

## CSC 355. Discrete Structures and Basic Algorithms

### Homework Assignment 7. Graphs Theory

#### Question 1. True or False

A DAG is a directed graph without cycles (Select if it is true or false and why).

- ☐ True
- ☐ False

#### Question 2. Multiple Choice (Select the right option and explain).

A simple path:

- ☐ allows repetition of vertices so long as no edge is repeated
- ☐ must have all vertices unique except that the first and last vertices are the same
- ☐ must have all vertices be unique
- ☐ None of the above

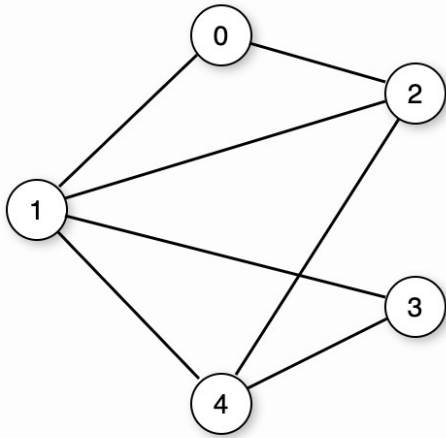
#### Question 3. Multiple Choice (Select the right option and explain).

A simple cycle:

- ☐ allows repetition of vertices so long as the length of the path is less than 5
- ☐ must have all vertices be unique
- ☐ must have all vertices unique except that the first and last vertices are the same
- ☐ None of the above

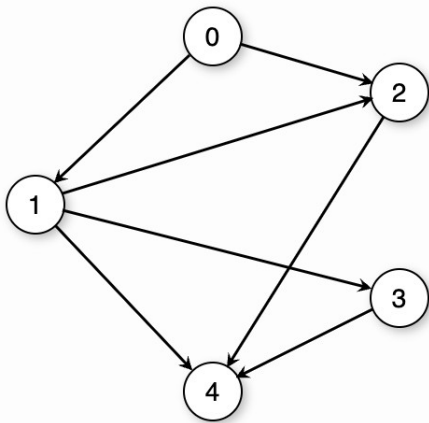
#### Question 4. Written Question

What is the degree of Vertex 4?



#### Question 5. Written Question.

What is the out degree of Vertex 1?



#### Submission Instructions

You must upload your homework in a **pdf** file in the designated area in D2L.

#### Grading Points

Total Score: 25 points

*Each question has a value of 5 points.*