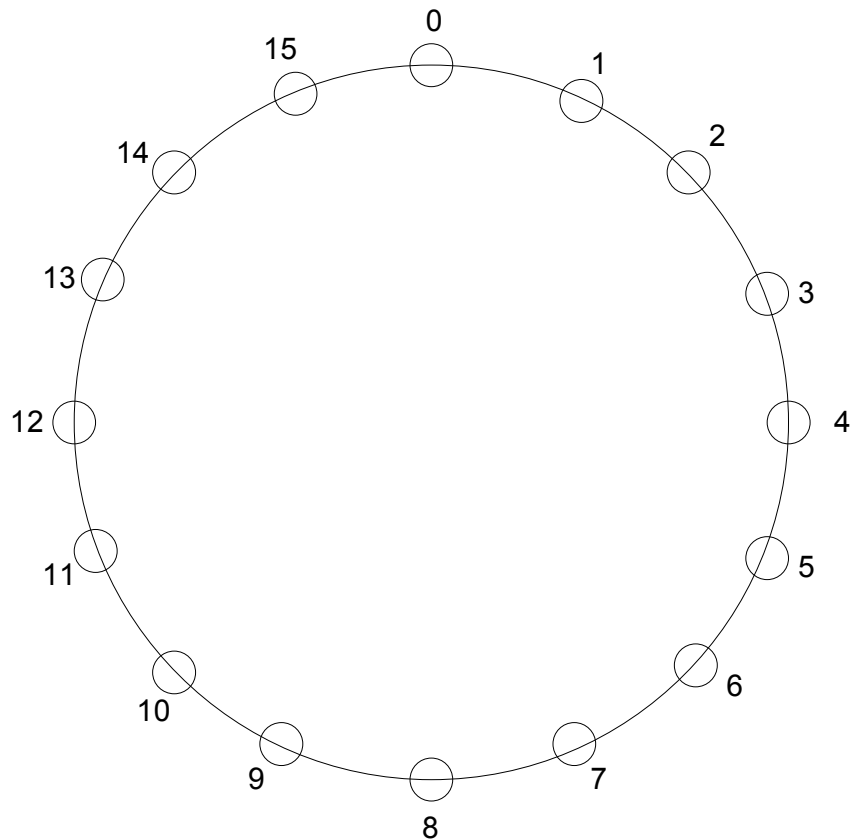# ITS413 – Quiz 7

Name: _____

ID: _____   Mark: _____ (out of 10)

Question 1 [7 marks]

Consider the Chord DHT network shown below.

The table below shows the list of peers (by ID) and files (by Key) already in the network. (The IDs and Keys were calculated using the same hash function).

Peers with ID:	1 6 8 9 12 14
Files with Key:	3 4 6 7 9 13 14 15

a) Complete the table below to show the keys stored by each node (the keys available are given in the above table). Write "none" if no keys are stored on a particular peer. [2 marks]

Peer ID	Keys stored
1	
6	
8	
9	
12	
14	

b) The tables below show the routing tables for selected peers in the network. Complete the table for the peer shown. (Hint: the Ideal Neighbour is the peer that would be the neighbour if all nodes existed) [3 marks]

Routing Table for Peer 1

Positions Away	Ideal Neighbour	Actual Neighbour	Key Space
1	2	6	2
2	3	6	3, 4
4	5	6	5 .. 8
8	9	9	9 .. 0

Routing Table for Peer 6

Positions Away	Ideal Neighbour	Actual Neighbour	Key Space
1	7	8	7
2	8	8	8, 9
4	10	12	10 .. 13
8	14	14	14 .. 5

Routing Table for Peer 9

Positions Away	Ideal Neighbour	Actual Neighbour	Key Space
1			
2			
4			
8			

Routing Table for Peer 14

Positions Away	Ideal Neighbour	Actual Neighbour	Key Space
1	15	1	15
2	0	1	0, 1
4	2	6	2 .. 5
8	6	6	6 .. 13

c) Complete the table below to show the set of peers that a search query will go via when source peer is searching for file with the key shown. (an example answer may be "1-4-8", meaning the query goes from peer 1 to peer 4 to peer 8) [2 marks]

Answer set 1:

Source Peer	Search for key	Path the query takes
6	15	

Question 2 [3 marks]

Consider the following pages and their links to other pages. The PageRank of selected pages are given. Calculate the PageRank of remaining pages.

Page	PageRank	Links to
A	120	C, D
B	30	F
C		-
D		E, F, G
E		-
F		-
G		-