

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

P. Pages : 4

Time : Three Hours



GUG/S/23/10654

Max. Marks : 60

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

1. a) Define index number and write characteristics of index number. 6
b) Construct the index number using base year's quantity as weight. 6

Commodity :-	A	B	C	D	E	F
Base year quantity in unit : -	7	4	40	32	25	70
Price per unit in 2018:-	10	15	8	7	9	2
Price per unit in 2019 : -	15	17	5	7	12	4

OR

- c) Given the following data construct the index no. by Dorbish & Bowley's and Fisher's ideal index no. 12

Year	Rice		Wheat		Jowar	
	Price	Quantity	Price	Quantity	Price	Quantity
2018	9.3	100	6.4	11	5.1	5
2019	4.5	90	3.7	10	2.7	3

2. a) Find the Spearman's rank correlation coefficient between the following two variables 6

Marks in BE : -	40	60	50	58	70	65	48	52
Marks in STBM: -	68	55	60	64	50	71	52	51

- b) Calculate the co-efficient of correlation for the following x and y series by Karl Pearson's method. 6

X – series : -	-6	-4	-3	-2	0	+1	+4	+5	+6	+9
Y – series : -	-12	-8	-7	-5	-3	-3	-2	-1	0	+1

OR

- c) From the following data obtain the lines of regression and estimate the value of y when x=9 and the value of x when y=22. 12

x : -	2	6	8	11	13	13	14	16
y: -	8	10	13	18	20	14	14	17

3. a) The following table shows the data obtained during an epidemic of cholera. 6

	Attacked	Not attacked
Inoculated	30	470
Not inoculated	190	1370

Test the effectiveness of inoculation of preventing the attack of cholera.

(χ^2 value = 3.841 for 5% of level).

- b) The following data are observed for cotton plants regarding leaf and character of cotton fruits. 6
- | | |
|--------------------------------------|-----|
| Leaf green, cotton fruit smooth | 372 |
| Leaf green, cotton fruit worm eaten | 122 |
| Leaf violet, cotton fruit smooth | 138 |
| Leaf violet, cotton fruit worm eaten | 868 |

Using χ^2 test find whether there is any significant association between colour of leaf and character of cotton fruits.

(χ^2 value for 1d.f. at 1% level of significance is 6.64)

OR

- c) The following table gives the statistical data regarding the general ability and their mathematical ability among 1000 executives of various companies. Test with χ^2 whether the general ability and mathematical ability are independent? 12

Mathematical ability	General ability		
	Excellent	Fair	Poor
Excellent	40	25	14
Fair	270	275	200
Poor	20	58	98

The table value of $\chi^2 = 13.28$ for 1% level of significance.

4. a) 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? 6
- b) A dealer buys a wristwatch for Rs. 325 and spends Rs. 20 on its repairs. If he sells the same for Rs. 400. Find its profit percent. 6

OR

- c) If a labour works for 5 hours, he gets Rs. 40 as wages. If he works for 9 hours, how much wages would he get? 6
- d) The tractor suffers 10% loss by selling a mobile handset for Rs. 18,000. At what price should he sell it to gain 20% profit. 6

5. Write short notes:-

- a) Use of index number. 3
- b) Types of correlation. 3
- c) Concept of chi-square test. 3
- d) Define 'Profit' and 'Loss'. 3

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

Time : Three Hours

Max. Marks : 60

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

- | | | | |
|----|----|---|----|
| 1. | अ) | निर्देशकाचे व्याख्या करा. आणि त्याचे वैशिष्ट्ये लिहा. | 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 लिहा. | |
| | अ) | निर्देशकाचे उपयोग. | 3 |
| | ब) | सहसंबंधाची प्रकार. | 3 |
| | क) | काई-वर्ग चाचणी संकल्पना. | 3 |
| | ड) | व्याख्या: नफा व तोटा | 3 |

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

Time : Three Hours

Max. Marks : 60

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

- | | | | |
|----|----|---|----|
| 1. | अ) | न्यादर्श परिभाषित किजिये और उसके विशेषताएँ लिखिए। | 6 |
| | ब) | अंग्रेजी माध्यम के अनुसार। | 6 |
| | | अथवा | |
| | क) | अंग्रेजी माध्यम के अनुसार। | 12 |
| 2. | अ) | अंग्रेजी माध्यम के अनुसार। | 6 |
| | ब) | अंग्रेजी माध्यम के अनुसार। | 6 |
| | | अथवा | |
| | क) | अंग्रेजी माध्यम के अनुसार। | 12 |
| 3. | अ) | अंग्रेजी माध्यम के अनुसार। | 6 |
| | ब) | अंग्रेजी माध्यम के अनुसार। | 6 |
| | | अथवा | |
| | क) | अंग्रेजी माध्यम के अनुसार। | 12 |
| 4. | अ) | अंग्रेजी माध्यम के अनुसार। | 6 |
| | ब) | अंग्रेजी माध्यम के अनुसार। | 6 |
| | | अथवा | |
| | क) | अंग्रेजी माध्यम के अनुसार। | 6 |
| | ड) | अंग्रेजी माध्यम के अनुसार। | 6 |
| 5. | | संक्षिप्त में उत्तर लिखिये। | |
| | अ) | न्यादर्श के उपयोग। | 3 |
| | ब) | सहसंबंध के प्रकार। | 3 |
| | क) | काई-वर्ग चाचणी की संकल्पना। | 3 |
| | ड) | परिभाषित किजिये लाभ और हानी। | 3 |
