**III-B. TECH I-SEM MID-I EXAMINATIONS**

**SET - 1**

**Date: Time: 10am to 12:00 pm**

**Subject: DAA Branch: IT**

**Answer all the Questions. Each Question carries equal mark 5 x 2 M = 10 Marks**

|  |  |  |
| --- | --- | --- |
|  |  | **CO** |
| **1.** | Write definitions of Time and Space Complexity. | **01** |
| **2.** | What do you understand by Algorithm and define its characteristics? | **01** |
| **3.** | Define the Backtracking, what are the problems over which this can be apply? | **02** |
| **4.** | What is cyclic graph? Give an example. | **02** |
| **5.** | What is Dynamic programming? | **02** |

**Answer Any 4 Questions. Each Question carries equal marks 5\*4=20 Marks**

|  |  |  |
| --- | --- | --- |
|  |  | **CO** |
| **6.** | Write Binary Search algorithm. Further, find number 64, from the list 6, 10, 45, 64, 70, 89, 92, 97, 99 using Binary Search algorithm? | **01** |
| **7.** | What is Divide and Conquer technique? Explain with an example. | **01** |
| **8.** | Draw the state-space tree along with answer nodes for 4-queen’s problem.  . | **02** |
| **9.** | What is sum-of-subsets problem? Find all possible solution for given elements whose weights are (w1,w2,w3,w4,w5)=(2,3,5,6,8,10) and m=10. Draw its State-Space Tree. | **02** |
| **10.** | Explain the Graph – coloring problem. And draw the state space tree for m= 3colors n=4 vertices graph. Discuss the time and space complexity. | **03** |
| **11.** | Illustrate binary search tree and Explain Optimal binary search tree with the following frequencies.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Index | 1 | 2 | 3 | 4 | | Elements | 10 | 20 | 30 | 40 | | Frequencies | 4 | 2 | 6 | 3 | | **03** |

**SCHEME OF EVALUATION**

**PART-A**

| **SNO** | **THEORY** | **MARKS** | **TOTAL** |
| --- | --- | --- | --- |
| **1** | What do you understand by Algorithm and define its characteristics? | **2** | **2** |
| **2** | Write definitions of Time and Space Complexity. | **2** | **2** |
| **3** | What is Dynamic programming? | **2** | **2** |
| **4** | What is cyclic graph? Give an example. | **2** | **2** |
| **5** | Define the Backtracking, what are the problems over which this can be apply? | **2** | **2** |

|  |  |  |  |
| --- | --- | --- | --- |
| **SNO** | **THEORY** | **MARKS** | **TOTAL** |
| **6** | What is Divide and Conquer technique? Explain with an example. | **5** | **5** |
| **7** | Write Binary Search algorithm. Further, find number 64, from the list 6, 10, 45, 64, 70, 89, 92, 97, 99 using Binary Search algorithm? | **5** | **5** |
| **8** | What is sum-of-subsets problem? Find all possible solution for given elements whose weights are (w1,w2,w3,w4,w5)=(2,3,5,6,8,10) and m=10. Draw its State-Space Tree. | **5** | **5** |
| **9** | Draw the state-space tree along with answer nodes for 4-queens problem. | **5** | **5** |
| **10** | Explain the Graph – coloring problem. And draw the state space tree for m= 3colors n=4 vertices graph. Discuss the time and space complexity. | **5** | **5** |
| **11** | Illustrate binary search tree and Explain Optimal binary search tree with the following frequencies.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Index | 1 | 2 | 3 | 4 | | Elements | 10 | 20 | 30 | 40 | | Frequencies | 4 | 2 | 6 | 3 | | **5** | **5** |

**III-B. TECH I-SEM MID-I EXAMINATIONS**

**SET - 2**

**Date: Time: 10am to 12:00 pm**

**Subject: DAA Branch: IT**

**Answer all the Questions. Each Question carries equal mark 5 x 2 M = 10 Marks**

|  |  |  |
| --- | --- | --- |
|  |  | **CO** |
| **1.** | What do you understand by Algorithm and define its characteristics? | **01** |
| **2.** | Write definitions of Time and Space Complexity. | **01** |
| **3.** | What is Dynamic programming? | **02** |
| **4.** | What is cyclic graph? Give an example. | **02** |
| **5.** | Define the Backtracking, what are the problems over which this can be apply? | **02** |

**Answer Any 4 Questions. Each Question carries equal marks 5\*4=20 Marks**

|  |  |  |
| --- | --- | --- |
|  |  | **CO** |
| **6.** | What is Divide and Conquer technique? Explain with an example. | **01** |
| **7.** | Write Binary Search algorithm. Further, find number 64, from the list 6, 10, 45, 64, 70, 89, 92, 97, 99 using Binary Search algorithm? | **01** |
| **8.** | Write the backtracking algorithm for the sum of subsets problem using the state space tree corresponding to m=30, w=(5,10,12,13,15,18). | **02** |
| **9.** | Draw the state-space tree along with answer nodes for 4-queen’s problem. | **02** |
| **10.** | Explain the Graph – coloring problem. And draw the state space tree for m= 3colors n=4 vertices graph. Discuss the time and space complexity. | **03** |
| **11.** | Illustrate binary search tree and Explain Optimal binary search tree with the following frequencies.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Index | 1 | 2 | 3 | 4 | | Elements | 10 | 20 | 30 | 40 | | Frequencies | 4 | 2 | 6 | 3 | | **03** |

