



TECHNICAL UNIVERISTRY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY (DICT 14M)

EIT 2201: DATA COMMUNICATIONS

END OF SEMESTER EXAMINATION

SERIES: APRIL 2015

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 (Compulsory)** 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) Define the following terms:
(i) Data communication
(ii) Data
(iii) Modulation (6 marks)
- b) Explain the approaches used to transmit data in a communication network (6 marks)
- c) Differentiate between the following technologies. (4 marks)
(i) Packet switching
(ii) Circuit switching
- d) Explain the functions of Protocols in a computer network (4 marks)

Question Two

- a) With the aid of a well labeled diagram explain the operation of the OSI Model in networking. (10 marks)
- b) Giving examples, differentiate between the following media (4 marks)
(i) Guided
(ii) Unguided
- c) Explain the functions of CSMA C/D as a mechanism of control and safe transmission of data in networks (6 marks)

Question Three

- a) Explain the features of IEEE 802.3 technology (8 marks)
- b) Illustrate the Frame format for the technology explained in (A) above (7 marks)
- c) Differentiate using examples, connection oriented and connectionless oriented protocol (5 marks)

Question Four

- a) Differentiate between Analog and Digital signals (6 marks)
- b) Explain the basic processes of MODULATION (6 marks)
- c) With the aid of a diagram, explain the operation of a 4 channel FDM system (7 marks)
- d) State the drawback of TDM technique (1 mark)

Question Five

- a) Differentiate the following: (4 marks)
(i) Routable Protocols
(ii) Non-routable protocols
- b) Explain the main responsibilities of the physical layer of the OSI reference model (8 marks)

- c) Explain the various protocols that operate in the TCP/IP application layer **(6 marks)**
- d) Differentiate between THROUGHPUT and BANDWIDTH **(2 marks)**