



*(Knowledge for Development)*

**KIBABII UNIVERSITY**

**UNIVERSITY EXAMINATIONS  
2016/2017 ACADEMIC YEAR**

**SPECIAL EXAMINATIONS  
YEAR ONE EXAMINATIONS**

**FOR THE DEGREE OF  
MASTER OF SCIENCE IN  
INFORMATION TECHNOLOGY**

**COURSE CODE : MIT 814**

**COURSE TITLE : COMPUTER NETWORKS**

**DATE: 29/09/2017 TIME: 2.00P.M. – 4.00P.M.**

---

**INSTRUCTIONS TO CANDIDATES**

### QUESTION ONE (20 MARKS)

- (a) List any four operations defined by a socket interface 2marks
- (b) Describe three types media used in guided communication 6 marks
- (c) Describe the following network topologies 4 marks
- (i) Star
  - (ii) hybrid
- (d) In wireless communication the signal strength is 20millwatts and the noise is 100 microwatts determine the signal to noise ratio 2 marks
- (e) Automatic repeat request (ARQ) is one approach that could be used in transmission of frame between a receiver and transmitter . Explain the other two approaches 4marks
- (f) Differentiate between congestion control and traffic management 2marks

### QUESTION TWO (20 MARKS)

- (A) WI-FI suffers from two problems 8 marks
- (i) identify these problems
  - (ii) With aid of diagrams illustrate mitigation of these problems .
- (b) Discuss the following as applied in WI-FI 802.11. 12 marks
- (i) Nodes mobility
  - (I) How nodes select their access points
  - (II) What happens when nodes move from one cell to another

### QUESTION THREE (20 MARKS)

- (a) Dijkstra's Algorithm – Is used in determining the shortest path during store and forward of packet. Illustrate this algorithm. 8marks
- (b) You have been contracted as consultant to come up with routing strategies for a circuit switching networks and packet switched networks. Discuss any four routing strategies that you could adopt 12 marks

### QUESTION FOUR (20 MARKS)

- (a) Discuss a communication protocol for the following networks 10 marks
- (i) BUS
  - (ii) Wireless
- (b) The Using BCD number system illustrate a system that will allow you to detect 10 marks
- (i) One error.
  - (ii) Two errors

### QUESTION FIVE ( 20 MARKS)

- (a) With aid of a diagram illustrate the concept of cryptography 8 mark

(b) Discuss any four human beings traits that a person the weakest link in the security chain of information security management system. 12 marks