

Total No. of Printed Pages: 3

**SUBJECT CODE NO: - X-3048**  
**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.

- Q1 A. Select the most appropriate answer. 05
- i) When two variables are independent the value of ' $\gamma$ ' would be  
 a) -1      b) +1      c) 0      d) none of these
  - ii) Karl Pearson's coefficient of correlation lies between  
 a)  $\pm 2$       b) 0 To +1      c)  $\pm 1$       d)  $\pm 0.111$
  - iii) In simple regression equation, the number of variables involves.  
 a) 0      b) 1      c) 2      d) None of these
  - iv) Probability of any event lies between \_\_\_\_\_ and \_\_\_\_\_  
 a) 1 and 2      b) 1 and 3      c) 0 and 1      d) none of these
  - v) Laspeyres Price Index Number is based on \_\_\_\_\_  
 a) Base year quantity  
 b) current year quantity  
 c) Average of base year and current years quantity  
 d) None of these
- B. Answer the following questions in one sentence 05
- 1) Define Correlation?
  - 2) What is common Logarithms?
  - 3) Define Regression?
  - 4) What is an Index Number?
  - 5) What is sample space?
- C. Fill in the blanks and rewrite the sentences. 05
1. If A and B are independent event's, Then  $P(A \cap B) =$  \_\_\_\_\_
  2. Two independent events cannot be mutually \_\_\_\_\_
  3. Index Numbers are called of Economic \_\_\_\_\_
  4. When one regression co-efficient is Positive, the other would also be \_\_\_\_\_
  5. Rainfall and Yield of crop is the example of \_\_\_\_\_ Correlation.

- D. state the following statements are whether True or false. 05
1. Mathematical operations can be easily done by log table
  2. Logarithm of 1 to any base is always zero.
  3. The coefficient of correlation is never Negative.
  4. The Regression Lines of two independent variables are parallel to each other.
  5. The degree of uncertainty can be measured numerically is called Probability.

Q2 Simplify by using Log Table. 15

$$\frac{92.21 \times (8.76)^2}{24.61}$$

Q3 Nine students obtained the following Percentage of Marks in the college test. calculate the Karl Pearson's Correlation co-efficient: 15

X	51	63	73	46	50	60	47	36	60
Y	49	72	74	44	58	66	50	30	55

You can assume X is 54 and Y is 55

Q4 Construct the 'Fisher's Ideal Index Number of price from the following for information 15

Commodity	2008		2012	
	Price	Quantity	Price	Quantity
A	2	20	5	15
B	4	4	8	5
C	1	10	2	12
D	5	5	10	6

Q5 A bag contain 5 Black and 7 white balls. A ball is drawn out of it and replaced in the bag. Then a ball is drawn again. what is Probability that 15

- i) Both the balls drawn were black
- ii) Both were
- iii) The first ball was white and the second black.
- iv) The first ball was black and second white

Q6 Supply and Price for 9 years are given below from both regression equations of supply on price and price on supply and calculate most likely price when supply is 90 15

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017
Supply	80	82	86	91	83	85	89	96	93
Price	145	140	130	124	133	127	120	110	116

Q7 write short Notes (Any 3) 15

1. Types of Logarithms
2. Characteristics of Index Number
3. Types of Correlation
4. Types of Regression Analysis
5. Types of Probability Event.