UBCCAT401 - Statistics Technique and Business Mathematics-II

P. Pages : 2

Time : Three Hours

GUG/W/23/12045

Max. Marks : 80

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

1. a) What do you mean by Regression. Explain the object of Regression Analysis. **8**

b) For so students of a class regression equation of marks in statistics (x) on the marks in Accounting (y) is 3y-5x+108 = 0. Mean Marks in Accounting is 44. The variance of the Marks in statistics 9/16 of the variance of Accounting. **8**

Find out
1) Mean marks in statistics
2) Coefficient of correlation

OR

c) Calculate coefficient of correlation and obtain lines of regression by the help of following data **16**

x =	1	2	3	4	5	6	7	8	9
y =	9	3	10	12	11	13	14	16	15

2. a) Calculate Fisher Index Number **8**

$\sum p_0 q_0 = 184$

$\sum p_1 q_1 = 259$

$\sum p_0 q_1 = 203$

$\sum p_1 q_0 = 236$

b) Find out index Number by Laspeyre's method and Paasche's method. **8**

Commodity	Quantity		Price	
	2020	2021	2020	2021
A	16	20	50	16
B	5	8	10	15
C	4	6	20	25

OR

c) Find out index number of **16**
i) Laspeyre's method   ii) Paasche's method
iii) Dorbish and Bowley method   iv) Fisher Ideal method.

Particular	2022		2021	
	Price in Rs	Total value	Price in Rs	Total value
X	4	48	5	50
Y	7	49	8	48
Z	5	20	6	18

3. a) Intelligent test on two groups of Boys and Girls gave the following result   **8**
Girls = $\bar{x} = 84$ SD = 10 N = 120

r = 0.4

Boys = $\bar{x} = 80$ SD = 11 N = 64
Find the significance of differences

b) Below are given the yield per aces for 6 plots earning a crop competition 3 of plot being   **8**
shown with varieties A and 3 with B.
A = 30 32 22
B = 20 18 16
Set up a table of Anova and calculate the value of F. Find the significance of
difference between yield of two varieties taking 5% value of F and No. of Degree of
Freedom to be 7.71

OR

c) Genetic Theory states that children having our Parcnto of blood type 'M' and the other   **16**
blood 'N' will always be one of the three types M, MN and N and that the proportion of
three types will an average be as 1:2:1. A report states that out of 300 children having one
'M' parent and on 'N' parent 30% were found to be type. 'M' 45% type 'MN' and remaining
type 'N'. Test the hypothesis by x^2 Test. Table value of x^2 for 2 Degree of freedom at 5%
level of significance is 5.991.

4. a) Simple interest on a certain amount for two years is Rs. 2400 and compound interest on   **8**
the same amount for the same period is Rs. 2544. Find out the Rate of interest.

b) Determine Half yearly compound interest for 2.5 year on Rs 4000 at 14% interest per year   **8**

OR

c) In a Godown there were 1525 Bags of wheat. Jowar and Rice after ward 75 Bags of wheat.   **8**
30 Bags of Jowar and 20 Bags of Rice were stored in the Godown due to which the ratio of
wheat. Jawar and Rice become 5 : 4 : 2. State how many Bags of wheat are their in the
Godown.

d) Monthly salaries of two persons are in the ratio 3:2. If each receives an increase of Rs.   **8**
1600 in Monthly salary, the new ratio is 10:8.
Find their original salary

5. Write short answers from the following.

a) Distinguish between Regression and correlation.   **4**

b) Limitation of Index Number.   **4**

c) uses of x^2 test.   **4**

d) Short-notes on simple interest and compound interest.   **4**

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