Seat No: ……. Enrollment No: ……

GUJARAT TECHNOLOGICAL UNIVERSITY

MBA (INTEGRATED) – SEMESTER – 02 EXAMINATION – SUMMER 2017

Subject Code: 4120503 **Date:11-05-2017**

Subject Name: Business Statistics

Time: 10.30 AM TO 01.30 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) Explain following terms with example. **07**

1) Range 2) Standard Deviation 3) Coefficient of Variation

Q.1 (b) A sample of 12 small accounting firms reveals the following numbers of professionals per office. **07**

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

a. Determines the mean absolute deviation.
b. Determines the variance.
c. Determines the Interquartile Range.

Q.2 (a) Write a detailed note on Sampling Techniques**.** **07**

Q.2 (b) Determine the probabilities for the following normal distribution problems **07**

a. $\mu = 604,\ \sigma = 56.8,\ x \leq 635$
b. $\mu = 48,\ \sigma = 12,\ x < 20$
c. $\mu = 37,\ \sigma = 4.35,\ x > 35$
d. $\mu = 156,\ \sigma = 11.4,\ x \geq 170$

OR

Q.2 (b) Write a short note on Uniform distribution and Normal Distribution. **07**

Q.3 (a) Write a detailed note on Measures of Central Tendency. **07**

Q.3 (b) Determine the mode and median of the following numbers. **07**

2	4	8	4	6	2	7	8
4	3	8	9	4	3	5	

OR

Q.3 (a) Explain the practical applications of business statistics. **07**

Q.3 (b) Construct a histogram and frequency polygon for the following data. **07**

Class Interval	Frequency
10-under 20	9
20-under 30	7
30-under 40	10
40-under 50	6

50-under 60	13
60-under 70	18
70-under 80	15

Q.4 a) Explain detail note on probabilities. **07**

Q.4 b) A bag contains 8 red and 5 white balls. Three balls are drawn at random. Find the probability that **07**

a. All the three balls are white.
b. All the three balls are red.

OR

Q.4 a) The following table gives a distribution of wages of 1000 workers. **07**

Wages (in Rs.)	No. of Workers
120 – 140	9
140 – 160	118
160 – 180	478
180 – 200	200
200 – 220	142
220 – 240	35
240 – 260	18

An individual is selected at random from above group. What is the probability that his wages are:

1) Under Rs. 160 2) Above Rs. 200 3) Between Rs. 160 and Rs. 200

Q.4 b) Explain the following: **07**

1) Addition rule for any two events A and B. What happens if the events A and B are mutually exclusive?
2) Multiplication rule for any two events A and B. What happens if the events A and B are independent?

Q.5 a) A random sample of voters is classified by age group, as shown by the following data. **07**

Age group	Frequency
18- under 24	17
24- under 30	22
30- under 36	26
36- under 42	35
42- under 48	33
48- under 54	30
54- under 60	32
60- under 66	21
66- under 72	15

Calculate the mean, mode and standard deviation of the data.

Q.5 b) Explain following terms with example. **07**

1) Inter – Quartile Range
2) Mean Absolute Deviation
3) Variance

OR

Q.5 a) From the following data find out mean and standard deviation where P(X) indicates the probability of X. **07**

X	0	1	2	3	4
P(X)	.35	.25	.18	.13	.09

Q.5 b) What do you mean by regression? Point out the usefulness of regression in business analysis. **07**

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