept of micro programmed control unit. **(10 Marks)**

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