



# **MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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## **University Examinations 2013/2014**

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE IN BACHELOR  
OF SCIENCE IN INFORMATION TECHNOLOGY

### **BIT 2108 – COMPUTER NETWORKS**

**DATE: APRIL 2014**

**TIME: 2 HOURS**

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**INSTRUCTIONS:** Answer question *one* and any other *two* questions

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#### **QUESTION ONE – 30 MARKS**

- (a) Give the meaning of the following terms as used in Computer Networks:
- i. Protocol (1 mark)
  - ii. Hub (1 mark)
  - iii. Transmitter (1 mark)
  - iv. Signal (1 mark)
  - v. Channel (1 mark)
- (b) Differentiate between:
- i. CSMA/CD and CSMA/CA (2 marks)
  - ii. Networking and Internetworking devices (2 marks)
  - iii. Static and dynamic routing (4 marks)
- (c) Where is shielded twisted pair most applicable? (4 marks)
- (d) Explain the stages involved in establishing a circuit connection. (4 marks)
- (e) Give reasons why computers are networked. (5 marks)
- (f) Detail four advantages of the peer to peer network. (4 marks)

## **QUESTION TWO –20 MARKS**

- (a) Computer networks require software to work properly. Give in detail five types of protocols used in computer networking. (10 marks)
- (b) Wireless propagation occurs in three different ways. List them. (1 mark)
- (c) Using diagrams show the above ways of wireless propagation. (9 marks)

## **QUESTION THREE – 20MARKS**

- (a) Using a diagram, compare and contrast the OSI model with the TCP/IP model giving the correct names and functions of the different layers. (15 marks)
- (b) As a network administrator, give different ways in which you can expand your network. (5 marks)

## **QUESTION FOUR – 20MARKS**

- (a) Give a discussion of five protocols that are used for computer networks. (10 marks)
- (b) Multiplexing is the process of combining separate signal channels into one composite stream. As a computer network student, explain different techniques that can be used in multiplexing. (10 marks)

## **QUESTION FIVE – 20 MARKS**

- a) You are on attachment in one of the leading ISP Company in the country. A group of students from a secondary school are on an academic tour of the company. They ask you to tell them how connections to the internet are done. Explain to them in detail four different ways connection to the internet is achieved. (16 marks)
- b) Explain what an ISP account is and its importance to internet connectivity. (4 marks)