



TECHNICAL UNIVERSITY OF MOMBASA

# Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION  
TECHNOLOGY

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

**EIT 2207: NETWORKING ESSENTIALS**

SPECIAL/SUPPLEMENTARY EXAMINATION  
**SERIES: FEBRUARY 2013**  
**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 **TWO** printed pages

**Question One (Compulsory)**

- a) Discuss the ring topology and the bus topology under the following topics:
- (i) Data Transmission Rate
  - (ii) Cost
  - (iii) Median Access Control Methods
  - (iv) Throughput
- (10 marks)**
- b) State the attributes of the following Ethernet LAN Technologies:
- (i) 10 Base T
  - (ii) 100 Base F
  - (iii) Gigabit Ethernet
- (10 marks)**

**Question Two**

- a) Explain the following transmission impairments:
- (i) Attenuation
  - (ii) Interferences
  - (iii) Noise
  - (iv) Bandwidth
- (10 marks)**
- b) Briefly describe the functions of the following protocols.
- (i) HTTP
  - (ii) FTP
  - (iii) TCP
  - (iv) IP
- (10 marks)**

**Question Three**

- a) Explain the functions of the following layers in ISO-OSI reference model.
- (i) Application layer
  - (ii) Session layer
  - (iii) Presentation layer
  - (iv) Network layer
  - (v) Transport layer
- (10 marks)**
- b) With the aid of at least two examples, differentiate between the following:
- (i) Connection oriented protocol and connection less oriented protocol
  - (ii) Routable protocol and non-routable protocol
- (10 marks)**

**Question Four**

- a) (i) With an aid of a diagram, describe the fiber optic cable. **(5 marks)**  
(ii) Differentiate between single-mode and multi-mode fiber optics. **(5 marks)**
- b) Using diagrams show the operation mechanism of FDDI Networking Technology. **(10 marks)**

**Question Five**

- a) Draw the Ethernet frame and explain the function of each component. **(10 marks)**
- b) Describe the operation of CSMA/CD Contention Medium Access Control Method used with Ethernet Networks. **(10 marks)**