

(6 pages)

Reg. No. :

Code No. : 20494 E Sub. Code : CSCS 41

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Fourth Semester

Computer Science

Skill Based Subject — COMPUTER ARCHITECTURE

(For those who joined in July 2021-2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Each word in control memory contains within it a _____
(a) Macro instruction (b) Micro instruction
(c) Instruction set (d) Code set
2. The _____ register holds the operand read from memory.
(a) Data (b) Address
(c) Instruction (d) Input

3. The _____ in digital computers is essentially a memory unit with an address register that can count only.
(a) Stack (b) Register
(c) ROM (d) RAM
4. There is one register in the computer called the _____ or PC that keeps track of the instructions in the program stored in memory.
(a) Instruction counter (b) Program counter
(c) Memory counter (d) Stack counter
5. _____ is the part of a processor unit that executes arithmetic operations.
(a) Arithmetic processor
(b) Arithmetic counter
(c) Arithmetic memory
(d) Arithmetic bus
6. The _____ printer contains a wheel with the characters placed along the circumference.
(a) Laser (b) Dot Matrix
(c) Do wheel (d) Daisy wheel

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7. ASCII uses _____ bits to code 128 characters.
(a) 8 (b) 5
(c) 7 (d) 6
8. A _____ transmission can send and receive data in both directions simultaneously.
(a) full-duplex (b) half-duplex
(c) semi duplex (d) duplex
9. Integrated circuit _____ chips are available in two possible operating modes, static and dynamic.
(a) ROM (b) RAM
(c) ERAM (d) EROM
10. The _____ algorithm selects for replacement the item that has been least recently used by the CPU.
(a) FIFO (b) LIFO
(c) LRU (d) MRU

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Compare instruction codes and operation code.
Or
(b) State the phases of instruction cycle.
12. (a) Write short notes on ALU.
Or
(b) Discuss about logical and bit manipulation instructions.
13. (a) Draw the flowchart for add and subtract operations.
Or
(b) Mention the four parts of multiplication algorithm.
14. (a) Write short notes on ASCII.
Or
(b) State the differences that exist between the central computer and each peripheral.

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[P.T.O.]

15. (a) Discuss about ram chip.

Or

(b) Discuss about magnetic disks.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Discuss about computer registers.

Or

(b) Write detail notes on control memory.

17. (a) Write detail notes on instruction formats.

Or

(b) List out and explain the data transfer instructions.

18. (a) Explain booth algorithm in detail.

Or

(b) Discuss about floating point addition and subtraction.

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19. (a) Draw the block diagram of a typical asynchronous communication interface.

Or

(b) Write detail notes on DMA.

20. (a) Write detail notes on associative memory.

Or

(b) Discuss about cache memory in detail.

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