

B B A (CBCS Pattern) Sem II
UCB2C07 - Statistical Methods for Business-II

P. Pages : 2

Time : Three Hours



GUG/S/18/20101

Max. Marks : 80

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

1. a) What is Regression ? Explain the importance of regression. 8

b) Calculate coefficient of correlation & obtain the times of regression by the help of following data : 8

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

OR

c) Find out the following : 16

- i) Coefficient of correlation between age of husband & age of wife.
- ii) The regression equation
- iii) Most likely age of husband when wife's age is 30 years
- iv) Most likely age of wife when Husband's age is 25 years.

Age of Husband	22	23	23	24	26	27	27	28	30	30
Age of wife	18	20	21	20	21	22	23	24	25	26

2. a) Calculate three yearly moving average of the following data : 8

year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
No. of students	15	18	17	20	23	25	29	33	36	40

b) The following figures relate to the profit of a commercial concern for 8 years. 8

year	1984	1985	1986	1987	1988	1989	1990	1991
Profit ₹	15.420	14.470	15.520	21.020	26.120	31.950	35.370	34.670

Find the trend of profits by the method of moving averages.

OR

c) Assuming a four yearly cycle calculate the trend by the method of moving averages from the following data relating to the production of tea in India. 16

Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Production	464	515	518	467	502	540	557	571	586	612

3. a) You are given the following data : 8

	Intelligent boys	dull boys	Total
Skilled Mother	45	20	65
Unskilled mother	15	20	35
Total	60	40	100

Do these figures support the hypothesis that skilled mothers have intelligent sons (5% value of χ^2 for 1 d.f. is 3.841)

- b) The following table shows the data obtained during an epidemic of cholera. 8

	Attacked	Not Attacked
Inoculated	30	470
Not inoculated	190	1310

Test the effectiveness of insulation of preventing the attack of cholera (χ^2 value 3.841 for 5% of level)

OR

- c) Two investigator draw samples from the same town in order to estimate the number of person falling in the income group poorer, middle class, well to do. Their result are as follows : 16

Income group				
Investigator	Poor	Middle Class	Well to do	Total
A	140	100	15	255
B	140	50	20	210
Total	280	150	35	465

Show that the sampling technique of at least one of the investigator is suspect. The table value of χ^2 for a degree of freedom at 5% level of significance is 3.841.

4. a) In how many ways the word 'Calcutta' be rearranged. 8

- b) Find the probability of drawing two king from a pack of card in two consecutive draw card drawn not been replaced. 8

OR

- c) A bag contain 4 white, 2 black, 3 yellow and 3 red balls. What is the probability of getting a white or red ball at random in a single draw of one. 8

- d) In how many ways the word 'College' be rearranged. 8

5. Write short note :

- a) Regression analysis. 4
- b) Utility of time series. 4
- c) Chi-square (χ)² test. 4
- d) Probability. 4
