

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

P. Pages : 2

Time : Three Hours



GUG/W/22/10595

Max. Marks : 80

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

1. a) Define the term of Regression. Explain the various Method of Regression. 8
b) From the following data find out the Two regression equations 8

	Advertisement Exp (in Lakhs Rs) x	Sales In Lakhs Rs y
Mean	10	90
Standard deviation	3	12

Co-efficient of correlation = 0.8

OR

- c)

X series	48	50	53	49	51	55	53	49
Y series	36	32	33	38	37	31	35	30

16

- Find out 1) The Two Regression Equations
2) Co – efficient of correlation
3) Most Likely value of Y when X is 47
4) Most Likely value of X when Y is 34

2. a) Determine the Trend value by semi average method. 8

Year	2011	2012	2013	2014	2015	2016
Sales ('000)	60	75	81	110	106	120

- b) Calculate the Three yearly moving average of the data given below. 8

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Sales (millions Rs)	3	4	8	6	7	11	9	10	14	12

OR

- c) Compute the 4 yearly moving averages from the following data. 16

Year	2009	2010	2011	2012	2013	2014	2015	2016
Annual sales (Rs in crores)	36	43	43	34	44	54	34	24

3. a) Following Table is published in a memorial written by Karl Pearson. 8

Eye Colour of Father	Eye Colour of Son		
	Not Light	Light	Total
Not Light	230	148	378
Light	151	471	622
Total	381	619	1000

Calculate the value of χ^2 .

- b) Calculate the value of χ^2 and determine that intelligent father have Intelligent sons 8
 Intelligent fathers with Intelligent sons 372
 Intelligent fathers with Dull sons 122
 Dull father with Intelligent sons 138
 Dull father with Dull sons 868
 The Value of χ^2 for one degree of freedom at 5% Level of significance is 3.841

OR

- c) The following table shows the statistical data regarding the General Ability and their mathematical ability among 1000 Executive of various companies test with χ^2 whether the general ability and mathematical Ability are Independent? 16

Mathematical Ability	General Ability			
	Excellent	Fair	Poor	Total
Excellent	40	25	14	79
Fair	270	275	200	745
Poor	20	58	98	176
Total	330	358	312	1000

The Table value of $\chi^2 = 13.28$ at 5% level of significance.

4. a) A can solve 90% of the problem given in a book and B can solve 70%. What is the probability that at Least one of them will be solve problem selected at random. 8
- b) It is 8:5 against a person who is now 40 years old Living till he is 70 and 4:3 against a person now 60 years living till he is 80 find the probability that one at Least of these person will be alive 30 year. 8

OR

- c) Probability of Three drivers will be able to drive Home Safety after driving are $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}$ respectively. If they set out to drive home after a party what is the probability that at least one drives home safety. 8
- d) A problem in statistics is given to three students Rahul, Rashi and Rudra whose chances of solving it are $\frac{1}{2}, \frac{1}{3}$ and $\frac{1}{4}$ what is the probability that the problem will be solved. 8

5. Write short note :

- a) Importance and utility of the regression analysis. 4
- b) Uses of time series. 4
- c) Meaning and concept of Chi-square. 4
- d) Meaning and history of probability. 4
