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**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

# University Examinations 2015/2016

**YEAR IV SEMESTER II EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY**

# BBT 2215: ADVANCED NETWORKING CONCEPTS

**DATE: AUGUST, 2016**  **TIME: 2 HOURS**

**INSTRUCTIONS: Answer Question ONE and Any Other TWO Questions.**

**Question One – 30 Marks**

a) Explain any six routing metrics. [6 marks]

b) Distinguish point to protocol from high level data link contrast protocol (HDLC).

 [4 marks]

c) Explain the difference between:

1. Permanent virtual circuit (PVC) and
2. IPv4 and IPv6 [8 marks]

d) Using suitable diagrams, describe the operation of the following access technologies.

1. FDDI
2. DQDB [12 marks]

**Question Two – 20 Marks**

a) Explain the roles of the following devices in a network:

1. Router
2. Bridge [6 marks]

b) Describe four variants of DSL technology (XDSL), stating their band widths and application areas. [6 marks]

c) With the aid of a diagram, describe low data changes when two hosts communicate via SMTP. [8 marks]

**Question Three – 20 Marks**

a) Describe the access services offered by narrow band ISDN and state their applications. [6 marks]

b) Explain two advantages and two disadvantages of using standards. [4 marks]

c) i. What is network design?

 ii. Describe the nine step process of network design. [10 marks]

**Question Four**

a) Describe any four functions of network management. [8 marks]

b) Distinguish the following:

1. Static and dynamic routing
2. Link state and dynamic vector routing. [6 marks]

c) Outline the functions of the following layers of OSI/ISO networking model. [6 marks]

1. Presentation
2. Session
3. Transport

**Question Five**

a) State four advantages of asynchronous transfer mode (ATM) technology. [2 marks]

b) Using suitable diagrams, describe the ATM user network interface (UNI) frame format. [8 marks]

c) Discuss the importance of sub-netting. [3 marks]

d) A company is given a sit address 212.49.52.0. the company needs ten (10) subnets. Develops the IP addressing plan for the subnets. Develop the IP addressing plan for the number of hosts per subnets. [7 marks]