TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

CERTIFICATE IN INFORMATION TECHNOLOGY & MAINTENANCE

EIT 1107: DATA COMMUNCATION

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 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 **THREE** printed pages

Question One (Compulsory)

a) Define the following terms:
   a) Data
   b) Data communication
   c) Signals
   d) Channels capacity **(4 marks)**

b) Compare between Analogue and Digital Transmissions **(6 marks)**

c) Explain the following transmission models **(4 marks)**
   (i) Parallel
   (ii) Serial

d) Describe the THREE modes of communication **(6 marks)**

Question Two

a) Define the following terms as used in Data Communication:
   (i) Protocol
   (ii) Parity bit **(2 marks)**

b) Explain any FIVE transmission impairments in data communication **(5 marks)**

c) Describe the similarities and differences between Synchronous and Asynchronous transmission of data. **(6 marks)**

d) Outline four advantages of fiber optics over coaxial cable **(4 marks)**

e) State ONE application of parallel transmission **(1 mark)**

f) Explain ONE advantage of synchronous over asynchronous data transmission **(2 marks)**

Question Three

a) Define multiplexing **(2 marks)**

b) Explain the TWO basic forms of multiplexing **(4 marks)**

c) Describe the areas of applications of multiplexing **(10 marks)**

d) Distinguish between circuit switching and Packet/Datagram Switching Techniques as used in data communication. **(4 marks)**

Question Four

a) Describe the functions of the TCP/IP standard in data communication **(10 marks)**

b) Explain at least THREE roles of a network administrator **(3 marks)**

c) List THREE Ethernet Network standards **(3 marks)**

d) Compare between star and bus topology **(4 marks)**

Question Five

a) Define the following Data Communication terms **(6 marks)**
- **(i)** Transmission Media
- **(ii)** Guided Transmission Media
- **(iii)** Unguided Transmission Media

b) Name any FOUR applications of coaxial cables **(4 marks)**

c) With the aid of a well labeled diagram, explain the functions of parts of Fiber Optics **(6 marks)**

d) Differentiate between TWO types of Optical Fiber Cables **(4 marks)**