

2022

B.A./B.Sc. (Hons.) Fifth Semester  
Physics  
Paper – VI: Computational Physics

Time allowed: 3 Hours

Max. Marks: 44

**NOTE:** Attempt five questions in all, including Question No.VII (Unit-III) which is compulsory and selecting two questions each from Unit I- II. Use of non-programmable calculator is allowed.

x-x-x

**UNIT-I**

- I. a) Write a short note on structured programming and elaborate it by a brief example.  
b) Differentiate between auto and static variables. (2x4<sup>1/2</sup> = 9)
- II. a) What are #include and #define directives? Explain with one example each. (6)  
b) Using the If-else statement write a program to find whether the entered number is even or odd. (3)
- III. a) Explain the string function strcpy () and demonstrate with the help of an example. (4)  
b) Write a program in C to enter the data of a two-dimensional array and print the data in matrix form. (5)

**UNIT-II**

- IV. Write an algorithm and a program in C language for calculating standard deviation for a discrete series. (9)
- V. Write an algorithm and a program in C language for integrating  $\int_1^2 \frac{1}{x} dx$  using Simpson's 1/3 method. (9)
- VI. Write an algorithm and a program in C language for the subtraction of two 3x3 matrices. (9)

**UNIT-III**

VII. Attempt any four of the following

- a) What are Global variables?  
b) What is the role of a switch statement?  
c) Give the advantages of using pre-processor directives.  
d) Name any two methods of numerical integration.  
e) What are pointers? (4x2)

x-x-x