Q.P. Code – 53232

Second Semester B.Com. Degree Examination, April/May 2019

(CBCS Scheme)

Commerce

QUANTITATIVE ANALYSIS – II

Time : 3 Hours] *[Max. Marks : 90*

Instructions to Candidates : Answers should be written in English only.

SECTION – A

Answer any **TEN** sub-questions. Each question carries **2** marks. **(10 × 2 = 20)**

1. (a) Distinguish between positive correlation and negative correlation.

   (b) Interpret r when (i) –.896 (ii) +.345

   (c) Give the meaning of Regression Analysis.

   (d) Calculate two regression co-efficients.

   When $r = -.99$ $\sigma_x = 10$ $\sigma_y = 12$

   (e) Mention two uses of consumer price index number.

   (f) Calculate price relative when the price of base year is ₹ 40 and the price of current year is ₹ 50.

   (g) State the assumptions of interpolation.

   (h) What is simple interest? How do you calculate it?

   (i) Find the mean proportion to 21 and 84.

   (j) A number is divided into 3 parts in the ratio of 8 : 5 : 7. If 1st part is 120 find the value of other two parts.

   (k) What is square matrix? Give an example.

   (l) Give the meaning of diagonal matrix with an example.

SECTION – B

Answer any **FIVE** questions. Each question carries **5** marks : **(5 × 5 = 25)**

2. Calculate Spearman's Rank Correlation Co-efficient between X and Y.

X:	45	36	24	56	72	18	65	48
Y:	65	30	42	63	58	30	78	20

3. You are given the following information :

Particulars	X	Y
Arithmetic Mean	20	120
Variance	25	625

Correlation coefficient between X and Y is 0.8

Estimate the value of Y when $X = 35$.

4. An enquiry of the budget of middle class family in Tumkur gave the following results. Calculate cost of living index for 2018 and interpret.

Items	Food	Rent	Clothing	Fuel	Misl.
% of Expenditure in 2018	40	10	15	10	25
Price per unit in 2018	300	80	100	40	120
Price per unit in 2019	375	128	140	80	216

5. Estimate the production for the year 2016 from the following data :

Year :	2013	2014	2015	2016	2017	2018
Production in '000' tons :	38	42	51	–	62	65

6. Mr. Guru borrowed a loan of Rs. 15,000 from Kumar at a Simple interest of 12% per annum. After 6 years he repaid Rs. 17,000 and gave a Motor bike to clear the debt and interest amount.

Find the Cost of Motor Bike.

7. The ratio of present age of mother and daughter is 7 : 2. After 5 years the ratio of their age becomes 8 : 3. Find their present ages.

8. If $A = \begin{bmatrix} 2 & 3 \\ 1 & -1 \end{bmatrix}$ $B = \begin{bmatrix} 0 & -3 \\ -1 & 3 \end{bmatrix}$

Find a matrix 'X' such that $A - X = 3B$.

SECTION – C

Answer any **THREE** questions. Each question carries **15** marks : **(3 × 15 = 45)**

9. Calculate Pearson's coefficient of correlation between Advertisement Cost and sales as per the data given below and interpret the result and comment through probable error.

Advt. Cost in '000' Rs. :	39	65	62	90	82	75	25	98	36	78
Sales in lakhs :	47	53	58	86	62	68	60	91	51	84

10. (a) To study the relationship between expenditure on accommodation (X) and expenditure on food and entertainment (Y) an enquiry into 50 families gave the following results :

$\Sigma X = 9000$, $\Sigma Y = 9800$, $\sigma_x = 60$ $\sigma_y = 20$ $r = 0.\upsilon$

Estimate the expenditure on food and entertainment when expenditure on accommodation is Rs. 250.

(b) Three friends Guru, Kumar, Babu have their annual incomes in the ratio of 6 : 5 : 4 and their annual expenditures are in the ratio of 3 : 2 : 1. If Guru's annual income is Rs. 15,000 and his annual expenditure are Rs. 13,800. Find the savings of Kumar & Babu.

11. (a) From the following table of yearly premium for policies maturing at different years. Estimate the premium for the policies maturing at the age of 47 years.

Age in years :	45	50	55	60	65
Premium in Rs. :	287	240	208	186	171

(b) The ratio of prices of watches were 16 : 23, Two years later the price of the first watch was increased by 10% and the second house by Rs. 450. Then the ratio of prices of watches becomes 11 : 20. What was the original price of watches?

12. (a) Calculate Fishers Index Number from the following and show that it satisfies Factor Reversal Test.

Commodities	M	N	O	P	Q
Price of Base Year	10	8	20	18	35
Value of Base Year	200	104	160	144	280
Value of Current Year	300	220	250	140	300
Quantity of Current year	25	22	10	07	10

(b) The Difference between Bankers discount and true discount on a bill due after 6 months @ 10% p.a. is Rs. 20. Find the value of the Bill, True discount and Bankers discount.

13. (a) Compute Consumer Price Index Number from the following Table using Family Budget Method :

Items	Food	Rent	Clothing	Fuel	Misl.
% of Expenditure in 2016	40	10	15	10	25
Price per unit in 2016	300	80	100	40	120
Price per unit in 2017	375	128	140	80	216

If a worker earns 15000 as Salary in Base Year, How much allowance has to be increased in current year to maintain the same standard of living?

(b) If $A = \begin{bmatrix} 0 & 2 & 3 \\ 2 & 1 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 7 & 6 & 3 \\ 1 & 4 & 5 \end{bmatrix}$

Find : (i) $5B - 3A$ (ii) $2A + 4B$.
