



Name:

Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2022

Course: Business Analytics

Semester: II

Program: MBA (BA) / (CORE)

Course Code: DSBA7005

Time : 03 hrs.

Max. Marks: 100

Instructions: Attempt all sections

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q 1	Attempt all questions.		CO1
a.	Data Analysis is a process of? a) inspecting data b) cleaning data c) transforming data d) All of the above	2	CO1
b.	A graph that uses vertical bars to represent data is called as a) Line graph b) Bar graph c) Scatterplot d) Vertical graph	2	CO1
c.	Data analytics which deals with development of a solution for a particular organization is classified as a) Industry analytics b) economic analyses c) applied analytics d) basic analytics	2	CO1
d.	What is a hypothesis? a) A statement that the researcher wants to test through the data collected in a study. b) A research question the results will answer. c) A theory that underpins the study. d) A statistical method for calculating the extent to which the results could have happened by chance.	2	CO1
e.	Which of the following is true about hypothesis testing? a) answering yes/no questions about the data b) estimating numerical characteristics of the data	2	CO2

	<p>c) describing associations within the data²</p> <p>d) modeling relationships within the data</p>		
f.	<p>_____ are used when you want to visually examine the relationship between two quantitative variables.</p> <p>a) Bar graph</p> <p>b) pie graph</p> <p>c) line graph</p> <p>d) Scatterplot</p>	2	CO2
g.	<p>An advantage of using computer programs for qualitative data is that they</p> <p>a) Can reduce time required to analyse data (i.e., after the data are transcribed)</p> <p>b) Help in storing and organising data</p> <p>c) Make many procedures available that are rarely done by hand due to time constraints</p> <p>d) All of the above</p>	2	CO2
h.	<p>If the assumed hypothesis is tested for rejection considering it to be true is called?</p> <p>a) Null Hypothesis</p> <p>b) Statistical Hypothesis</p> <p>c) Simple Hypothesis</p> <p>d) Composite Hypothesis</p>	2	CO2
i.	<p>_____ are the basic building blocks of qualitative data.</p> <p>a) Categories</p> <p>b) Units</p> <p>c) Individuals</p> <p>d) None of the above</p>	2	CO2
j.	<p>A statement made about a population for testing purpose is called?</p> <p>a) Statistic</p> <p>b) Hypothesis</p> <p>c) Level of Significance</p> <p>d) Test-Statistic</p>	2	CO1

SECTION B
4Qx5M= 20 Marks

Q2.	What do you understand by data cleaning? What is an outlier? Explain the process of outlier detection.	5	CO2
Q3.	Discuss the difference between Applied and basic business analytics with examples	5	CO1

Q4.	Discuss the approaches used by data analysts for evaluating a course of action with examples.	5	CO2
Q5.	Explain the phase Data Discovery of Data Analytics Lifecycle.	5	CO1
SECTION-C 3Qx10M=30 Marks			
Q6.	What are the different Projective Techniques? Why are they useful?	10	CO2
Q7.	What do you understand by time series? Explain Autocorrelation and Auregression with examples.	10	CO2
Q8.	A. What do you understand by Predictive models and simulation techniques? What are their advantages and disadvantages? OR B. What is data mining? What are the different techniques used in data mining?	10	CO2
SECTION-D 2Qx15M= 30 Marks			
Q9.	Consider the following business research problem: Several variables are considered in attempting to determine whether a person will like his or her new job. Four predictor (independent) variables are given with the data set: relationship with supervisor, overall quality of work environment, total hours worked per week, and opportunities for advancement. Using the data that are given, a multiple regression model has been developed to predict job satisfaction from the four independent variables. In the multiple regression model, job satisfaction is the dependent variable. There are 19 observations. Give your expert opinion as a Business Analyst. The Excel regression output for this problem follows:	15	CO3

SUMMARY OUTPUT					
<i>Regression Statistics</i>					
Multiple R		0.952			
R Square		0.906			
Adjusted R Square		0.880			
Standard Error		8.03			
Observations		19			
ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	8748.967	2187.242	33.89	0.00000046
Residual	14	903.664	64.547		
Total	18	9652.632			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P value</i>	
Intercept	-2.6961	13.005	-0.21	0.8381	
Relationship with Supervisor	6.9211	3.774	1.83	0.0880	
Overall Quality of Work Environment	6.0814	1.550	3.92	0.0015	
Total Hours Worked per Week	0.1063	0.1925	0.55	0.5895	
Opportunities for Advancement	0.3881	1.6322	0.24	0.8155	

Q10.

A. Study the Excel regression output that follows. How many predictors are there? What is the equation of the regression model? Using the key statistics discuss the strength of the model and its predictors.

SUMMARY OUTPUT					
<i>Regression Statistics</i>					
Multiple R		0.814			
R Square		0.663			
Adjusted R Square		0.636			
Standard Error		51.761			
Observations		28			
ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	131567.02	65783.51	24.55	0.0000013
Residual	25	66979.65	2679.19		
Total	27	198546.68			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	
Intercept	203.3937	67.518	3.01	0.0059	
X ₁	1.1151	0.528	2.11	0.0448	
X ₂	-2.2115	0.567	-3.90	0.0006	

OR

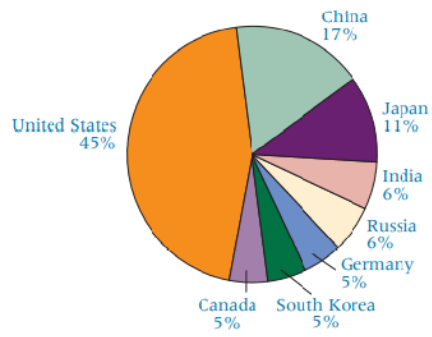
B. Shown below are side-by-side Excel pie charts displaying both oil and coal energy consumption figures by country. Give your expert opinions as a business analyst.

15

CO3

Pie Charts for World Oil and Coal Consumption (Top Eight Nations)

Oil Consumption



Coal Consumption

