Regna. \_\_\_\_\_\_\_\_\_\_\_\_

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

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

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **17CA2010** | **Duration :** | **3hrs** |
| **Sub. Name :** | **DATA STRUCTURES AND APPLICATIONS** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Elaborate the possible operations performed in a stack with suitable algorithm and program. | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Discuss the concept of arrays using suitable examples. | CO1 | 10 |
| b. | Explain any one application of stack in detail using suitable algorithm and program. | CO1 | 10 |
|  |  |  |  |  |
| 3. |  | List and explain the different operations performed in a linked list with suitable algorithm and program. Bring out the advantage of linked list over arrays. | CO3 | 20 |
| (OR) | | | | |
| 4. |  | Explain the operations performed in a doubly linked list through suitable algorithm and program. | CO3 | 20 |
|  |  |  |  |  |
| 5. |  | Explain the operations that can performed in a queue using linked list with suitable algorithm and program. | CO4 | 20 |
| (OR) | | | | |
| 6. |  | Write a program to implement the operations of queue using arrays. Provide necessary algorithms. | CO4 | 20 |
|  |  |  |  |  |
| 7. |  | Elaborate the working of binary search in detail through algorithm and program. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Discuss in detail the working of linear search through algorithm and program. | CO2 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Explain any two sorting methods in detail through necessary algorithm. Highlight the advantages and disadvantages of each method. | CO5 | 20 |