TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATIONS FOR DEGREE IN:
BACHELOR OF TECHNOLOGY IN INFORMATION COMMUNICATION TECHNOLOGY
(BMCS 12S – J-FT)

EIT4254: NETWORK DESIGN & IMPLEMENTATION

END OF SEMESTER EXAMINATION
SERIES: APRIL 2015
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*

This paper consists of **FIVE** questions.
Attempt question **ONE (Compulsory)** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

Question One (Compulsory)

a) By citing an example in each case, differentiate between the following terms:
- **(i)** Physical and logical network topologies **(4 marks)**
- **(ii)** Network address and broadcast address **(4 marks)**
- **(iii)** Loop back address and auto-configuration range **(4 marks)**

b) The organization has purchased the class address 216.21.5.0 and would like to use it to create network of 5 hosts per network. As a network administrator explain how you are going to subnet this network and write down the first four network ranges **(8 marks)**

c) State and explain THREE factors that will affect a network design **(6 marks)**

Question Two

a) The International Organization for Standardization (ISO) Network Management forum divided network management into five functional areas. Describe the FIVE functional areas of network management **(10 marks)**

b) Highlight THREE differences between UDP and TCP protocols **(6 marks)**

c) Differentiate between the following terms as used in computer networking:
- **(i)** Backbone and segment **(2 marks)**
- **(ii)** A node and a packet **(2 marks)**

Question Three

a) Highlight any FOUR likely causes of a network connection failure **(4 marks)**

b) Using a well labeled diagram, explain the roles of each OSI reference model layer in network administration. **(6 marks)**

Question Four

a) A company is the process of designing a computer network, knowing you as an expert in this era, they approach you to assist in designing. Describe how you will take them through a Network Design and Implementation Cycle **(14 marks)**

b) Explain ONE way of knowing the physical address of a PC **(2 marks)**

c) Outline FOUR common network tools **(4 marks)**

Question Five

a) Compare and contrast between peer-to-peer and client-server models **(6 marks)**

b) State and explain TWO methods of communication **(4 marks)**

c) A certain student in IT class was crimping a cross over cable in a computer lab. Copy and complete the rable below for him. **(10 marks)**

Pin	Connector A	Connector B
Pin 1		
Pin 2		Orange
Pin 3		White green
Pin 4		
Pin 5		
Pin 6	Blue	
Pin 7	White Brown	
Pin 8	Brown	Brown