

B.C.C.A. - II (CBCS Pattern) Semester-IV  
**UBCCAT401 - Paper-II : Statistics Techniques and Business Mathematics-II**

P. Pages : 2

Time : Three Hours



**GUG/S/25/12045**

Max. Marks : 80

Notes : All questions are compulsory and carry equal marks.

**Either:**

1. a) Define Regression? Explain its types. 8

b) Fit the Regression equation of x on y & y on x from the following data: 8

x =	10	20	30	40	50	60
y =	15	5	10	25	30	40

Obtain the estimate of y when x = 22.

**OR**

c) Find out regression equation, the expected life of wife when husband age is 33 years. 16

Average age of husband = 25 years

Average age of wife = 22 years

Standard deviation for the age of husband = 4 years.

Standard deviation for the age of wife = 5 years.

Coefficient of correlation between the age of husband and wife is 0.8

**Either:**

2. a) Find out fisher index number 8

$$\sum p_0 q_0 = 184 \quad \sum p_0 q_1 = 203$$

$$\sum p_1 q_1 = 259 \quad \sum p_1 q_0 = 236$$

b) Find out fisher Ideal Index number 8

Article	2002		2001	
	Price	Total value	Price	Total value
x	4	48	5	50
y	7	49	8	48
z	5	20	6	18

**OR**

c) Find out Index number by i) Laspeyres's method, ii) Paasches Method iii) Dorbish and Bowley's method iv) Fisher method v) Marshall and Edgeworth method 16

Commodity	Quantity		Price	
	2000	2001	2000	2001
A	16	20	50	16
B	5	8	10	15
C	4	6	20	25

**Either:**

3. a) Intelligent test on two groups Boys and girls gives the following result. 8

Particular	No.	Mean	SD
Boys	121	84	10
Girls	81	81	12

Examine if the difference between the two groups mean is significant.

- b) Following data relates to the sales in a time of trade depression of a certain proprietary articles in wide demand. Do the data suggest that the sales are significant affected by the depression. 8

District			
Sales	Hits by Depression	Not hits by depression	Total
Satisfactory	250	80	330
Not Satisfactory	140	30	170
Total	390	110	500

Table value of  $\chi^2$  for one degree at 5% level of significance is 3.841.

**OR**

- c) Below are given the yield per acer for 6 plots earning a crop competition of 3 plots being shown with varieties A & 3 with B. 16

A	B
30	20
32	18
22	16

Set up a table of analysis of variance & calculate f to find the significance of difference. between yield of the two varieties taking 5% value of F for the calculated number of degree of freedom to be 7.71

**Either:**

4. a) The ratio present age of his mother and son is 3:1 the mother age of the time of birth of her son was 24 years find this present age. 8

- b) Find out the period in which the amount of Rs. 6,000 will be doubled at the simple interest rate  $12\frac{1}{2}\%$  pa. 8

**OR**

- c) Find the compound Interest accruing annually on 5000 for 3 years @ 10% pa find what the loan amount to at the end of year. 8

- d) Divide Rs. 1020 between A, B and C so that A gets  $\frac{2}{3}$ <sup>rd</sup> of what B get, B get  $\frac{1}{4}$ <sup>th</sup> & What C gets. Find the shares of each. 8

5. Solve all the questions.

- a) Explain uses of Regression analysis. 4  
b) Explain importance of Index number. 4  
c) State the characteristics of  $\chi^2$  test. 4  
d) Explain Simple Interest. 4

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