***Subject : Data Science & Visualization*(21CS644)**
Faculty : Prof. Santosh Y N

1	Define the following terms with an example • Data Science • Datafication • Big Data • Statistical Modeling	**10**	**CO1**	**L1**
2	According to Author Rachel, explain how data science team profiles can be constructed from data scientist profiles.	**5**	**CO2**	**L1**
3	According to Author Rachel, illustrate with an example, **'Why data is not objective'**	**5**	**CO1**	**L2**
4	What do you mean by Data Scientist w.r.t Academia and Industry	**8**	**CO1**	**L1**
5	Illustrate the problems associated with an example when **"N = ALL"** *Where N is used to represent the total number of observations in the population.*	**6**	**CO2**	**L2**
6	Define the following according to Data Science • Model • Probability Distribution • Fitting a model	**6**	**CO2**	**L1**
7	With a neat diagram explain Drew Conway's Venn diagram of Data Science	**8**	**CO1**	**L1**
8	Differentiate between Population & Sample with an example	**6**	**CO2**	**L2**
9	Explain Statistical Inference with an example	**6**	**CO1**	**L1**
10	What are different relevant features of the Chasing Dragon app?	**6**	**CO3**	**L1**
11	Explain selecting an algorithm in wrapper method.	**6**	**CO3**	**L2**
12	Suppose you have your Chasing Dragons dataset. Your outcome variable is Return: a binary variable that captures whether or not the user returns next month, and you have tons of predictors. Write a R Script using decision tree algorithm for the above scenario.	**8**	**CO3**	**L3**
13	Define Random Forest. Explain Random forest Algorithm	**8**	**CO3**	**L1**
14	Explain Real world recommendation engine with neat diagram.	**6**	**CO3**	**L2**
15	Explain the following • SVD • PCA	**8**	**CO3**	**L2**
16	With a neat diagram explain the steps involved in the Data	**8**	**CO4**	**L2**

	Wrangling process.			
17	Explain what Scatter Plot, Bubble Plot, Correlogram and Heatmap are. Also explain their uses and design practices with examples.	**10**	**CO4**	**L2**
18	Explain the Stacked Bar Charts with an example. Also explain the uses and the design practices to ne followed.	**8**	**CO4**	**L2**
19	Discuss Venn Diagram with an example.	**6**	**CO4**	**L3**
20	Compare Stacked Bar Charts and Stacked Area Charts.	**6**	**CO4**	**L3**
21	Explain the uses of Choropleth Map and what are the design practices to be followed.	**8**	**CO4**	**L2**
22	What is the way to specify colors, marker types, and line styles?	**6**	**CO5**	**L2**
23	List the parameters involved in pie chart	**6**	**CO5**	**L2**
24	List the different ways to write the mathematical expressions	**8**	**CO5**	**L2**
25	Explain the following Plots • Box Plot • Violin Plot • Scatter Plot • Bar chart • Bubble Plot With the Design Practices	**10**	**CO5**	**L2**

CO1: Understand the data in different forms
CO2: Apply different techniques to explore Data Analysis and the Data Science process.
CO3: Analyze feature selection algorithms & design a recommender system.

CO4: Evaluate data visualization tools and libraries and plot graphs.
CO5: Develop different charts and include mathematical expressions.