

Roll No.

Total No. of Questions : 9]
(2021)

[Total No. of Printed Pages : 7

**BCA (CBCS) RUSA IIIrd Semester
Examination**

4044

COMPUTER ORGANIZATION

BCA-0303

Time : 3 Hours]

[Maximum Marks : 70

Note :- Attempt *five* questions in all, selecting *one* question each from Units–I, II, III and IV. Q. No. 1 (Part–A) is compulsory.

Part–A

(Compulsory Question)

1. (A) Attempt all questions :

(i) ASCII stands for

(ii) Decimal equivalent of $(AF63)_{16}$ is

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C–591

(1)

Turn Over

(iii) The timing for all registers in basic computer is controlled by a

(iv) Program Counter (PC) holds

Answer the following MCQ's by selecting the most appropriate option :

(v) Computer bus consists of :

(a) Registers

(b) Accumulators

(c) Set of parallel lines

(d) Computer clock

(vi) The disadvantage(s) of the hardwired approach is :

(a) It is less flexible

(b) It cannot be used for complex instructions

(c) It is costly

(d) Less flexible and cannot be used for complex instructions

(vii) If a system is 64 bit machine, then the length of each word will be :

- (a) 4 bytes
- (b) 8 bytes
- (c) 16 bytes
- (d) 12 bytes

(viii) The two phases of executing an instruction are :

- (a) Instruction decoding and storage
- (b) Instruction fetch and instruction execution
- (c) Instruction execution and storage
- (d) Instruction fetch and instruction processing

(ix) In which of the following mode effective address is equal to the address part of the instruction ?

- (a) Indexed Addressing Mode

- (b) Direct Address Mode
- (c) Indirect Address Mode
- (d) Relative Address Mode

(x) In computers, subtraction is generally carried out by :

- (a) 9's complement
- (b) 2's complement
- (c) 10's complement
- (d) 1's complement

$$1 \times 10 = 10$$

(B) Answer the following in **25** to **40** words :

/(i) Write a short note on Hamming code for error detection and correction.

/(ii) Discuss Shift Micro-operations.

/(iii) Distinguish between Hardwired control and Microprogrammed control.

/(iv) What do you mean by Zero Address Instruction ?

(v) What is the difference between Internal and External Interrupts ?

$$4 \times 5 = 20$$

Part-B

Unit-I

2. (i) Discuss Octal, Hexadecimal and Binary number systems.
- (ii) Perform the subtraction $72532 - 13250$, using 10's complement. 6,4
3. (i) What is the difference between conversion of decimal numbers into binary and binary coding of decimal numbers ? Explain with the help of an example.
- (ii) How a floating point binary number is represented in mantissa and exponent form ? 8,2

Unit-II

4. (i) What is a Bus ? Give the circuit diagram of Bus System for four registers. Also discuss the function table for the Bus.

- (ii) What do you mean by three-state gate ? 8,2

5. (i) Discuss the working of 4-bit Adder-Subtractor and also give its circuit diagram.

(ii) Discuss logic micro-operations.

7,3

Unit-III

6. (i) Explain Stored Program Organisation ? What is instruction Format ?

(ii) What do you mean by Register ? List various types of registers available in a basic computer and explain their function.

5,5

7. (i) What is Instruction Cycle ? Explain fetch and decode.

(ii) Explain working of Control Unit of computer system with proper diagram.

4,6

Unit-IV

8. (i) Explain the Register Stack Organization and discuss its functioning.

(ii) Explain the conversion from infix to Reverse Polish Notation by giving an example.

5,5

9. (i) What are Data Transfer and Data Manipulation Instructions ? Discuss.
- (ii) What is Program Control ? List various Program Control Instructions.

6,4