

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

## JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

# University Examinations 2016/2017

**FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DIPLOMA IN INFORMATION TECHNOLOGY**

**DIT 0204 : NETWORK ESSENTIALS**

**DATE: JULY 2017 TIME: 1½ HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER**

**TWO QUESTIONS.**

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**QUESTION ONE (30 MARKS)**

(a) Network administrator or network engineers need to learn what the configuration weaknesses are and correctly configure their computing and network devices to compensate. State five examples of configuration weaknesses. [5 marks]

(b) State five features of shielded twisted pair (STP) cable. [5 marks]

(c) Explain how a message moves from one computer to another using the OSI model.

[4 marks]

(d) Discuss three phases in circuit switching. [6 marks]

(e) Explain network security. [2 marks]

(f) Explain the functions of each of the following devices as applied in networking:

(i) Hub. [1 mark]

(ii) Bridge. [1 mark]

(iii) Switch. [1 mark]

(iv) Router. [1 mark]

(g) State four advantages of fiber optic cable over twisted pair cable and coaxial cable.

[4 marks]

**QUESTION TWO (15 MARKS)**

(a) CSMA/CD utilizes the algorithm 1-persistent techniques. Discuss the algorithm.

[8 marks]

(b) Explain the meaning of Personal Area Network (PAN). [2 marks]

(c) Discuss two packet switching techniques as used in networking. [5 marks]

**QUESTION THREE (15 MARKS)**

(a) Discuss four major primary classes of network attacks. [8 marks]

(b) Explain circuit switching as used in data communication. [2 marks]

(c) Discuss three types of hubs as used in networking. [5 marks]

**QUESTION FOUR (15 MARKS)**

(a) Discuss four features of star topology. [8 marks]

(b) State any four network connectivity hardware. [5 marks]

(c) Define the term network. [2 marks]

**QUESTION FIVE (15 MARKS)**

(a) Discuss the following topologies as applied in networking:

(i) Bar topology. [2 marks]

(ii) Ring topology. [2 marks]

(iii) Mesh topology. [2 marks]

(iv) Star topology. [2 marks]

(b) State four considerations to be taken while choosing a topology. [4 marks]

(c) State three hardware resources controlled by an operating system. [3 marks]