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| **P.V.P Siddhartha Institute of Technology** |
| **Department of Computer Science and Engineering** |
| **Course: B.Tech** | **Year: II** | **Semester: II** | **Descriptive: II** | **A.Y:2023-24** |
| **Subject Code: 20CS3402** | **Subject Name: Advanced Data Structures** | **Regulation:PVP20** |
| **Duration:1 hr 30 min** | **Maximum Marks:15 Marks** | **Date:25-4-24** | **Session: F.N** |
| **Answer all the Questions. Each Question carries 5Marks 3×5M=15M** |
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| **Q.No** |  | **Marks** | **CO** | **Level** |
| **1.** | **a)** | Apply insertion operation on B- Tree of order 3 for the given elements 6, 7, 9, 22, 13, 31, 35, 28, 24, 5, 34, 8, 25, 10, 11, 12, 14, 39,  | **4** | **CO3** | **L3** |
| **b)** | Explain pattern matching and give its applications | **1** | **CO2** | **L2** |
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| **2.** | **a)** | Apply all pairs shortest path algorithm on the given graph  | **4** | **CO3** | **L3** |
| **b)** | Which algorithm will be suitable on the graph below to find shortest path from a single source to all other vertices  | **1** | **CO1** | **L2** |
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| **3.** | **a)** | Organize the ordering of vertices produced by topological sort when it is run on the below graph | **1.5** | **CO4** | **L4** |
|  | **b)** | Analyze the KMP algorithm that will effectively search for a given text – abcabcabdabc for a given pattern- abcabdabc | **1.5** | **CO4** | **L4** |
|  | **c)** | Explain in detail how to find the 11 in the below data structure using smart find algorithm | **2** | **CO2** | **L2** |