



TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR BACHELOR OF TECHNOLOGY IN
INFORMATION TECHNOLOGY (BTIT M11)

EIT 4302: DATA COMMUNICATION

END OF SEMESTER EXAMINATION

SERIES: APRIL 2013

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- Answer Booklet

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

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

Question One (Compulsory)

- a) (i) Define a MODEM
(ii) Compare and contrast DSL MODEM to cable MODEM. **(6 marks)**
- b) Describe briefly the evolution of wireless networks. **(4 marks)**
- c) Describe the following terms as applied in data communication:
(i) Caching
(ii) DNS
(iii) Web Server Design **(6 marks)**
- d) Distinguish between public and private IP address **(2 marks)**
- e) Describe the following UTP cable categories:
(i) CAT 5
(ii) CAT 6
(iii) CAT 7 **(6 marks)**
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f) Describe error control as applied in data communication **(6 marks)**

Question Two

Compare and contrast the structure functionality of OSI reference model to TCP/IP protocol suite. **(20 marks)**

Question Three

a) Describe the following IEEE 802 STANDARDS:

- (i) 802.3
- (ii) 802.4
- (iii) 802.5
- (iv) 802.11
- (v) 802.16

(10 marks)

b) A telecommunication organization that deals with data communication solutions has approached you for advice on the data switching techniques that they need to use to satisfy client with varied needs. Required:

Discuss any **TWO** commonly used switching techniques and state their most suitable environment. **(10 marks)**

Question Four

a) (i) Define carrier systems

(ii) Describe how TI carrier system works

(iii) Describe the functions of SONET

(iv) Describe how ISDN functions

(13 marks)

b) (i) Define IP addressing

(ii) Distinguish between DHCP and NATS

(7 marks)

Question Five

A data communication organization wishes to upgrade the services it has been offering to include multimedia so as to satisfy user demand, however the company is worried this move may lead to poor network performance, poor quality of services, poor security and increased cost of the network among other undesirable issue. Required:

Discuss how the organization could overcome all the FOUR challenges identified above in Q5 (a) **(20 marks)**