

GOVERNMENT COLLEGE OF COMMERCE & ECONOMICS
BORDA, MARGAO GOA
B. Com. (Sem.IV) SEMESTER END EXAMINATION, July 2021
(Under OS-1 COVID-19 pandemic)
GE 5 -- Business Statistics - II

Duration	Answering:	02 Hours	Max. Marks: 40	No. of Pages: 02
	Online Submission:	01 Hour		

Instructions: (i) Answer any **Four** out of **Six** questions
(ii) Figures to the right indicate full marks.
(iii) Students need to submit **Handwritten** answer paper scanned in whiteboard mode in a single PDF file only.

Q.1. Find the coefficient of correlation for the following data using

(10 Marks)

- i) Karl Pearson's formula and
- ii) Spearman's formula

X	10	20	30	40	50
Y	70	60	50	40	30

Q.2. Find the Regression equations for the following data and hence find y , when $x=10$ and find x when $y=25$.

(10 Marks)

X	8	12	20	35	42
Y	23	38	52	61	40

Q. 3. If two unbiased Ludo dice are rolled, then find the probability such that (10 Marks)

- i) the sum of the numbers appearing on the uppermost faces of the two Ludo dice is an odd number.
- ii) the product of the numbers appearing on the uppermost faces of the two Ludo dice is a perfect square.
- iii) the numbers appearing on the uppermost faces of the two Ludo dice are the same.
- iv) the sum of the numbers appearing on the uppermost faces of the two Ludo dice is a multiple of six.

Q. 4. Using Newton's Interpolation Formulae, (10 Marks)
evaluate $y = e^{2x}$ for $x = 0.05$ and $x = 0.37$ from the following data :

x	0.00	0.10	0.20	0.30	0.40
$y = e^{2x}$	1.0000	1.2214	1.4918	1.8221	2.2255

Q.5. Using Lagrange's Interpolation Formula, (10 Marks)
find the value of y when $x = 1.9$ from the following data :

x	1.8	2.0	2.2	2.4	2.6
y	2.9	3.6	4.4	5.5	6.7

Q.6. Answer the following: (2x5 =10 Marks)

- a) The heights of 10000 people are distributed normally with mean 172 cms and standard deviation 5 cms. How many people will have height greater than 180 cms and how many will have height less than 164 cms? It is given that area of the standard normal variate between $Z = \pm 1.6$ is 0.8904 .
- b) The average Intelligence Quotient for the adult population is 100 with the standard deviation of 15. A researcher believes this value has changed and he decides to test the I.Q. of 75 random adults. The I.Q. of the sample is 105. Is there enough evidence to suggest that the average I.Q. has changed ?