

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

MBA

SEM: II - THEORY EXAMINATION (2025 - 2026)

Subject: Introduction to Business Analytics

Time: 3 Hours

Max. Marks: 100

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

20

1. Attempt all parts:-

- (1.1) The scientific process of transforming data into insight for making better decisions is called: (CO1, K2) 1
- (a) Business Intelligence
 - (b) Business Analytics
 - (c) Data Reporting
 - (d) Database Management
- (1.2) The primary purpose of Business Analytics is to: (CO1, K2) 1
- (a) Store large volumes of data
 - (b) Design computer hardware
 - (c) Drive decisions and actions
 - (d) Create network infrastructure
- (1.3) The process of fixing or removing incorrect, incomplete, or duplicate data is called: (CO2, K3) 1
- (a) Data entry
 - (b) Data cleaning
 - (c) Data typing
 - (d) Data saving
- (1.4) To find the average of numbers in Excel, you would use the: (CO2, K3) 1
- (a) SUM function
 - (b) AVERAGE function
 - (c) COUNT function
 - (d) MIN function

- (1.5) The most common average, found by summing all values and dividing by the count, is called: (CO3, K4) 1
- (a) Median
 - (b) Mode
 - (c) Mean
 - (d) Range
- (1.6) The middle value in a sorted list of numbers is called the: (CO3, K4) 1
- (a) Mean
 - (b) Mode
 - (c) Median
 - (d) Range
- (1.7) Simple linear regression examines the relationship between how many variables? (CO4, K3) 1
- (a) One
 - (b) Two
 - (c) Three
 - (d) Four
- (1.8) In a simple linear regression, the variable we want to predict is called the: (CO4, K3) 1
- (a) Independent variable
 - (b) Dependent variable
 - (c) Control variable
 - (d) Constant variable
- (1.9) A time series is a set of data points collected at: (CO5, K4) 1
- (a) Random time intervals
 - (b) Regular time intervals
 - (c) The same point in time
 - (d) Irregular time intervals
- (1.10) The long-term upward or downward movement in a time series is called: (CO5, K4) 1
- (a) Seasonality
 - (b) Cyclicity
 - (c) Trend
 - (d) Random variation

2. Attempt all parts:-

- (2.1) State the two primary reason to define the importance of Business Analytics in organizations. (CO1, K2) 2
- (2.2) State the purpose of the SUM and SUMIF function in Excel with example. (CO2, K3) 2
- (2.3) Define the Mode and range with an example of each. (CO3, K4) 2
- (2.4) Describe the difference between dependent and independent variables in regression 2

- with an example? (CO4, K3)
- (2.5) Define the term 'Trend' in a time series with a graph showing the type of trend. (CO5, K4) 2

SECTION-B 30

Answer any one of the following:-

- (3.1) Describe the Business Analytics process with all its key stages in details. (CO1, K2) 6
- (3.2) Elaborate on the three types of Business Analytics: Descriptive, Predictive, and Prescriptive. (CO1, K2) 6

Answer any one of the following:-

- (3.3) Describe how to edit and clean data step by step in Excel with an example of dataset. (CO2, K3) 6
- (3.4) Explain five important Excel functions used for data analysis and their uses. (CO2, K3) 6

Answer any one of the following:-

- (3.5) Explain the concept of measures of location (central tendency) with examples. (CO3, K4) 6
- (3.6) Describe the Mean, Median, and Mode with formulas and suitable examples. (CO3, K4) 6

Answer any one of the following:-

- (3.7) Describe the simple linear regression equation $Y = a + bX$ and explain each component. (CO4, K3) 6
- (3.8) Explain the least squares method and why it is used to find the best regression line. (CO4, K3) 6

Answer any one of the following:-

- (3.9) Explain the entire concepts of Time Series Analysis with a detailed example. (CO5, K4) 6
- (3.10) Describe the four components of a time series: Trend, Seasonality, Cyclicity, and Irregular variation in details. (CO5, K4) 6

SECTION-C 50

4. Answer any one of the following:-

- (4.1) "Business Analytics is a mindset, not just a collection of tools." Critically evaluate this statement in the context of modern business decision-making. (CO1, K2) 10
- (4.2) Analyze the proposition that prescriptive analytics is the ultimate goal of Business Analytics, while descriptive and predictive analytics are merely stepping stones. (CO1, K2) 10

5. Answer any one of the following:-

- (5.1) "Data cleaning is 80% of the work in data analysis." Critically evaluate this statement and explain why it is important before any visualization. (CO2, K3) 10
- (5.2) Analyze how a well-designed data dashboard can improve decision-making for a sales manager. (CO2, K3) 10

6. Answer any one of the following:-

- (6.1) "The Mean, Median, and Mode each tell a different story about the same data." 10

Critically evaluate this statement with an example. (CO3, K4)

- (6.2) Analyze why Standard Deviation is considered a more reliable measure of variability than the Range. (CO3, K4) 10

7. Answer any one of the following:-

- (7.1) "Correlation does not imply causation." Analyze this statement in the context of a simple linear regression model between ice cream sales up and drowning incidents. (CO4, K3) 10

- (7.2) Compare and contrast supervised learning and unsupervised learning. When would you choose one over the other? (CO4, K3) 10

8. Answer any one of the following:-

- (8.1) Compare and contrast Auto-Regression (AR) and Moving Average (MA) models. When would you prefer one over the other? (CO5, K4) 10

- (8.2) "Seasonality is predictable, but cyclicity is much harder to forecast." Evaluate this statement with reasoning. (CO5, K4) 10

REG_JAN_JUNE_2026