**SCHEME OF EVALUATION**

**PART-A**

| **SNO** | **THEORY** | **MARKS** | **TOTAL** |
| --- | --- | --- | --- |
| **1** | What do you understand by Algorithm and define its characteristics? | **2** | **2** |
| **2** | Write definitions of Time and Space Complexity. | **2** | **2** |
| **3** | Define the Backtracking, what are the problems over which this can be apply? | **2** | **2** |
| **4** | What is cyclic graph? Give an example. | **2** | **2** |
| **5** | What is Dynamic programming? | **2** | **2** |

|  |  |  |  |
| --- | --- | --- | --- |
| **SNO** | **THEORY** | **MARKS** | **TOTAL** |
| **6** | Write Binary Search algorithm. Further, find number 64, from the list 6, 10, 45, 64, 70, 89, 92, 97, 99 using Binary Search algorithm? | **5** | **5** |
| **7** | What is Divide and Conquer technique? Explain with an example. | **5** | **5** |
| **8** | Draw the state-space tree along with answer nodes for 4-queens’ problem. | **5** | **5** |
| **9** | What is sum-of-subsets problem? Find all possible solution for given elements whose weights are (w1,w2,w3,w4,w5)=(2,3,5,6,8,10) and m=10. Draw its State-Space Tree. | **5** | **5** |
| **10** | Explain the Graph – coloring problem. And draw the state space tree for m= 3colors n=4 vertices graph. Discuss the time and space complexity. | **5** | **5** |
| **11** | Explain optimal binary search tree with an example. | **5** | **5** |

**III-B. TECH I-SEM MID-I EXAMINATIONS**

**SET - 3**

**Date: Time: 10am to 12:00 pm**

**Subject: DAA Branch: IT**

**Answer all the Questions. Each Question carries equal mark 5 x 2 M = 10 Marks**

|  |  |  |
| --- | --- | --- |
|  |  | **CO** |
| **1.** | Write definitions of Time and Space Complexity. | **01** |
| **2.** | What do you understand by Algorithm and define its characteristics? | **01** |
| **3.** | What is cyclic graph? Give an example. | **02** |
| **4.** | Define the Backtracking, what are the problems over which this can be apply? | **02** |
| **5.** | What is Dynamic programming? | **02** |

**Answer Any 4 Questions. Each Question carries equal marks 5\*4=20 Marks**

|  |  |  |
| --- | --- | --- |
|  |  | **CO** |
| **6.** | Write Binary Search algorithm. Further, find number 64, from the list 6, 10, 45, 64, 70, 89, 92, 97, 99 using Binary Search algorithm? | **01** |
| **7.** | What is Divide and Conquer technique? Explain with an example. | **01** |
| **8.** | Write the backtracking algorithm for the sum of subsets problem using the state space tree corresponding to m=30, w=(5,10,12,13,15,18). | **02** |
| **9.** | Explain the Graph – coloring problem. And draw the state space tree for m= 3colors n=4 vertices graph. Discuss the time and space complexity. | **02** |
| **10.** | Draw the state-space tree along with answer nodes for 4-queen’s problem. | **03** |
| **11.** | Illustrate binary search tree and Explain Optimal binary search tree with the following frequencies.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Index | 1 | 2 | 3 | 4 | | Elements | 10 | 20 | 30 | 40 | | Frequencies | 4 | 2 | 6 | 3 | | **03** |

**SCHEME OF EVALUATION**

**PART-A**

| **SNO** | **THEORY** | **MARKS** | **TOTAL** |
| --- | --- | --- | --- |
| **1** | Write definitions of Time and Space Complexity. | **2** | **2** |
| **2** | What do you understand by Algorithm and define its characteristics? | **2** | **2** |
| **3** | What is cyclic graph? Give an example. | **2** | **2** |
| **4** | Define the Backtracking, what are the problems over which this can be apply? | **2** | **2** |
| **5** | What is Dynamic programming? | **2** | **2** |

|  |  |  |  |
| --- | --- | --- | --- |
| **SNO** | **THEORY** | **MARKS** | **TOTAL** |
| **6** | Write Binary Search algorithm. Further, find number 64, from the list 6, 10, 45, 64, 70, 89, 92, 97, 99 using Binary Search algorithm? | **5** | **5** |
| **7** | What is Divide and Conquer technique? Explain with an example. | **5** | **5** |
| **8** | Write the backtracking algorithm for the sum of subsets problem using the state space tree corresponding to m=30, w=(5,10,12,13,15,18). | **5** | **5** |
| **9** | Explain the Graph – coloring problem. And draw the state space tree for m= 3colors n=4 vertices graph. Discuss the time and space complexity. | **5** | **5** |
| **10** | Draw the state-space tree along with answer nodes for 4-queen’s problem. | **5** | **5** |
| **11** | Illustrate binary search tree and Explain Optimal binary search tree with the following frequencies.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Index | 1 | 2 | 3 | 4 | | Elements | 10 | 20 | 30 | 40 | | Frequencies | 4 | 2 | 6 | 3 | | **5** | **5** |