****

**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

Reg.No.\_\_\_\_\_\_\_\_\_\_\_\_\_

**End Semester Examination – Nov/Dec - 2016**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **12EC206** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **C++ AND DATA STRUCTURES** | **Max. marks :** | **100** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Q. No.** | **Questions** | | **Marks** |
| **PART-A(10X1=10 MARKS)** | | | |
| 1. | Write the basic syntax for “FOR LOOP” statement. | | (1) |
| 2. | State the purpose of using a scope resolution operator. | | (1) |
| 3. | List any two overload operators. | | (1) |
| 4. | Data type conversion from built-in to user defined needs a \_\_\_\_\_\_\_\_\_ for its execution. | | (1) |
| 5. | The C++ keywords used with Exceptions are \_\_\_\_\_\_, \_\_\_\_\_\_ & \_\_\_\_\_\_\_. | | (1) |
| 6. | True or False: A static function can be invoked using the class name and function name. | | (1) |
| 7. | Give the pictorial representation of a double linked list | | (1) |
| 8. | Name the memory management operators | | (1) |
| 9. | Name a Sorting technique that is based on “Divide & Conquer”. | | (1) |
| 10. | Mention the importance of binary search. | | (1) |
| **PART B(5 X 3= 15 MARKS)** | | | |
| 11. | Explain with an example about ‘Arrays’. | | (3) |
| 12. | With an example discuss about the unary minus operator overloading. | | (3) |
| 13. | State the purpose of using ‘this pointer’. | | (3) |
| 14. | Discuss about the single linked list. | | (3) |
| 15. | Sort the following numbers using Bubble Sort technique. {20, 15,1, 6, 12}. | | (3) |
| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. | a. | Write an object oriented program using classes & Objects. | (7.5) |
| b. | Discuss in detail about ‘C++ objects as data types’. | (7.5) |
| (OR) | | | |
| 17. | a. | Write a C++ program using the concept of constructors. | (10) |
| b. | Write a simple C++ program to return objects from functions. | (5) |
| 18. |  | Write an object oriented program to overload any binary operator and discuss about the unary and binary operators. | (15) |
| (OR) | | | |
| 19. | a. | With an object oriented program explain in detail about ‘multilevel inheritance’ | (12) |
| b. | Discuss about the pointers | (3) |
| 20. | a. | Differentiate the **Normal member functions** accessed with pointers, **Virtual**  **member functions** accessed with pointers and pure virtual functions accessed with  Pointers with an example program. | (12) |
| b. | Explain about the ‘Friend function’ with an object oriented program. | (3) |
| (OR) | | | |
| 21. | a. | Write a C++ program explain the importance of using static function. | (7.5) |
| b. | Write a C++ program to discuss about the concept of Files | (7.5) |
| 22. |  | With a C++ program explain the concept of adding 2 nodes at the beginning ,  Appending 2 nodes and displaying the same using one way list. | (15) |
| (OR) | | | |
| 23. |  | Discuss in detail about the circular linked list with an example program. | (15) |
| 24. | a. | Sort the following elements using Merge sort (60, 20, 69, 8, 99, 30, 97, 44) and implement the same using C++ code. | (10) |
| b. | Give an account on Selection sort. | (5) |
| (OR) | | | |
| 25. |  | Explain the search operations that can be done on sequential lists. | (15) |