



**KIBABII UNIVERSITY COLLEGE**

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**UNIVERSITY REGULAR EXAMINATIONS**  
**2013 /2014 ACADEMIC YEAR**  
**3<sup>RD</sup> YEAR 2<sup>ND</sup> SEMESTER EXAMINATIONS**  
**(MAIN EXAMINATION) – REGULAR**  
**COMPUTER SCIENCE DEPARTMENT**  
**BACHELOR OF SCIENCE INFORMATION TECHNOLOGY**

**COURSE CODE: BIT 221**

**COURSE TITLE: COMPUTER NETWORKS**

**DATE: 14<sup>TH</sup> APRIL, 2014**

**TIME: 12.000 NOON -5.00P.M**

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**INSTRUCTION TO CANDIDATES**

Answer all questions in this section (30 marks)

## Question One

- a) Explain the following terms as used in the internet technology  
i) TCP/IP ii) Web browser iii) Telnet iv) FTP v) Intranet (5 marks)
- b) i) Describe any four services provided by communication network (4 marks)  
ii) Explain any three functions of a computer network in an organization (3 marks)
- c) Explain the importance of designing a network in layer form (5 marks)
- d) i) Using an example describe fully an IP address (3 marks)  
ii) Outline the features of IPv4 address (3 marks)
- e) i) Describe ring topology (3 marks)  
ii) Why is wireless technology necessary (4 marks)

## SECTION B

Answer any 2 questions from this section

### Question Two

(20 marks)

- a) Communication in the internet is facilitated by protocols identified in short as TCP/IP and often simply as IP. Describe the TCP/IP suite showing how they relate. (8 marks)
- b) Communication has entered an era of fundamental change where market regulatory forces have finally caught up with relentless advance of technology. Explain this statement in relation to the current technological revolution and government policy on communication (12 marks)

### Question Three

(20 marks)

- a) Two branches of a bank (in two different cities) are connected by a leased line. Describe the type of a network for this lease line (6 marks)
- b) What are the advantages of the OSI model network layers? (10 marks)
- c) Differentiate between MAN and LAN as used in networking (4 marks)

### Question Four

(20 marks)

- a) Why is TCP/IP popular. (10 marks)
- b) Write brief notes on the following transmission media  
i) Coaxial Cable (3 marks)  
ii) Optical Fiber (3 marks)
- c) Differentiate between serial data communication and parallel communication (4 marks)

### Question Five

- a) Transmission Control Protocol and User Data Protocol are the two famous transport protocols used on top of IP in the Internet environment. Compare TCP and UDP based on four basic properties and point out the differences (10 marks)
- b) Describe the areas which comprise network management (10 marks)