CHRIST UNIVERSITY,BENGALURU - 560029

End Semester Examination March - 2017

Bachelor of Science II SEMESTER

Code: CSC231 **Max.Marks: 100**

Subject: DATA STRUCTURES AND OPERATING SYSTEMS **Duration: 3Hrs**

SECTION A

Answer all the questions **10X2=20**

1 Write a situation where usage of array is better than linked list.

2 Give the syntax of malloc().

3 What are the different operations that can be performed on a data structure?

4 What are the operations that are performed on a stack?

5 Define a binary tree.

6 List components of a computer system.

7 Define cooperating processes.

8 What do you mean by hold and wait condition?

9 What is the best fit strategy for memory management?

10 List any four operations on a file.

SECTION B

Answer any eight questions **8X5=40**

11 Write a note on analysis of sequential search algorithm.

12 Explain the process of deletion of an element from a one way linked list with suitable diagrams.

13 Write a note on applications of stacks.

14 Write a note on the different traversals of a binary tree.

15 Trace selection sort algorithm for the following set of numbers:
32 51 200 85 10 -9

16 Explain secondary storage management in brief.

17 What do you mean by preemptive and non-preemptive scheduling algorithm? Discuss advantages and disadvantages of each of them.

18 Explain the system model used by processes for utilizing resources.

19 Compare and contrast - First fit and Worst fit memory allocation strategies.

20 Explain different file types in brief.

SECTION C

Answer any two questions **2X10=20**

21 Write a program to add two matrices.

22 Write a program to create,display and insert an element into the beginning of singly linked list.

23 Write a program to implement binary search.

SECTION D

Answer any two questions **2X10=20**

24 (a) Explain the various process states with a neat diagram.
(b) Explain the significance of PCB in detail.

25 What is a resource allocation graph? Explain in detail how it is used for deadlock handling.

26 With a neat diagram, explain the structure of a page table. Explain the significance of a page table in memory management.