Total No. of Questions : 8] [Total No. of Printed Pages : 3

Paper Code : 21312

F–412

B.C.A. (Third Semester) Examination, 2018

(New Course)

Paper–BCA–302

COMPUTER ORGANISATION

Time : 3 Hours] [Maximum Marks : 70

Note :– Attempt any *five* questions. All questions carry equal marks.

1. How can one perform multiplication of two numbers by using Booth algorithm for multiplication, also perform 5 × 3 by using Booth's Algorithm ?

2. (a) Convert the following numbers accordingly :

   (i) $(12121)_3 = (?)_{10}$

   (ii) $(FA372)_{16} = (?)_8$

   (iii) $(101101)_2 = (?)_{Gray}$

   (iv) $(1231)_{10} = (?)_2$

   (v) $(175)_9 = (?)_2$

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(b) Obtain the 10's complement of the following six-digit decimal numbers :

(i) 123900

(ii) 090657

3. Explain the following :

(a) Micro-operation

(b) Micro-instruction

(c) Micro-program

(d) Micro-code http://www.mjpruonline.com

4. Explain the purpose of addressing mode, also explain various types of addressing modes.

5. (a) Differentiate between :

(i) Static RAM and dynamic RAM

(ii) EPROM and EEROM

(b) How many 128 × 8 RAM chips are needed to provide a memory capacity of 2048 bytes ?

6. (a) An address space is specified by 24 bits and the corresponding memory space by 16 bits :

(i) How many words are there in the address space ?

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(ii) How many words are there in the memory space ?

(b) Explain paged segment memory.

7. (a) Explain bus arbitration in system organization.

(b) Explain DMA controller with a neat diagram.

8. Write short notes any *four* :

(i) Interrupt

(ii) Main memory addressing

(iii) IEEE floating point representation

(iv) One address instruction

(v) Reverse polish notation

(vi) Direct mapping.