

B.Com.- I (CBCS Pattern) Sem-II  
UCA2C06 - Statistics Techniques & Business Mathematics-II

P. Pages : 4

GUG/W/22/10654

Time : Three Hours



Max. Marks : 60

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

1. a) Define Index Number. Explain it's importance. 6

b) Calculate fisher ideal index number from the following. 6

Commodity	Base Year		Current Year	
	Price in Rs.	Quantity	Price in Rs.	Quantity
A	4	3	6	2
B	5	4	6	4
C	7	2	9	2
D	2	3	1	5

**OR**

c) Find out index numbers by Laspeyre's method Paasche's method. Dorbish and Bowley method and Fisher ideal method. 12

Commodity	2017		2016	
	Price in Rs.	Quantity	Price in Rs.	Quantity
Jowar	6	8	4	7
Wheat	3	4	2	5
Rice	5	5	3	4
Dal	8	3	6	2

2. a) Calculate coefficient of correlations & it's probable error 6

x =	20	24	28	32	36
y =	14	18	22	26	30

b) Several methods of importing business education were ranked by two students as follows. 6

Rank by A :	2	1	3	5	4	6	7
Rank by B :	1	3	2	4	7	5	6

Calculates Spearman Rank coefficient of correlation

**OR**

c) Find out: 12

- 1) Coefficient of correlation between Age of Husband and Age of wife.
- 2) Two Regression equation
- 3) Most likely Age of Husband when wife Age is 30 years
- 4) Most likely Age of wife when Husband Age is 25 years

Age of Husband (In years) :	22	23	23	24	26	27	27	28	30	30
Age of wife (In years) :	18	20	21	20	21	22	23	24	25	26

3. a) Out of 8,000 Graduate in a town 800 are Female out of 1600 Graduate Employed 120 are Female. Use Chi-square to determine if any distinction is made in appointment on the basis of a six value of  $\chi^2$  at 5% level of one degree of freedom is 3.841. 6

- b) Calculate coefficient of contingency by Karl Pearson Method. 6

	Attacked	Not Attacked	Total
Inoculated	31	469	500
Not inoculated	185	1315	1500
Total	216	1784	2000

**OR**

- c) Following table represents the numbers of Boys and Girls who choose the five possible answer to an item of an attitude scale. 12

	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 different in the attitude towards this items. The table value of  $\chi^2$  for 4 Degree of freedom at 5% level of significance is 9.49.

4. a) In a Godown there were 1525 Bags of Wheat, Jowar and Rice afterward 75 Bags of wheat, 30 Bags of Jowar and 20 Bags of Rice were stored in the Godown due to which the ratio of Wheat, Jowar and Rice became 5:4:2 state how many bags of Wheat are their in the Godown. 6
- b) A Milkman purchase 120 litre of Milk @ Rs. 10 per litre and sell it @ Rs 11 per litre after adding 25 litre of Milk. Which he had purchase at Rs. 7 per litre. Find out profit or loss. Also find out profit or loss percentage. 6

**OR**

- c) Monthly Salary of 2 persons are in the ratio of 3:5. If each receives an increase of Rs. 20 in the monthly salary the ratio is altered to 13:21 find their salary. 6
- d) Rahul Ltd manufactured a machine for Rs. 54,000 and sold it to Pama and Company at 10% profit on selling price. Pama and company added 10% to the cost and then sold it to Rudra stores at 5% discount. Rudra stores sold it to a consumers for Rs. 70,000. Compute percentage of profit earned by Rudra stores. 6

5. Write short answers.

- a) Explain uses of Index numbers. 3
- b) Distinguish between correlation and Regression. 3
- c) Explain uses of  $\chi^2$  test. 3
- d) Explain the term Profit and Loss briefly. 3

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- सुचना :- 1. सर्व प्रश्न अनिवार्य आहेत.  
2. सर्व प्रश्नांना समान गुण आहे.

