R19

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MBA III Semester Examinations, March/April - 2022
DATA ANALYTICS

Time: 3 Hours   Max.Marks:75

Answer any five questions
All questions carry equal marks

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1.   Define Data Analytics and explain its importance in an organization?   [15]

2.a)   What is Data Visualization? Explain different tools of data visualization?
  b)   Explain about pivot tables.   [8+7]

3.a)   Define discrete probability distribution and solve the below given problem? Let X be a discrete random variable with the following PMF.

$$P_x(k) = \begin{cases} 0.1 & \text{for } k = 0 \\ 0.2 & \text{for } k = 1 \\ 0.3 & \text{for } k = 2 \\ 0.4 & \text{for } k = 3 \\ 0 & \text{otherwise} \end{cases}$$

   i) Find EX
   ii) Find Var(X)
   iii) If $Y = (X-2)^2$, find EY.
  b)   What are measures of Variability?   [8+7]

4.a)   Explain about continuous probability distribution.
  b)   Explain about Measures of Association.   [7+8]

5.a)   What is Two way Anova? Mention merits and demerits?
  b)   A reputed marketing agency in India has three different training programs for its salesmen. The three programs are Method - A, B, C. To assess the success of the programs, 4 salesmen from each of the programs were sent to the field. Their performances in terms of sales are given in the following table. Test whether there is significant difference among methods and among salesmen.   [7+8]

Salesmen	Methods		
	A	**B**	**C**
1	4	8	5
2	7	9	8
3	10	5	9
4	6	7	8

6.a)   Explain about multiple correlation.
  b)   Explain about method of Least squares.   [8+7]

7.a) Explain the algorithm of KNN?
 b) We have the data from the questionnaire survey and objective testing with two attributes (acid durability and strength) to classify whether a special paper tissue is good or not. Here are four training samples.

X_1 = Acid Durability(sec)	X_2 = Strength(kg/sqmt)	Y = Classification
8	7	Bad
6	6	Bad
4	5	Good
2	4	Good

Now the Factory produces a new paper tissue that pass laboratory test with X_1 = 3 and X_2 = 7. Without another expensive survey, can we guess what the classification of this new tissue is? [7+8]

8.a) Explain the process of Monte Carlo Simulation?
 b) New company is conducting interviews for 15 minutes for a single interviewee. Some of them make take more or less than 15 minutes depending on their performance. The following summary shows interviews for various positions in the company, their probabilities and the actual time needed.

Position	Time Required	No. of Interviewees
HR Associate	20 min	45
HR Analyst	30 min	30
HR Supervisor	40 min	20
HR Director	35 min	5

Simulate the company interviews for two hours and find out the average waiting time for the interviewees as well as the idleness of the interviewer. Assume that all the interviewees show up at the company exactly at 8:00 AM. Use the following random numbers for handling the above problem.

25, 46, 82, 18, 59, 77, 33, 12 [7+8]

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