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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. Select the one which is NOT a key component of business analytics. (CO1, K1) 1

(a) Data collection
(b) Data analysis
(c) Data visualization
(d) Data destruction

1-b. Business analytics is primarily concerned with which type of data?(CO1, K1) 1

(a) Qualitative data
(b) Quantitative data
(c) Primary data
(d) Secondary data

1-c. _____ is the best alternative to MS Excel offered by Google Inc. (CO2, K1) 1

(a) Google Slides
(b) Google Sheets
(c) Google Files
(d) None of these

1-d. MS Excel is a _____.(CO2, K1) 1

(a) Database Management Software
(b) Presentation software
(c) Workbook software

(d) Spreadsheet software

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 calculated by summing up all values in a dataset and dividing by the total number of values?(CO3, K1) 1

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

1-g. The main objective of classification in supervised learning is. (CO4, K1) 1

(a) To predict continuous numerical values
(b) To group similar data points together
(c) To predict categorical labels for new instances
(d) To discover relationships between variables

1-h. The primary purpose of scaling and encoding features in data preprocessing is. (CO4, K1) 1

(a) To remove outliers
(b) To normalize the data for better model performance
(c) To identify patterns in the data
(d) To reduce the number of variables

1-i. The model which combines both autoregressive and moving average components? (CO5, K1) 1

(a) AR model
(b) MA model
(c) ARIMA model
(d) Seasonal model

1-j. The method which can be used to smooth data to identify trends. (CO5, K1) 1

(a) Fourier Transform
(b) Spectral Analysis
(c) Moving Average
(d) Seasonal Subseries Plot

2. Attempt all parts:-

2.a. Define data visualization.(CO1. K2) 2

2.b. Write any two objectives of Pivot table in MS Excel. (CO2, K1) 2

2.c. Define variance. (CO3, K2) 2

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2.d.	Define dependent and independent variable. (CO4, K2)	2
2.e.	Define seasonality. (CO5, K2)	2

SECTION-B 30

3. Answer any five of the following:-

3-a.	Differentiate between analytics and business analytics. (CO1, K2)	6
3-b.	Elucidate the applications of business analytics.(CO1, K4)	6
3-c.	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-d.	Explain the purpose of using Microsoft Excel and list three common uses of the application. (CO2, K2)	6
3.e.	Discuss the advantages and disadvantages of using range as a measure of dispersion. (CO3, K2)	6
3.f.	Define Artificial Intelligence and discuss its primary goals and challenges. (CO4, K2)	6
3.g.	Explain the benefits and limitations of using a moving average model for time series forecasting. (CO5, K2)	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	A clothing retailer wants to send targeted offers to customers based on seasonality and previous buying patterns. Design a predictive analytics model they could use, and explain how it supports marketing decisions. (CO1, K4)	10
4-b.	Elucidate the characteristics of business analytics, analytics and business intelligence. (CO1, K2)	10

5. Answer any one of the following:-

5-a.	Define data dashboard. Explain the steps to create a dashboard. (CO2, K2)	10
5-b.	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

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.	Describe the impact of skewness on the measures of central tendency (mean, median, mode). Provide examples of positively and negatively skewed distributions. (CO3, K2)	10

7. Answer any one of the following:-

7-a.	An e-commerce firm wants to recommend products to users based on past purchase patterns. Which data mining technique(s) can be used to generate recommendations, and how? (CO4, K4)	10
7-b.	Describe the role of anomaly detection in data mining. Mention some techniques	10

used for this purpose. (CO4, K2)

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

8-a.	Discuss the use of time series forecasting in financial markets. Explain how can businesses leverage these forecasts for strategic planning?(CO5, K2)	10
8-b.	Discuss the impact of big data and real-time data on time series forecasting. Elaborate the opportunities and challenges presented by these advancements.(CO5, K2)	10

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