Enrollment No:
Exam Seat No: $\qquad$

## C.U.SHAH UNIVERSITY

Winter Examination-2015
Subject Name: Business Statistics
Subject Code: 4MS02BST1
Branch: BBA
Semester: II Date: 20/11/2015 Time: 10:30 AM To 01:30 PM Marks: 70
Instructions:
(1) Use of Programmable calculator \& any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

## Q-1 Attempt the following questions:

a) Define Sample. 01
b) Which of the following is not a data measurement level? 01

1. Nominal 2. Ordinal 3. Interval 4. Rational
c) What is a histogram? 01
d) Calculate the arithmetic mean of the following data: 5,6,7,8,9 01
e) Give the formula for median of odd number of terms. 01
f) What is a percentile? 01
g) Give the formula for interquartile range. 01
h) Define Skewness. 01
i) Which events are known as mutually exclusive events? 01
j) Which of the following is not a statistical test? 01
2. T- Test 2. Z-Test 3. F-Test 4. G-Test
k) Which are the two different types of statistics? 01
l) What is the other name of random sampling? 01
3. Probability 2. Progressive 3. Presumption
$\mathbf{m}$ ) Which of the following is not a type of regression analysis? 01
4. Simple 2. Multiple 3. Compound
n) What is the name of all errors other than sampling errors?

Attempt any four questions from Q-2 to Q-8
Q-2 Attempt all questions
a. A data set contains the following values.

5,9,16,17,18
a. Find the range.

b. Find the mean absolute deviation.
c. Find the population variance.
d. Find the population standard deviation.
b. Calculate the co-efficient of correlation for the following data:

| Day | Interest <br> rate | Futures <br> Index |
| :---: | :--- | :--- |
| 1 | 7.43 | 221 |
| 2 | 7.48 | 222 |
| 3 | 8.00 | 226 |
| 4 | 7.75 | 225 |
| 5 | 7.60 | 224 |
| 6 | 7.63 | 223 |
| 7 | 7.68 | 223 |
| 8 | 7.67 | 226 |
| 9 | 7.59 | 226 |
| 10 | 8.07 | 235 |
| 11 | 8.03 | 233 |
| 12 | 8.00 | 241 |

Q-3 Attempt all questions
Compute the mean, mode, variance and standard deviation on the following sample data.

| Class Interval | Frequency |
| :--- | :--- |
| 10- under 15 | 6 |
| 15-under 20 | 22 |
| 20-under 25 | 35 |
| $25-$ under 30 | 29 |
| $30-$ under 35 | 16 |
| $35-$ under 40 | 8 |
| 40 -under 45 | 4 |
| $45-$ under 50 | 2 |

## Q-4 Attempt all questions

a. Suppose you are testing $\mathrm{H}_{0}: \mathrm{p}=.17$ versus $\mathrm{H}_{\mathrm{a}}: \mathrm{p}>.17$. A random sample of 550
people produces a value of $\mathrm{p}^{\wedge=}=.465$. Use $\alpha=.05$ to test this hypothesis
b. Write a note on Type I and Type II errors.

## Q-5 Attempt all questions

Find the equation of regression line

| $\mathbf{X}$ | 23 | 29 | 29 | 35 | 42 | 46 | 50 | 54 | 64 | 66 | 67 | 78 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{Y}$ | 69 | 95 | 102 | 118 | 126 | 125 | 138 | 178 | 156 | 184 | 176 | 225 |



## Q-6 Attempt all questions

a. Explain various techniques of random sampling.
b. Calculate the first second and third quartiles for the following data

| Company | Revenue |
| :--- | :--- |
| ABB | 10481 |
| ACC | 10032 |
| Ambuja | 6274 |
| Aurobindo | 5107 |
| Zee | 2889 |
| Sun | 1808 |
| L\&T | 1578 |
| LMW | 1364 |
| Reliance | 445 |
| Adani | 444 |
| Godrej | 370 |
| Bajaj | 358 |
| TCS | 341 |
| Tisco | 258 |
| Titan | 229 |
| Bata | 215 |

## Q-7 Attempt all questions

a. Explain various techniques of non- random sampling.
b. Compute variance and standard deviation for the following data:

| Firm | No.of Partners |
| :--- | :--- |
| LMW | 2618 |
| Reliance | 2118 |
| Adani | 2027 |
| Godrej | 1535 |
| Bajaj | 312 |
| Bata | 281 |

## Q-8 <br> - Attempt all questions

a. Determine the value of the coefficient of correlation for the following data:

| $\mathbf{X}$ | 3 | 4 | 6 | 7 | 11 | 14 | 17 | 21 | 25 | 28 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{Y}$ | 15 | 18 | 12 | 13 | 8 | 7 | 7 | 4 | 8 | 6 |

b. Explain the role of null and alternate hypothesis.


