TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING

DIPLOMA IN TELECOMMUNICATION & INFORMATION ENGINEERING

ETI 2203: COMPUTER NETWORKS I

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2014
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*

This paper consists of **FIVE** questions. Answer any **THREE** questions
Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

Question One (Compulsory)

a) Describe what you understand by the term 'computer network' **(2 marks)**

b) Describe TWO case scenarios where a computer network can be put into use and outline TWO advantages accrued out of the use of networks for both cases. **(8 marks)**

c) Describe the following types Networks Architecture and outline TWO advantages of using each:
   (i) Peer to peer
   (ii) Server based **(6 marks)**

d) Describe TWO common network user applications **(4 marks)**

Question Two

a) Define the term "Network Topology" **(2 marks)**

b) Describe at least THREE types of physical network topologies. **(9 marks)**

c) Distinguish between physical topology and a logical topology as used in computer networks. **(4 marks)**

d) Describe the following types of networks. **(5 marks)**
   (i) LAN
   (ii) WAN
   (iii) CAN

Question Three

a) With the aid of labeled diagrams, explain the design architecture of the following types of network cables.
   (i) Co-axial cables
   (ii) Unshielded twisted pair
   (iii) Fibre optic cable **(9 marks)**

b) Outline THREE advantages of Twisted pairs cable over co-axial cable **(3 marks)**

c) Distinguish between guided and unguided media **(4 marks)**

d) Outline FOUR principal factors one should consider when designing a computer network **(4 marks)**

Question Four

a) Describe a wireless Local Area Networks

b) Outline THREE possible functions of a Wireless Adopter Card **(3 marks)**

c) Distinguish between the following network components according to functions:
   (i) A switch and a hub
   (ii) A router and gateway **(4 marks)**

d) Outline the use of the following connectors: **(2 marks)**

(i) RJ45

(ii) BNC **(2 marks)**

e) State the TWO possible connections employed using UTP/RJ45 connectors **(2 marks)**

f) Using diagrams, describe the TWO connections stated in 4(e) above **(8 marks)**

Question Five

a) Outline the THREE roles of the Network interface card. **(6 marks)**

b) Describe FOUR enhancement that can be performed/added to the NIC to speed up the movement of data through it **(12 marks)**

c) A part from the Network Interfaces Card, state TWO other PC interfaces that can be used for networking. **(2 marks)**