NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF APPLIED SCIENCE
COMPUTER SCIENCE DEPARTMENT
AUGUST EXAMINATIONS 2009

SUBJECT: INTERNET AND WEB DESIGNING
CODE: SCS2204

INSTRUCTION TO CANDIDATES

Answer any four questions. The paper contains five questions.

Time: 3 hours

QUESTION ONE

a. Outline and explain the layers of the TCP/IP model   [10]
b. After reviews are assigned a classification. State and describe these classifications   [10]
c. State any five advantages of using an OSI layered model   [5]

QUESTION TWO

Answer questions a and b using the following scenario.
BEL is a lodge in the heart of Bulawayo. There are four departments that are the Catering, Laundry, Accounts and Bookings. There is need to also accommodate other subnets for future use. These departments are to form a network. Internet service provider has assigned BEL the address 192.168.3.0/27.
a. State all the physical components required for the process of networking.
                                                                                          [10]

b. Using the above information:
   i)   How many subnets can the network have?   [2]
   ii)   How many usable hosts per subnet?   [2]
   iii)   What is the network address for the second subnet?   [2]
   iv)   What is the class of this network   [1]
   v)   What is the subnet mask for the second subnet?   [2]
   vi)   Describe the 3 maturity levels of internet standards   [6]

QUESTION THREE

a) What is the correct order of PDUs in data encapsulation?   [6]

b) What are the major differences between TCP and UDP protocols of a TCP/IP suite   [10]

c) DHCP uses a four phase process to configure a DHCP client. State and explain these phases.   [8]

d) What is the purpose of a Domain Name System?   [1]

QUESTION FOUR

a) Explain the protocols found in the application layer of the OSI model citing the port numbers of each and the services they provide.

   i)   Telnet   [3]

   ii) FTP   [3]

   iii) SNMP   [3]

   iv) NFS   [3]

   v)   SMTP   [3]

   vi) IP addressing uses one of the three methods of addressing namely dotted, binary and hexadecimal. Represent the following Binary format 10101100.00010000.00011110.00111000 as a dotted format and hexadecimal format.   [6]

   vii) Explain any four uses of the Internet.   [4]

QUESTION FIVE

a) As a web designer, you have been approached by Fatima Primary school Headmaster who wishes to display the grade seven results in the school web site that is currently non existent. You are to develop the web site (just two pages) using HTML the first page indicates the name of the school, the address and a list of grade seven teachers. The Second page should indicate that the results are for the grade seven for the year 2008. The results should be displayed in a table that will consist of cells with the candidate number, First name, Surname and the total units obtained by the candidate. The two pages should be linked.   [15]

b) What network security issues should be considered when setting up a network?   [5]

c) When more bits are used for the subnet mask, more subnets are available, but fewer hosts are available per subnet. In a class B network, how many subnets and hosts per subnet would be available if 3 bits are used for the subnet?   [2]

d) In reference to the OSI reference model, which layers represented the following:
   i)   Frames   [1]

   ii) Segments   [1]
   iii) Packets   [1]

END OF QUESTION PAPER