QP CODE: 21100876

Reg No : .....

Name : .....

B.Com DEGREE (CBCS) EXAMINATION, MARCH 2021

Fourth Semester

Core Course - CO4CRT12 - QUANTITATIVE TECHNIQUES FOR BUSINESS-II

(Common for B.Com Model II Computer Applications ,B.Com Model II Finance & Taxation ,B.Com Model II Marketing ,B.Com Model II Travel & Tourism ,B.Com Model III Office Management & Secretarial Practice ,B.Com Model III Taxation ,B.Com Model III Computer Applications ,B.Com Model III Travel & Tourism ,B.Com Model I Computer Applications ,B.Com Model I Co-operation ,B.Com Model I Marketing ,B.Com Model I Finance & Taxation ,B.Com Model I Travel & Tourism ,B.Com Model II Logistics Management)

2017 Admission onwards

3046706A

Time: 3 Hours Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What is perfect correlation?
2. Calculate coefficient of correlation.

   X 10 9 8

   Y 5 6 7
3. Write a note on probable error.
4. What is total regression?
5. Write a note on regression lines?
6. Define Index Numbers.
7. Two dice are thrown. Find the probability that the sum of the dots on the faces that turn up is i)9; ii)11.
8. What do you mean by Base Shifting?
9. Define Cyclical Variations.
10. List out the demerits of free hand curve method.
11. List the sample space in throwing 2 dice .

12. From the following data, construct an index number for the year 2019 with 2018 as base under Paasche's Method

Items	2017		2018	
	Price	Quantity	Price	Quantity
A	8	4	10	5
B	5	4	6	4
C	8	5	9	4
D	10	5	12	6

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Draw a correlation graph and comment on it.

Year	2014	2015	2016	2017	2018
X (Rs. In crores)	2	4	6	8	10
Y (Rs. In crores)	4	6	8	10	12

14. Explain the steps for calculating Spearman's Rank correlation Coefficient.

15. Given the following data,what would be the possible yield of rice per acre when rainfall is 29cm?.Coefficient of correlation between rainfall and yield is 0.8.

	Rainfall	Yield
Mean	25	40
variance	9	36

16. From the following data, construct index numbers under Simple Aggregate Expenditure method and Average of Relative Method.

Commodities	Price in 2017	Price in 2018
A	60	80
B	30	45
C	18	22
D	120	150
E	65	65

17. From the following data, compute Laspeyre's, Paasche's and Fisher's Index Numbers, taking 2012 as the base year.

Articles	2012		2018	
	Price	Quantity	Price	Quantity
A	10	4	15	3
B	30	12	50	10
C	40	18	55	14
D	25	12	45	6

18. Indicate the importance of Time Series Analysis in business.

19. Obtain a trend line from the following data using free hand curve method.

Year	2010	2011	2012	2013	2014	2015	2016	2017
Value	64	82	97	71	78	112	115	131

20. A bag contains 7 white and 9 black balls. 3 balls are drawn together. What is the probability that

i) all are black; ii)all are white ; iii) 1 white and 2 black; iv)2 white and 1 black

21. A problem in STATISTICS is given to two students. The odds in favour of A solving the problem are 6 to 9 and the odds against B solving the same problem are 12 to 10. What is the probability that if both of them try the problem is solved.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Calculate coefficient of correlation by concurrent deviation method from the following data:

X	112	125	126	118	118	121	125	125	131	135
Y	106	102	102	104	98	96	97	97	95	90

23. Obtain the line of regression of Y on X for the following data:

Age(Years)	56	42	36	47	49	42	60	72	63	55
Blood pressure	147	125	118	128	145	140	155	160	149	150

Estimate blood pressure of a person whose age is 50 years

24. Below are given the annual production of X Ltd.

Year	2010	2011	2012	2013	2014	2015	2016
Production (in tonnes)	70	75	90	91	95	98	100

(i) Fit a straight line by the method of least squares tabulate the trend values.

(ii) Estimate the production for the year 2017.

(iii) Eliminate the trend using Additive Model. What components of the time series are left over?

(iv) Convert annual trend equation to monthly trend equation.

25. Suppose, a black ball has been drawn from one of the three bags, the first containing three black balls and seven white, the second five black and three white, the third, eight black balls and four white. What is the probability that it was drawn from the first bag?

(2×15=30)