

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA- SEMESTER -II - EXAMINATION- SUMMER-2023

Subject Code: 4529201
Subject Name: Business Analytics
Time: 10:30 AM TO 1:30 PM
Instructions:

Date: 19/07/2023
Total Marks: 70

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of simple calculators and non-programmable scientific calculators are permitted.

- Q.1** Definitions / terms / explanations / short questions based on concepts of theory/practical **14**
- (a) Name some sources of Semi-Structured Data.
 - (b) What are Key Performance Indicators?
 - (c) What is Data Lake and how does it differ from Data Warehouse.
 - (d) What is a Dashboard?
 - (e) Define Business Intelligence?
 - (f) Which data model is followed by OLTP systems like ERP?
 - (g) Which chart will you use for displaying percentage-wise sales data for different product lines?
- Q.2** (a) Explain the difference between OLTP and OLAP systems. **07**
- (b) What is Business Analytics and its Components? Explain different types of Business Analytics. **07**
- OR**
- (b) List OLAP Operations which can be performed on an OLAP cube. Explain Roll-up and Drill Down Operations with diagram. **07**
- Q.3** (a) Explain Characteristics of a Data Warehouse according to Inmon's definition. Also show a schematic diagram of Data Warehouse. **07**
- (b) What is Data Visualization? Explain different types of Charts used for Data Visualization. **07**
- OR**
- Q.3** (a) Explain the process of Data Mining. Give some real life examples of use of Data Mining. **07**
- (b) Explain Structured data, its characteristics and advantages. **07**
- Q.4** (a) What is Big Data? Explain 5 V's of Big Data. **07**
- (b) Which are the important metrics to be considered for Web analytics. **07**
- OR**
- Q.4** (a) Explain Business Performance Management Cycle. **07**
- (b) Why Social Media Analytics is very useful now-a-days? Explain the uses of Social Media Analytics. **07**
- Q.5** **CASE STUDY:**
- Amazon, one of the biggest e-commerce giant, reported net sales of over \$149.2 billion in the final quarter of 2022. There is no doubt that the e-commerce retail giant continues to lead the way in e-commerce growth.
- Their focus on customer experience put Amazon in the role of a thought leader in e-commerce experience. Customer satisfaction is measuring at 79% in 2022. There are over 76 million customer accounts, and 1.3 million active seller customers in its marketplaces.

Amazon communicates the fulfillment promise in several ways including the presentation of the latest inventory availability information, delivery date estimates, and options for expedited delivery, as well as delivery shipment notifications and update facilities, editorial and customer

reviews, manufacturer product information, web pages tailored to individual preferences, such as recommendations and notifications, secure payment systems, image uploads.

The community of online customers also creates feature-rich content, including product reviews, online recommendation lists, wish lists, and buying guides.

Free shipping offers are used to encourage increase in basket size since customers have to spend over a certain amount to receive free shipping. The level at which free shipping is set is critical to profitability and Amazon has changed it as competition has changed and for promotional reasons.

Data Science has a significant impact on the E-commerce retail industry today in a variety of ways. Data Science provides retailers with countless opportunities.

Top data science use cases in the retail industry are

Recommendation Systems: The customer's prior history serves as the foundation for the recommendation system. While customers are browsing the internet, it enables shops to comprehend their interests and provide pertinent recommendations.

Personalized Marketing: The procedure entails gathering a sizable amount of data from the transactions of millions of consumers and then analyzing it to forecast the customers' future decisions or choices. This study is based on consumer preferences, complaints, and reviews of various items.

Price Optimization: The pricing optimization model's many algorithms carry out a real-time study of the consumer's reaction to prices, discounts, sales during holidays, marketing campaigns, etc.

Inventory Control: The goal of inventory management is to make sure that goods are always available for purchase. Retailers may utilise data science to forecast demand and keep a safety buffer to handle fluctuating demand. The ability to predict demand will help businesses have more inventory on hand so they can serve clients during emergencies.

Augmented Reality: The retail sector is gradually embracing the concept of augmented reality as a way to let buyers sample a product without really purchasing it. Customers may scan the goods they want to purchase and digitally place them in their homes to see how they originally appeared. Through the use of picture recognition technology, this will enable people to feel the merchandise.

Analysis of customer sentiment: The algorithm uses client information gathered from online service reviews and social media channels. that they can comprehend the customer's perspective on the merchandise.

Detecting Frauds of Credit Cards: Getting the trust of the consumer is one of the key elements impacting the performance of the sector. However, certain fraudulent acts might permanently damage the consumers' valued confidence, which would be a big loss for the sector.

- (a) What are the important Business KPI's that an E-commerce retail has to keep in mind? 07
- (b) What are the features aided by analytics that have contributed to the success of Amazon? 07

OR

- Q.5 (a) If you are told to design a Corporate Dashboard for Amazon, then make a list of important Measures (Metrics) that you would like to be included on the Dashboard. (Hint: Category wise sales / profit, Country wise sales / profit, Sales Returns, and so on.) 07
- (b) Is Web Analytics and Sentiment Analytics important for e-commerce retail? Discuss. 07
