Printed Page:- **Subject Code:- BMBA0204**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

MBA

SEM: II - THEORY EXAMINATION (20.....- 20.....)

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-a. The role of prescriptive analytics in business is. (CO1, K1) 1

(a) To describe what has happened

(b) To predict what will happen

(c) To prescribe actions for optimal outcomes

(d) To diagnose issues in processes

1-b. One benefit of using business analytics is. (CO1, K1) 1

(a) Increasing operational costs

(b) Enhancing subjective judgment

(c) Saving time and costs

(d) Reducing data storage needs

1-c. In Microsoft Excel cells, a function must start with _____. (CO2, K1) 1

(a) $

(b) =

(c) ” “

(d) F

1-d. In Excel the chart wizard: (CO2, K1) 1

(a) Can place a chart on a new chart sheet or on any sheet in the workbook

(b) Can only place a chart on a new chart sheet

(c) Can only place a chart on a new blank worksheet

(d) Can only be used to create embedded charts

1-e. The mean is sensitive to which of the following?(CO3, K1) 1

(a) Outliers
(b) Median values
(c) Mode values
(d) Central values

1-f. The measure of central tendency which is also known as the average is. (CO3, K1) 1

(a) Geometric Mean
(b) Arithmetic Mean
(c) Harmonic Mean
(d) Mode

1-g. One of the key assumption of simple linear regression is.(CO4, K1) 1

(a) The relationship between variables is non-linear
(b) The residuals are dependent
(c) The variance of errors is constant
(d) The independent variable is categorical

1-h. The main purpose of the F-test in regression analysis is. (CO4, K1) 1

(a) To estimate the regression coefficients
(b) To assess the overall significance of the regression model
(c) To measure the proportion of variance explained by the model
(d) To check for multicollinearity

1-i. The primary characteristic of seasonality in time series analysis is. (CO5, K1) 1

(a) Long-term systematic changes or movements in data
(b) Short-term fluctuations in data
(c) Patterns that repeat at regular intervals
(d) Random noise in data

1-j. The primary purpose of time series forecasting is. (CO5, K1) 1

(a) To predict future values based on historical data
(b) To analyze the correlation between variables
(c) To perform real-time data analysis
(d) To categorize different types of data

2. Attempt all parts:-

2.a. Define business analytics.(CO1, K2) 2

2.b. State the purpose of the 'AutoSum' button. (CO2, K2) 2

2.c. Highlight the relevance of mode in summarizing categorical data. (CO3, K2) 2

2.d. Highlight any two examples of supervised learning. (CO4, K3) 2

2.e. State the applications of time series forecasting.(CO5, K3) 2

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SECTION-B 30

3. Answer any five of the following:-

3-a.	Illustrate the use of dashboards in business analytics with a real-world example. (CO1, K2)	6
3-b.	Describe a scenario where diagnostic analytics helps a firm understanding a drop in product sales. (CO1, K3)	6
3-c.	Explain the purpose of using Microsoft Excel and list three common uses of the application. (CO2, K3)	6
3-d.	Describe the process to use conditional formatting to highlight cells based on their values. Provide an example using a dataset of exam scores. (CO2, K3)	6
3.e.	Explain the concept of skewness and its effect on the measures of central tendency. (CO3, K2)	6
3.f.	Discuss the ethical considerations in AI development and deployment. (CO4, K4)	6
3.g.	Discuss the use of moving average models in time series forecasting.(CO5, K2)	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	Explain the classification of analytics with the help of relevant examples.(CO1, K2)	10
4-b.	Define data structure. Explain the types of data with examples.(CO1, K2)	10

5. Answer any one of the following:-

5-a.	Discuss the importance of data visualization in Excel. Mention at least two Excel features that enhance data visualization and explain how they are used. (CO2, K3)	10
5-b.	Discuss the steps to create a comprehensive sales tracking and reporting system in Excel, including the use of pivot tables, charts, slicers, and advanced formulas to analyze sales data. (CO2, K4)	10

6. Answer any one of the following:-

6-a.	Define the Pearson correlation coefficient and explain its significance in statistical analysis. Provide a detailed example showing the calculation of the Pearson correlation coefficient for a dataset.(CO3, K2)	10
6-b.	Discuss the calculation method for finding the mean, median, and mode in a dataset. Compare and contrast these measures, highlighting their strengths and limitations. (CO3, K2)	10

7. Answer any one of the following:-

7-a.	Provide a real-world example where machine learning, data mining, and AI are integrated to solve a business problem. (CO4, K4)	10
7-b.	Describe the role of AI in the future of work and its impact on various industries.(CO4, K4)	10

8. Answer any one of the following:-

8-a.	Discuss the impact of big data and real-time data on time series forecasting.	10

Elaborate the opportunities and challenges presented by these advancements.(CO5, K2)

8-b. An FMCG brand wants to optimize its supply chain using past sales data. Describe how time series forecasting supports this objective. (CO5, K4) 10

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