Enrollment No: _____Exam Seat No:_____

C. U. SHAH UNIVERSITY

Summer Examination-2022

Subject Name : Statistics - II

Subject Code : 4CO04STA2 **Branch: B.Com (English)**

Semester: 4 **Date: 06/05/2022** **Time: 11:00 To 02:00** **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 wage of workers of a factory follows 1

(A) Binomial Distribution (B) Poisson Distribution

(C) Normal Distribution (D) None of these

b) Normal distribution is also called _____ 1

(A) Gaussian Distribution (B) De-Moivre Distribution

(C) Laplace Distribution (D) None of these

c) Parameter is a characteristic of _____ 1

(A) Probability distribution (B) Sample

(C) Population (D) None of these

d) The standard normal distribution is symmetrical at z = _____ 1

(A) 0 (B) 1 (C) -1 (D) 2

e) The normal curve is _____ 1

(A) Bell-shaped (B) U-shaped (C) J-shaped (D) None of these

f) There are _____ models of time series. 1

(A) 3 (B) 2 (C) 4 (D) None of these

g) The period of cyclical variations is always _____ 1

(A) Less than one year (B) More than one year

(C) More than two year (D) None of these

h) Characteristic of an individual which cannot be measured numerically called … 1

(A) A variable (B) An attribute

(C) A random variable (D) None of these

i) As the sample size increases, S. E. …… 1

(A) Decreases (B) Increases

(C) Remains constraint (D) None of these

j) In any one (or more than one) class frequency is negative, then the given data are said to be …. 1

(A) Consistent (B) Inconsistent

(C) Both (A) and (B) (D) None of these

k) If the value of Q = 1, then there is a …. 1

(A) Perfect positive association (B) Perfect negative association

(C) Partial positive association (D) Partial negative association

l) Statistical data may be collected by complete enumeration is called …… 1

(A) Sample inquiry (B) Population inquiry

(C) Both (A) and (B) (D) None of these

m) The population of Patan city is an example of …… 1

(A) A finite population (B) Can infinite population

(C) A hypothetical population (D) Both (A) and (B)

n) The number of possible samples of size n out of population of N units with replacement is = _____ 1

(A) n^N (B) N^n (C) ${}^NC_n$ (D) None of these

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

Q-2 **(14)**

Explain the difference between population and enumeration and sample enumeration.

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

(A) Give the properties of normal distribution. **7**

(B) Explain the importance of time series. **7**

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

(A) Explain the different types of association. **7**

(B) Give the difference between liner correlation and association of attributes. **7**

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

(A) Explain the difference between simple random sampling technique and stratified random sampling technique. **7**

(B) Find stratified sample mean and also calculate the variance of stratified sample mean. **7**

Stratum	Numbers	Mean	Variance	Sample Size
A	40	10	25	8
B	35	20	30	6
C	25	12	08	4

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

(A) In a two towns A and B the following information was supplied by an investigator. **7**

Particulars	Town A	Town B
Total population	240	234
Literates	40	34
Criminals	40	20
Literates criminals	5	2

Compare the degree of association between literacy and crime in two towns.

(B) Obtain coefficient of association and coefficient of collignation by Yule's from the data given below. **7**

N = 2000 (B) = 280 (α) = 1740 (αβ) = 1560

Q-7 **(14)**

100 battery cells with mean life of 12 hours and its S. D. is 3 hours. Assuming life of battery cells is normal find

(i) Percentage of battery cells having life more than 15 hours

(ii) Percentage of battery cells with life time between 10 and 14 hours

(iii) Percentage of battery cells having a life less than 6 hours

Q-8 **(14)**

Fit a second-degree parabola from the following time series and forecast the price for the year 1998.

Year	1992	1993	1994	1995	1996	1997
Price	100	107	128	140	181	192