- |    |    |  |    |
|----|----|--|----|
| 1. | अ) | निर्देशांक म्हणजे काय, निर्देशांकाचे महत्व स्पष्ट करा. | 6  |
|    | ब) | इंग्रजी माध्यमानुसार.                                  | 6  |
|    |    | किंवा  |    |
|    | क) | इंग्रजी माध्यमानुसार.                                  | 12 |
| 2. | अ) | इंग्रजी माध्यमानुसार.                                  | 6  |
|    | ब) | इंग्रजी माध्यमानुसार.                                  | 6  |
|    |    | किंवा  |    |
|    | क) | इंग्रजी माध्यमानुसार.                                  | 12 |
| 3. | अ) | इंग्रजी माध्यमानुसार.                                  | 6  |
|    | ब) | इंग्रजी माध्यमानुसार.                                  | 6  |
|    |    | किंवा  |    |
|    | क) | इंग्रजी माध्यमानुसार.                                  | 12 |
| 4. | अ) | इंग्रजी माध्यमानुसार.                                  | 6  |
|    | ब) | इंग्रजी माध्यमानुसार.                                  | 6  |
|    |    | किंवा  |    |
|    | क) | इंग्रजी माध्यमानुसार.                                  | 6  |
|    | ड) | इंग्रजी माध्यमानुसार.                                  | 6  |
| 5. |    | थोडक्यात उत्तरे द्या.                                  |    |
|    | अ) | निर्देशांकाचे उपयोग स्पष्ट करा.                        | 3  |
|    | ब) | सहसंबंध व प्रतिगमनातील फरक स्पष्ट करा.                 | 3  |
|    | क) | $\chi^2$ Test ची उपयोगिता स्पष्ट करा.                  | 3  |
|    | ड) | नफा व तोटा यावर संक्षिप्त टिपणे लिहा.                  | 3  |

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- सूचनाएँ :- 1. सभी प्रश्न अनिवार्य हैं।  
2. सभी प्रश्नों के अंक समान हैं।

- |    |    |   |    |
|----|----|---|----|
| 1. | अ) | निर्देशांक याने क्या, निर्देशांक के महत्व स्पष्ट किजिए। | 6  |
|    | ब) | अंग्रेजी माध्यम के अनुसार।                              | 6  |
|    |    | <b>अथवा</b>   |    |
|    | क) | अंग्रेजी माध्यम के अनुसार।                              | 12 |
| 2. | अ) | अंग्रेजी माध्यम के अनुसार।                              | 6  |
|    | ब) | अंग्रेजी माध्यम के अनुसार।                              | 6  |
|    |    | <b>अथवा</b>   |    |
|    | क) | अंग्रेजी माध्यम के अनुसार।                              | 12 |
| 3. | अ) | अंग्रेजी माध्यम के अनुसार।                              | 6  |
|    | ब) | अंग्रेजी माध्यम के अनुसार।                              | 6  |
|    |    | <b>अथवा</b>   |    |
|    | क) | अंग्रेजी माध्यम के अनुसार।                              | 12 |
| 4. | अ) | अंग्रेजी माध्यम के अनुसार।                              | 6  |
|    | ब) | अंग्रेजी माध्यम के अनुसार।                              | 6  |
|    |    | <b>अथवा</b>   |    |
|    | क) | अंग्रेजी माध्यम के अनुसार।                              | 6  |
|    | ड) | अंग्रेजी माध्यम के अनुसार।                              | 6  |
| 5. |    | संक्षिप्त में उत्तर दिजिए।                              |    |
|    | अ) | निर्देशांक के उपयोग स्पष्ट किजिए।                       | 3  |
|    | ब) | सहसंबंध व प्रतिगमन का फरक स्पष्ट किजिए।                 | 3  |
|    | क) | $\chi^2$ Test की उपयोगिता स्पष्ट किजिए।                 | 3  |
|    | ड) | लाभ व हानी इसपर टिपण लिखिए।                             | 3  |

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