# 5026

## Three/ Four Year B.C.A. I Semester
## Examination - Dec. 2023

(Faculty of Science)

## Subject – BCA

## Programming in C

**Time Allowed: Three Hours**

समय सीमाः तीन घंटे

**Maximum Marks: 80**

अधिकतम अंक: 80

No supplementary answer-book will be given to any candidate. The candidate should write the answers precisely in the main answer book only.

किसी भी परीक्षार्थी को पूरक उत्तर–पुस्तिका नहीं दी जाएगी। परीक्षार्थियों को समस्त प्रश्नों के उत्तर मुख्य उत्तर–पुस्तिका में ही लिखने चाहिए।

Answers to short answer-type questions must be given in sequential order. Similarly, all the parts of one question of *descriptive* part should be answered in one place in the answer-book.

लघुत्तरात्मक प्रश्नों के उत्तर–प्रश्नों के क्रमानुसार ही देवें। इसी प्रकार किसी भी एक वर्णनात्मक प्रश्न के अन्तर्गत पूछे गए विभिन्न प्रश्नों के उत्तर, उत्तर–पुस्तिका में एक ही स्थान पर क्रमानुसार हल करने चाहिए।

Write your roll number on the question paper before start writing answers of questions.

प्रश्नों के उत्तर लिखने से पूर्व प्रश्न–पत्र पर रोल नम्बर अवश्य लिखिए।

Question paper consists of **two** parts A and B.

प्रश्न–पत्र में दो भाग अ और ब होंगे।

**PART-A: 20 marks भाग–अः 20 अंक**

**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 लघुउत्तरीय प्रश्न (20 शब्दों की सीमा के साथ) अनिवार्य हैं। पहला प्रश्न पाठ्यक्रम में शामिल विषयों/पाठ के ज्ञान, समझ और अनुप्रयोगों पर आधारित है।

**PART-B: 60 marks भाग–बः 60 अंक**

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

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

# PART-A

1. Attempt all the questions: (Short answer-type questions) [10×2=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 uses of function?

   (h) What is argument in function?

   (i) What is scale factor?

   (j) Define union.

# PART-B

## Unit-1

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]

## Unit-2

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 type 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 integer number. [7]

5026 2

## Unit-3

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**

[5×3=15]

Explain the following terms -

(i) Function calls

(ii) Recursion Function

(iii) Return values

(iv) Function Prototype

(v) Parameter passing

## Unit-4

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 members using pointer notation. [7]

--------------------------------