UNIVERSITY OF ESWATINI

FACULTY OF SCIENCE AND ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE

Main Examination

Course Name: Web Technology and Development

Course Code: CSC 433

Time allowed: **Three (3)** Hours

INSTRUCTIONS TO THE CANDIDATES

1) Answer any **four (4)** questions out of the **five (5)** questions.
2) Each question carries **twenty-five (25)** marks.
3) This examination paper should **NOT** be opened until permission has been granted by the invigilator.
4) Number of marks per each question is written at the end of each question

Question 1

a. Explain the following terms:

i) Bad-neighbour effect [3 marks]

ii) Collocation [3 marks]

iii) Web cache [3 marks]

iv) Domain Name System [3 marks]

v) Temporal locality [3 marks]

b. Write a PHP MySQLi code to connection to the database called **CSC433**, with servername: `localhost`, username: `csc433user` and password: `csc4332020` [5 marks]

c. Write a PHP MySQLi code to close connection established in Question 1 (b) above [5 marks]

Question 2

a. With aid of diagrams, critically compare and contrast TCT/IP model from OSI model [15 marks]

b. Write a PHP MySQLi code to create a table called **WebDev** with the following fields:

- `id`, (AUTO_INCREMENT PRIMARY KEY)
- `studentID`
- `firstname`, VARCHAR(30) NOT NULL
- `lastname`, VARCHAR(30) NOT NULL
- `email`, VARCHAR(50)

The table **WebDev** should be contained in a database called **CSC433** [10 marks]

Question 3

a. The World Wide Web is strongly becoming important source of information globally and its usage is increasing exponentially because of ever-growing demand for data sharing, transformation and transmission, especially in the era of Internet of Things (IoT), big data and fourth industrial revolution. Explain the web

caching challenges caused by the rapid growth of the World Wide Web usage [8 marks]

b. With the aid of relevant examples, explain how web cache replacement algorithms are classified. [10 marks]

c. Write a PHP MySQLi code to insert data into a table called **`WebDev`** with the following fields; `id`, `studentID`, `firstname`, `lastname` and `email` . Note that the table fields have same properties as highlighted in Question 2 (b) [7 marks]

Question 4

The World Wide Web has been evolving from Web 1.0 to the sensory-emotion Web. With the aid of relevant examples, explain the Web Evolution [25 marks]

Question 5

a) Write HTML code to output the HTML Alumni Registration Form shown in Figure 1 below. [10 marks]

Alumni Registration Form

Enter Name :	
Enter Phone Num :	
Select Gender :	○ Male ○ Female
Enter Address :	
Select City :	Manzini
Uneswa Education :	☐ BSc
	☐ BBA
	☐ BA
	☐ BSc Comp.Ed
	☐ BCOM
	☐ BEng
	☐ BScIT
	☐ MBA
	☐ PhD
Submit	

Figure 1. Alumni Registration Form

b) Write a PHP MySQLi code that displays the data entered in the Alumni Registration Form in Figure 1. The registration details are shown in Figure 2. [10 Marks]

REGISTRATION DETAILS	
Name :	John Mike
Phone :	78246653
Gender :	MALE
Address :	jmike@gmail.com
City	Manzini
Educational Qualification :	BScIT

Figure 2. Alumni PHP code Output