Roll No. .....

Total No. of Questions : 9] [Total No. of Printed Pages : 4

(2111)

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. 1 (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 ..... and 1,1

(ii) Complements of numbers are used in digital computers for logical manipulation and ..... operation. 1

(iii) Control word has ..... bits. 1

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

State whether the statement is True *or* False :

(v) Prefix notation is same as Polish Notation. (True/False) 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. 4×5=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.

   (ii) Give the construction of Bus System with three-state buffers. 4,6

5. (i) Explain the working of 4-bit Binary Adder.

   (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 ?

   (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.

   (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.

   (ii) What is a Control Word ? Name its fields. 7,3

9. (i) Discuss the Instruction Formats of a computer system.

   (ii) Differentiate between Implied and Immediate modes of addressing. 6,4