

1129

M.Com. (Master of Entrepreneurship & Family Business)

1st Semester

FB-104: Tools for Business Research

Time allowed: 3 Hours

Max. Marks: 80

NOTE: Attempt five questions in all, selecting atleast two questions from each Unit. Students may ask the required table from the Superintendent of examination centre. Only simple non-programmable calculators are allowed.

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UNIT - I

- I. (a) Differentiate between sampling and census methods.
 (b) Differentiate between sampling and non-sampling errors. (8+8)

- II. (a) Some data are given as: -

X	1	2	4	3	5	6	3	8	9
Y	16	23	35	28	44	40	22	61	82

Compute the coefficient of correlation.

- (b) From the following data, compute the coefficient of correlation between X and Y:

	X Series	Y Series
Number of items	15	15
Arithmetic mean	25	18
Sum of square of deviations	136	138

(8+8)

- III. (a) Two balls are drawn at random with replacement from a bag containing 5 blue and 10 red balls. Find the probability that both the balls are either blue or red.
 (b) Explain: -
 (i) Conditional probability
 (ii) Bayes' theorem
 (iii) Importance of probability in research (4+12)

- IV. (a) A survey of 800 families with four children each revealed the following distribution. Fit a binomial distribution: -

No. of boys	0	1	2	3	4
No. of families	42	178	290	226	64

- (b) It is known that from the past experience that in a certain factory 3% product are defective. A sample of 100 items are taken at random. Find the probability that exactly 5 products are defective. (Given $e^{-3}=0.04979$).

(8+8)

P.T.O.

(2)

V. Explain: -

- (a) Difference between matrices and determinants.
- (b) Minor
- (c) Adjoint
- (d) Simultaneous linear equation

(4+4+4+4)

UNIT – II

VI. What is statistical hypothesis? Discuss the procedure of testing a statistical hypothesis. (16)

VII. Two independent samples of 8 and 7 items gave the following value:-

Sample-A	09	11	13	11	15	09	12	14
Sample-B	10	12	10	14	09	08	10	

Examine whether difference between means of 2 samples is significant at 5%.

(16)

VIII. Explain the meaning and significance of ANOVA. How is an ANOVA table set up and how a test is performed? (16)

IX. Determine the expected values for each of the observed values shown in the following 2 × 3 contingency table using both the logical and arbitrary methods:-

Sample	Expenditure of the students			Total
	Poor	Middle Class	Rich	
I	200	250	400	850
II	300	450	600	1350
TOTAL	500	700	1000	2200

(16)

X. Write short notes on: -

- (a) Run and sign test
- (b) Sign rank test and Wilcoxon test

(8+8)

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