Enrollment No: _____   Exam Seat No:_____

C.U.SHAH UNIVERSITY
Winter Examination-2015

Subject Name : Statistics-I
Subject Code : 4CO03STA1   **Branch : B.Com. (English,LL.B.)**
Semester : 3   Date : 8/ 12/ 2015   Time : 2:30 To 5:30   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:**   **(14)**
 a)   The limits of population correlation are=…………   1
        (a) r ± P.E   (b) r ± 3 P.E
        (c) r ± S.E   (d) r ± 3 S.E
 b)   Rank correlation coefficient always lies between=………..   1
        (a) 0 to 1   (b) -1 to +1
        (c) -1 to 0   (d) None
 c)   Where two regression lines always cut each other?   1
        (a) Mean   (b) Median
        (c) Co-efficient   (d) Mode
 d) b_{yx} means what?   1
        (a) regression coefficient x on y
        (b) regression coefficient y on x
        (c) Both
        (d) None
 e) $b_{xy} . b_{yx}$ = ……………   1
        (a) r   (b) r^2
        (c) $(\overline{x}, \overline{y})$ (d) None
 f)   What is the probability of impossible event?   1
        (a) 1   (b) 0
        (c) -1   (d) None
 g)   If events A and B are mutually exclusive events then, how can it is denoted?   1
        (a) A U B = 1   (b) A ∩ B = 1
        (c) A ∩ B = Ø   (d) None

 h)   Probability of any event always lies between……..   1
        (a) -1 to 0   (b) 0 to +1
        (c) -1 to +1   (d) None
 i)   In any Probability distribution $\sum P(X_i)$ is always…………..   1
         (a) 1   (b) 0
        (c) μ   (d) σ

j) If $\sum (X_i) = 2$ then what will be the value of $\sum (2X-1)$? 1

   (a) 5   (b) 1

   (c) 3   (d) 0

k) What are the parameters of binomial distribution? 1

   (a) n and q   (b) n and p

   (c) n , p and q   (d) None

l) $P (-\infty \le Z \le 0) = $ …………… 1

   (a) 0. 4775   (b) 0.5

   (c) 0.8999   (d) None

m) What is the value of 'e' in normal distribution? 1

   (a) 2.7183   (b) 2.1738

   (c) 3.1416   (d) 2.7138

n) Standard normal variate is denoted by- 1

   (a) μ (b) σ

   (c) Z   (d) X

Q-2   **Attempt all questions**   **(14)**

a. Find correlation of coefficient from the following information: **7**

X	80	140	180	120	100	80
Y	15	35	50	45	40	20

b. Find correlation of coefficient from the following information: **7**

Y / X	90-100	100-110	110-120	120-130
50-55	4	7	6	2
55-60	6	10	7	4
60-65	6	12	10	7
65-70	3	8	6	3

Q-3   **Attempt all questions**   **(14)**

a. The information regarding rainfall and yield of a crop is given below :   **7**

	Average	S.D.	r
Rainfall (in inches)	25	3	0.80
Yield of per acre	40	6	

Estimate the yield when rainfall is 30 inches.

b. By the help of below two regression equations, find out (1) means of x and y   **7**

(2) Correlation of coefficient between x and y.

$Y = 0.5X + 25$, $X - 22 = 0.4 Y$

Q-4   **Attempt all questions**   **(14)**

a. There are 4 white and 6 black balls in one bag. And 5 white and 4 black balls in   **7** another bag. One bag is selected at random and 2 balls are drawn from it. Find the Probability that both the ball are white.

b. From the pack of 52 cards, three cards are drawn at random one after the other   **7** without replacement. Find the Probability that at least two of them are spade.

Q-5   **Attempt all questions**   **(14)**

a. The Probability distribution of a random variable x is as follows :   **7**

X_i	-1	0	1	2	3	4
Probability	1/8	1/8	1/4	1/4	1/8	1/8

Find mean and variance of x.

b. State the uses of binomial distribution. **7**

Q-6 **Attempt all questions** **(14)**

a. X is distributed as a binomial variate with mean 3 and variance 2, find P $(3 \leq X \leq$ **7** 6).

b. State the properties of binomial distribution. **7**

Q-7 **Attempt all questions** **(14)**

a. The mean $\mu=112.4$ and variance $\sigma = 3.6$, of a normal distribution. Find the **7** following probabilities :

    (1) Less than 117.8   (2) More than 109.7

b. State the properties of normal distribution. **7**

Q-8 **Attempt all questions** **(14)**

a. There are 6 slips in a box and numbers 1, 1, 2, 2, 3, 3 are written on these slips. Two **7** slips are taken at random from the box, find the expected value of the sum of the numbers on the slips.

b. State the uses of normal distribution. **7**