Printed Page:- 03 **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 (2023 - 2024)

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. Select the one which is true about primary data?(CO1) 1

(a) It is collected from existing databases

(b) It is gathered from secondary sources

(c) It is collected directly from the place of origin

(d) It is not suitable for business analytics

1-b. The open-source programming language which is widely used for data science and machine learning?(CO1) 1

(a) Java

(b) Python

(c) C++

(d) Ruby

1-c. Select which of the following is an add-in provided by Microsoft Excel for Business Analytics?(CO2) 1

(a) Analysis Toolpak

(b) Solver

(c) Risk Solver Platform

(d) All of these

1-d. We use Conditional Formatting in Excel to?(CO2) 1

(a) To create a new spreadsheet

(b) To emphasize data

(c) To write a letter

(d) To draw shapes

1-e. The measure of central tendency which is least affected by outliers?(CO3) 1

(a) Mean

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(b) Mode
(c) Median
(d) Geometric Mean

1-f. The mode is particularly useful for which type of data?(CO3) 1

(a) Continuous data
(b) Categorical data
(c) Nominal data
(d) Ordinal data

1-g. In the regression equation $Y=\beta 0+\beta 1X+\epsilon$, what does $\beta 1$ represent?(CO4) 1

(a) The y-intercept
(b) The error term
(c) The slope of the regression line
(d) The predicted value of Y

1-h. The primary goal of supervised learning in data mining is?(CO4) 1

(a) To discover hidden patterns in data
(b) To summarize data
(c) To learn a mapping function from input features to output labels
(d) To perform basic arithmetic calculations

1-i. The term "trend" in time series analysis refers to?(CO5) 1

(a) Short-term fluctuations in data
(b) Long-term systematic changes or movements in data
(c) Random noise in data
(d) Seasonal variations in data

1-j. A positive slope of a trend line indicate?(CO5) 1

(a) A decreasing trend
(b) An increasing trend
(c) No trend
(d) Random fluctuations

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2. Attempt all parts:-

2.a. Define data visualization.(CO1) 2

2.b. State the reason to use VLOOKUP function in MS Excel.(CO2) 2

2.c. State the significance of the coefficient of variation (CV).(CO3) 2

2.d. Highlight any two examples of artificial intelligence.(CO4) 2

2.e. Define cyclicality.(CO5) 2

SECTION B **30**

3. Answer any <u>five</u> of the following:-

3-a. Elaborate the reasons that have prompted the organizations to adopt business analytics.(CO1) 6

3-b. Differentiate between discrete and continuous metrics with the help of appropriate examples.(CO1) 6

3-c. Explain the concept of data validation in Excel and how it can be applied to a range of 6

cells.(CO2)

3-d.	Discuss the purpose of the IF function in Excel and give an example of its usage.(CO2)	6
3.e.	Define standard deviation. Explain how standard deviation relates to variance. Include the formula for its calculation.(CO3)	6
3.f.	Discuss the role of regression analysis in financial modeling. Provide an example illustrating its use in risk management.(CO4)	6
3.g.	Describe the components of a time series. Explain trend, seasonality, and noise with examples.(CO5)	6

SECTION C **50**

4. Answer any <u>one</u> of the following:-

4-a.	Define data structure. Explain the types of data with examples.(CO1)	10
4-b.	Explain the concept of Data-driven decision making. Outline the benefits of data driven decision making.(CO1)	10

5. Answer any <u>one</u> of the following:-

5-a.	Explain the process of setting up a complex pivot table, including grouping, filtering, and using calculated fields. Provide an example scenario and the steps involved.(CO2)	10
5-b.	Discuss the use of advanced functions such as VLOOKUP, HLOOKUP, INDEX, and MATCH in Excel. Include examples demonstrating how to use these functions to search and retrieve data.(CO2)	10

6. Answer any <u>one</u> 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)	10
6-b.	Explain the difference between correlation and causation. Discuss the potential pitfalls of interpreting correlation as causation with real-world examples.(CO3)	10

7. Answer any <u>one</u> of the following:-

7-a.	Discuss the challenges associated with big data in data mining. Explain how can businesses address these challenges?(CO4)	10
7-b.	Describe the application of regression analysis in market research. Provide an example illustrating its use.(CO4)	10

8. Answer any <u>one</u> of the following:-

8-a.	Discuss the impact of big data and real-time data on time series forecasting. Explain the opportunities and challenges presented by these advancements.(CO5)	10
8-b.	Explain the ARIMA model and its components: Autoregressive (AR), Integrated (I), and Moving Average (MA).(CO5)	10

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