

**SARASWAT VIDYALAYA'S
SRIDORA CACULO COLLEGE OF COMMERCE & MANAGEMENT STUDIES
KHORLIM, MAPUSA, GOA**

B.Com – Honors / B.Com - General (w. e. f. 2017-18)

**S.Y.B.COM. SEMESTER END EXAMINATION, JULY 2021
REGULAR SEMESTER IV (online mode)**

Subject:- BUSINESS STATISTICS -II (GE-5 , C C : UCAG102)
(CBCS- Revised Course)

M.Marks:- 40
Duration:- 2 hrs.

Instructions:- 1. Attempt all the questions

2. Use of non-programmable calculator is allowed.

3. Sub-questions of a question should be answered continuously.

Q. I. Answer **any five** questions from the following: (2X5= 10)

- 1) Define the term “Scatter diagram”. Draw scatter diagrams for positive correlations.
- 2) What are the parameters for Poisson distribution? Give examples where Poisson distribution can be used.
- 3) Define the term “Complementary events”. Give examples of complementary events associated with an experiment.
- 4) What is the probability that a leap year will have:
 - a) 53 Sundays.
 - b) 53 Sundays or 53 Mondays?
- 5) Write down any five properties of coefficient of correlation.
- 6) For a Binomial distribution, mean = 6 and variance = 2, Find n and p.
- 7) Find the value of product moment coefficient of correlation from the following data: $n = 7$, $\sum x = 35$, $\sum y = 37$, $\sum xy = 219$, $\sum x^2 = 239$, $\sum y^2 = 215$
- 8) What are the advantages of drawing a sample from a population?

Q.II Answer **any six** from the following: (5x6 = 30)

- i) A and B are participating in a running race. If the probability of A winning the race is $\frac{1}{2}$ and probability of B winning it is $\frac{1}{4}$, find the probability that (i) one of them will win (ii) none of them will win.
- ii) Certain corresponding values of x and y are given below. Find the value of y when x = 5, using the Lagrange's formula

x	0	1	2	4	6
y	2	5	12	19	35

- iii) Calculate Rank correlation coefficient for the following data and hence comment on it.

Judge I	8	5	4	3	6	2	7	1
Judge II	8	4	3	6	5	2	6	1

- iv) The incomes of a group of 10,000 persons were distributed normally with mean Rs. 6000 and standard deviation 100. Find

- the number of persons having income between 5800 and 6300
- the highest income of the lowest paid 700 people.

(Given for s.n.v. z, area between $z = 0$ to i) $z = 2$ is 0.4772

ii) $z = 3$ is 0.4987

iii) $z = 1.48$ is 0.43)

- v) In a sample of 400 residents of a locality, 232 are men. Test the hypothesis that sex ratio is 1:1 at 5 % l.o.s.

- vi) Find the value of x when $y = 4$ for the following data if $\text{Cov}(x,y) = 0.25$

	x	y
Mean	3	5
Variance	2.5	0.5

- vii) Given the following information;

Number of pairs of observation = 6

Sum of x series = 48

Sum of y series = 24

Sum of squares of x series = 784

Sum of squares of y series = 321

Sum of product of x and y from their respective means = 320.

Find the correlation coefficient and comment on it.

- viii) Estimate the production for the years 2013 and 2015 from the data given below:

Year	2010	2011	2012	2013	2014	2015	2016
Production ('000 tons)	100	120	150	-	210	-	320

=====VVVVVVVVVV=====