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|  | **[Design & Analysis of Algorithm]**  **[BSCS – 5 A]**  **Department of Computer Science**  **Bahria University, Lahore Campus** |

**Quiz: 3** Date: Week [12]

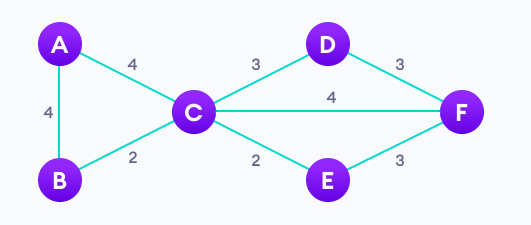
Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- |
| **Evaluation of CLO** | **Question Number** | **Marks** | **Obtained Marks** |
| **CLO statement**  **CLO1:** Demonstrate an understanding of algorithm design process and different problem solving techniques  **CLO2:** Analyze algorithm (estimate upper and lower bounds without coding and running the algorithm) | 1 | 1 (5) |  |
| 2 | 1 (5) |  |
| **Total Marks** | | **2.5**  **(10)** |  |

**Q1. Select the most suitable Cell/Cells for the following concepts. Apply in corresponding columns.**

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| --- | --- | --- | --- | --- |
| **Sr. No.** | **Description** | **A** | **B** | **C** |
|  | **Master’s theorem can be applied on** | T (n) = 2T (n/2) + 2n | T (n) = 2T (n/3) + sin(n) | None of these |
|  | **Complexity on solving this recurrence relation will be?** | O(n2.8) | O(n3) | All of these |
|  | **select the overall running time complexity of Kruskal's Algorithm** | O(n2) | O(Elog V) | O(n) |
|  | **A spanning tree of a graph is a sabgraph that is a tree and connects all \_\_\_\_\_\_\_\_\_\_ together.** | Nodes | Edges | Both |
|  | **Trees as special case of graph which can have self-loop.** | True | False | Can have loop but self-loop not allowed |
|  | **In tree, there could be only one path between 2 nodes.** | True | False | Indirect multiple path could exist. |
|  | **Kruskal's algorithm runs faster in sparse graphs than Prims algorithm** | True | False | Both are equal |
|  | **Selection Sort belongs to \_\_\_\_\_\_\_\_\_\_\_ approach.** | Iterative Improvement | Divide & Conquer | Brute Force |

**Q2. Design a minimum spanning tree using Prims algorithm.**

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