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| **ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27** |
| **B.SC– IISEMESTER** |
| **SEMESTER EXAMINATION: APRIL 2018** |
| **CS218- DATA STRUCTURE AND OPERATING SYSTEM** |
|  |  |  |  |  |  |
| **Time- 2 1/2 hrs** |  | **Max Marks-70** |
|  |  |  |  |  |  |
| **This paper contains two printed pages and three parts** |
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SECTION A

Answer **ALL** questions. Each question carries **TWO** marks 2\*10=20

1.What is data structure? Mention the different types of data structures.

2.What is a Circular Queue?

3.What do you mean by Infix and Postfix Expression?

4. Write the difference between static memory allocation and dynamic memory allocation.

5.Define complete binary tree.

6. Define operating system. What are the problems encountered in using a computer without an operating system?

7. What is a dispatcher?

8.How is a program different from a process give three points.

9.What is a PCB? Explain.

10.What is paging in memory management?

SECTION B

 Answer any **FIVE** questions. 6\*5=30

11.  What is a stack? Write the PUSH and POP operation algorithms for a stack.

12.Write an algorithm to evaluate a postfix expression.

13.What is binary search? What are its advantages over linear search? Write and explain an algorithm for searching an element using binary search.

14. With a neat diagram explain the different states of a process.

15.Explain the different types of Operating System.

16.Write a detailed note on dynamic partition with a mention of its storage allocation strategies

17.Explain FCFS scheduling with example.

SECTION C

 Answer any **TWO** questions. 10\*2=20

18. What is quick sort technique? Give an algorithm and sort the following numbers using quick sort.

 10, 1, 9, 8, 27, 90, 95, 55, 56 43

19. What is a Link List? Write algorithms to add a node at the beginning and at the end of the link list.

20. Explain the concept of virtual memory management with demand paging technique.

**CS 218\_B\_19**