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Computer

April 2017

(Computer Architecture)

Time - Three hours
(Maximum Marks: 75)

35241

IN.B: (1) Answer any FIVE questions in each PART - A and PART - B.
Q.No. 8 in PART - A and Q.No. 16 in PART - B are compulsory.

(2) Answer division (a) or division (b) of each question in PART - C.

(3) Each question carries 2 marks in PART - A, 3 marks in Part - B and 10 marks in PART - C.]

PART - A

1. Define micro-operation.
2. Draw one stage of logic circuit.
3. What are the advantages of DMA data transfer?
4. Define serial communication.
5. How many 16kB RAM are required to construct 1MB RAM?
6. Why we prefer cache memory?
7. Mention the different index registers present in 8086 processor and their use.
8. Differentiate SMP and NUMA in their memory access time.

PART - B

9. Draw 4 bit arithmetic circuit.
10. Explain source initiated strobe controlled data transfer.
11. Mention the function of interrupt controller.
12. Tabulate memory address map for 512 bytes RAM and 512 bytes ROM in a system.
13. Explain the different ways of writing into a cache memory.
14. What are the flags in 8086 processor? Mention them.
15. Explain pipelining in super scalar processor?
16. Define multi-threading.

[Turn over....

PART - C

17. (a) (i) Explain about different applications of logic micro operation.
(ii) Draw the structure of control unit.
(Or)
(b) Explain the operation of one stage of ALU.
18. (a) Explain how a priority interrupt is resolved parallelly.
(Or)
(b) (i) Explain source initiated handshaking method of data transfer.
(ii) Explain DMA transfer.
19. (a) (i) Explain about secondary storage devices.
(ii) Explain about associative memory page table in virtual memory.
(Or)
(b) Explain direct mapping technique of cache memory.
20. (a) (i) Explain arithmetic pipeline operation.
(ii) How to calculate effective address of 8086?
(Or)
(b) What are the registers available in 8086 microprocessor? Explain.
21. (a) Draw and explain Intel core duo block diagram.
(Or)
(b) Explain NUMA organization.