Three/Four Year B.C.A. I Semester Examination – December 2023

(Faculty of Science)
(Three-Year scheme of 10+2+3 Pattern)
Paper – BCA
PROGRAMMING IN C

Time Allowed: Three Hours

Maximum Marks – 80

QUESTION PAPER CONSISTS OF TWO PARTS A AND B.

Part A : 20 Marks

Part A is compulsory having 10 very short answer-type questions (with a limit of 20 words) of two marks each. The first question is based on knowledge, understanding and applications of the topics/text covered in the syllabus.

(भाग अ में दो अंक के 10 अति लघुउतरीय प्रश्न (20 शब्दों की सीमा के साथ) अनिवार्य हैं। पहला प्रश्न पाठयक्रम में शामिल विषयों / पाठ के ज्ञान, समझ और अनुप्रयोगों पर आधारित हैं।)

Part B : 60 Marks

Part B of the question paper is divided into four units comprising question numbers 2 – 5. There is one descriptive question from each unit with internal choice. Each question will carry 15 marks.

(भाग ब के प्रश्न पत्र को प्रश्न संख्या 2–5 सहित चार इकाइयों में विभाजित है। प्रत्येक इकाई से आंतरिक विकल्प के साथ एक वर्णनात्मक प्रश्न है। प्रत्येक प्रश्न 15 अंक का है।)

PART – A

1. Attempt all the question : (Short answer type questions)   **[2*10=20]**

   (a)   What is a programming language?

   (b)   Define syntax and semantics in the context of programming languages.

   (c)   What was the first high – level programming language and when was it developed?

   (d)   Who developed C language and in which year and where?

   (e)   What is operator precedence?

(f) What is purpose of null character ('\0')?

(g) What are the use of function?

(h) What is argument in function?

(i) What is scale factor?

(j) Define union.

PART – B

2.

(a) Explain the programming language evaluation criteria. **[7]**

(b) Write short notes on – **[4+4 = 8]**

   (i) High level languages.

   (ii) Pseudo Code.

OR

(a) What is an algorithm? Write an algorithm to display first 10 terms of Fibonacci series. **[2 + 6 = 8]**

(b) What is flowchart? Draw a flowchart for finding the largest number among three numbers. **[2 + 5 = 7]**

3.

(a) What is Constant? How a Constant defined in C? how the Constant is differ from Variable? Explain with example. **[2 + 2 + 4 = 8]**

(b) Explain the following statements with example – **[4 + 3 = 7]**

   (i) break & continue

   (ii) goto

OR

(a) What do you mean by Iteration? Explain various types of loops available in C with syntax and examples. **[2 + 6 = 8]**

(b) Write a C program to compute the sum of the digits of a given number. **[7]**

4. Define Array. What are the advantages and disadvantages of Array? How to declare and initialization of two-dimensional array. Explain with example.

[3 + 5 + 7 = 15]

OR

Explain the following terms – **[5 * 3 =15]**

(i) Function calls

(ii) Recursion function

(iii) Return values

(iv) Function prototype

(v) Parameter passing

5.

(a) What is Pointer? What are the benefits of the Pointer? How pointer variables are used in a program? **[2 + 3 + 3 = 8]**

(b) Write a C program to read two integer values and swap the values using function with pointer. **[7]**

OR

(a) What is meant by the following terms? **[4 + 4 = 8]**

(i) Structure and Union

(ii) Array of structures

(b) Write a C program for demonstrating operations on individual structure's member using pointer notation. **[7]**