[Knowledge for Development]

KIBABII UNIVERSITY

[KIBU]

UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS
YEAR ONE SEMESTER TWO EXAMINATIONS

FOR THE DEGREE IN
INFORMATION TECHNOLOGY

COURSE CODE   :   BIT 214

COURSE TITLE   :   COMPUTER NETWORKS

DATE: 1/02/2019   TIME: 2:00 P.M – 4:00 A.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [COMPULSORY] [30 MARKS]

a. Explain three advantages and three disadvantages of twisted pair cables
   [6Marks]

b. For the following IP addresses, identify the class, network id, host id and correct sub netting.

   i. 192.16.4.26

   ii. 26.0.10.17   [5Marks]

c. Distinguish between

   i. intelligent and passive hubs   [2Marks]

   ii. ISA and PCI   128-191   [2Marks]

   iii. Firewall and antivirus   [3Marks]

d. What is the difference between data and signal?   [2Marks]

e. Give three reasons why hubs are needed in wireless transmissions   [3Marks]

f. Explain the meaning of following terms

   ii. Transceiver

   ii. FDDI

   iii. CSMA/CD   [6Marks]

g. Distinguish between Network Id and Host Id.   [1Mark]

✓ QUESTION TWO [20 MARKS]

a. When signals travel through the medium, they tend to deteriorate. State and explain any six factors that may lead to signal deterioration on transit.   [12Marks]

b. Define the following terms as used in networking: [8Marks]
   i. Transmission media
   ii. Guided Media
   iii. Unguided Media
   iv. Chanel capacity

QUESTION THREE [20 MARKS]

a. Differentiate between transport layer and session layer of the OSI reference model system.

           [5Marks]

b. Explain five factors to consider when choosing a network topology   [5Marks]

c. What is a MODEM?   [2Marks]

d. For each of these four network issues: DHCP, NetBIOS, CSMA/CD and FDDI,

      i. Write their names in full   [2Marks]

      ii. Explain their functions in networking   [4Marks]

      iii. State the OSI reference model layer they operate at   [2Marks]

QUESTION FOUR [20 MARKS]

a. Differentiate between data link layer and network layer of the OSI reference model.

           [3Marks]

b. Briefly, discuss the following four classes of IP address: class A, B, C and D. [8Marks]

c. One of the functions of a protocol is to cope up with signal error.

      i. Describe two ways that a protocol cops up with errors   [4Marks]

      ii. Determine the checksum for the extended ASCII message "Dad"   [5Marks]

QUESTION FIVE [20 MARKS]

a. What is a network protocol?   [2Marks]

b. Describe Physical layer, data link layer and network layer of the OSI reference model

           [9Marks]

c. For each of the following protocols, write their names in full, outline their functions and state the OSI reference model layer they operate

     i. UDP

     ii. FTP

     iii. IP   [9Marks]