

Term End Examination February – 2026

Course	: BBAR	Date	: 23-Feb-26
Subject Code	: BBAR-304	Time	: 11:30am to 01:45pm
Subject Name	: Business Analytics	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three)

(30)

1. Explain the life cycle of the business analytics process and its significance in decision-making.
2. Explain the importance of hypothesis testing in business analytics. Describe the hypothesis testing process and key statistical concepts such as p-value and Type I & II errors.
3. What are probability distributions? Discuss the differences between binomial, Poisson, and normal distributions with real-world applications.
4. Explain covariance and correlation analysis in business analytics. How do these concepts help in decision-making?
5. What are the components of time series data? Explain different time-series modeling techniques with examples.

Section B

Answer the following (Attempt any four)

(20)

1. Describe the classification of business analytics. Explain each type with suitable examples and tools used.
2. Define sampling. Explain different types of sampling methods and their applications in business analytics.
3. Discuss the role of confidence intervals in business decision-making. Explain how confidence levels affect business predictions.
4. What is simple linear regression? Describe the methodology of determining regression equations and its application in business analytics.
5. Discuss the moving average and exponential smoothing techniques. How are they used in forecasting?
6. What is Autoregression (AR) and Moving Average (MA) forecasting models? How do they help in business analytics?

Section C

Part – A (Multiple Choice Questions)

(10)

- Which of the following is NOT a type of Business Analytics?
A Descriptive Analytics
B Diagnostic Analytics
C Predictive Analytics
D Experimental Analytics
- Which component of Business Analytics deals with statistical and machine learning concepts?
A Business Domain Knowledge
B Technology
C Data Science
D Data Visualization

- 3 Why has data become so important in today's business world?
 - A Advanced software techniques are available
 - B Clean data is readily accessible
 - C Improved hardware storage and processing power
 - D All of the above
- 4 Which of the following is a challenge in implementing business analytics?
 - A Limited availability of clean data
 - B Lack of computational tools
 - C Limited internet access
 - D Overdependence on business intuition
- 5 Which probability distribution is used for modeling the number of events in a fixed interval of time?
 - A Binomial Distribution
 - B Poisson Distribution
 - C Normal Distribution
 - D Uniform Distribution
- 6 What is the purpose of hypothesis testing in business analytics?
 - A To randomly analyze data
 - B To determine relationships between variables
 - C To make predictions based on historical data
 - D To verify assumptions and make data-driven decisions
- 7 Which of the following is a probabilistic sampling method?
 - A Convenience Sampling
 - B Snowball Sampling
 - C Stratified Sampling
 - D Judgmental Sampling
- 8 A low p-value (< 0.05) in hypothesis testing suggests that:
 - A The null hypothesis should be rejected
 - B The null hypothesis should be accepted
 - C More data is needed for decision-making
 - D The hypothesis test is invalid
- 9 Which measure indicates the strength and direction of a linear relationship between two variables?
 - A Mean
 - B Standard Deviation
 - C Correlation Coefficient
 - D Mode
- 10 What does a regression analysis help in determining?
 - A The relationship between dependent and independent variables
 - B The frequency of data distribution
 - C The shape of a histogram
 - D The mean and median of a dataset

Part – B (Do as Directed)

(10)

- 1 What are the three crucial components of Business Analytics?
- 2 Which type of business analytics focuses on predicting future trends?
- 3 What is the main challenge organizations face in implementing business analytics?
- 4 What does a p-value indicate in hypothesis testing?
- 5 What is the Central Limit Theorem (CLT)?
- 6 What is the difference between Type I and Type II errors?
- 7 Which probability distribution is used to model the number of events occurring in a fixed interval?
- 8 What does a correlation coefficient of 0 indicate?
- 9 What does R^2 (coefficient of determination) measure in regression analysis?
- 10 What does the Durbin-Watson test detect in time-series forecasting?