

(6 pages)

Reg. No. :

Code No. : 21144

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JASE 31

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2017

Third Semester

Computer Science – Allied

COMPUTER ARCHITECTURE

(For those who joined in July 2016 onwards).

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Choose the correct answer :

1. _____ of an instruction is a group of bits that define such operations as add, subtract, multiply, shift, and complement.
(a) Binary Code (b) Instruction Code
(c) Operation Code (d) Hexadecimal Code
2. _____ is a processor register.
(a) Accumulator (b) Input
(c) Output (d) Data

3. _____ supervises the transfer of information among the registers and instructs the ALU as to which operation to perform.
(a) Memory Unit (b) Registers
(c) ALU (d) Control unit
4. Identify the symbol used for Shift right A Operation
(a) INCA (b) SHRA
(c) SHLA (d) SUB
5. _____ algorithm gives a procedure for multiplying binary integers in signed-2's complement representation
(a) Booth (b) Addition
(c) Subtraction (d) Division
6. When the dividend is twice as long as the divisor, the condition for _____.
(a) Negative (b) Underflow
(c) Overflow (d) Positive
7. Each interface attached to the _____ contains an address decoder that monitors the address lines.
(a) I/O bus (b) Control bus
(c) Memory bus (d) CPU

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8. A data _____ command causes the interface to respond by transferring data from the bus into one of its registers.
- (a) Control (b) Status
(c) Input (d) Output
9. Each processor element in a loosely coupled system has its own _____ local memory.
- (a) Private (b) Public
(c) Global (d) Virtual
10. _____ memory system employs separate buses between each memory module and each CPU.
- (a) Multi-port (b) Common-bus
(c) Crossbar (d) Hypercube

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Write note on Stored program organization.
- Or
- (b) Describe the basic instruction formats.

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12. (a) Elucidate the functions of Memory stack.

Or

- (b) Compare Immediate addressing mode with Register Indirect addressing mode.
13. (a) Explain the Hardware implementation for subtraction operation.

Or

- (b) How to perform Division of two fixed-point binary numbers in signed-magnitude representation?
14. (a) Discuss the features of Isolated I/O.

Or

- (b) Distinguish between RAM and ROM memory.
15. (a) What is parallel processing?

Or

- (b) Describe the vector operations.

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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 Address sequencing.

Or

- (b) Explain the phases of basic computer instruction cycle.

17. (a) Illustrate the evaluation of Reverse Polish Notation with an example.

Or

- (b) Discuss the Instruction formats.

18. (a) Design the algorithm for adding and subtracting two binary numbers in signed-2's complement representation.

Or

- (b) Explain the Multiplication Algorithm with its Hardware implementation.

19. (a) Illustrate the modes of data transfer to and from peripherals.

Or

- (b) Explain the basic operations of Cache memory.

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20. (a) Discuss the Array processors.

Or

- (b) Explain the Hyper cube system.

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