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## P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

**Third Semester, M.Tech. - Computer Science and Engineering (MCSE)**

**Semester End Examination; Dec. - 2019**

**Advanced Concepts in Information Technology**

*Time: 3 hrs*

*Max. Marks: 100*

*Note: Answer FIVE full questions, selecting ONE full question from each unit.*

### UNIT - I

- |      |   |    |
|------|---|----|
| 1 a. | Define optimal binary search tree. Explain the various steps of optimal binary search tree. | 10 |
|      | b. Explain recursive greedy algorithm and iterative greedy algorithm.                       | 10 |
| 2 a. | Explain Huffman algorithm with an example.  | 10 |
|      | b. Explain the various elements of Greedy strategy.   | 10 |

### UNIT - II

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|------|--|----|
| 3 a. | What is text mining? Explain the stages of document processing in text mining.                       | 10 |
|      | b. What is sentiment analysis? Explain the role of on-line tools used to perform sentiment analysis. | 10 |
| 4 a. | Define mobile analysis. Explain the criteria on which mobile analytics tools are categorized.        | 10 |
|      | b. What is opinion mining? Explain opinion mining considering Tweets data as a case study.           | 10 |

### UNIT - III

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|------|--|----|
| 5 a. | List out the points to be considered for implementing storage virtualization.          | 10 |
|      | b. Distinguish between symmetric and asymmetric storage virtualization in the network. | 10 |
| 6 a. | Explain storage virtualization on various levels of the storage network.               | 10 |
|      | b. Write a note on storage virtualization on block level.                              | 10 |

### UNIT - IV

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|------|---|----|
| 7 a. | Explain blocking and non-blocking message passing operations with a neat diagram. | 10 |
|      | b. Explain creating and using Cartesian topologies with examples.                 | 10 |
| 8 a. | Distinguish between overlapping communication and collective communication.       | 10 |
|      | b. Identify the principles of message-passing programming.                        | 10 |

### UNIT - V

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|-------|--|----|
| 9 a.  | Distinguish between data mining and machine learning.                            | 10 |
|       | b. Explain various challenges and issues of machine learning.                    | 10 |
| 10 a. | Identify the areas in real world applications where machine learning is adapted. | 10 |
|       | b. Explain any one machine learning algorithm with an example.                   | 10 |

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