

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

P. Pages : 2

Time : Three Hours



GUG/S/25/10595

Max. Marks : 80

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

1. a) Define regression analysis and explain its objective. **8**
- b) From the following information find regression equations and estimate the production when the capacity utilization is 70%. **8**

Particular	Average Mean	Standard Deviation
Production (in lakh units)	42	12.5
Capacity Utilization (%)	88	8.5

Correlation of Coefficient (r) 0.72

OR

- c) Calculate coefficient of Correlation & obtain the 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 the three and five year moving averages of the following data: **8**

Year	1	2	3	4	5	6	7	8	9	10	11	12
Production (‘000 tons)	18	19	20	22	20	19	22	24	25	22	25	26

- b) The following table shows the index of industrial production for the period from 1976 to 1985. Using the year 1976 as the base year. Obtain trained values for the following data using 4 yearly centered moving averages. **8**

Year	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Index	0	2	3	3	2	4	5	6	7	10

OR

- c) Find out the production for the month of Nov in particular year and with a trend value by applying least square method. **16**

Month	Jan.	Feb.	March	April	May	June	July	August
Production (in lakhs)	120	135	138	125	141	147	140	132

3. a) Following figures show that distribution of digits in number chosen at random from a telephone directory. 8

Digits	0	1	2	3	4	5	6	7	8	9	Total
Frequency	1026	1107	997	966	1075	933	1107	972	964	853	10,000

Test whether the digit may be taken to occur equally frequently in the directory. The table value of X^2 for 9 degree of freedom at 5% level of significance is 16.919.

- b) The treatment A & B were tried to control a certain type of plant disease. The following results were obtained. 8

A = 200 plants were examined & 40 were infected.

B = 200 plants were examined & 10 Were infected.

If treatment B superior to treatment A. Table value of X^2 for one degree of freedom at 5% level of significance is 3.841.

OR

- c) Following table represents the number of boys and girls who chose the five possible answer to an item of an attitude scale. 16

Boys	Strongly Approved	Approved	Indifferent	Dis-Approved	Strongly Dis-Approved
Boys	50	60	15	50	25
Girls	20	30	10	30	30

Do these data indicate a significant sex difference in the attitude towards this item.

The table value of X^2 for 4 degree of freedom at 5% level of significance is 9.49

4. a) Three cards are drawn, what is the chance that they are Ace, King and Queen in any order (being not replaced) 8

- b) A bag contains 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

OR

- c) A sub-committee of 6 members is to be formed out of a group of 7 men and 4 ladies. Calculate the probability that the sub-committee will consist of 16
- 1) Exactly two ladies
 - 2) At least two ladies

5. Write short note: 4
- A) Importance of Regression. 4
 - B) Components of Time Series. 4
 - C) Characteristics of Chi-square test. 4
 - D) Concepts of probability. 4
