



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

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**UNIVERSITY EXAMINATION FOR BACHELOR OF TECHNOLOGY IN
INFORMATION TECHNOLOGY (BTIT M10/S-PT)**

EIT 4303: DATA COMMUNICATION

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: OCTOBER 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions

Answer question **ONE (COMPULSORY)** and any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

QUESTION ONE (COMPULSORY - 30 MARKS)

- (a) Define CDMA as applied in data communication **(2 Marks)**
- (b) Distinguish between DNS and NAT as applied in data communication **(4 Marks)**
- (c) Outline the range of **THREE** IP addresses used for Internet communication **(3 Marks)**
- (d) (i) Define network model also known as network layers
(ii) Explain **TWO** popular data communication network models **(5 Marks)**
- (e) (i) Define DHCP server

- (ii) Explain any TWO uses of DHCP **(5 Marks)**
- (f) Compare and contrast Digital Subscriber Line DSL and Cable **(4 Marks)**
- (g) Describe briefly VoIP **(3 Marks)**
- (h) Outline any **FOUR** types Firewall **(2 Marks)**
- (i) Explain why GMSK is a popular modulation technique used mobile phone technology **(2 Marks)**

QUESTION 2

- (a) Describe audio digitization **(4 Marks)**
- (b) Compare and contrast OSI reference Model and TCP/IP **(8 Marks)**
- (c) Explain **FOUR** popular IEEE 802 standards **(8 Marks)**

QUESTION 3

- (a) Distinguish between wi-fi and wiMax **(8 Marks)**
- (b) Explain multimedia Quality of Service issue in data communication **(4 Marks)**
- (c) Describe the security measures that you would undertake to ensure security of data communication **(8 Marks)**

QUESTION 4

- (a) Differentiate between following terms as applied in data communication.
 - (i) ISDN
 - (ii) SONET
 - (iii) ISDL
 - (iv) DSLAM **(8 Marks)**
- (b) Distinguish the following data communication devices
 - (i) Switch
 - (ii) Router
 - (iii) Muxs
 - (iv) MODEM **(8 Marks)**
- (c) Differentiate between asynchronous Time Division Multiplexing and synchronous Time Division Multiplexing **(4 Marks)**

QUESTION 5

- (a) State any TWO advantages of dividing an Ethernet LAN with a bridge. **(2 Marks)**
- (b) Distinguish between TI and EI telecommunication Carrier used in data communication **(4 Marks)**

(c) Explain briefly the following switching techniques

(i) Packet switching

(ii) Circuit switching

(6 Marks)

(d) Briefly describe the following mobile phone terminologies

(i) GSM

(ii) GPRS

(iii) EDGE

(iv) EGPRS

(8 Marks)