

17. Calculate Fisher's Ideal Index from the data given below.

Commodity	Price		Quantity	
	2006	2007	2006	2007
A	8	10	20	30
B	12	15	10	10
C	6	8	16	20
D	4	6	17	10

18. Explain the types of Probability in detail.
19. You are working as a Purchase manager for a company. The following information has been Supplied to you by two manufacturers of electric bulbs.

Particulars	Company A	Company B
Mean life (in hours)	1300	1248
Standard deviation (in hours)	82	93
Sample size	100	100

Which brand of bulbs are you going to purchase if you desire to take a risk of 5%?

20. Discuss the assumption of Two way ANOVA and key difference between one way ANOVA.

S.No. 9189

RON 5

(For candidates admitted from 2007–2008 onwards)

M.Com. DEGREE EXAMINATION, NOVEMBER 2023.

Commerce

BUSINESS TOOLS FOR DECISION MAKING

Time : Three hours

Maximum : 100 marks

SECTION A — (10 × 2 = 20)

Answer ALL questions

1. What is meant by Correlation?
2. What do you understand by Linear Regression?
3. Mention any two uses of time series.
4. Write a short note on cost of living Index number.
5. Define the term Probability.
6. Mention the name of Theorems in probability.
7. Write a short note on critical region.
8. What is null Hypothesis?
9. What is chi-square test for independence?
10. State the Benefits of applying ANOVA test.

SECTION B — (5 × 7 = 35)

Answer ALL questions, Choosing either (a) or (b)

11. (a) Define direct and inverse relationship.

Or

- (b) If $r = 0.8$ and $n = 64$ find out the probable error of the coefficient of correlation and determine the limits for the population correlation coefficient.

12. (a) State the uses of Index numbers.

Or

- (b) The trend of annual production of a company is described by the following equation.
 $Y_e = 18 + 0.6X$ Origin 2007: X unit = 1 year,
 Y-unit = Annual Production. Convert the equation to a monthly trend equation.

13. (a) Explain the importance of Normal Distribution.

Or

- (b) Obtain the binomial distribution for which mean is 10 and standard variance is 5.

14. (a) What are the types of Errors in Hypothesis testing?

Or

- (b) The following results are obtained from a sample of 10 boxes biscuits.

Mean weight of contents = 490 gms

Standard deviation of the weight = 9 gms.

Could the sample come from a population having a mean of 500 gms.

15. (a) Why do you use chi-square test?

Or

- (b) Find out F value and if there is significant difference between variables.

Sources of variation	Sum of squares	Degrees of Freedom	Mean sum of squares	Variation ratio
Between columns	190	2		
Error	140	12		
Total	330	14		

$N = 2$, $df = 12$, Table value at 5% level = 3.89.

SECTION C — (3 × 15 = 45)

Answer any THREE questions

16. Calculate the Pearson's coefficient of correlation from the following data using 44 and 26 respectively as origin of X and Y.

X	43	44	46	40	44	42	45	42	38	40	42	57
Y	29	31	19	18	19	27	27	29	41	30	26	10