UNIVERSITY OF ESWATINI

FACULTY OF SCIENCE AND TECHNOLOGY

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 **ALL** questions in **Section A**.
2) Choose any **two (2)** questions in **Section B**
3) This examination consists of **four (4)** printed pages.
4) This examination paper should **NOT** be opened until permission has been granted by the invigilator.
5) The number of marks per each question is written at the end of each question.

SECTION A- 60 Marks

Question 1

a) Describe the function of the following protocols:
   - i)   HTTPS
   - ii)   FTP
   - iii) UDP
   - iv)   TCP.   [8 marks]

b) Describe the difference between rich internet applications (RIA) and Web-Oriented Architecture (WOA).   [6 marks]

c) Explain how client-side scripting is different from server-side scripting.   [6 marks]

Question 2

a) With aid of relevant examples, describe two (2) types of website.   [4 marks]

b) With aid of the diagrams, critically compare and contrast TCT/IP model and OSI model.   [6marks]

Question 3

a) Critically discuss the web evolution process from Web 1.0 to Web 4.0.   [8 marks]

b) Describe three (3) types of HTML version information in Web technology.   [6 marks]

c) In server-side programming, HTML form data is sent to the database after creating database connection.

   - i)   Write a PHP MySQL code for creating database connection. Comment your code.*   [4 marks]

   - ii)   Write a PHP MySQL code for the closing database connection. Comment your code.   [4marks]

d) The chief executive officer (CEO)of a company called **ABCD holdings** is considering hosting their website to market their products and services online. As a webmaster, you have been approached by the CEO to give them a comprehensive advice on the best Web-hosting platform and web-hosting components to consider when choosing the Internet Service Provider. Provide a comprehensive advice to the CEO and explain all hosting platforms and components to consider when making a decision in order to realize their dream.   [8 marks]

Question 4

A company called **ABCD holdings** created a *Contact Us* HTML page that captures users' information for future use. The Contact Us HTML page is shown below in Figure 1.

Figure 1, Contact_us.php

i) Write HTML code to output an HTML Form shown above in Figure 1.   [10 marks]
ii) Write a PHP script to validate name textfield to capture letter only, email validation, and then select gender when Submit button is clicked.   [10 marks]

Question 5

i) Write a PHP MySQL script/ code to insert HTML form data in Figure **1** into a database called **ABCD** and with a table name called *contact*. The contact table contains the following columns; id, name, email, website, comment. The id is the primary key and AUTO_INCREAMENT.   [10 marks]
ii) Write a PHP MySQL script/code to read contact information and comments from a table name called *contact*.   [10 marks]

Question 6

T and G holdings is a general dealer shop that sells clothes, music, kids toys and food. The shop created a database called **TG_DB** and a table name called **Products** to store products information as part of the stock. The table **Products** has the following fields; id, name, type and price. The product *id* is a unique identifier, and it provides the name of the product, the type of the product as well as the price of the product. The Products table is shown below in Table1.

Table 1, MySQL Table Products.

id	name	type	price(E)
123451	Park's Great Hits	Music	19.99
123452	Silly Puddy	Toy	3.99
123453	Playstation	Toy	89.95
123454	Men's T-Shirt	Clothing	32.50
123455	Blouse	Clothing	34.97
123456	Electronica 2002	Music	3.99
123457	Country Tunes	Music	21.55
123458	Watermelon	Food	8.73

i) Using information in Table 1, describe and determine the output of the PHP MySQL aggregate function below. [10 marks]

```php
<?php
$query = "SELECT type, MIN(price) FROM products GROUP BY type";

$result = mysql_query($query) or die(mysql_error());

while ($row = mysql_fetch_array($result)){
    echo $row['type']. " - $". $row['MIN(price)'];
    echo "<br />";
}
?>
```

ii) Write a PHP MySQL code to calculate the average price of clothing, food, music and toy. [10 marks]