

**KABARAK**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**2009/2010 ACADEMIC YEAR**

**FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE**

**COURSE CODE: COMP 466**

**COURSE TITLE: MESSAGING SYSTEMS**

**STREAM: Y4S2**

**DAY: MONDAY**

**TIME: 9.00 – 11.00 A.M.**

**DATE: 09/08/2010**

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**INSTRUCTIONS:**

- Answer **ALL** the questions in **PART ONE** and any **TWO** questions in **PART TWO**.

**PLEASE TURNOVER**

## PART ONE

### QUESTION ONE (30 MARKS)

- a. Name the four parts of the header field of an Internet Message Format Standard compliant message. (2 marks)
- b. John whose e mail address is john@test.com exchanges a series of e mail messages with his friend Jane whose e mail address is jane@example.com. Their exchanges are contained in the table below.

Message	Message ID	Description
M-0	0056@test.com	New message from John to Jane
M-1	0047@example.com	Reply from Jane to message M-0
M-2	0097@test.com	Reply from John to message M-1
M-3	0089@example.com	Reply from Jane to message M-2
M-4	0090@example.com	New message from Jane to John

- i. What is the content of the In-Reply-To header field for the following messages?
- M-1 (1 mark)
  - M-2 (1 mark)
  - M-3 (1 mark)
  - M-4 (1 mark)
- ii. What is the content of the References field for the following messages?
- M-2 (2 marks)
  - M-3 (3 marks)
  - M-4 (1 mark)
- c. Name the five top level discrete media types defined by the MIME RFC 2046. (5 marks)
- d. An SMTP server receives a message with the following headers fields. Describe what each of the header fields mean.
- i. MIME-Version: 1.0 (1 mark)
  - ii. Content-Type: message/rfc822 (2 marks)
  - iii. Content-Transfer-encoding/base64 (2 marks)
- e. Name the four roles that an SMTP system can take. (2 marks)
- f. An SMTP server can send mail over the internet using the following two methods. Describe each method.
- i. Mail forwarding through a relay (2 marks)
  - ii. Sending using DNS (4 marks)

## PART TWO

### QUESTION TWO (20 MARKS)

- a. What is a directory service? (1 mark)
- b. What is the importance of a directory service in a messaging system? (1 mark)
- c. What do the following terms mean in the design and management of a directory service?
  - i. Replication (2 marks)
  - ii. Distribution (2 marks)
- d. An organization called Lexington has a registered domain Lexington.co.ke. The organization has three departments, human resources, finance, administration and IT.
  - i. Draw the LDAP tree structure that incorporates the domain name. (2 marks)
  - ii. An employee whose first name is John and last name is Okweku belongs to the IT department. What is the distinguished name for John's entry in the LDAP tree? (2 marks)
- e. A user connects to a POP3 server to download some messages. The POP3 session progresses through four states.
  - i. Name these four states. (4 marks)
  - ii. Briefly describe what happens in the
    - First session state (2 marks)
    - Second session state (2 marks)
    - Third session state (1 mark)
    - Fourth session state (1 mark)

### QUESTION THREE (20 MARKS)

- a. What is groupware? (1 mark)
- b. How are group calendars used to schedule meetings? (4 marks)
- c. How do the following issues affect the design of enterprise wide messaging systems?
  - i. Bandwidth connecting the different sites of the enterprise (4 marks)
  - ii. Devices using different platforms and operating systems (2 marks)
- d. What is the effect of using web based messaging systems on the following?
  - i. Installation and update of client software (4 marks)
  - ii. Bandwidth required between clients and the servers in the messaging system (3 marks)
  - iii. Hardware requirements of the client (2 marks)

### QUESTION FOUR (20 MARKS)

- a. Give three reasons why it is important to train users to use messaging systems. (3 marks)
- b. Name and briefly describe three training methods that can be included with messaging system software. (6 marks)
- c. Briefly describe how the web can be used for training purposes. (5 marks)
- d. Name and briefly describe the three administrative models that can be used to administer a message system. (6 marks)