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

G:\logo and QP Template\logo 3 Feb 2018 final.tif

**End Semester Examination – Nov/Dec – 2018**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **17BI2004** | **Duration :** | **3hrs** |
| **Sub. Name :** | **DATA STRUCTURE AND OOPS IN C++** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Discuss in detail how a Stack and Queue data structure can be implemented using Linked list. | CO1 | 10 |
| b. | Discuss about the Tower of Hanoi problem and solution in detail with example. | CO2 | 10 |
| (OR) | | | | |
| 2. | a. | Explain in detail about the process of converting an infix expression to post fix expression with appropriate example. | CO1 | 10 |
| b. | Explain the algorithm/C++ code for deletion in a doubly linked list with an example. | CO1 | 10 |
|  |  |  |  |  |
| 3. |  | Demonstrate merge sort technique to sort the numbers 54 26 13 33 52 97 43 29 88 66 in ascending order. | CO3 | 20 |
| (OR) | | | | |
| 4. | a. | Explain Quick Sort algorithm and using that sort the numbers 100, 70, 10, 50, 20, 60, 30, 80, 40, 90 in ascending order. | CO2 | 10 |
| b. | Discuss about Bubble sort and Selection sort with the help of algorithms. | CO1 | 10 |
|  |  |  |  |  |
| 5. | a. | Elaborate the fundamental characteristics of Object Oriented Programming with real time examples. | CO4 | 15 |
| b. | List out any five escape sequence characters with sample code. | CO1 | 5 |
| (OR) | | | | |
| 6. | a. | Explain the relational and bitwise operators with sample code. | CO1 | 10 |
| b. | Write a C++ program to provide grades for the students according to their mark obtained out of 100. | CO2 | 10 |
|  |  |  |  |  |
| 7. | a. | Write appropriate sample code to demonstrate break, continue and goto statements used in C++. | CO5 | 10 |
| b. | Write a program in C++ to do the following operations in a n x n matrix.   1. Matrix Addition. 2. Matrix Multiplication. | CO5 | 10 |
| (OR) | | | | |
| 8. | a. | Explain the various control statements in C++ with sample code. | CO1 | 15 |
| b. | Demonstrate default argument mechanism with an example. | CO | 5 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Write a program in c++ to copy a file from one location to another. | CO5 | 10 |
| b. | Explain the various types of inheritance with sample code. | CO4 | 10 |