

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

P. Pages : 2

Time : Three Hours



**GUG/S/24/10595**

Max. Marks : 80

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

1. a) Write the difference between correlation and g-regression. 8

b) Estimate most likely height of father whose son height is 70 inches. 8

Particular	Mean Height	Standard Deviation
Father	67 inches	3.5 inches
Son	65 inches	2.5 inches

Coefficient of correlation = 0.8

**OR**

c) For 50 student of class regression equations of marks in statistics (y) and marks in accountancy (x) are  $4y - 5x - 80 = 0$ . Average marks in accountancy are 40 & ratio of two standard deviation  $S_y:S_x = 5:2$  16

Find out:

- i) Mean marks of statistics.  
ii) Coefficient of correlation.

2. a) Compute the 4 yearly moving average's from the following data along with centered moving average or trend values. 8

Year:	2001	2002	2003	2004	2005	2006	2007	2008
Annual sales:	36	43	43	34	44	54	34	24

b) Find the trend for the following series using a three year weight moving averages with weights 1:2:1 8

Year:	1991	1992	1993	1994	1995	1996	1997
Values:	2	4	5	7	8	10	13

**OR**

c) Compute the Trend Line by least square method from the data given below" 16

Months:	Jan	Feb	March	April	May	June	July	August
Production:	120	135	138	125	141	147	140	132

3. a) Following data relates to the sales in a time of trade depression of a certain proprietary articles in white demand. Do the data suggest that the sales are significantly affected by the depression. 8

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  $x^2$  for one degree of freedom at 5% level of significance in 3.841.

- b) Two treatment A & B were tried to control a certain type of plant disease. The following result were obtained.  
 A = 200 plant were examined & 40 were found infected.  
 B = 200 plants were examined & 10 found infected.  
 If Treatment B superior to treatment A. Table value of  $\chi^2$  for one degree of Freedom at 5% level of significance is 3.841

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**OR**

- c) Following table represents the number of boy's and girls who chose the five possible. Answer to an item of an attitude scale.

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	Strong approved	Approved	Indifferent	Dis approved	Strongly disapproved
Boy	50	60	15	50	25
Girls	20	30	10	30	30

Do these data indicated a significant sex different in the attitude towards this item.

The table value of  $\chi^2$  for 4 degree of freedom is 5% level of significance is 9.49.

4. a) What is the chance that a year 1980 in the month of January should have 5<sup>th</sup> Monday.
- b) A cards is drawn from a pack of cards find the probability that it is.
- A black card
  - A Red card
  - A club
  - An Ace
  - A Red Ace
  - An Ace of spade
  - Not a spade
  - A king or a Queen

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**OR**

- c) A sub-committee of G member is to be formed out of a group of 7 men and 4 ladies. Calculate the probability that the sub committee will consist of
- Exactly two ladies.
  - At least two ladies
- d) One bag contain 4 white balls and 2 black balls. Another consists of 3 white balls and 5 black balls if one ball is drawn from each bag. Find the probability that
- Both are white
  - Both are black
  - One is white & one is black

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5. Short note.
- Explain the objective of regression line
  - What are the element of a decision problem.
  - Discuss the characteristics of chi-square test.
  - Uses of time series.

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