

Name:
Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Term Examination, May 2021

Course: Data Visualization for Analytics
Program: B.Tech. CSE-BAO
Course Code: CSBA2007

Semester: IV
Time 03 hrs.
Max. Marks:100

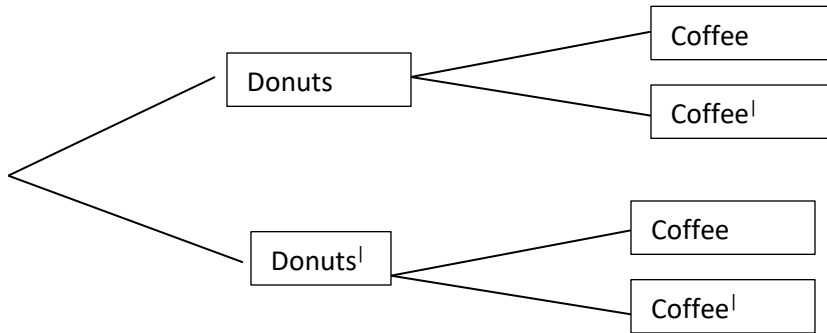
Instructions: Attempt all the questions. In section A, select the correct answer/answers.

SECTION A (ALL QUESTIONS ARE OBJECTIVE)

S. No.		Marks	CO
Q 1	Which of this is transaction data? a) Photos uploaded on cloud b) Likes, share and other activities performed in social media in each session c) Heart-rate and workout data collected by fitness bands d) Location data collected by Google maps	5	CO2
Q 2	Basic plots are example for: a) 1d plot b) 2d plot c) 3d plot d) 4d plot	5	CO4
Q 3	The Abbreviation of D3 is a) Data-Driven Document b) Data-Detached Document c) Data-Deleted Document d) Data-Donated Document	5	CO3
Q 4	Which diagram is a graphical method of displaying the inter – relationships between data in a matrix? a) Chord Diagram b) Sankey Diagram	5	CO2

	c) Flow Map d) Arc Diagram		
Q 5	A box plot is based on a representation of _____ numbers a) Six b) Five c) Seven d) Two	5	CO4
Q 6	The aim of Exploratory Data Analysis is to deal with: a) Parameter estimation and margin of error. b) Maximize visibility into a set of data c) Uncover the structure at the foundation d) All the above	5	CO1
SECTION B			
Q 7	Explain the differences between Data Visualization and Infographics Describe the key features of Graduated Symbol maps and Cartograms	10	CO1
Q 8	Geospatial data comes in which two basic forms? Explain the methods and importance of identifying Outliers?	10	CO2
Q 9	A. Explain the three prominent sources that influences the creation of any data visualization. Show their relationship diagrammatically. B. Explain the different types of dashboards. C. Explain the difference between Business intelligence and Business Analytics.	10	CO4
Q 10	Explain in detail about fishbone diagram and arc diagram. Also draw sample diagrams for fishbone diagram and arc diagram.	10	CO2
Q 11	Write formula and show relationship between variance, Standard Deviation and Standard Score.	10	CO3
SECTION-C			
Q 12	(a) Duncan's Donuts are looking into the probabilities of their customers buying donuts and coffee. They drew up a probability tree to show the probabilities, but in a sudden gust of wind, they all fell off. Your task is to pin the Probabilities back on the tree. Here are some clues to help you. (11 Marks)	20	CO3

$$P(\text{Donuts}) = 3/4, P(\text{Coffee} | \text{Donuts}^c) = 1/3, P(\text{Donuts} \cap \text{Coffee}) = 9/20$$



Solutions: $2/3, 3/5, 2/5, 1/4, 3/4, 1/3$

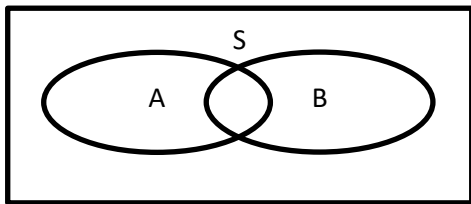
Once you've completed the above probability tree, you need to use it to find out following probabilities:

$P(\text{Donuts})=?$, $P(\text{Donuts}^c | \text{Coffee})=?$, $P(\text{Donuts} \cap \text{Coffee})=?$, $P(\text{Coffee})=?$, $P(\text{Donuts} | \text{Coffee})=?$

(b) Shade in the area that represents each of the following probabilities on the Venn diagram given below:

$P(A \cap B) + P(A \cap B^c)$, $P(A | \cap B)$, $P(A \cup B) - P(B)$

(9 Marks)



Or

Q 12

(a) The Manic Mango games company is testing two brand-new games. They've asked a group of volunteers to choose the game they most want to play, and then tell them how satisfied they were with game play afterwards.

80 percent of the volunteers chose Game 1, and 20 percent chose Game 2. Out of the Game 1 players, 60 percent enjoyed the game and 40 percent didn't. For Game 2, 70 percent of the players enjoyed the game and 30 percent didn't.

Your first task is to fill in the probability tree for this scenario. (12 Marks)

(b) Manic Mango selects one of the volunteers at random to ask if she enjoyed playing the game, and she says she did. Given that the volunteer enjoyed playing the game, what's the probability that she played game 2? Use Bayes' Theorem. (8 Marks)

20

CO4