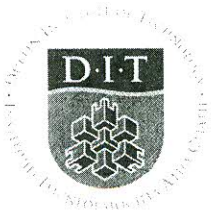

DUBLIN INSTITUTE OF TECHNOLOGY

DT211C BSc. (Honours) Degree in Computer Science (Infrastructure)

Year 1

SUMMER EXAMINATIONS 2016/2017

NETWORKING 1 - FUNDAMENTALS [CMPU1021]

DR MARTIN MC HUGH
DR DEIRDRE LILLIS

FRIDAY 19TH MAY 4.00 P.M. – 6.00 P.M.

TWO HOURS

INSTRUCTIONS TO CANDIDATES

ANSWER **THREE** QUESTIONS OUT OF **FOUR**.

ALL QUESTIONS CARRY EQUAL MARKS.

1 BONUS MARK WILL BE AWARDED TO EACH STUDENT

Question 1

a) Compare and contrast the functions of Hosts, Servers and Clients

(12 marks)

b) Compare and contrast the difference between a Telnet and SSH connection

(10 marks)

c) Explain the difference between the Running Configuration File and the Startup Configuration File

(11 marks)

Question 2

a) Explain, with the aid of an example, what the term Data Encapsulation means.

(9 marks)

b) Data Transfer can be measured in 3 ways, Bandwidth, Throughput and Goodput. Provide an explanation for each of these.

(12 marks)

c) The Data Link Layer is often broken into two sublayers. What are these sublayers and explain the role of each of them.

(12 marks)

Question 3

a) Explain the difference between CSMA/CD and CSMA/CA

(12 marks)

b) Explain the term Connectionless in terms of IP

(6 marks)

c) IPv6 was created to solve the problem associated with IPv4. Provide and explain the improvements to IPv4 by IPv6

(15 marks)

Question 4

a) Convert the following values from decimal to binary (show your workings)
185
223
48

(9 marks)

b) You are tasked by your supervisor with assigning IP addresses for your new MAN (Metropolitan Area Network), which consists of 8 different buildings, each building will have 255 workstations. Your supervisor will assign IP addresses to the serial interfaces using a different network. You will need to determine the following four items for each of the eight buildings

I. Subnet Masks
II. Network Addresses
III. Broadcast address for each subnet
IV. Valid host ranges on each subnet

(20 marks)

c) What are the functions of the Presentation Layer?

(4 marks)