Roll No. ....

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

(2102)

BCA (CBCS) RUSA IIIrd Semester Examination

3993

COMPUTER ORGANIZATION

BCA-303

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 parts :

(i) Decimal equivalent of $(2FA0C)_{16}$ is ....

(ii) Floating Point representation is used to store .... numbers.

(iii) A binary digit is called a   1,1,1

State whether the statement is True *or* False :

(iv) In computers, subtraction is generally carried out by using 10's Complement.

(True/False)   1

(v) A group of bits that tells the computer to perform specific task is known as micro-operation. (True/False) 1

Answer the following MCQs by selecting the most appropriate option :

(vi) Which method/s of representation of numbers occupies a large amount of memory than others ?

    (a) Sign-magnitude

    (b) 1's complement

    (c) 2's complement

    (d) None of these 1

(vii) .... are the different type/s of generating control signals.

    (a) Micro-programmed

    (b) Hardwired

    (c) Micro-instruction

    (d) Both Micro-programmed and Hardwired 1

(viii) 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   1

(ix) The circuit converting binary data into decimal is :

    (a) Multiplexer   (b) Encoder

    (c) Decoder   (d) Code converter   1

(x) The main virtue for using single Bus system is ....

    (a) Fast data transfers

    (b) Cost effective connectivity and speed

    (c) Cost effective connectivity and ease of attaching peripheral devices

    (d) None of the mentioned   1

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

(i) What is common bus system ? Why is it required ?

(ii) Perform Y–X using 2's complement, where Y = 1000011 and X = 1010100.

(iii) Discuss logic micro-operations.

(iv) What do you mean by Control Memory ?

(v) Discuss types of Interrupt.   4×5=20

Part–B

Unit–I

2. Perform the following Conversions :

   (i) $(F3A7C2)_{16} = (.........)_{10} = (.........)_{8} = (.........)_{2}$

   (ii) $(59282)_{10} = (.........)_{16} = (.........)_{8} = (.........)_{2}$ 10

3. (i)   What is BCD ? How is it different from conversion from decimal to binary numbers ?

   (ii) Perform the subtraction of unsigned decimal numbers by taking 10's complement of the subtrahend 1753–8640.   5,5

Unit–II

4. What is Register Transfer ? Discuss the basic symbols for Register transfer and also explain control function.   10

5. Discuss the working of 4-bit arithmetic circuit.   10

Unit–III

6. What is an Instruction Format ? Discuss most common fields present in an instruction format.   10

7. Discuss the Timing and Control ? Also explain hardwired and micro-programmed control.   10

Unit–IV

8. Discuss the General Register Organization ? Also give the bus organization for seven CPU Registers.   10

9. (i)   What do you mean by Zero-Address instruction ? Where is it used ?

   (ii) Write a short note on Reverse Polish Notation.   5,5

C–765   (4)