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SUBJECT CODE NO: - XX-3520
FACULTY OF COMMERCE AND MANAGEMENT
B.Com F.Y (Sem- II)
Examination March / April - 2023
Business Mathematics & Statistics-II

[Time:3:00 Hours]

[Max. Marks: 80]

Please check whether you have got the right question paper.

N. B

- 1) Question No 1 is compulsory.
- 2) Solve any four questions from Q.No. 2 to Q.No. 7

Q1 A. A select the most appropriate answer from the alternatives given below (one mark each) 05

1. Age of applicant for the life Insurance and Premium of insurance is _____ correlation.
 - a) Negative
 - b) Zero
 - c) None of these
 - d) Positive
2. $y = a + bx$ then y is _____ value.
 - a) Dependent variable
 - b) Independent variable
 - c) Intercept
 - d) None of these
3. In the regression equation $a + bx$ then x is called _____ variable.
 - a) Dependent
 - b) Independent
 - c) Positive
 - d) None of these
4. In simple regression equation, the number of variables involves _____.
 - a) 0
 - b) 1
 - c) 2
 - d) None of these
5. Laspeyres Price Index Number is based on _____.
 - a) Base year quantity
 - b) Current year quantity
 - c) average of base year & Current year quantity
 - d) None of these

B. Answer the following questions in one sentence each. 05

1. Define correlation?
2. What is mean by regression?
3. What is an Index Number?
4. What is sample space?
5. Define Probability?

C. Fill in the Blanks.

05

1. Karl Pearson's co-efficient of correlation lies between _____.
2. The regression analysis measures _____ between x and y.
3. The base period should always be _____.
4. If event cannot happen, the probability of the event will be _____.
5. Quantity Index reflects _____ changes from one period to another.

D. State whether the following statements are true or false.

05

1. Co-efficient of correlation is a relative measure of association between two or more variables.
2. 'Estimating lines' are the same as the regression lines.
3. The regression lines of two independent variables are parallel to each other.
4. Like all statistical tools, Index Numbers must be used with great caution.
5. The set of all possible outcomes of random experiments is called the Probability.

Q2 Calculate Karl Pearson's co-efficient of correlation from the following data.

15

X	78	89	97	69	59	79	68	61
Y	125	137	156	112	107	136	123	108

You may use 69 as working mean for 'x' and 112 that for 'y'.

Q3 From the following data from two regression equation.

15

Sales	91	97	108	121	67	124	51	73	111	57
Purchase	71	75	69	97	70	91	39	61	80	47

Q4 Construct the 'Fisher's Ideal Index Number of Price from the following data.

15

Commodity	2007		2012	
	Price	Qty	Price	Qty
A	4	7	6	8
B	2	5	3	4
C	3	4	5	5
D	6	2	8	3

- Q5 A Bag Contain 3 red, 4 white and 5 black balls. 15
 Three balls are taken from the bag. Find the probability that.
- I. All are black
 - II. All are of different colours.

- Q6 Calculate the co-efficient of correlation from the following ages of husbands and wife's. 15

Husbands age	Wife age
23	18
27	22
28	23
29	24
30	25
31	26
33	28
35	29
36	30
39	32

(Use 30 and 25 as working mean for 'x' and 'y'.)

- Q7 Write a short Notes (Any Three) 15
1. Types of Correlation
 2. Nature of Probability
 3. Types of Regression
 4. Types of Index Number
 5. SPSS