

UBCCAT401 - Statistics Techniques and Business Mathematics-II

P. Pages : 2

GUG/W/22/12045

Time : Three Hours



Max. Marks : 80

- Notes : 1. All questions are compulsory.
2. All questions are carry equal marks.

1. a) What do you meant by Regression. Explain the functions of Regression. **8**
- b) For 50 students of a class regression equation of Marks in statistics (y) on Marks in Accounting (x) are $4y - 5x - 80 = 0$ Average Marks in Accounting are 40 and ratio of two standard Deviation $\delta y : \delta x = 5 : 2$ **8**
Find out (1) mean marks in statistics (2) coefficient of correlation

OR

- c) Equation given as under **16**
 $4x - 5y + 33 = 0$
 $20x - 9y = 107$
variance of $y = 16$
Find out
i) Mean value of x and y ii) Coefficient of correlation
iii) Standard Deviation of x

2. a) Given that **8**
 $\Sigma p_0 q_0 = 930$ $\Sigma p_0 q_1 = 1200$
 $\Sigma p_1 q_1 = 590$ $\Sigma p_1 q_0 = 431$
Calculate
i) Laspeyre's Method ii) Paasche's method

- b) Find out Index Number by Fisher method. **8**

Article	2018		2019	
	Price in Rs.	Total value	Price in Rs.	Total value
Jowar	7	42	6	54
Wheat	10	120	9	72
Rice	8	48	7	56

OR

- c) Find out Index Number by **16**
1) Laspeyre's Method 2) Paasche's Method
3) Dorbish & Bowley method 4) Fisher Ideal Method

Year	Rice		What		Jowar	
	Price in Rs.	Quantity	Price in Rs.	Quantity	Price in Rs.	Quantity
2018	4	50	3	10	2	5
2019	10	40	8	8	4	4

3. a) Intelligent test on two groups of Boys and Girls gave the following results. 8
 Girls = $\bar{x} = 84$ SD = 10 N = 120
 Boys = $\bar{x} = 80$ SD = 11 N = 64 $r = 0.4$
 Find out significance of Difference

- b) A random sample of 150 village taken from Nagpur district with a S.D. of 41.25 Another random sample of 150 villages from Chandrapur district with a S.D. of 33.75. If the S.D. of all the village is 30. Estimate if the difference between the two S.D. is significant or not. 8

OR

- c) Rudra company Wishes to test whether it's three salesman A, B and C trend to make sale of the same size weather they differ their selling ability as measured by the average size of their sale during the last week their have been 14 sales calls. A made 5 calls, B made 4 calls and C made 5 calls following are the weekly sales records of the three salesman. 16

A(Rs) B(Rs) C(Rs)

3	6	7
4	3	3
3	3	4
4	4	6
0	Nil	5

Perform the analysis of variance and draw your conclusion Table value of F at 5% level is 1.83.

4. a) Monthly salaries of 2 persons are in the ratio of 3:5. If each receives an Increase of Rs. 20 in the monthly salary the ratio is altered to 13:21. Find their salary. 8
 b) Determine six monthly compound Interest for $2\frac{1}{2}$ year on Rs. 4000 at 14% interest per year. 8

OR

- c) A man invested Rs. 750 for 5 years and Rs. 1250 for 4 years at the certain rates the total income for two investment is Rs. 437.50. Find the rate of interest. 8
 d) Annual Income ratio of A and B is 4:3 and Annual expenditure ratio is 3:2. If A saves Rs. 600 and B saves Rs. 800 at the end of the year. Find out 8
 i) Their Annual Income ii) Their Annual Expenditure

5. Write short answers.

- a) Objectives of Regression line. 4
 b) Characteristics of Index Number. 4
 c) Characteristics of Chi-Square Test. 4
 d) Distinguish between Simple interest & compound interest. 4
