Roll No. | | | | | | | | | | | | **Total No. of Pages : 03**

Total No. of Questions : 17

M.Com. (Sem.–1)

STATISTICAL ANALYSIS

Subject Code : MCOP-103-18

M.Code : 75335

Date of Examination : 21-01-23

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A contains EIGHT questions carrying TWO marks each and students has to attempt ALL questions.**
2. **SECTION-B consists of FOUR Subsections : Units-I, II, III & IV. Each Subsection contains TWO questions each carrying EIGHT marks each and student has to attempt any ONE question from each Subsection.**
3. **SECTION-C is COMPULSORY and consist of ONE Case Study carrying TWELVE marks.**

SECTION-A

Answer briefly:

1. What do you mean by positional averages?
2. What is the difference between mean deviation and standard deviation?
3. Explain the concept of skewness.
4. Discuss the different types of correlation.
5. State the concept of conditional probability.
6. What is the concept of general rule of multiplication and addition?
7. Find $P(x \geq 5)$ using binomial formula if $n = 7$ and $p = 0.10$
8. Explain the following terms in PERT :

   a) Expected time

   b) Activity variance.

SECTION-B

UNIT-I

9. What are the various measures of central tendency? Describe their relative merits and demerits and their uses.

10. What are the mathematical properties of standard deviation? State its application in the field of management.

UNIT-II

11. A company has decided to purchase special shoes for security guards. The following series shows the number of security guards and the required shoe size for these guards.

Shoe sizes	6	7	8	9	10	11
No. of security guards	7	10	15	13	3	1

Find the range and its coefficient and also calculate its standard deviation and variance.

12. What is regression? Explain its different properties in detail.

UNIT-III

13. Define binomial distribution and discuss its different assumptions. Also define mean and standard deviation in a binomial distribution.

14. What is linear programming? Explain its assumptions and business applications.

UNIT-IV

15. Explain PERT. Compare CPM and PERT explaining clearly the similarities and differences.

16. Consider a factory having four machines. There are four jobs which are to be optimally loaded in all the four machines so that the operating cost is minimum. Operating cost matrix is given in table below:

Jobs/Machine	**A**	**B**	**C**	**D**
1	6	12	7	15
2	11	8	11	7
3	16	14	15	12
4	9	9	11	6

Solve using Hungarian method.

SECTION-C

17. **Case Study:**

M/s Raj Traders and M/s Bansal Traders are into the business of manufacturing lamps for the last 20 odd years. Both are fierce competitors and stake claim to manufacturing the best lamps in the region.

A purchasing agent obtained samples of lamps from two suppliers, M/s Raj Traders and M/s Bansal Traders.

He had the samples tested in his own laboratory for the length of life of lamps against the number of lamps, with the following results. According to you, which supplier's lamps are more uniform with respect to length of lives?

Life of bulbs in hours	**700-900 hrs**	**900-1100 hrs**	**1100-1300 hrs**	**1300-1500 hrs**
M/s Raj Traders	10	16	26	8
M/s Bansal Traders	3	42	12	3

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.