UNIVERSITY OF NORTH BENGAL

B.Sc. General Part-II Examination, 2022

COMPUTER SCIENCE

PAPER-IV

Time Allotted: 2 Hours   Full Marks: 50

The figures in the margin indicate full marks.
All symbols are of usual significance.

GROUP-A

(PROGRAMMING LANGUAGE-I)

1.   Answer any *five* questions: 5×5 = 25

   (a) Explain the two way selection (if, if-else, nested if-else, cascaded if-else) in C language with syntax.

   (b) Explain the different types of loops in C with syntax and example.

   (c) Explain about the basic data types in C language with example.

   (d) What is recursion? Differentiate between recursion with iteration.

   (e) What is an array? Explain the declaration and initialization of one and two dimensional arrays with example.

   (f) What is a pointer? Explain, how the pointer variable declared and initialized.

   (g) Explain the features and characteristics of C languages.

   (h) Explain different relational operators available in C language with examples.

   (i) Discuss in detail about local variables and global variables with respect to their scope and extent.

   (j) Write a function to count the number of digits in an integer number. Also write main program.

GROUP-B

(OPERATING SYSTEM)

2.   Answer any *five* questions :   5×5 = 25

   (a) What is operating system? Explain different functions of operating system.

   (b) What is semaphore and why is it used ? Discuss briefly.

   (c) Explain different types of scheduling queues and types of schedulers.

   (d) What are the four necessary conditions to occur a deadlock? Explain briefly.

(e) Explain the segmentation memory management scheme in detail.

(f) Explain the need of CPU Management. Which are the different scheduling schemes?

(g) How virtual memory is implemented? Discuss demand paging in detail.

(h) Consider the page reference string:

7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 7, 0, 1

How many page faults would occur for the LRU replacement algorithms assuming three frames? Remember that all frames are initially empty.

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