Download all Notes and papers from StudentSwwindharsobjects.com

Roll	No.	•••••••		
Tota	l No	. of Ouestions	:	091

[Total No. of Pages: 02

B. Tech. (Sem. - 5th) DESIGN AND ANALYSIS OF ALGORITHMS <u>SUBJECT CODE</u>: CS - 307 <u>Paper ID</u>: [A0467]

[Note: Please fill subject code and paper ID on OMR]

Time: 03 Hours

Maximum Marks: 60

Instruction to Candidates:

- 1) Section A is Compulsory.
- 2) Attempt any Four questions from Section B.
- 3) Attempt any Two questions from Section C.

Section - A

Q1)

 $(10\times 2=20)$

- a) Explain the term the order of complexity.
- b) Give the general characteristics of greedy algorithm.
- c) Describe the general principle of Divide and conquer.
- d) Explain the asymptotic notation.
- e) What is re-entrant program?
- f) What is stable sorting?
- g) Differentiate between NP-Hard and NP-Complete.
- h) What do you mean by worst case analysis?
- i) Define Non-deterministic algorithm.
- j) Give an example of an algorithm which is infinite in nature.

J-786[8129]

P.T.O.

Download all Notes and papers from StudentSuvidha.com

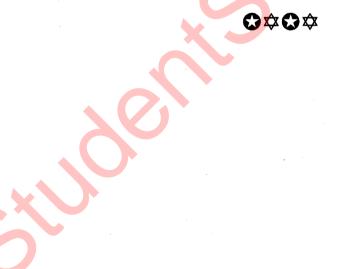
Section - B

$$(4 \times 5 = 20)$$

- Q2) Differentiate between deterministic and non-deterministic algorithms?
- Q3) Explain how the knapsack problem can be solved using branch and bound algorithms.
- Q4) Explain the backtracking problem with the help of suitable example?
- Q5) Explain how to validate and analyze the algorithms.
- **Q6)** Explain the algorithm of a non-deterministic finite automation.

$$(2\times 10=20)$$

- Q7) Explain in detail basic concepts of P, NP, NP-hard and NP-complete problems.
- Q8) Explain in detail the structure of string storage. Design an algorithm which finds number of words, lines and characters in a given text.
- Q9) What do you mean by complexity of an algorithm? Define time and space complexity with examples.



J-786

2