

Register No.: ..... Name.: .....

**SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)**

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

**THIRD SEMESTER MBA DEGREE EXAMINATION (Regular), FEBRUARY 2022****(2020 Scheme)****Course Code : 20MBA203****Course Name: Business Analytics****Max. Marks : 60****Duration: 3 Hours****PART A***(Answer all questions. Each question carries 2 marks)*

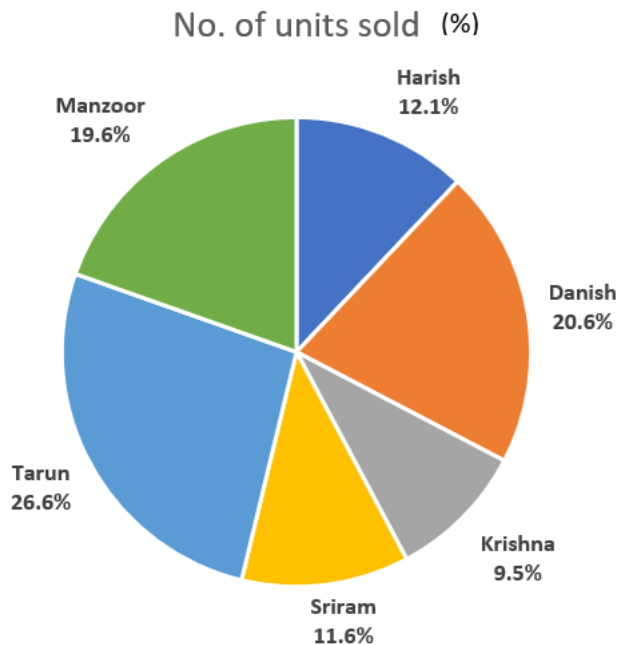
1. What is conditional probability?
2. How does Prescriptive analytics differ from Predictive analytics? Explain any two points of difference.
3. A partial frequency distribution table is provided below:

<b>Class</b>	<b>Relative Frequency</b>
A	0.22
B	0.18
C	0.40
D	

- a) What is the relative frequency of class D? [1 mark]
  - b) The total sample size is 200. What is the frequency of class D? [1 mark]
4. Write a note on Delphi method used as qualitative approach to forecasting.
  5. List any two primary assumptions underlying linear programming models?

**PART B***(Answer any 3 questions. Each question carries 10 marks)*

6. Discuss the emergence of business analytics as a competitive strategy for businesses in current scenario. Give 5 distinct points to justify the need and relevance of business analytics.
7. Identify the different types of probability distributions and make use of these distributions in business.
8. With the rise in COVID cases in India and lockdown imposed in several states, an increasing number of Indian families in urban areas are opting for robotic cleaners to take care of domestic chores. Eureka Forbes introduced the Forbes Robo Vac n Mop, a robotic vacuum cleaner that sweeps and mops to make daily cleaning hassle-free. The company's sales persons in Kochi sold a total of 199 robotic vacuum cleaners. The following pie chart shows the percentages of vacuum cleaners sold by each salesperson.



- a) Identify two the problems with using a pie chart to display these data? [2 marks]
- b) What type of chart would be preferred for displaying the data in this pie chart? Give one reason for your choice. [2 marks]
- c) Using the chart that you recommended above, display the percentage of items sold by each salesperson to convey the data better. [6 marks]
9. a) What is K-Means Clustering? [2 marks]
- b) Detail the major steps involved in K-Means Clustering. [8 marks]
10. Linear programming is used for obtaining the most optimal solution for a problem with given constraints. Explain this statement in the context of Transportation Problem.

### PART C

*(Compulsory question, the question carries 20 marks)*

11. a) The management of Lulu Hypermarket is clear that business analytics is key in its further growth. It decides to invest in technology infrastructure that will help to meet the potential of Big Data.

What is Big Data in the context of a retailer like Lulu Hypermarket? Explain any 2 of its characteristics.

**[2 + 2 = 4 marks]**

- b) As a part of its entry into advanced analytics, the management of Lulu Hypermarket is keen to build a team for data visualization. As an Analytics consultant, what would be your recommendation for the tools and software for data visualization? List any four of these.

**[4 marks]**

- c) Lulu Hypermarket would like to determine the best way to allocate a monthly budget of INR 1,00,000 between newspaper advertising and radio advertising. Management decided that at least 25% of budget must be spent on each type of media and that the amount of money spent on local newspaper advertising must be at least twice the amount spent on radio advertising. A marketing consultant developed an index that measures audience exposure per dollar of advertising on a scale from 0 to 100, with higher values representing greater audience exposure. If the value of the index for local newspaper advertising is 50 and the value of index for radio advertising is 80, how should Lulu Hypermarket allocate its advertising budget to maximize the value of total audience exposure? Formulate a linear programming model that can be used to determine how Lulu Hypermarket should allocate its advertising budget to maximize the value of total audience exposure.

**4 marks]**

- d) What is Data Mining? List 2 applications of Data Mining in an online retail business environment.

**[2 + 2 = 4 marks]**

- e) What is Binomial Distribution? List the four criteria that a Binomial Distribution must follow. Give 1 example in business analytics that can be associated with Binomial Distribution.

**Marks ((1 + 2 + 1 = 4 marks)**

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