

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

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

# **UNIVERSITY EXAMINATIONS 2014/2015**

FOURTH YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

**BBT 2215 : ADVANCED NETWORKING CONCEPTS**

**DATE: AUGUST 2015 TIME: 2 HOURS**

**INSTRUCTIONS:**

**ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS**

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**QUESTION ONE**

1. Outline the process for physically creating a computer network [6 marks]
2. Describe the steps involved in gathering the symptoms of a network problem in order t o determine the scope of the problem [5 marks]
3. Discuss briefly the factors that should be considered when selecting a WAN service. [6 marks]
4. (i) What does a switch do if a frame arrives and the destination MAC address is not in its MAC address below? [1 mark]

(ii) You replace a hub with a layer 2 switch . How does this affect collision domain? [1 mark]

(iii) What does a switch do with a broadcast frame? [1 mark]

(iv) You replace a hub with a layer 2 switch. how does this affect broadcast domain? [1 mark]

(v) Why do routers typically add more latency than switches? [2 marks]

1. Discuss four advantages obtained from the use of a fiber – optic transmission system. [4 marks]
2. Give the functions or applications of the following network troubleshooting commands:-
3. Host name [1 mark]
4. Ipconfig /all [1 marks]
5. Ping [1 marks]

**QUESTION TWO**

JKUAT Karen campus has considered creating a network for the new tuition

complex that has just been completed. The building is composed of five floors

including the ground floor. You have been tasked to be the designer of this

network which will later be connected to the rest of the JIUAT network. It is

assumed that you will base your design on Ethernet and all the floors will be

cabled. It is further assumed that each floor will have approximately 150

computers. On each floor there will be administrative computers which must be

separated from the student computers.

1. (i) what is the minimum number of wiring clusets [telecommunication rooms] you would create for this particular network [1 mark]

(ii) Where would you place your MDF and why? [2 marks]

(iii) What would be the minimum number of 24 - port switchers you will use for this network? [2 marks]

1. Assuming that the average UTP cable run for each computer is 40 meters, how many reels of UTP cable would you require for wiring the whole building? Show your working 9NB It is assumed that as a networking professional you know the length of one reel of UTP cable. Round the reel length to the nearest 10 meters. [4 marks]
2. Explain how the following diagrams help in troubleshooting the network:
3. Physical network diagram [3 marks]
4. Logical network diagram [3 marks]
5. Explain any five ways that the network manager can enhance availability and reliability of this JKUAT network. [5 marks]

**QUESTION THREE**

1. Describe any three rules that will help ensure that the structural cabling design projects are both effective and efficient [6 marks]
2. Explain the contributions given in the placement of serrors
3. When you are selecting a switch, you need to decide between fixed configuration or modular configuration and stockable or non-stockable . discuss.
4. Fixed configuration switches [2 marks]
5. Modular switches [2 marks]
6. Stockable switches [2 marks]
7. Discuss four major benefits of VLANS [4 marks]

**QUESTION FOUR**

1. Discuss in detail the three steps followed in establishing a network baseline [6 marks]
2. Draw a well-labeled diagram to illustrate how the horizontal cabling run from the work area to the wiring closets ( or telecommunications area or equipment rooms) [6 marks]
3. Explain the following terminologies that are commonly used to describe physical WAN connections
4. Customer premises equipment [2 marks]
5. Data communication equipment [ CPE] [2 marks]
6. Data terminal equipment [DCE]
7. Demarcation point [2 marks]