



# TECHNICAL UNIVERSITY OF MOMBASA

## INSTITUTE OF COMPUTING AND INFORMATICS

### UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

BIT2204: NETWORK SYSTEMS ADMINISTRATION.

END OF SEMESTER EXAMINATION

**SERIES:** APRIL 2016 SERIES

**TIME:** 2 HOURS

**DATE:** May 2016 Year

#### **Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of 5 questions. Attempt question ONE and any other TWO questions.

**Do not write on the question paper.**

#### **Question ONE**

- (a) Advantages of using optical fibre cables in digital communication (6 Marks)
- (b) Reason that led to OSI reference model (6 marks)
- (c) Distinguish between FM and FSK with the aid of a sketch (4 Marks)
- (d) Describe TWO popular platforms in system administration (6 Marks)
- (e) Distinguish between pure ALOHA and Slotted ALOHA with the aid of a sketch (4 Marks)
- (f) Describe how Fibre Distributed Data Interface FDDI works (4 Marks)

## Question TWO

- (a) Discuss how voice digitization can be achieved using with the aid of a sketch
  - i. PAM (2 Marks)
  - ii. PWM/PDM (3 Marks)
  - iii. PPM (3 Marks)
  - iv. PCM (6 Marks)
  - v. Delta Modulation (6 Marks)

## Question THREE

- (a) Describe the following CSMA protocols
  - i. I persistent (3 Marks)
  - ii. Non persistent (3 Marks)
  - iii. P – persistent (4 Marks)
- (b) Describe the procedure for CSMA/CA with the aid of a sketch (10 Marks)

## Question FOUR

- (a) Discuss the key security concerns in system Network administration (10 Marks)
- (b) Describe the function of the following networking devices
  - i. Bridge (3 Marks)
  - ii. Router (3 Marks)
  - iii. Server (4 Marks)

## Question FIVE

- (a) Compare and contrast frame relay to X.25 technology (8 Marks)
- (b) Describe SIX (6) key functions of network management (12 Marks)