



THE CO-OPERATIVE UNIVERSITY OF KENYA

END OF SEMESTER EXAMINATION APRIL -2023

**EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER
SCIENCE, SOFTWARE ENGINEERING
(YR II SEM II)**

UNIT CODE: BCIT 2218

UNIT TITLE: INTERNET APPLICATION PROGRAMMING

DATE: WEDNESDAY, 19TH APRIL, 2023

TIME: 9:00 AM – 11:00 AM

INSTRUCTIONS:

- Answer question ONE (compulsory) and any other TWO questions

QUESTION ONE [30 MARKS]

- (a) Internet application developers define the web in a conceptual level as indicated below, explain each of the web concepts as regards web application programming **[10 marks]**
- A hypertext information system
 - Cross-platform
 - Distributed
 - Dynamic
 - Interactive
- (b) Explain and show the difference between the following concepts, Give Examples of tools used in each **[9 marks]**
- Server-side scripting
 - Client-side scripting
 - Mixed-mode scripting
- (c) Given the following piece of HTML Script, explain each of the tags in the program. **[8 marks]**

```
<html>
<head>
  <!-- Web Content here -->
  <title>Title Page</title>
</head>
<body>
  <!-- This is a comment. -->
  <h1>Hello world!</h1>
</body>
</html>
```

- (d) Web applications exhibit a lot of internet based security threats that hinder execution of the application, show how internet application programming tools can be used to create loopholes that compromise the systems or applications **[3 marks]**

QUESTION TWO [20 MARKS]

- (a) Sketch the Client-server architecture as depicted in the execution of internet applications [6 marks]
- (b) Explain the Anatomy of an internet-based application as per the following concepts [8marks]
- Website
 - Web server
 - Web page
 - Home page
- (c) JavaScript (JS) is a lightweight, interpreted compiled programming language, meaning it can be used for both Client-side as well as Server-side developments language for web pages. Explain what is inferred by Lightweight, Interpreted and Compiled programming language [6 marks]

QUESTION THREE [20 MARKS]

- (a) Write the HTML code that is required to render the page displayed. [10marks]

Product Delivery Details

Customer Name:

Customer Address:

Town / City:

Email Address:

Are you living within Nairobi county? YES NO

- (b) Explain the following protocols commonly used in internet-based application development. [6 marks]
- SFTP
 - HTTPS
 - DNS
- (c) JavaScript can be written in two ways, one of the ways is to embed it directly to an HTML file by writing the code inside the html program. Write the piece of code embedding JavaScript into a webpage that renders the words “This is My JavaScript example on a browser [4 marks]

QUESTION FOUR [20 MARKS]

- (a) Common Gateway Interface (CGI) allows the webserver to execute programs and incorporate output in the text, graphics and audio send to a web server. Mention five critical roles of the CGI [10 marks]
- (b) Database Management System are commonly used when handling big data in internet applications, show the features of MongoDB that makes it the best choice for internet based applications. [5 marks]
- (c) Hypertext Preprocessor (PHP) is a server-side scripting language that is used for web development and can be easily embedded with HTML files, given the following peach of PHP code, Explain each line of code [5 marks]

```
<?php
    echo "<html>";
    echo "<h1> My First Welcome Page </h1>";
    echo "</html>";
?>
```

QUESTION FIVE [20 MARKS]

- (a) Identify and explain five programming languages that can be used to write CGI programs
[10 marks]
- (b) PHP can be written and executed in 3 major ways for rendering in the browser, Explain the three ways by indicating and giving the code for the 3 ways.
[6 marks]
- (c) Mention and explain two emerging trends in the area of internet application programming
[4 marks]