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II Semester M.B.A. (Day & Evening) Degree Examination

November/December - 2025

MANAGEMENT

Business Analytics

(CBCS Scheme 2019 Onwards)

Paper : 2.4

Time : 3 Hours Maximum Marks : 70

SECTION - A

Answer any Five questions from the following. Each question carries 5 marks. **(5×5=25)**

1. Define Business Analytics. What are its major challenges?
2. Explain the concept of data warehousing in business analytics.
3. Differentiate between OLAP and OLTP with examples.
4. What is Knowledge Discovery from Data (KDD) in data mining?
5. Briefly describe the role of a business analyst.
6. What are the benefits and barriers of big data analytics?
7. Differentiate between predictive analytics and prescriptive analytics.

SECTION - B

Answer any Three questions from the following. Each question carries 10 marks. **(3×10=30)**

8. Illustrate the CRISP-DM process and discuss its significance in data mining application.
9. Explain Simple Linear Regression and its application in predictive analytics.
10. Discuss marketing analytics and supply chain analytics with industrial examples.
11. Highlight contemporary developments in analytics such as artificial intelligence and Internet of Things (IoT).

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SECTION - C

(Compulsory)

12. Case Study: **(1×15=15)**

A leading telecom company faced a growing challenge as the rate of customer churn started increasing, threatening revenues and brand reputation. The analytics team began by integrating data from multiple sources-call logs, customer profiles, billing systems, complaints, and social media engagement. A large data warehouse was created for secure and efficient data storage and retrieval. Using predictive analytics techniques such as logistic regression and decision trees, the team analyzed key variables linked to churn, uncovering patterns like frequent network downtimes, unresolved complaints, and lack of usage of digital services.

Prescriptive analytics was then utilized to design targeted retention campaigns for at-risk customers. Personalized recommendations, discount offers, and proactive support interventions were delivered through multiple channels, leveraging insights from data mining and customer segmentation. The impact of these strategies was assessed in real-time using dashboards and A/B testing. Customer feedback was systematically collected to refine ongoing campaigns and adjust analytical models for greater accuracy.

Within six months, the telecom operator saw a marked improvement in customer retention metrics: the churn rate dropped by 20%, cost of acquiring new customers fell, and profitability improved. The success was attributed to data-driven decision making and robust integration of analytics tools across business operations. The executive team expanded these strategies to cross-sell new products and build loyalty among existing subscribers, setting new industry benchmarks for customer engagement through analytics.

Answer All questions:

a) Explain how predictive analytics and logistic regression were used to address churn.

b) Discuss the role of data integration and mining in improving retention strategies.

c) What measurable outcomes resulted from the company's analytics initiatives?