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**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**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **11EI217** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **C++ AND DATA STRUCTURES** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Write the rules for naming identifiers in C++. | (1) |
| 2. | What are the operators available in C++? | (1) |
| 3. | Define call by reference method in C++. | (1) |
| 4. | List out the operators that cannot be overloaded. | (1) |
| 5. | Define Destructor. | (1) |
| 6. | Write the uses of this pointer. | (1) |
| 7. | List the applications of stack. | (1) |
| 8. | Draw the node structure of singly linked list. | (1) |
| 9. | Define Binary tree. | (1) |
| 10. | What are the file pointers used in C++? | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | Write the syntax of cin and cout functions in C++. | (3) |
| 12 | Describe the functions of new and delete operator in C++. | (3) |
| 13 | Explain Default constructor in C++ with example. | (3) |
| 14 | Convert the following infix expression into its postfix expression: A\*(B+C)/D-E\*(F+G-H) | (3) |
| 15 | Write the linear search algorithm. | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. | a. | Explain logical operators in C++ with example. | (7) |
| b. | Write a C++ program to find out the largest among given three numbers. | (8) |
| (OR) | | | |
| 17. | a. | Explain the various looping constructs available in C++ with suitable examples | (10) |
| b. | Describe various data types in C++. | (5) |
| 18. |  | What is operator overloading? Overload the numerical operators ‘+’ for complex numbers “addition”. | (15) |
| (OR) | | | |
| 19. |  | Write a C++ program to swap two numbers using call by value and call by reference. | (15) |
| 20. | a. | Define Friend function and list its characteristic also demonstrate friend function to a class. | (10) |
| b. | Describe exception handling in C++. | (5) |
| (OR) | | | |
| 21. | a. | Explain the various object oriented concepts with example. | (7) |
| b. | Detail different types of inheritance in C++. | (8) |
| 22. | a. | Explain Queue data structure and its operations in detail with the help of pseudo codes or C++ code. | (10) |
| b. | Briefly discuss about the arrays and the address calculations in arrays when it is stored in row major order and column major order? | (5) |
| (OR) | | | |
| 23. | a. | Describe the array implementation of linear queue with a neat sketch and required algorithms/C++ code. | (10) |
| b. | Explain the algorithm/C++ code for insertion in a singly linked list with an example. | (5) |
| 24. | a. | Write the pseudocode for selection sort and with the help of that sort the input 90, 80, 70, 60, 50, 40, 30, 20, 10 in ascending order and show each steps of sorting. | (10) |
| b. | Write the pseudocode for binary search algorithm. | (5) |
| (OR) | | | |
| 25. | a. | Explain Merge Sort algorithm and using that sort the numbers 24 54 12 67 32 56 99 28 87 44 in ascending order? | (10) |
| b. | Describe about streams in C++. | (5) |

ALL THE BEST