## WEST BENGAL STATE UNIVERSITY
B.A./B.Sc. Honours 2nd Semester Examination, 2022

# CMAACOR04T-COMPUTER APPLICATION (CC4)

Time Allotted: 2 Hours

Full Marks: 50

*The figures in the margin indicate full marks.*
*Candidates should answer in their own words and adhere to the word limit as practicable.*
*All symbols are of usual significance.*

1. Answer any *five* questions from the following:  $2 \times 5 = 10$
   - (a) When a floating point number is said to be normalised?
   - (b) Find the 2's complement of $(-10)_2$.
   - (c) Subtract $(1001.01)_2$ from $(1010.11)_2$ using 2's complement method.
   - (d) What are the advantages of assembly language?
   - (e) Explain the difference between synchronous and asynchronous bus.
   - (f) What is the equivalent hexadecimal of $(7642314)_8$?
   - (g) What is content addressable memory?
   - (h) What do you mean by locality of reference?

**Answer any *five* questions from the following**    $8 \times 5 = 40$

2. Explain Booth's multiplication algorithm. Apply Booth's multiplication algorithm to multiply $(+13)_{10}$ and $(-12)_{10}$.    4+4

3. (a) Realise a full adder with the help of only half adders.    4+4
   (b) Compare serial and parallel adder circuits.

4. (a) What do you mean by Micro-operations?    2+3+3
   (b) What are the different types of Micro-operations?
   (c) What is Register Transfer Language (RTL)?

5. (a) What are the major advantages of DMA transfer?    4+4
   (b) Briefly discuss on Daisy Chaining.

6. (a) What are the advantages of having cache memory in the system?    2+3+3
   (b) Briefly explain the concepts of associative mapping and set-associative mapping.

7.   Differentiate between the following terms:                                      4+4

   (a) RISC vs. CISC

   (b) Synchronous vs. Asynchronous data transfer.


8. (a) What are the functions of the following:                              $(1\frac{1}{2} \times 4)+2$

   (i) PC            (ii) SP            (iii) MAR            (iv) MDR

   (b) Differentiate between direct and indirect addressing modes.


9.   Write short notes on any *two* of the following:                         $4 \times 2 = 8$

   (a) DRAM

   (b) CLA

   (c) Flynn's classification

   (d) Encoder.


   **N.B. :** *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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