UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2023
SET 2

Course: Business Analytics **Semester: II**
Program: MBA MKT/HR/OR/FIN/ Global **Time : 03 hrs.**
Course Code: DSBA 7005

Max. Marks: 100

Instructions:

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q 1	Attempt all questions. Mention True/false/ Options		
I	Can you compare the ratio of two observations on an interval scale A. Yes B. No	2	CO1
II	Which of the following is NOT a common application of business analytics? a) Improving customer satisfaction b) Reducing costs c) Increasing revenue d) Developing new products	2	CO1
III	What is the primary goal of descriptive analytics? a) To predict future outcomes b) To identify patterns in historical data c) To optimize business processes d) To make data-driven decisions	2	CO1
IV	What type of analytics is used to identify which customers are most likely to buy a particular product? a) Descriptive analytics b) Predictive analytics c) Prescriptive analytics d) Diagnostic analytics	2	CO1
V	Which of the following is an example of a data visualization technique? a) Regression analysis b) Cluster analysis c) Scatterplot d) Decision tree	2	CO1
VI	Qualitative forecasting is a type of forecasting that involves more subjective, intuitive, or experiential approaches	2	CO1

VII	Which measure of central tendency is the best choice when dealing with nominal data? a) Mean b) Median c) Mode d) All three measures can be used	2	CO1
VIII	Which measure of central tendency is used for skewed distributions? a) Mean b) Median c) Mode d) All three measures can be used	2	CO1
IX	Which measure of central tendency is most affected by outliers? a) Mean b) Median c) Mode d) All three measures are equally affected	2	CO1
X	Which of the following statements is true about nominal scales? a) They have a natural zero point b) They involve ranking or ordering c) They can be used for arithmetic operations d) They involve grouping or categorizing data	2	CO1

SECTION B
4Qx5M= 20 Marks

	Attempt any **four** questions		
Q 2	A researcher is conducting a survey to gather data on the political affiliation of voters in a city. What data scale researcher should use.	5	CO2
Q3.	Not All data can be represented by all graphs. Justify	5	CO2
Q4.	What is Descriptive analytics, and why it is required?	5	CO2
Q5	Define the Pyramid of analytics.	5	CO2
Q6	Importance of Analytics in Business Context	5	CO2

SECTION-C
3Qx10M=30 Marks

	Attempt any **three** questions		
Q7	Explain the various scales and their importance in Analytics	10	CO3
Q8	How can Analytics contribute in area of web and social analytics?	10	CO3
Q9	Calculate the weighted moving average of the following data and predict the forecast for another one year. Weights distributed are 6, 2, 2 for three years data. 	Year	Production in (Millions)
---|---|	10	CO3

2016	5
2017	6
2018	8
2019	9
2020	3
2021	5
2022	2
2023	7
2024	?

Q 10	Below are given the annual profits (in '000 rupees) in an industrial concern: 	Year	Profits (in '000 rupees)
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2016	85
2017	80
2018	90
2019	92
2020	83
2021	94
2022	98
2023	93 | Calculate the Semi Average and fit a trend line for above data. Explain the trend for the time series analysis	10	CO3

SECTION-D
2Qx15M= 30 Marks

Q	Attempt any two question		
Q 12	A fitness center is collecting data on its members, including age, gender, membership type (e.g. monthly, annual), frequency of visits per week, duration of each visit, and number of classes attended per month. What are some appropriate charts or visualizations that could be used to analyze this data? Justify your selection of charts.	15	CO4
Q 13	In a certain industry the production of a certain commodity (in '000 tons) during the year 2013-2022 is given in the following table: 	Year	Production(in '000 tons)
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2013	80
2014	84
2015	80
2016	88
2017	98		15	CO4

2018	92			
2019	84			
2020	88			
2021	80			
2022	100			

(i)   Graph the data.

(ii)   Obtain the least square fitting the data and construct the graph of the trend line.

(iii) Compute the trend values for the years 2013-2022 and estimate the production of commodity during the years 2023, if the present trend continues.

Q14	Explain the framework for data-driven decision-making used in analytics.	15	CO2