Reg. No. : | | | | | | | | | | |

Question Paper Code: 49403

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Elective

Electronics and Communication Engineering

14UEC903 - COMPUTER ARCHITECTURE AND ORGANIZATION

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Floating point representation is used to store.

   (a) Boolean values (b) Whole number

   (c) Real integer (d) Integer

2. Floating point representation is used to store

   (a) boolean values (b) whole numbers

   (c) real integers (d) integers

3. In computers, subtraction is generally carried out by

   (a) 9’s complement (b) 10’s complement

   (c) 1’s complement (d) 2’s complement

4. Pipeline implement

   (a) fetch instruction (b) decode instruction

   (c) fetch operand (d) calculate operand

5. CPU does not perform the operation

   (a) data transfer (b) logic operation

   (c) arithmetic operation (d) all the above

6. A micro program written as string of 0's and 1's is a

(a) symbolic microinstruction (b) binary microinstruction
(c) symbolic micro program (d) binary micro program

7. The techniques which move the program blocks to or from the physical memory is called as

(a) Paging (b) Virtual memory organization
(c) Overlays (d) Framing

8. The associatively mapped virtual memory makes use of

(a) Translation Look-aside Buffer (b) Page table
(c) Frame table (d) None of these

9. Interrupts which are initiated by an instruction are

(a) internal (b) external (c) hardware (d) software

10. The computer architecture aimed at reducing the time of execution of instructions is

(a) CISC (b) RISC (c) ISA (d) ANNA

PART - B (5 x 2 = 10 Marks)

11. Write the general format for floating point numbers.

12. What is coprocessor and what are the functions performed by the coprocessor?

13. What is an instruction pipeline?

14. Explain virtual memory.

15. What is processor time of a program?

PART - C (5 x 16 = 80 Marks)

16. (a) Explain the different types of addressing modes with suitable examples. (16)

Or

(b) With examples explain the different types of instruction format. . (16)

17. (a) Explain how multiplication is carried out using Booth's algorithm. Extend it for floating point operation. What are the advantages of modified Booth's algorithm? (16)

Or

(b) Write short notes on

(i) Floating point arithmetic?

(ii) Modified booths algorithm (16)

18. (a) Explain in detail about instruction pipelining with flow chart. (16)

Or

(b) What is associate memory? Draw the block diagram of associate memory and explain how the read and write operations performed in associated memory. (16)

19. (a) Explain preemptive and non-preemptive memory allocation strategies in detail. (16)

Or

(b) Write short notes on multilevel memories and optical memories. (16)

20. (a) Explain the IOB organization and communication between CPU and IOB. (16)

Or

(b) Explain the use of vectored interrupts in processors. Why is priority handling desired in interrupt controllers? How do the different priority schemes work? (16)