



KENYATTA UNIVERSITY
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
(INFORMATION TECHNOLOGY)

SIT 109: INTRODUCTION TO INTERNET TECHNOLOGIES

2ND SEMESTER 2023/2024

TIME: 2 HOURS

INSTRUCTIONS: Answer Question ONE and any other TWO questions

QUESTION ONE (30 Marks)

- a) i. Analyse the differences between an intranet and the public Internet in terms of access, information, and users. **(6 MARKS)**
ii. Appraise the security implications of these differences. **(2 MARKS)**
- b). Design a simple network topology and explain how packet switching would function for two computers on the network sharing information. **(6 MARKS)**
- c). Give the syntax for linking to an external CSS file. **(2 MARKS)**
- d). TCP/IP is suite of communication protocols. State what the abbreviation stands for and briefly describe the specific purpose of TCP and that of IP. **(4 MARKS)**
- e). State the difference between IPv4 and IPv6 IP addressing schemes. **(4 MARKS)**
- f). Describe the role of internet service providers. **(3 MARKS)**
- g). List three common broadband wired internet connection types. **(3 MARKS)**

QUESTION TWO (20 Marks)

- a) Evaluate whether Wi-Fi or cellular networking would be better suited for providing primary Internet connectivity across public areas of a large university campus like KU's main campus. **(10 MARKS)**
- b) Discuss the impact of widespread wireless Internet access on society, individuals, and organisations. Examine both benefits and potential drawbacks. **(10 MARKS)**

QUESTION THREE (20 Marks)

- a) Explain how Wi-Fi and mobile networks enable wireless Internet access, describing how the technologies work and key developments in their evolution. **(10 MARKS)**
- b) Critique the key benefits and limitations of using fiber optic cabling compared to traditional twisted pair copper cabling for implementing a local area network. **(10 MARKS)**

QUESTION FOUR (20 Marks)

- a) Critique the use of inline, embedded, and external CSS stylesheets based on factors like reusability, ease of editing, and overriding styles. **(8 MARKS)**
- b) Formulate an animation for a web page using CSS Transitions to transform style properties on hover. Your code should transition the transform property to scale up images on hover over 0.5 seconds duration. **(12MARKS)**

QUESTION FIVE (20 Marks)

Assemble an interactive web page with HTML, CSS, and JavaScript (Vanilla JS without frameworks) to display expanding and collapsing content sections when clicked.

- a) The HTML should contain content sections with clickable headings. **(4 MARKS)**
- b) The CSS should style the content sections and headings **(8 MARKS)**
- c) The JavaScript should add click event listeners to toggle the visibility of the corresponding content sections. **(8 MARKS)**