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|  **Description: Description: Image result for st.joseph college logo** Date: 19-04-2018 (9AM) **ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27** |
| **B.C.A - II SEMESTER** |
| **SEMESTER EXAMINATION: APRIL 2018** |
| **CS 215 - Data Structures And Operating Systems** |
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| **Time- 2 1/2 hrs** |  |  **Max Marks-70** |  |
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 (For supplementary candidates)

Do not write the register number on the question paper

Please attach the question paper along with the answer script.

**I.Answer all the following : 2 X 10=20**

1. Explain primitive data structures with examples.
2. Explain the complexity analysis of insertion sorting.
3. What are queues? Explain the memory representation.
4. What is meant by grounded link list? Give an example.
5. Define complete binary tree with an example.
6. Define operating systems. Give any two examples.
7. What is a system call?
8. What is the difference between a program and a process?
9. Distinguish between internal and external fragmentation.
10. What are the different file access types?

**II.Answer any five of the following 6 X 5=30**

1. Convert the infix expression to postfix

**A+B-C/D\*F-E/H-K/L+J-M**

1. Define a node in link list and write an algorithm to create a link list.
2. Define with examples
3. Root (2)
4. Full Binary tree (2)
5. Binary search tree. (2)
6. Explain the working of Multiprogrammed and time sharing systems.
7. Explain the different states of a process in detail.
8. Explain FCFS process scheduling with a suitable example.
9. Explain
10. Distributed systems. (3)
11. Real time systems  (3)

**III.Answer any two of the following 10 X 2=20**

1. A. Explain the layered and microkernel operating system structure. (5)

B. Explain the use of PCB in detail. (5)

 19. A. Discuss the FIFO page replacement algorithm in detail. (5)

 B. Write an algorithm to sort the elements in ascending order (5)

 using insertion sort.

1. Write the algorithm to insert and delete the elements from

circular queue.

CS-215-A-18