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SARDAR PATEL UNIVERSITY

M.Sc. (Geoinformatics)

SEMESTER- 1

EXTERNAL EXAMINATION-2016

PS01CGIN04: Advanced Programming Concepts & Data Structure

Date: 21-10-2016, Friday **Time: 10.00 am to 1.00 pm** **Marks: 70**

Q-1 **Select the correct option from the following questions.** **[8]**

(1) By default, the member defined in a class is _____

A Public B. Private

C Protected D. None

(2) Which of the following operator cannot be overloaded in C++?

A. ++ B. >

C. < D. ::

(3) _____ has ability to take more than one forms.

A. Object B. Class

C. Inheritance D. Polymorphism

(4) A pure virtual function is equated to _____

A. Zero B. -1

C. 1 D. NULL

(5) The word "PUSH" and "POP" is related to ___ data structure.

A. Tree B. queue

C. Stack D. Link list

(6) A node having zero indegree is known as _____ node.

A. Root B. Branch

C. Leaf D. terminal

(7) _____ Traversal algorithm process root first.

A. Preorder B. Postorder

C. Inorder D. All of these

(8) _____ is a nonlinear data structure.

A. Tree B. Graph

C. Both A and B D. None of these

Q-2 Do as directed. (**ATTEMPT ANY SEVEN**) [14]

(1) Define pointer. Why it is required?

(2) List out various modes of file management with their meaning.

(3) What is the difference between constructor and destructor?

(4) Discuss on parameter passing using pass by value and pass by reference.

(5) Write a note on Macros in C++.

(6) What is Data Structure? List out applications of Data structure.

(7) What is difference between Static binding and Dynamic binding?

(8) Write a short note on Doubly Link List.

(9) What is 'Queue'? How does it defer from a 'Stack'?

Q-3 A Explain the basic terminology related to OOP's. List advantages and disadvantages of OOP's. [6]

B What is operator overloading? Explain unary operator with example. [6]

OR

B Explain function overloading with an example. [6]

Q-4 A Explain inheritance and its different forms with examples. [6]

B Define friend function. What are the characteristics of it? Explain its usage with example. [6]

OR

B What is virtual function? Why it is required? Discuss virtual function with example. [6]

Q-5 A What is Stack? Explain PUSH and POP operations. [6]

B What is Linked List? Write an algorithm for insertion of new element at the Last of the singly Linked List. [6]

OR

B Write an algorithm to delete an element from a Simple Queue. [6]

Q-6 A What is a binary tree? Explain inorder, preorder and postorder traversal of a binary tree. [6]

B What is hashing? List out Hashing techniques. Explain ANY TWO of them. [6]

OR

B Write a brief note on ISAM. [6]

—X—

(2)