

16029(J) J-16

**B. Tech 2nd Semester Examination**

**Principles of Computer Programming and C++ (NS)**

**BE-104**

**Time : 3 Hours**

**Max. Marks : 100**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Attempt one question each from Sections A, B, C and D. Section E is compulsory. Write suitable comments wherever necessary. Assume Data wherever necessary.

**SECTION - A**

1. (a) Differentiate between Volatile and Non-Volatile memory. How different memories in a computer are hierarchically arranged? (10)
- (b) With the help of a suitable diagram explain the working of a dot matrix printer. (10)

OR

2. Briefly explain the following:

- (a) Joystick
- (b) Mouse
- (c) Antivirus
- (d) Laser printer
- (e) ALU (5×4=20)

[P.T.O.]

**SECTION - B**

3. (a) Explain the different types of software's in a computer system. (10)
- (b) Write external command in DOS to create a subdirectory "HPTU" within directory "HP". (5)
- (c) What is the difference between testing and debugging? (5)

OR

4. (a) Draw a flow chart to find the smallest number among a given series of numbers. (10)
- (b) What is a pseudo code? Write a pseudo code to find the sum of three numbers. (10)

**SECTION - C**

5. (a) What are the different components of a class? Differentiate between public, private and protected members of a class. (10)
- (b) Give an example in C++ code showing the instantiation of a class. (10)

OR

6. (a) What is meant by data encapsulation and information hiding? How are they supported in C++? (10)
- (b) Write a C++ program to show the square roots of numbers from 1 to 99. (10)

**SECTION - D**

7. Discuss the if-else and while loop control statements with suitable example. Write a Program in C++ using its to decide on the price of item by giving discount of 10, 20 and 30 percent for quantities greater than 100, 200 and 300. (20)

OR

8. (a) Write a C++ program for writing on a text file "hptu.txt".  
(10)
- (b) How do you declare pointer to a class member? How do you dereference it? Is it possible to declare pointers to static members?  
(10)

**SECTION - E**

9. Short answer type questions:
- (i) What is ROM and RAM?
  - (ii) Differentiate between Impact and Non-Impact Printers.
  - (iii) What are different generations of computers.
  - (iv) Differentiate between compiler and interpreter?
  - (v) Difference between external and internal DOS commands.
  - (vi) Give example for creating an object for class "HPTU".
  - (vii) What is a constructor to a class?
  - (viii) What is operator overloading?
  - (ix) What is a global variable?
  - (x) Difference between array and structure. (2×10=20)