

15. (a) Explain about main memory.

Or

(b) Describe the purpose of Cache memory.

PART C — (5 × 8 = 40 marks)

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

16. (a) What are the phases of instruction cycle? Explain in detail.

Or

(b) Explain about computer instructions.

17. (a) Explain stack organizations.

Or

(b) What is addressing modes? Explain its various types.

18. (a) Explain multiplication algorithm and give example.

Or

(b) Explain division algorithm and five example.

19. (a) Describe asynchronous data transfer.

Or

(b) What is the purpose of DMA? Explain with block diagram.

20. (a) Explain about associative memory.

Or

(b) Describe virtual memory.

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B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Third Semester

Computer Science — Main

COMPUTER ARCHITECTURE

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A group of bits that instruct the computer to perform a specific operations is called
(a) operation code (b) status word
(c) instruction code (d) op-code.
2. The address of the next instruction is hold by
(a) stack pointer (b) program counter
(c) input register (d) accumulator.
3. The prefix notation of the infix notation $x * y - p * q + A * B$
(a) $- + * xy * pq A * B$
(b) $+ - xy * pq * AB$
(c) $- + * xy * pq * AB$
(d) $xy * pq * AB * - -$

4. In which mode, the effective address is equal to the address part of instruction?
(a) immediate mode (b) register mode
(c) direct mode (d) indirect mode.

5. When $A = B$, the subtract magnitude for the operation $(+A) - (+B)$ is
(a) $+(A - B)$ (b) $-(A - B)$
(c) $+(A + B)$ (d) $-(A + B)$.

6. The sequence counter used in the multiplication algorithms denotes the number of bits in the
(a) multiplier
(b) multiplicand
(c) partial product
(d) double length of multiplier.

7. Which command is issued to activate the peripheral and to inform it what to do
(a) I/O command
(b) Control command
(c) Status command
(d) Data output command.

8. In _____, the interface transfers data into and out of the memory unit through the memory bus.
(a) Programmed I/O
(b) Interrupt-initiated I/O
(c) Direct-memory access
(d) None.

9. Cache memory is in between _____
(a) input and output processor
(b) main memory and input processor
(c) main memory and CPU
(d) main memory and output processor.

10. An address in main memory is called a
(a) location (b) physical address
(c) virtual address (d) (a) or (b).

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain about stored program organization and indirect address with neat block diagrams.

Or

(b) Describe the functions of computer registers and how the registers and memory are connected to the common bus system.

12. (a) Explain about instruction formats.

Or

(b) Describe the data manipulation instruction.

13. (a) Draw the flow chart for add and subtract operations and explain.

Or

(b) Explain the addition and subtraction algorithms for floating - point numbers.

14. (a) Explain isolated and memory-mapped I/O.

Or

(b) What do you understand about priority interrupt? Explain Daisy-chaining priority.