

Exam. Code : 103204

Subject Code : 1366

B.A./B.Sc. Semester—IV

BIOINFORMATICS

(Computer Programming in C++ and PERL)

Time Allowed—3 Hours]

[Maximum Marks—75

**Note** :— Section A is compulsory and consists of 10 short answer questions. Each question in Section A carries 1½ marks. Sections B, C, D and E will consist of TWO questions each. Students are required to attempt any ONE question from each respective Section. Each question in Section B, C, D and E carries 15 marks.

SECTION—A

(Attempt all questions)

1. (i) What is multilevel inheritance in C++ ?
- (ii) List data types in C++ language.
- (iii) What is a constructor in C++ ?
- (iv) Name logical operators of C++ language.
- (v) Name different versions of PERL language.
- (vi) What is a translator operator in PERL ?
- (vii) Name any three string handling functions in C++.

(viii) List various operators of PERL.

(ix) What is a pure virtual function in C++ ?

(x) Write the precedence of arithmetic operators in C++.

$1\frac{1}{2} \times 10 = 15$

### SECTION—B

(Attempt any ONE question)

2. (i) Write a C++ program to input a string and print its reverse without using library functions. 8
- (ii) Define class and object. With an example explain the concept of data encapsulation and accessing of member functions. 7
3. Write a program to multiply two 2-dimensional  $3 \times 3$  arrays. 15

### SECTION—C

(Attempt any ONE question)

4. What is operator overloading in C++ ? Give examples to explain the operator overloading of subscript '[ ]' and parenthesis '( )' operator. 15
5. (a) Explain Inline function and Function overloading with the help of an example. 8
- (b) Distinguish between virtual and pure virtual functions in C++. 7

**SECTION—D**

**(Attempt any ONE question)**

6. Discuss the use of different operators used in PERL. Explain hashes and lists with the help of suitable example codes. 15
7. (a) Write a PERL program to find out the number of lines and characters in a file. 8
- (b) Discuss the scalar functions with the help of an example in PERL. 7

**SECTION—E**

**(Attempt any ONE question)**

8. Write a PERL program to verify that an input line only contains alpha-numeric characters. Also show the first non alpha-numeric character found. 15
9. (a) What are PERL subroutines and functions? Explain with the help of an example. 8
- (b) Write a program that reads all the input from the standard input file, converts all the vowels (except y) to uppercase, and prints the result on the standard output file. 7