

Roll No. _____

Total No. of Questions : 9]
(2111)

[Total No. of Printed Pages : 4

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

4515

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. I (Part-A) is compulsory.

Part-A

(Compulsory Question)

1. (A) Attempt all questions :

Fill in the blank spaces :

- (i) The floating point representation of a number has two parts bits and fractional. 1.1
- (ii) Complements of numbers are used in digital computers for logical manipulation and arithmetic operation. 1

(iii) Control word has 16 bits. 1

(iv) The Stack Pointer SP points at the top of the stack. 1

State whether the statement is True or False :

(v) Prefix notation is same as Polish Notation. 1

(vi) A software interrupt is initiated by executing an instruction. (True/False) 1

Answer the following MCQs by selecting the most appropriate option :

(vii) Which logic circuit would you use for addressing memory ?

(a) Full Adder (b) Multiplexer

(c) Decoder (d) DMA circuit 1

(viii) Where the result of an arithmetic and logical operation are stored ?

(a) In Accumulator

(b) In Cache Memory

(c) In ROM

(d) In Instruction Registry 1

(ix) An exception condition in a computer system caused by an event external to the CPU is known as :

(a) Halt (b) Process

(c) Interrupt (d) None of these 1

(B) Answer the following in 25 to 50 words :

- (i) How alphanumeric representation is done in a computer ?
- (ii) Write a short note on logic micro-operations.
- (iii) Explain the terms microinstruction and micro program.
- (iv) Explain relative addressing mode.
- (v) Explain the working of Half-Adder. $4 \times 5 = 20$

Part-B

Unit-I

2. (i) Convert the following numbers to the bases indicated below :

(a) $(7968)_{10} = (?)_8 = (?)_2 = (?)_{16}$

(b) $(478.5)_{10} = (?)_2 = (?)_8$ 3.2

(ii) Perform the subtraction with the following unsigned decimal numbers by taking 10's complement of the subtrahend.

(a) $5250 - 1321$

(b) $1753 - 8640$ 5

3. (i) What do you mean by BCD arithmetic ? Give an example to explain it.

(ii) Discuss error detection code used in the parity bit. 5.5

Unit-II

4. (i) What do you mean by Register Transfer ? Discuss. 4.6
(ii) Give the construction of Bus System with three-state buffers. 4.6
5. (i) Explain the working of 4-bit Binary Adder. 4.6
(ii) Write a short note on Arithmetic Logic Shift Unit. 4.6

Unit-III

6. (i) What is an Instruction Code ? What are its Parts ? 4.6
(ii) Explain the common Bus System which transfers information between registers and memory. 4.6
7. (i) What is an Instruction Cycle ? Discuss its phases. 5.5
(ii) How Register-Reference instructions are recognized ? Explain. 5.5

Unit-IV

8. (i) Give the circuit diagram of CPU and also explain its working. 7.3
(ii) What is a Control Word ? Name its fields. 7.3
9. (i) Discuss the Instruction Formats of a computer system. 6.4
(ii) Differentiate between Implied and Immediate modes of addressing. 6.4