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Reg. No. :

Code No. : R 21163

Sub. Code : JACS
JAS

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2018.

Third Semester

Computer Science/Software Engineering — Allied

COMPUTER ARCHITECTURE

(For those who joined in July 2016 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ is a group of bits that instruct computer to perform a specific operation.

- (a) Binary Code
- (b) Instruction Code
- (c) Operation Code
- (d) Hexadecimal Code

_____ register holds memory operand.

- (a) address
- (b) input
- (c) output
- (d) data

_____ performs the required microoperations for executing the instructions.

- (a) Memory Unit
- (b) Registers
- (c) ALU
- (d) Control unit

Identify the symbol used for Transfer A Operation

- (a) INCA
- (b) ADD
- (c) TSFA
- (d) SUB

The solution to any problem that is stated by a finite number of well-defined procedural steps is called an

- (a) program
- (b) flowchart
- (c) commands
- (d) algorithm

The two signs A and B are compared by an _____ gate.

- (a) OR
- (b) AND
- (c) NOT
- (d) Exclusive-OR

7. Each peripheral device has associated with _____ unit.

- (a) Input (b) Control
- (c) ALU (d) Interface

8. A _____ command is used to test various status conditions in the interface and peripheral.

- (a) control (b) status
- (c) input (d) output

9. A multiprocessor system with common shared memory is classified as a shared memory _____ coupled multiprocessor.

- (a) tightly (b) loosely
- (c) strongly (d) data

10. _____ multiprocessor system consists of a number of processors connected through a common path to a memory unit.

- (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.

(a) Write note on Instruction code and operation code.

Or

(b) Draw a diagram of control unit of basic computer Explain.

(a) Elucidate the purpose of Control word.

Or

(b) Explain the three address Instruction format.

(a) Explain the Hardware implementation for addition operation.

Or

(b) How to perform Multiplication of two fixed-point binary numbers in signed-magnitude representation?

(a) Discuss the features of Memory-mapped I/O.

Or

(b) Mention the usage of RAM memory.

15. (a) Compare loosely coupled system with tightly coupled system.

Or

- (b) Write note on SISD and SIMD.

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 control memory.

Or

- (b) Explain the functions of Registers in a computer.

17. (a) Illustrate the sequence of micro operations used to implement Push and Pop operations.

Or

- (b) Write note on addressing modes.

18. (a) Draw a flowchart for subtraction operation. Explain.

Or

- (b) Discuss the Booth Multiplication Algorithm.

Discuss the Direct Memory Access.

Or

Draw a block diagram of Associative memory and explain.

Explain the Time-shared common bus and multiport memory system.

Or

Discuss the Pipelining technique.
