

Mount Kenya



University

UNIVERSITY EXAMINATION 2012/2013

SCHOOL OF APPLIED AND SOCIAL SCIENCES

DEPARTMENT OF INFORMATION TECHNOLOGY

BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

VIRTUAL CAMPUS

UNIT CODE: BIT 2203

UNIT TITLE: DATA COMMUNICATION &
NETWORKS

APRIL 2013

SUPPLEMENTARY

TIME: 2HRS

Answer question One and any other Two Questions

1. a) Explain the following technologies. (10 Marks)

- i. Network.
- ii. Networking.
- iii. Protocols.
- iv. Topology.
- v. Packet.

b) Network set up can configured as either peer-to-peer or client/server.

- i. Differentiate between the two types of configurations. Use illustrations.

(6 Marks)

- ii. Explain the most suitable environment to use each type of configuration.

(4 Marks)

- iii. Explain three challenges associated with each type of configuration.

(6 Marks)

c) Differentiate the following concepts.

(4 Marks)

- i. LAN and WAN.

- ii. Logical and physical topology.
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- 2. a) Explain the term Network architecture. (2 Marks)
 - b) Explain three major elements of a LAN architecture. (6 Marks)
 - c) Giving examples, discuss the following network services. (6 Marks)
 - i. Workgroup computing.
 - ii. Centralized software management.
 - iii. Electronic Mail.
 - d) Explain how Ethernet protocol transmits the data through transmission line. Explain the challenges faced by this protocol and how it solves the challenges. (6 Marks)
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- 3. A) Explain the role of OSI reference model in networks implementation. (2 Marks)
 - b) Draw the OSI reference model showing the arrangement of its layers. (7 Marks)
 - c) Make a comparison between star and ring topology in terms of performance and reliability. (6 Marks)
 - d) Describe five network design goals. (5 Marks)
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- 4. A) Explain the meaning and the role of the following protocols. (4 Marks)
 - i. IP
 - ii. TCP
 - b) Differentiate between circuit switching and packet switching. Give examples. (4 Marks)
 - c) With the aid of diagrams, explain what is meant by each of the terms. (12 Marks)

- i. Amplitude modulation.
 - ii. Frequency modulation and
 - iii. Phase modulation.
5. A) Explain the function of a router. (2 Marks)
- b) Discuss two types of routing. (4 Marks)
- c) Discuss the function of the following network device. (9 Marks)
- i. Switch.
 - ii. Repeater.
 - iii. Bridge.
- d) Outline five advantages of a star topology. (5 Marks)