

Section 2: Case study. The test duration is 1 hour 15 min.**(20 marks)****1. Problem Statement**

A company, Echelon Private Limited, hires a number of 4000 staffs at any given point in time.

It is recorded by the Human Resource department that, approximately 15% of its staffs leave the company.

The high percentage of staffs leaving the company is an issue that the company's management is trying to resolve.

The main reasons are:

- Projects are delayed for the projects on which the former staffs were involved. This results in reputation loss among the company's clients and partners.
- Loss of required manpower to handle the different tasks and projects.
- Additional resources (time and effort) are required to on-board new staffs and allow them to acclimatize to the company.

The company has engaged a Data Analytics firm. This is done with the primary objective of understanding what factors the company should focus on to retain their staffs.

They would also like to know what different changes the company should make in order to get their staffs to continue working and increase their loyalty.

They are also interested in knowing which of these matters should be addressed first, as well as low-hanging fruits that can be implemented.

You are an analyst working for the firm. Your initial task is to plan on how the project should be conducted.

2. Goal of the Case Study & Instructions

The results of the data analytics shall be used by the management to understand what changes that they should make to the company's workplace in order to get their employees to stay.

The excel file **data_dictionary.xlsx** contains the definition of the variables used in the different Excel files.

You are to provide answers for the following questions. Each question should be answered as **detailed and specific** as possible. **No codings** are required. All answers are essay based (per question). You may synthesize probable visualizations (i.e., draw) to illustrate/ support your answers.

3. Case Study Questions

- a. What exactly is the company trying to find out?

Provide two (2) data analytics questions that you would ask (based on the data provided) to help the company achieve its objective? Justify why you need to ask these questions.

(4 marks)

- b. Provide an example of Key Performance Indicators (KPI) that can be set and used based on the questions that you have asked in (a).

(2 marks)

- c. Look at the data provided. Do you need to do any data pre-processing to use the data?

Provide two (2) different examples and justify why you need to pre-process some of the data before you can use it for data analytics. Explain the approach that you shall use to pre-process the data.

(4 marks)

- d. List at least 3 different types of analysis that you will perform based on the data to solve the problem. Justify your choice of analysis.

Example:

- Descriptive analysis, explain the choice of technique for descriptive analysis.
- Predictive analysis, explain the choice of technique for predictive analysis.

(6 marks)

- e. In relation to (d), provide 2 types of visualizations that you will use to present your analytical findings. Explain and justify the choice of visualizations.

(4 marks)

END