

**SYNERGY INSTITUTE OF ENGINEERING AND TECHNOLOGY, DHENKANAL**

Near NH-55, Banamali Prasad – 759001

**Assignment-4[CO4]****Full Marks-40****Duration-Within 1 Week from Notification****Name-****Registration No-****Subject with Code:** Design And Analysis of Algorithms  
(CSPC2006)**Course & Branch:** B. Tech CSE**Year & Semester:** 2<sup>nd</sup> . 4<sup>th</sup>

Course Outcome	Total Marks	Marks Secured	Signature of Evaluator
CO4	40		

**Section-A****Answer All Questions**

1. Differentiate between FIFO and LIFO Branch & Bound. [2 marks][L2]
2. Define Vertex Cover problem. [2 marks][L2]
3. What is the need of Approximation Algorithm? [2 marks][L2]
4. What is n-Queen's problem? [2 marks][L2]

**Section-B****Answer All Questions**

1. Write Robin-Karp String matching algorithm. [6 marks][L2]
2. Define the class P, NP, NPC and NP-hard problems. [6 marks][L2]

**Section-C****Answer All Questions**

1. What is Subset-Sum problem? Let  $w = \{5, 10, 12, 13, 15, 18\}$  and  $m=30$ . Find a possible subset of  $w$  that sum to  $m$ . Draw the portion of state space tree that is generated. [10 marks][L3]
2. Write short notes on [10 marks][L2]
  - a) Branch & Bound
  - b) Backtracking