

**HARINGHATA MAHAVIDYALAYA**  
**SEM-II 2<sup>nd</sup> Internal Assessment Examination- 2019**  
**B.SC. (Hons.)**  
**Subject- CC3**  
**Subject Title- Programming in C++**  
**Coverage: Unit-5 to Unit- 7 and Unit-9 to Unit- 10**  
**Submission from 22.05.2019 to 31.05.2019**

**Answer any two (2) questions**

**Maximum Marks: 10**

1. Write down the differences between static and dynamic memory allocation.
2. Write short note on new operator.
3. What is constructor? What do you mean by parameterized constructor? Illustrate with an example.
4. Illustrate function overloading with a suitable example.
5. What are the properties of a constructor? Write down the differences between a constructor and an ordinary member function.
6. Write a C++ program that will add two complex number overloading + operator and friend function.

**HARINGHATA MAHAVIDYALAYA**  
**SEM-II 2<sup>nd</sup> Internal Assessment Examination- 2019**  
**B.SC. (Hons.)**  
**Subject- CC3 (Practical)**  
**Subject Title- Programming in C++ Lab**  
**Coverage: Serial No-11 to Serial No-22**  
**Submission from 22.05.2019 to 31.05.2019**

**Answer any two (2) questions**

**Maximum Marks: 10**

1. WAP that prints a table indicating the number of occurrences of each alphabet in the text entered as command line arguments.
2. Write a program that swaps two numbers using pointers.
3. Write a program in which a function is passed address of two variables and then alter its contents.
4. Write a program which takes the radius of a circle as input from the user, passes it to another function that computes the area and the circumference of the circle and displays the value of area and circumference from the main() function.
5. Write a menu driven program to perform following operations on strings:
  - a) Show address of each character in string
  - b) Concatenate two strings without using strcat function.
  - c) Concatenate two strings using strcat function.
  - d) Compare two strings
  - e) Calculate length of the string (use pointers)
  - f) Convert all lowercase characters to uppercase
  - g) Convert all uppercase characters to lowercase
  - h) Calculate number of vowels
  - i) Reverse the string
6. Create the Person class. Create some objects of this class (by taking information from the user). Inherit the class Person to create two classes Teacher and Student class. Maintain the respective information in the classes and create, display and delete objects of these two classes (Use Runtime Polymorphism).

**HARINGHATA MAHAVIDYALAYA**  
**SEM-II 2<sup>nd</sup> Internal Assessment Examination- 2019**  
**B.SC. (Hons.)**  
**Subject- CC4**  
**Subject Title- Computer System Architecture**  
**Coverage: Unit-3 to Unit- 4**  
**Submission from 22.05.2019 to 31.05.2019**

**Answer any two (2) questions**

**Maximum Marks: 10**

1. What is addressing mode? Discuss the different types of addressing mode with examples.
2. Design and explain the hardwired control unit of a basic computer.
3. What do you mean by instruction format? Evaluate the following expression using zero, one, two, and three byte instruction format techniques:

$$X = ( A + B ) * ( C - D )$$

4. Implement the circuit diagram of 4-bit arithmetic unit and 4-bit logic unit of a basic computer and explain.
5. Discuss the instruction cycle of a basic computer in detail using flowchart.
6. Implement the bus system for four 4-bit registers using multiplexer and explain it.