15652

Name: .....

Reg. No. .....

FOURTH SEMESTER B.TECH. DEGREE EXAMINATION, JUNE 2011

CS/IT.09.403/PTCS.09.402 – Computer Organization and Design

Time: Three hours **Maximum: 70 marks**

PART – A

1. State any two advantages of networked computers.
2. Define CPU execution time for a program. Give its expression.
3. What is the decimal value of this 32 bit two's complement number?
   1111 1111 1111 1111 1111 1111 1111 1100_2
4. Draw the adder hardware for the carry out signal.
5. State the difference between SRAM and DRAM.

(5x2=10 marks)

PART – B
(Answer any FOUR)

6. What is SPEC bench mark? Explain.
7. How if-then-else statement is compiled into conditional Branches?
8. Design a 1-bit ALU and explain its operation.
9. What are round and guard digits? Explain with an example.
10. How to combine the datapaths for the memory instructions and the R-type instructions? Explain.
11. What is the average time to read or write a 512-byte sector for a typical disk rotating at 5400 RPM? The advertised average seek time is 12 ms, the transfer rate is 5 MB/sec, and the controller overhead is 2 ms. Assume that the disk is idle so that there is no waiting time. **(4x5=20 marks)**

PART – C

12. Discuss the organization of a computer with block diagram showing the five classic components. **(10 marks)**

OR

13. Explain the various Registers and Data addressing modes of Intel 8086. **(10 marks)**

14. Explain the principle of Carry Lookahead adder. **(10 marks)**

OR

15. With flow chart and steps explain the signed multiplication. **(10 marks)**

16. Discuss in detail about single cycle and multicycle implementations. **(10 marks)**

OR

17. Explain the structure of Pentium Pro Implementation. **(10 marks)**

18. Explain in detail about cache memory. **(10 marks)**

OR

19. Discuss the types and characteristics of I/O Devices. **(10 marks)**

(4x10=40 marks)

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