

University of Central Punjab, Faculty of IT
Mid Term Examination- Fall 2022
Artificial Intelligence-Lab (F1)

Program: BSCS

Course Code: CSAL3241

Time Allowed: 90minutes

Instructors: Usman Aamer

Marks: 80

Instructions:

- Time to attempt the exam is 80 minutes. Last 10 minutes are for submission.
 - Understanding of a question is part of exam. Don't ask invigilator for any explanation.
 - Plagiarism will be penalized.
 - Name your solution as "<your roll number>_mid_<section>", zip and submit.
 - Implementation of both tasks in a single notebook is recommended.
-

Task 01:

(10)

Slice list into 3 equal chunks and reverse each chunk

Given:

```
sample_list = [11, 45, 8, 23, 14, 12, 78, 45, 89]
```

Expected Outcome:

```
Chunk 1 [11, 45, 8]
```

```
After reversing it [8, 45, 11]
```

```
Chunk 2 [23, 14, 12]
```

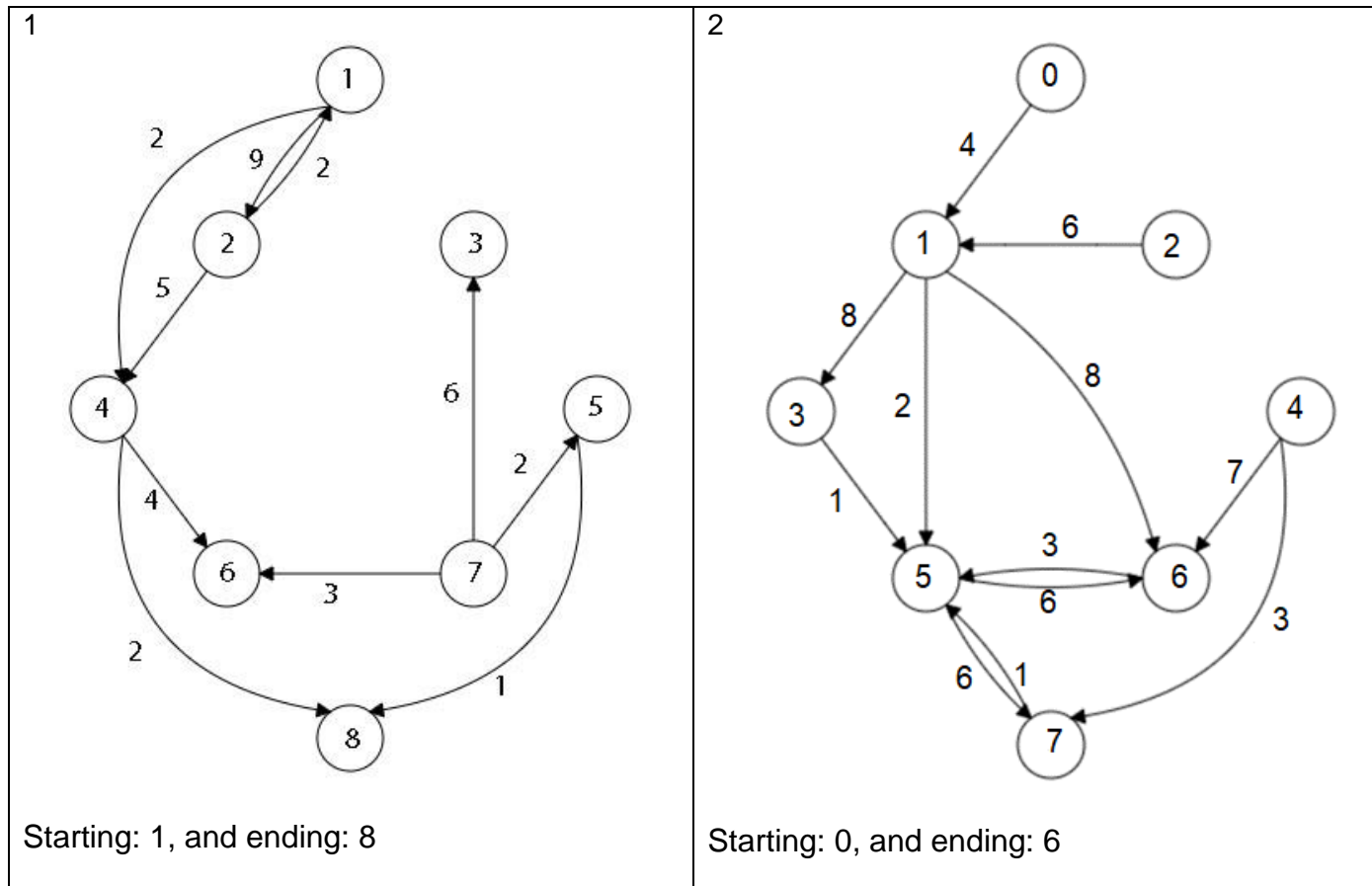
```
After reversing it [12, 14, 23]
```

```
Chunk 3 [78, 45, 89]
```

```
After reversing it [89, 45, 78]
```

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Task 02: You must initialize the given graphs as dictionary of dictionaries and perform the following task. (10)



- i. Implement Depth First Search method that take graph and starting node (15)
- ii. Implement a Depth First Search based path method to traverse the graph and find a path between given two vertices. It should take "graph", "starting node", "ending node" as arguments. (20)
- iii. You are given with paths in graphs. You have to implement a function say 'costcal' to find the cost of the given path. 'Costcal' will take graph and the path as arguments. (15)
 Path in Graph1: [1,2,4,8]
 Path in Graph2: [0,1,3,5,6]
- iv. Display the results of above three functions. (10)