Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA (AM) – SEMESTER – 2 • EXAMINATION – SUMMER 2018

Subject Code: 4120503   **Date:01/06/2018**
Subject Name: Business Statistics
Time: 02:30 PM to 05:30 PM   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Define the following: **07**
1) Standard Deviation & Variance
2) Absolute & Relative Measures of Dispersion
3) Quartile Deviation and Coefficient of Quartile Deviation

(b) A data set contains the following eight values.   **07**
  4   3 0 5 2 9 4 5
a. Find the range.
b. Find the mean absolute deviation.
c. Find Lower Quartile
d. Find upper Quartile
e. Find the inter-quartile range.

Q.2 **(a)** Determine the mean, the variance, and the standard deviation of the following   **07**

x	0	1	2	3	4	5	6	7
P(x)	.103	.118	.246	.229	.138	.094	.071	.001

(b) What is Probability? Explain Rules of Probability with examples.   **07**

OR

(b) Machines A, B, and C all produce the same two parts, X and Y. Of all the parts   **07**
produced, machine A produces 60%, machine B produces 30%, and machine C
produces 10%. In addition,
40% of the parts made by machine A are part X.
50% of the parts made by machine B are part X.
70% of the parts made by machine C are part X.
A part produced by this company is randomly sampled and is determined to be
an X part. With the knowledge that it is an X part, revise the probabilities that the
part came from machine A, B, or C.

Q.3 **(a)** Define sampling. Discuss Probability and Non Probability sampling methods.   **07**
(b) PWC Associates reports that the mean height for a Class A warehouse is 22 feet.   **07**
Suppose heights are normally distributed and that
the standard deviation is 4 feet. A Class A warehouse is randomly selected.
a. What is the probability that height is greater than 17 feet?
b. What is the probability that height is less than 13 feet?
c. What is the probability that height is between 25 and 31 feet?

OR

Q.3 **(a)** Determine the value of the coefficient of correlation, r, for the following data.   **07**

X	4	6	7	11	14	17	21
Y	18	12	13	8	7	7	4

(b) Explain in brief with example; uniform, normal and exponential distribution.   **07**

Q.4 **(a)** Write a note on 'Why statistics is important in Business'   **07**

(b) A sample of 12 MNC's reveals the following numbers of professionals per office.   **07**

7	10	9	14
11	8		
5	12	8	3 13
6			

a. Determine the mean.
b. Determine the variance.
c. Determine the standard deviation.
d. What is the coefficient of variation for this sample?

OR

Q.4 **(a)** The Air Transport Association of India publishes figures on the busiest airports. The following data are constructed from these figures for a recent year. Assume these are population data.   **07**

Number of Passengers

Arriving and Departing (millions)	Number of Airports
20–30	8
30–40	7
40–50	1
50–60	0
60–70	3
70–80	1

a. Calculate the variance.
b. Calculate the standard deviation.

(b) What is Permutation and Combination? Explain with suitable examples.   **07**

Q.5 Explain following terms with suitable examples (ANY 7)   **14**

1. Levels of Data measurement.
2. Types of graphical depiction of data.
3. Mean Deviation
4. Range and Coefficient of Range
5. Mutually exclusive events & Elementary Events
6. Unions & Intersections
7. Regression
8. Scatter Diagram
9. Chebyshev's Theorem

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