جامعة القاهرة الجديدة التكنولوجية NEW CAIRO TECHNOLOGICAL UNIVERSITY

Sub.	Re-Sub

LOs	LO1		LO2	
Sub				
Resub	P	Not Achieved	P	Not Achieved

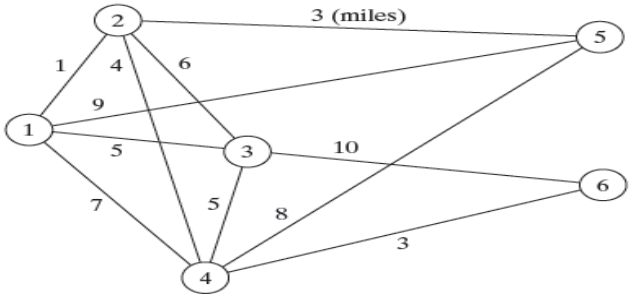
Student Name		Code		Section	
Unit No. & Title	ICT 224 - Data Structure				
Qualification	Higher Diploma in Information Technology (y2)				
Assignment No.	2		Assessor Name	Dr. Eman Monir	
Evidence	Document / observation/ Hardware/ Project/ …		IV Name	Dr. Rasha Elstohy	
Hand out date	1/5/2024		Hand in date	7/5/2024	

Targeted LO	Targeted criteria	Criteria achieved	Assessment comments
LO1	Pass		
	Merit		
	Distinction		
LO2	Pass		
	Merit		
	Distinction		
Assessor Signature: *Eman Monir*			

Criteria reference	Targeted criteria	To achieve the criteria the evidence must show that the student is able to:	Evidence	Page numbers
LO1	Pass	**P7** Explain what is meant by tree? **P8** Explain what is meant by graph? **P9** Illustrate what is meant by minimum spanning tree and dijkestra algorithms		
	Merit	**M3** Compare between Graph and trees.		
	Distinction	**D3** Apply Trees and graphs using C++.		
LO2	Pass	**P10** Explain the different techniques of searching. **P11** Explain what is meant by Sorting techniques?		
	Merit	**M4** Discuss how asymptotic analysis can be used to assess the effectiveness of an Algorithm..		
	Distinction	**D4** Critically evaluate the complexity of an implemented ADT/algorithm.		
"I certify that this assignment is my own work, written in my own words. Any other person's work included in my assignment is referenced / acknowledged".				
IV Signature: *Rasha ElStohy*		Learner's signature:	Date:	

Scenario

You work as in-house software developer for Softnet Development Ltd, your account manager has made you technical project leader and your role is to inform them about designing and implementing abstract data types. You have been asked to create a presentation for all collaborating partners on how ADTs can be utilized to improve software design, development, and testing. Further, you have been asked to write an introductory report for distribution to all partners on how to specify abstract data types and algorithms in a formal notation.



20	50	10	5	30	8	9	10	6	2

Tasks

Task1:

From the above scenario

1. Illustrate what is meant by minimum spanning tree and Dijkstra algorithms, apply both algorithms on the mentioned graph
2. Differentiate between Graph and trees.

Task2:

From the above scenario

1. Assuming you have the above array, first apply any sorting technique to sort the array elements in c++ and apply a sequential search algorithm to search for the value 30.
2. Illustrate how to calculate the complexity of the previous programs? And discuss how to evaluate the complexity of these algorithms?

Resubmission Feedback: ***Please note resubmission feedback is focussed only on the resubmitted work**	
Assessor Signature:	**Date: / /202**
Internal Verifier's Comments:	
IV Signature:	**Date: / /202**