



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

### (A Constituent College of JKUAT) (A Centre of Excellence)

# Faculty of Engineering &

# Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY (DICT 2K 11M/DICT 10A/DICT 11M)

### ECT 2202: 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** and any other **TWO** questions Maximum marks for each part of a question are as shown This paper consists of **THREE** printed pages **SECTION A (COMPULSORY)** 

#### **Question One (30 marks)**

- a) Identify the classes of each of the following ID Addresses.
  - i) 129.151.4.8 ii) 192.110.103.22 iii) 72.177.100.20 (3 marks)
- **b)** Explain the functions of the following layers in the OSI model.

i) Transport Layer	(2 marks)
ii) Data Link Layer	(2 marks)
iii) Session Layer	(2 marks)
iv) Physical Layer	(2 marks)

- c) During Network Configuration, a student used the commands IPConfig/all and ping. Distinguish between the two commands.
  (4 marks)
- d) State any FOUR KEY considerations that need to be factored when selecting a transmission medium. (4 marks)
- e) Write short notes on the following transmission medium impairment.

i) Attenuation	(2 marks)
ii) Distortion	(2 marks)
iii) Noise	(2 marks)
iv) Jitters	(2 marks)

f) State any THREE advantages of installing computer networks. (3 marks)

#### **SECTION B (Answer Any Two Questions)**

#### **Question Two (15 marks)**

- **a)** Explain using diagrams these **THREE** transmission modes:
  - i) Full duplex
  - **ii)** Half duplex
  - iii) Simplex; and explain. (9 marks)
- b) List THREE advantages of using unbounded/unguided transmission medium against bounded/guided transmission medium. (6 marks)

#### **Question Three (15 marks)**

- a) State the FOUR major tasks of a network administrator.(4 marks)
- b) Explain the functional difference between the following networking devices.
  i) Router and Switch
  ii) Hubs and Bridges
  (6 marks)
  (5 marks)

#### **Question Four (15 marks)**

a) Using a detailed diagram, compare the similarities and differences between the TCP/IP Internet model and that of the OSI model. (15 marks)

#### **Question Five (15 marks)**

a)	Describe <b>FIVE</b> factors to consider when selecting a network topology.	(10 marks)
b)	Outline <b>FIVE</b> advantages of a star topology.	(5 marks)