

THE UNIVERSITY OF ZAMBIA
END OF YEAR EXAMINATIONS: NOVEMBER, 2021
ICT 3010: DATABASE AND WEB TECHNOLOGIES

Instructions: Answer three (3) questions
Time: Three (3) hours

SECTION A: COMPULSORY [30 MARKS]

1. (a) The school has asked you to create its database to keep information on teachers, pupils, and classes. [20 marks]
 - (i) How many entities the school database will have? [2 marks]
 - (ii) Using the entity-relationship diagram, explain how the entities in the school database will relate to each other. [16 marks]
 - (iii) How many tables is the school database likely to have? [2 marks]
- (b) Write the HTML5 or CSS3 codes which can do the following: [10 marks]
 - (i) Create a background with 6 colors fading into each other to the bottom. [2.5 marks]
 - (ii) Insert an audio media into a web page. [2.5 marks]
 - (iii) Insert the logo using the picture element. [2.5 marks]
 - (iv) Connect the external CSS file to the HTML file. [2.5 marks]

SECTION B: CHOOSE TWO QUESTIONS FROM THIS SECTION [30 MARKS]

2. (a) Carefully study the MySQL table printout below and write the SQL statements used for creating, inserting, and displaying data from it. [10 marks]

Id	Surname	Given_name	Year_of_study	Email
11249067	Mwiinga	Thabiso	4	mwiinga@unza.zm
12000401	Mundia	Nasilele	3	NULL
12006812	Bwalya	Bwalya	3	tuesday@unza.zm
12111000	Njobuu	Ketty		
12890012	Mwalimu	Edward	3	mwalimu@unza.zm
13459087	Mulauzi	Felesia	2	mulauzi@gmail.com

- (b) Explain the concept of database normalization up to form 3. [5 marks]
3. (a) With relevant examples, explain **five** (5) post-table creation SQL statements. [10 marks]
 - (b) Explain the points of departure of HTML 5 from earlier HTML versions. [5 marks]

4. (a) Write short notes on **five** (5) of the following concepts/terms:
[10 marks]

- (i) Tuple
- (ii) Chen notation
- (iii) Data redundancy
- (iv) Padding
- (v) Debugging
- (vi) HTML element

(b) Write the SQL statement that is used to add a new column called **surname**, and change the data type on a column **student_id** from integer to fixed character on a table called **students**. [5 marks]

5. (a) Explain the uses of PHP in web development. [7.5 marks]

(b) Explain PHP syntax. [7.5 marks]

END OF EXAMINATION