WEST BENGAL STATE UNIVERSITY
B.Sc. Honours Part-I Examination, 2020

COMPUTER SCIENCE

PAPER-CMSA-II

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.

Answer any *three* questions from the following   16×3 = 48

1. (a) Differentiate interpreter and compiler.   2

    (b) What are the advantages and disadvantages of Absolute loader?   3

    (c) How two-pass assembler is advantageous?   2

    (d) What are the uses of DLL?   3

    (e) What is the use of cross compiler?   3

    (f) Write down the different phase of compiler.   3

2. (a) Make a comparative study between One-phase and Two-phase assembler.   4

    (b) What are the primary and secondary tasks of Lexical Analysis Phase?   4

    (c) What is the significance of bootstrap loader?   4

    (d) Explain the working of two pass assembler.   4

3. (a) What is system software? Explain its different components.   2+4

    (b) Write a brief note on linkage editor.   5

    (c) Explain "Relocation" and "Program Linking" in brief.   5

4. (a) Define tail recursion. Differentiate Non-tail and tail recursion, using a suitable example.   4

    (b) Convert the following arithmetic expression from infix to postfix using Stack: 4

    $$(a + b \wedge c \wedge d) * (e + f/d)$$

    (c) Write a recursive function to calculate the LCM of two numbers. Hence convert it into an iterative function.   5

    (d) What are the differences between 'Divide-and-conquer' and "Dynamic" Algorithm?   3

5. (a) Distinguish between Data Structure and Abstract Data Type (ADT).   3

    (b) Why Binary Search could not be applied on Linked List?   3

(c) In which condition linear search is advantageous than binary search? 3

(d) Define Sparse matrix. Explain the concept of 3-tuple representation of Sparse Matrix with a suitable example. 2+5

6. (a) Differentiate between ++i and i++ 2

(b) Differentiate the following: 2+2

(i) malloc( ) and calloc( )

(ii) fscanf( ) and fread( )

(c) What is the difference between auto and static variable in C? 2

(d) What is the difference between break and goto? 2

(e) Distinguish between structure and union. 2

(f) What is type casting? What is its utility? 2+2

[2 marks for Neatness]

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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