D 102988 **(Pages : 3)** **Name.....**

Reg. No.....

FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2024

B.B.A.

BBA 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

(2019 Admission onwards)

Time : Two Hours and a Half Maximum : 80 Marks

Part A

Answer **all** *questions.*

1. What is Correlation ?
2. What are cyclical variations ?
3. What is Index Number ?
4. What is meant by Multiple Correlation ?
5. What is Conditional Probability ?
6. What is meant by Baye's Theorem ?
7. What is meant by discrete probability distribution ?
8. What is meant by Binomial Distribution ?
9. What is meant by Poisson Distribution ?
10. What is meant by Perfect Correlation ?
11. What is meant by Quantity Index Number ?
12. What are Mutually Exclusive Events ?
13. What is moving average ?
14. What is Regression line ?
15. What are Unweighted Index Numbers ?

(15 × 2 = 30, Maximum ceiling - 25 Marks)

Turn over

Part B

Answer **all** *questions.*

16. What is the probability of obtaining at least one head in the simultaneous toss of two unbiased coins ?

17. State the differences between positive and negative correlation ?

18. State the Properties of Regression Co-efficients ?

19. Calculate co-efficient of correlation by concurrent deviation method :—

Year	:	2003	2004	2005	2006	2007	2008	2009	2010	2011
Supply	:	160	164	172	182	166	170	178	192	186
Price	:	292	280	260	234	266	254	230	190	200

20. Among 60 people, 35 can speak in English, 40 in Malayalam and 20 can speak in both the languages. Find the number of people who can speak at least one of the languages. How many cannot speak in any of these languages ?

21. Following are the data related with the output of a factory for 7 years :

Years	:	2006	2007	2008	2009	2010	2011	2012
Output (in tones)	:	47	64	77	88	97	109	113

Calculate the trend values through the method of least squares and also forecast the production 2013 and 2015.

22. If r = 0.6 and N = 64, find out the PE and SE of the correlation co-efficient. Also determine the limits of population correlation co-efficient ?

23. It is known from the past experience that in a certain plant, there are on an average four industrial accidents per year. Find the probability that in a given year there will be less than four accidents. Assume Poisson distribution ?

(8 × 5 = 40, Maximum ceiling - 35 Marks)

Part C

Answer any **two** *questions.*
Each question carries 10 *marks.*

24. Write an essay on various methods of measuring correlation ?

25. Two variables gave the following data

$\bar{x} = 20, \sigma x = 4, r = 0.7$
$\bar{y} = 15, \sigma x = 3$

Obtain regression lines and find the most likely value of y when $x = 24$.

26. Find the correlation co-efficient between age and playing habits of the following students using Karl Pearson's co-efficient of correlation method :

Age	:	15	16	17	18	19	20
Number of students	:	250	200	150	120	100	80
Regular Players	:	200	150	90	48	30	12

27. Following are the date related with the prices and quantities consumed for 2010 and 2012 :

Commodity	2010		2012	
	Price	Quantity	Price	Quantity
Rice	5	15	7	12
Wheat	4	5	6	4
Sugar	7	4	9	3
Tea	52	25	55	2

1 Laspeyre's method.

2 Paasche's method.

3 Bowly's - Dorbish method.

4 Fisher's method.

(2 × 10 = 20 marks)