**Q.P. Code: 18CS5003** **R18**

**Reg. No.** | | | | | | | | | | |

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY::PUTTUR**
**(AUTONOMOUS)**
**M.Tech I year II Semester (R18) Regular Examinations June 2019**
**(For Students admitted in 2018 only)**

**Time: 3 hours** **ADVANCE ALGORITHMS** **Max. Marks: 60**

**(M.Tech – CSE)**

**(Answer all Five Units 5×12=60 Marks)**

**UNIT I**

| | | |
|---|---|---|
| 1 | What is minimum cost spanning tree? Write algorithm for kruskals technique with Illustration | 12M |
| | **OR** | |
| | Illustrate below graph traversing techniques with algorithm | |
| 2 | a. Breadth first search | 6M |
| | b. Depth first search | 6M |

**UNIT II**

| | | |
|---|---|---|
| | Illustrate about following | |
| 3 | a. Warshall's technique | 6M |
| | b. Graph colouring problem | 6M |
| | **OR** | |
| 4 | What is matroid? Illustrate any two greedy algorithm techniques | 12M |

**UNIT III**

| | | |
|---|---|---|
| | Explain following | |
| 5 | a. Maxflow-mincut theorem | 6M |
| | b. Ford-Fulkerson Method | 6M |
| | **OR** | |
| 6 | Illustrate LUP-Decomposition in detail | 12M |

**UNIT IV**

| | | |
|---|---|---|
| | Write algorithms for following | |
| 7 | a. Travelling sales person problem | 6M |
| | b. Towers of Hanoi | 6M |
| | **OR** | |
| 8 | Narrate Schonhage-Strassen Integer Multiplication algorithm | 12M |

**UNIT V**

| | | |
|---|---|---|
| 9 | Discuss any Randomized algorithms | 12M |
| | **OR** | |
| | Describe following | |
| 10 | a. Polynomial-space-bounded problems | 6M |
| | b. Nondeterministic Turing machines | 6M |

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