

The  
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**DIPLOMA UNIVERSITY EXAMINATIONS**  
**SCHOOL OF MANAGEMENT AND LEADERSHIP**  
**DIPLOMA IN INFORMATION COMMUNICATION**  
**TECHNOLOGY**

**DIT 203: CONCEPTS OF INTERNET BASED PROGRAMMING**

**DATE: 7<sup>TH</sup> APRIL 2026**

**DURATION: 2 HOURS**

**MAXIMUM  
MARKS: 70**

**INSTRUCTIONS:**

1. Write your registration number on the answer booklet.
2. **DO NOT** write on this question paper.
3. This paper contains **SIX (6)** questions.
4. Question **ONE** is compulsory.
5. Answer any other **FOUR** questions.
6. Question **ONE** carries **30 MARKS** and the rest carry **10 MARKS** each.
7. **Write all your answers in the Examination answer booklet provided.**

## QUESTION ONE

**Read the Case Study below carefully and answer the questions that follow:**

### **Case Study:**

TechMarket is a growing online electronics shop that wants to expand its sales beyond its physical store. The business owner has hired junior web developers to create a modern website that allows customers to view products, place orders, and receive delivery updates. The team begins by analysing user needs and creating a basic site plan. They decide to use HTML, CSS, and JavaScript for the front-end, and a server-side language to process online orders.

TechMarket registers a domain name that matches the brand and selects a hosting service that provides cloud-based servers. The developers configure DNS records so that customers can reach the site using the domain name. The site must load well on mobile phones because many customers use smartphones for online shopping. To improve visibility, the business owner requests that the website should appear higher in search results, so the developers apply Search Engine Optimization techniques. They also include HTTPS and security checks to protect user data and payment details. Customer information must be handled responsibly, and the owner warns the developers about legal and ethical issues related to personal data stored on the website.

### **Required:**

a) With reference to TechMarket's intention to expand sales beyond the physical store, identify two main goals of creating the website and explain how the Internet helps the business achieve these goals.

**(6 marks)**

b) Referring to the domain name registration, hosting service, and DNS configuration in the case, explain how these elements work together

to make the TechMarket website accessible to customers online.

**(6 marks)**

- c) Considering that many customers use smartphones for shopping, analyse how responsive web design improves user experience for TechMarket clients.

**(6 marks)**

- d) From the measures mentioned in the case such as HTTPS and security checks, discuss two security risks the website may face and suggest ways to protect customer data.

**(6 marks)**

- e) Based on the owner's concern about handling customer data, evaluate two legal or ethical considerations that developers should observe when collecting information online.

**(6 marks)**

## QUESTION TWO

- a) A learner is trying to understand how people access websites and online services daily. Using this situation, define the Internet and the World Wide Web.

**(2 marks)**

- b) A business owner wants a website that allows customers to place orders and receive updates instead of just viewing information. Distinguish between static and dynamic websites to guide this decision.

**(4 marks)**

- c) Users today spend much time on streaming platforms and social media applications. State two current trends influencing such modern web services.

**(4 marks)**

## QUESTION THREE

- a) An office network automatically assigns IP addresses to devices and allows staff to send emails to clients. With reference to this situation,

explain the role of the following protocols:

**(4 marks)**

- i. DHCP
- ii. SMTP

b) A user types a website name into a browser and quickly reaches the intended site without knowing the server's IP address. Describe how DNS makes this possible.

**(3 marks)**

c) An online shop chooses to use HTTPS instead of HTTP for its website. Give three advantages of this choice in an e-commerce environment.

**(3 marks)**

#### **QUESTION FOUR**

a) A team of developers is tasked with building a website from scratch for a new business. Outline the steps they would follow from the initial idea to final deployment.

**(5 marks)**

b) After launching the site, users complain about slow loading pages and difficulty navigating the content. Discuss three characteristics of a good website related to usability, performance, and accessibility.

**(5 marks)**

#### **QUESTION FIVE**

a) A student learning web development notices that some scripts run in the browser while others run on the server. Explain the difference between client-side scripting and server-side scripting.

**(4 marks)**

b) During a coding lesson, learners are introduced to programming languages used for different parts of a website. State two languages

used for client-side scripting and two for server-side scripting.

**(4 marks)**

- c) An online booking system processes customer orders before displaying confirmation messages. Mention one advantage of using server-side scripting in such a system.

**(2 marks)**

## **QUESTION SIX**

- a) a) A web application is attacked by hackers attempting to steal user information. Identify two common security threats that affect web applications. **(2 marks)**

- b) Developers are advised to include security measures during development and deployment of websites. Discuss two methods they can use to improve website security.

**(4 marks)**

- c) A blog allows users to post comments and upload content. Explain two ethical practices developers should follow when handling such user generated content.

**(4 marks)**