UNIVERSITI
TEKNOLOGI
PETRONAS

FINAL EXAMINATION
MAY 2024 SEMESTER

COURSE : TAM5133 – DIGITAL ANALYTICS

DATE : 4 AUGUST 2024 (SUNDAY)

TIME : 2:30 PM – 6:30 PM (4 HOURS)

INSTRUCTIONS TO CANDIDATES

1. Answer **ALL** questions in the Answer Booklet.
2. Begin **EACH** answer on a new page in the Answer Booklet.
3. Indicate clearly answers that are cancelled, if any.
4. Where applicable, show clearly steps taken in arriving at the solutions and indicate **ALL** assumptions, if any.
5. **DO NOT** open this Question Booklet until instructed.

Note :

i. There are **FIVE (5)** printed pages in this **double-sided** Question Booklet including the cover page .

1. Key performance Indicators (KPI) provide an objective basis for measuring the performance of data management, analytics, and governance initiatives. This leads to greater accountability among teams and individuals responsible for data within the organization. ABC company is interested to implement Enterprise Resource Planning (ERP) software. This ERP should have the following modules such as HR & administration, Account & finance, Marketing & sales, and Production. ABC got a very good information technology support department managing all operations further this department is ready to support ERP implementation. Information Technology digital KPI are quantifiable goals that help the decision maker to track and measure success. To measure the information technology performance, you need to collect and analyse the data from various sources such as survey, feedback, logs, reports, dashboards, and benchmarks. You need to ensure that the data is accurate, reliable, and consistent.

   a. Propose a business specific IT based Key Performance Indicators (KPI) for ABC company and justify the new IT digital KPIs to show that these are effective for ERP implementation benefits.

   [15 marks]

   b. Analyse different analytics tools available online and propose the most suitable tool for this above case. Explore the factors which are motivated your selection.

   [10 marks]

2. The XYZ company produces household electrical and electronic items. The demand is given in the following **TABLE Q2.** To conduct your demand analysis, use **FIVE (5)** period moving average and exponential smoothing method. Assume the first week forecasted demand is in between 250 and 350. Use the alpha value as 0.3. Justify your answer based on error square minimizations. Clearly provide all your assumptions.

TABLE Q2: Demand in units

Week	Demand
1	310
2	365
3	395
4	415
5	390
6	440
7	450
8	380
9	430
10	480
11	400
12	450
13	465
14	390
15	Predict

[25 marks]

3. In Malaysian enterprise, employee turnover is natural due to various reasons. In the year 2023, the minimum of 18 percent in government organisation and the maximum of 80 percent in Leisure & Hospitality (L&H) organisation employee turnover. The L&H industry average rate is only 20 percent. A high turnover rate can be a red flag signalling a host of potential issues within the organization. Assuming that you are in a human resource digital analytic team to resolve this issue.

Explain the factors to be considered to retain and engage employees effectively in L&H industry. Propose a suitable predictive analytic tool to prepare your strategic competitive advantages to minimize employee turnover. Clearly provide all your assumptions.

[25 marks]

4. The dynamic and largely unpredictable digital media environment raises important questions about how digital media firms have adapted to a competitive digital media environment with lots of uncertainty. The experience capability theory provides us with an appropriate approach through examining via digital media firms adapt to rapidly changing environments. It argues that in dynamic markets, firms must adapt and adopt refresh their resources based on their new developed capabilities and competencies that will deliver sustainable competitive advantage over time. It makes sense to use suitable database. when you have a huge amount of data, a huge number of queries but very little variety of queries. It basically works by partitioning and replicating.

Propose with justification the suitable database that can be used to store digital data for the above case. Construct the database by firstly designing the logical model and secondly implementing the database using the required implementation.

[25 marks]

- END OF PAPER -