

Enrollment No: _____

Exam Seat No: _____

C. U. SHAH UNIVERSITY

Summer Examination-2022

Subject Name: Statistics - I

Subject Code: 4CO03STA2

Branch: B.Com (English)

Semester: 3

Date: 28/04/2022

Time: 02:30 To 05:30

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) Probability distribution may be.... 1
(a) discrete (b) continuous (c) infinite (d) both (a) and (b)
- b) Value of r is the independent of change of.... 1
(a) Scale only (b) Origin only
(c) Origin and Scale (d) None of these
- c) Probability is expressed as.... 1
(a) Percentage (b) Ratio (c) Proportion (d) All of the above
- d) Mean of B.D. is.... 1
(a) np (b) npq (c) \sqrt{np} (d) \sqrt{npq}
- e) The correlation between shoe-size and intelligence is 1
(a) zero (b) negative (c) positive (d) none of these
- f) Covariance measures _____ variations of two variables x and y. 1
(a) single (b) joint (c) both (a) and (b) (d) none of these
- g) The correlation coefficient r is the of the b_{xy} and b_{yx} 1
(a) A.M. (b) GM. (c) H.M. (d) none of these
- h) If it is known that an event B has happened the probability of an event A Given B is called.... 1
(a) Subjective Probability (b) Conditional Probability
(c) Independent Probability (d) None of this
- i) Variance of x may be positive, negative or zero. 1
(a) true statement (b) false statement
(c) both (a) and (b) (d) none of these
- j) If rank correlation coefficient is 0.60 and $\sum d^2 = 66$ then the numbers of pairs is 1
(a) 9 (b) 10 (c) 8 (d) 11
- k) r, b_{yx} and b_{xy} have _____ sign 1
(a) different (b) same (c) both (a) and (b) (d) none of These
- l) The regression lines are perpendicular to each other if $r =$ _____ 1



- (a) 0 (b) 1 (c) - 1 (d) ± 1
- m) Probability of impossible event is... 1
 (a) 0 (b) 1 (c) 0.5 (d) None of these
- n) Value of R^2 is lies between _____ and _____ 1
 (a) (- 1, 1) (b) (0, 1)(c) (- 1, 6) (d) (0, 2)

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
 In town hall ten competitors are ranked in beauty by three judges as follows: 14

Judge-I	1	2	5	6	8	9	3	10	7	4
Judge-II	5	1	6	4	10	7	2	9	8	3
Judge-III	9	8	7	6	2	3	10	1	4	5

Use rank correlation coefficient to determine which pair of two judges have nearest approach towards judging beauty.

- Q-3 Attempt all questions (14)**
- (a) Differentiate between Spearman's method of rank correlation and Karl Pearson's correlation method. 7
- (b) State the merit and limitations of Karl Pearson's correlation and Spearman's method of rank correlation. 7

- Q-4 Attempt all questions (14)**
- (a) Calculate the coefficient of correlation. 7

X	920	890	870	860	830	770	710	630	530	500
Y	8.6	8.3	9.1	7.7	6.8	8.5	5.2	8.2	3.7	5.7

- (b) Explain the method of scatter diagram in studying linear correlation. 7
- Q-5 Attempt all questions (14)**
 Calculate the coefficient of correlation. 14

Y \ X	10-20	20-30	30-40	40-50	60-70
20-30	3	2	3	-	-
30-40	-	5	9	6	-
40-50	-	2	4	3	3

- Q-6 Attempt all questions (14)**
- (a) Explain events, random experiment and sample space. 7
- (b) Explain the properties of Binomial Distribution and State the uses of Binomial Distribution. 7

- Q-7 Attempt all questions (14)**
- (a) If A, B and C are mutually exclusive and exhaustive events and $2P(A) = 3P(B) = 4P(C)$, Find the $P(B \cup C)$ and $P(A \cup B)$. 7
- (b) Out of 30 tickets bearing the numbers from 1 to 30, one ticket is taken at random. Find the probabilities that the number is (i) multiple of 3 (ii) multiple of 4 (iii) multiple of 3 or 4. 7

- Q-8 Attempt all questions (14)**
- (a) A box contains 8 tickets, 3 of them a prize of Rs. 5 each and the remaining 5 a prize of Rs. 2 each. 7
- (a) If one ticket is drawn at random, what is the expected value of the



prize?

(b) If two tickets are drawn at random, what is the expected value of the prize?

- (b) A bag contains 4 green and 5 white balls, another bag contains 5 green and 3 white balls. One ball is drawn at random from each. Find the Probability that they are of one green and one white. 7

