



[Knowledge for Development]

KIBABII UNIVERSITY

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**UNIVERSITY EXAMINATIONS
2019/2020 ACADEMIC YEAR**

**YEAR TWO SPECIAL/SUPPLEMENTARY
EXAMINATIONS**

**FOR THE DEGREE IN
INFORMATION TECHNOLOGY**

COURSE CODE : BIT 214/ BIT221
COURSE TITLE : COMPUTER NETWORKS

DATE: 05/02/2021 TIME: 8:00 A.M – 10:00 A.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [COMPULSORY] [30 MARKS]

- a. Define an IP Address [2 marks]
- b. What are the features provided by layering? [4 marks]
- c. State the three characteristics that a good network should meet. [6 marks]
- d. What is the role of the following networking components? [8 marks]
- (i) Switch
 - (ii) Router
 - (iii) Network card
 - (iv) Network Media
- e. Distinguish between analog signals and digital signals. [4 marks]
- f. What do you understand by the term protocol? Give any two examples and there functions [6 marks]

QUESTION TWO [20 MARKS]

- a. Distinguish between I.P. and MAC addresses. [4 marks]
- b. Differentiate between the OSI model and Internet model [6 marks]
- c. Explain the following IP address classes [10 marks]
- i) Class A
 - ii) Class B
 - iii) Class C
 - iv) Class D
 - v) Class E

QUESTION THREE [20 MARKS]

- a. Explain the following four levels of addresses used in an internet employing the TCP/IP protocols. Use a diagram to explain your answer [12 marks]
- i) Physical.
 - ii) Logical
 - iii) Port
 - iv) Specific.
- b. Differentiate between parallel and serial transmission modes. [4 marks]
- c. Security is a problem related to Hub operation. Explain. [4 marks]

QUESTION FOUR [20 MARKS]

- a. The data transmission software or protocols perform several functions for the efficient and error free transmission of data. State and explain these functions. **[8 marks]**
- b. State Three merits and demerits of token passing in computer networks. **[6 marks]**
- c. Using a diagrams, Explain the three data transmission modes. **[6 marks]**

QUESTION FIVE [20 MARKS]

- a. Network administration tasks fall into two very different categories: configuration and troubleshooting. Configuration tasks prepare for the expected; they require detailed knowledge of command syntax, but are usually simple and predictable. In contrast, network troubleshooting deals with the unexpected. Troubleshooting frequently requires knowledge that is conceptual rather than detailed. State and explain four network trouble shooting tools **[8 marks]**
- b. Switching can be divided into two major categories. Describe. **[4 marks]**
- c. Two types of mechanisms can be deployed to control data flow. Describe them. **[6 marks]**
- d. What is the function of ARP? **[2 mark]**