

B.C.C.A.(with Credits)-Regular-Semester 2012 Sem. IV
241 - Statistics Techniques and Business Mathematics – II

P. Pages : 2

Time : Three Hours



GUG/W/16/5139

Max. Marks : 80

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

1. a) Explain 'Regression lines'. Also state their point of Intersection. **8**
b) Find out the regression co-efficient from the following data by Standard Deviation method. **8**

$$x = 06, 02, 10, 04, 08$$

$$y = 09, 11, 05, 08, 07$$

OR

- c) From the following data find out **16**
i) the co-efficient of correlation between the Age and Blood pressure.
ii) The regression lines of x on y and y on x.
iii) estimate the Blood Pressure when Age is 45 years.

Age in years :	56	42	72	36	63	47	55
Blood Pressure :	147	125	160	118	149	128	150

2. a) Construct Index No. by Aggregate Expenditure method **8**
 $\Sigma p_1 q_0 = 2254, \Sigma p_0 q_0 = 1480,$
b) Calculate the Index No. for the year 2011 assuming 1999 as a base year applying current year method. **8**

Items	Quantity consumed in 2011	Prices in 1999	Prices in 2011
Food Grain	40	16	20
Milk and Ghee	25	40	60
Vegetables	05	10.50	10.50
Pulses	20	51.20	62.40
Cereals	10	20.00	15.00

OR

- c) Compute Index No. by Aggregate Expenditure Method (2) Current year method **16**
(3) Dorbish Bowleys method (4) Fishers Ideal Index No. formula.

Commodity	Base Year		Current Year	
	Price per unit	Total value	Price per unit	Total value
1	2	40	5	75
2	4	16	8	40
3	1	10	2	24
4	5	25	10	60

3. a) The following table gives the numbers of Air craft accident that occurred during the various days of the week. Find whether accident are uniformly distributed over the week. 8

Days	Sun	Mon	Tue	Wed	Thus	Fri	Sat	Total
No. of Accident	14	16	08	12	11	09	14	84

$\chi^2 = 12.59$ for 5% level of significance at 6 d.f.

- b) Compute the value of χ^2 from the following statistical Data. 8

	Affected	Not Affected
Inoculated	130	248
Not Inoculated	140	70

OR

- c) The following table shows that the conditions of housewife and condition of home. 16

Condition of home	Condition of housewife		
	Clean	Not clean	Total
Clean	85	52	137
Fairy clean	48	15	63
Dirty	15	60	75
Total	148	127	275

Do this result suggest that the condition of housewife has bearing on the condition of home at 5% level of significance value of χ^2 for 2 d.f. is 5.99.

4. a) There are 40 boys and 24 girls in a class. Find the ratio of the numbers of boys to the number of girls. 8

- b) The Amount with compound Interest of a certain principal at 5% p.a. is Rs. 3528. Find the principal when the period is two years. 8

OR

- c) If 50 books were distributed among 10 students, How many students would get 30 books distributed. If each had to get the same number of books as before? 8

- d) Netra borrowed Rs. 15,000 from a bank at 10% p.a. for a period of 3 years. How much Interest did he have to pay? 8

5. a) Explain the concept of regression and ratio of variations and state their utility in the filed of economics. 4

- b) State any four important points that should be considered in constructing Index Number. 4

- c) Write a short note on Degrees of Freedom. 4

- d) Explain the concept of compound Interest. 4
