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I Semester B.A./B.Sc. Examination, March/April 2023
(F+R) (NEP) (2021 – 22 and Onwards)
COMPUTER SCIENCE
Problem Solving Techniques

Time : 2½ Hours

Max. Marks : 60

Instruction : *Answer **all** the Parts.*

PART – A

I. Answer **any four** questions. **Each** question carries **two** marks.   **(4×2=8)**

   1) Define time and space complexity of an algorithm.

   2) How to declare and initialize variables ? Give examples.

   3) What is the difference between = and = = ?

   4) What is the use of command line argument ?

   5) Differentiate conditional and looping statements.

   6) What is pattern matching ? Give an example.

PART – B

II. Answer **any four** questions. **Each** question carries **five** marks.   **(4×5=20)**

   7) Explain structure of C-program with an example.

   8) Write an algorithm for reversing the given number.

   9) What is an array ? Explain different types of array.

   10) What is pointer ? Explain initialization and accessing the pointer with suitable example.

   11) Write a C program to find Greatest common divisor of two integers a and b.

   12) With an example, write an algorithm to search an element using Binary search.

PART – C

III. Answer **any four** questions. **Each** question carries **eight** marks.   **(4×8=32)**

  13) a) Write an algorithm for generating the Fibonacci series.

       b) Explain the characteristics of an algorithm.   **(4+4)**

  14) a) Explain various if statements.

       b) Write about type conversions with examples.   **(4+4)**

  15) a) Write a C program to add two matrices.

       b) Explain categories of functions.   **(4+4)**

  16) a) Explain pseudo random number generation function.

       b) Explain pointer to a pointer.   **(4+4)**

  17) a) With example explain bubble sort technique/method.

       b) Explain how do you merge two arrays with an example.   **(4+4)**

  18) a) Explain hash searching technique.

       b) Explain the application of pattern searching.   **(4+4)**

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