CLASS: BE   SEMESTER: V
BRANCH: IT   SESSION : MO/2019

SUBJECT : IT5027 DESIGN OF COMPUTER ALGORITHMS

TIME: 1.5 HOURS   FULL MARKS: 25

INSTRUCTIONS:
1. The total marks of the questions are 30.
2. Candidates may attempt for all 30 marks.
3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. The missing data, if any, may be assumed suitably.

Q1 (a) What do you know about Big Oh, Big Theta and Big Omega notations?   [2]
    (b) Explain how to write and analyze algorithms.   [3]

Q2 (a) What is the difference between priori analysis and posteriori testing?   [2]
    (b) Briefly explain how to analyze recursive algorithms.   [3]

Q3 (a) What is the importance of divide and conquer approach?   [2]
    (b) Explain 2-way merge sort with an example.   [3]

Q4 (a) What is the difference between DFS and BFS? Illustrate with a simple example? [2]
    (b) Solve the recurrence relation by using back substitution and recursion tree method: [3]
         $T(n)= 2T(n/2) + n$; n>1
                 1   ; n=1

Q5 (a) Illustrate Horner's rule using factorization method.   [2]
    (b) Briefly explain presorting technique with an example.   [3]

Q6 (a) What do you know about transform and conquer?   [2]
    (b) How knuth morris pratt (KMP) algorithm improves input enhancement in string matching? [3]
         Briefly explain.

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