Tab 1

**Assignment 01 Output:**

========== CUSTOMER ORDERS ==========

Before Sorting:

Order ID: O01 | Timestamp: 1700000100000

Order ID: O02 | Timestamp: 1699999999000

Order ID: O03 | Timestamp: 1700000200000

Order ID: O04 | Timestamp: 1699999950000

Order ID: O05 | Timestamp: 1700000300000

Order ID: O06 | Timestamp: 1700000000000

Order ID: O07 | Timestamp: 1699999900000

Order ID: O08 | Timestamp: 1700000500000

Order ID: O09 | Timestamp: 1699999850000

Order ID: O10 | Timestamp: 1700000400000

Order ID: O11 | Timestamp: 1700000000000

After Sorting (by Timestamp):

Order ID: O09 | Timestamp: 1699999850000

Order ID: O07 | Timestamp: 1699999900000

Order ID: O04 | Timestamp: 1699999950000

Order ID: O02 | Timestamp: 1699999999000

Order ID: O06 | Timestamp: 1700000000000

Order ID: O11 | Timestamp: 1700000000000

Order ID: O01 | Timestamp: 1700000100000

Order ID: O03 | Timestamp: 1700000200000

Order ID: O05 | Timestamp: 1700000300000

Order ID: O10 | Timestamp: 1700000400000

Order ID: O08 | Timestamp: 1700000500000

Time Taken: 0.02002 ms

=== Code Execution Successful ===

Tab 2

**Assignment 02 Output:**

Sort movies by (rating/year/watch): rating

Movies sorted by rating:

Title Rating Year Watch

-------------------------------------------

Titanic 7.8 1997 12000

Avatar 7.9 2009 15000

Up 8.2 2009 5400

Joker 8.4 2019 8200

Coco 8.4 2017 4700

Avengers 8.5 2012 9500

Gladiator 8.5 2000 6600

Interstellar 8.6 2014 7300

Matrix 8.7 1999 9800

Inception 8.8 2010 8700

Time taken by QuickSort: 0.014 ms

=== Code Execution Successful ===

Tab 3

**Assignment 03 Output:**

=== Emergency Relief Supply Distribution ===

Enter number of relief items: 3

Item #1

Name: water bottle

Weight (kg): 5

Importance Value: 700

Divisible? (1 = yes, 0 = no): 0

Item #2

Name: maggie

Weight (kg): 2

Importance Value: 500

Divisible? (1 = yes, 0 = no): 1

Item #3

Name: chips

Weight (kg): 1

Importance Value: 600

Divisible? (1 = yes, 0 = no): 1

Enter boat capacity (kg): 10

=== Supplies Loaded on Boat ===

- chips: 1.00 kg, Importance: 600.00

- maggie: 2.00 kg, Importance: 500.00

- water bottle: 5.00 kg, Importance: 700.00

Total importance carried: 1800.00

Execution time: 3.480 ms

=== Code Execution Successful ===

Tab 4

**Assignment 04 Output:**

Enter number of intersections: 6

Enter number of roads: 8

Enter roads as: startNode endNode travelTime(mins)

0 1 4

0 2 2

1 2 1

1 3 5

2 3 8

2 4 10

3 4 2

3 5 6

Ambulance starting intersection: 0

Number of hospitals: 2

Enter hospital node indices: 4 5

Calculating shortest travel paths...

--- Emergency Route ---

Ambulance start: 0

Hospital nodes: [4, 5]

Nearest hospital: 4 (Travel time: 10 mins)

Shortest path: 0 -> 2 -> 1 -> 3 -> 4

Execution time: 6.564 ms

=== Code Execution Successful ===

Tab 5

**Assignment 05 Output:**

Enter number of nodes in multistage graph: 7

Enter number of edges: 10

Enter edges as: from to cost

0 1 5

0 2 3

1 3 2

1 4 6

2 3 4

2 4 1

3 5 7

3 6 3

4 5 2

4 6 5

Enter source node: 0

Enter destination node: 6

--- Optimal Delivery Route ---

Path: 0 -> 2 -> 4 -> 6

Execution time: 0.13858 ms

=== Code Execution Successful ===

Tab 6

**Assignment 06 Output:**

Enter total number of essential items: 5

Enter maximum truck capacity (in kg): 50

Enter details for each item (weight in kg and utility value):

Item 1 weight (kg): 10

Item 1 utility value: 60

Item 2 weight (kg): 20

Item 2 utility value: 100

Item 3 weight (kg): 250

Item 3 utility value: 40

Item 4 weight (kg): 15

Item 4 utility value: 80

Item 5 weight (kg): 25

Item 5 utility value: 90

Maximum Utility (Optimal Relief Load): 240

Selected Items (1 = included, 0 = not included):

Item 1 -> 1

Item 2 -> 1

Item 3 -> 0

Item 4 -> 1

Item 5 -> 0

=== Code Execution Successful ===