



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2012/2013

THIRD YEAR FIRST SEMESTER EXAMINATIONS FOR THE
DEGREE OF BACHELOR SCIENCE IN COMPUTER SCIENCE
(CITY CAMPUS - EVENING)

SCS 306: INTERNET COMPUTING

Date: 3rd December, 2012

Time: 5.30 -8.30pm

INSTRUCTIONS:

- ♦ Section A (Q1 Compulsory containing 30 marks).
- ♦ Section B (Q2-Q5 Attempt any Two questions containing 20 marks each).



SECTION A {Compulsory}

QUESTION ONE (30MKS)

- a) Define the term Internet computing [2 Marks]
- b) These two abbreviations ARPANET and ARPA are synonymous with the Internet.
- i. State the relationships between them [3 Marks]
 - ii. The role they played in the setup of current Internet [4 Marks]
- c) Differentiate the following terms Web browser and Search engine and state two examples of each [6 Marks]
- d) Your former school wants to come up with a computer network for the school. You have therefore been invited to shed light on the intended new project at the school given your IT skills. Discuss and provide reasons for supporting the project and what the administration should expect from the noble project. [15 Marks]

SECTION B {Attempt Any 2 Question}

QUESTION TWO (20MKS)

- a) The Network layer, the Transport layer and the Application layer are some of the layers found on the OSI model. State the functions and then list the protocols that are associated with any of these layers. [10 Marks]
- a) The primary purpose of TCP is to provide reliable logical circuit or connection service between pairs of processes. It does *not* assume reliability from the lower-level protocols (such as IP), so TCP must guarantee this itself.
- i. Explain what is TCP [2 Marks]
 - ii. List and explain four facilities it (TCP) provides for the applications using it that characterizes it. [8 Marks]

QUESTION THREE (20MKS)

- b) Computers have become a very important tool in the current society cutting across all academic fields. They have surely revolutionized how we do things more so communication. When humans are speaking to one another, they speak in a particular language. This language is made of words and letters. Although we type words and letters in the computer, the computer does not understand the words and letters. Rather, those words and letters are translated into numbers. Computers “talk” and understand in numbers. As a computer programmer or an IT professional, list and explain four numbers system used by computers and give examples. [12 Marks]
- c) MAC and IP addresses have become integral part of our daily communication, in any given communication media, channel or devices.

- i. What Is a MAC Address? [3 Marks]
- ii. Write the abbreviation (MAC) in full [1 Mark]
- iii. Differentiate between MAC address and IP address [4 Marks]

QUESTION FOUR (20MKS)

- a) There are 2 models used to communicate on the Internet and Network, which are OSI model and TCP/IP model. These models came at different times in history. Compare and contrast the OSI model and the TCP/IP model giving similarities and differences [10 Marks]
- b) Grace was sending an email to her mum, upon sending the email, she receives a message of undelivered email, within the message of undelivered mail there were POP and SMTP protocol as part of the problem, why the e-mail was not delivered. In relation to these;
 - i) Describe the features of the POP and SMTP protocols [5 Marks]
 - ii) Explain how these protocols support e-mail services [5 Marks]

QUESTION FIVE (20MKS)

- a) The application layer is the layer normally close to you as a user, as you are supposed to send and receive some information over the Internet. Within the application layer discuss the roles played by the following protocols and write their abbreviations in full where applicable [12 arks]
 - i) Telnet
 - ii) DNS
 - iii) FTP
 - iv) SMTP,
- b) What is the difference between “Internet” and “internet” [4 Marks]
- c) The Internet has become a very insecure place to trade on, elaborate any 4 attacking methods the culprits use to attack on the Internet? [4 Marks]