

**MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL**

Paper Code : BBA 504A Data Analytics Skills for Managers

Time Allotted : 3 Hours

Full Marks : 70

The Figures in the margin indicate full marks.
Candidate are required to give their answers in their own words as far as practicable

Group-A (Very Short Answer Type Question)

1. Answer any ten of the following :

[1 x 10 = 10]

- (i) Is clustering techniques supervised or unsupervised machine learning?
- (ii) What is the full form of MCDM?
- (iii) What is Scenario Manager in Excel?
- (iv) What is process control in SQC?
- (v) Descriptive Analytics addresses the question, "why did this happen? ". State true or false
- (vi) In data processing, what does the abbreviation SAP stand for?
- (vii) Which is not a major data analysis approach?
- (viii) In data characterization, class under study is called.....
- (ix) The arithmetic mean of six numbers is 47. If one number is excluded, their mean becomes 41. Find the excluded number.
- (x) Residual plot helps in analyzing the model using the values of the residues. State true or false
- (xi) What is 'value' in marketing ?
- (xii) What is the arithmetic mean of the first 99 natural numbers?

Group-B (Short Answer Type Question)

Answer any three of the following

[5 x 3 = 15]

2. Define Data Analytics. Explain briefly the various types of Data Analytics
3. Explain different data transformation techniques used in data mining.
4. Calculate SD from the following data.

Classes	0 -10	10 - 20	20 - 30	30 - 40	40 - 50
f	5	8	15	16	6

5. Calculate Correlation Coefficient from the following distribution.

X	2	4	6	9	10	17
Y	3	7	9	12	15	14

6. Why can't we use Linear Regression in place of Logistic Regression for Binary Classification?

Group-C (Long Answer Type Question)

Answer any three of the following

[15 x 3 = 45]

7. (a) Discuss the role of data analytics in business with proper cases.
(b) Differentiate between predictive analytics and descriptive analytics
8. (a). Explain Data Smoothing as a Data Transformation technique.
(b). Explain Data Normalization.
(c). Suppose we have a mean and standard deviation for attribute A as \$ 54,000 and \$ 16,000. How will we normalize the value \$ 73,600 using Z-score Normalization?
9. a) Explain the advantages and limitations of Data Transformation.
b) What is Data Discretization? Explain different types of Discretization.
10. (a) What is a box and whisker plot?
A sample of 10 boxes of raisins has these weights (in grams):
25, 28, 29, 29, 30, 34, 35, 35, 37, 38
Make a box plot of the data

(b) The mean and SD height readings of a group of employees of a firm are found to be 172 cm and 18 cm while the mean and SD of weight readings are 65kg and 9 kg. Compare the variability of height readings to weight readings. [7]

Draw a dendrogram using single linkage technique using the following data:

11. (a) What is Wilks' lamda? [6]

(b) Given the dataset (a,b,c,d,e) and the following distance matrix construct a dendrogram by complete linkage hierarchical clustering using the agglomerative method [9]

	a	b	c	d	e
a	0	9	3	6	11
b	9	0	7	5	10
c	3	7	0	9	2
d	6	5	9	0	8
e	11	10	2	8	0

*** END OF PAPER ***

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