

**22U458**

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Name: .....

Reg.No: .....

**FOURTH SEMESTER B.B.A. DEGREE EXAMINATION, APRIL 2024**

(CBCSS - UG)

(Regular/Supplementary/Improvement)

**CC19U BBA4 C04 - QUANTITATIVE TECHNIQUES FOR BUSINESS**

(B.B.A. - Complementary Course)

(2019 Admission onwards)

Time : 2.5 Hours

Maximum : 80 Marks

Credit : 4

**Part A** (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. Write four functions of Quantitative technique.
2. Write four mathematical quantitative technique in QT.
3. What are the significance of Time series analysis?
4. Name the four components of Time series.
5. What is exponential trend?
6. Define index number.
7. Does correlation always signify cause and effect relationship.
8. Distinguish between positive and negative correlation.
9. What do you mean by probable error?
10. What do you mean by standard error of estimate ?
11. What is complement of a set?
12. What are the properties of probability?
13. If A and B are two mutually exclusive events and  $P(A) = 0.45$  and  $P(B) = 0.35$ , find  $P(A \text{ or } B)$
14. How to fit a binomial distribution?
15. Comment on the following: For a poisson distribution, Mean= 8 and Variance= 7.

**(Ceiling: 25 Marks)**

**Part B** (Paragraph questions)

Answer *all* questions. Each question carries 5 marks.

16. What are the various applications of QT in business.

17. State the defects of Index numbers.
18. If  $\sum P_0Q_0 = 700$ ,  $\sum P_0Q_1 = 532$ ,  $\sum P_1Q_0 = 875$ ,  $\sum P_1Q_1 = 658$ . Find Laspeyres's Index Number and Fisher's Index Number. Also show that latter one satisfies time reversal and factor reversal tests.
19. Find Karl Pearson's coefficient of correlation between X and Y From the following data giving test scores of 10 candidates in mathematics and statistics and interpret
- |                      |   |    |    |    |    |    |    |    |    |    |    |
|----------------------|---|----|----|----|----|----|----|----|----|----|----|
| Score in mathematics | : | 98 | 70 | 40 | 20 | 85 | 75 | 95 | 80 | 10 | 5  |
| Score in statistics  | : | 85 | 65 | 32 | 30 | 80 | 60 | 80 | 70 | 20 | 10 |
20. Explain the difference between correlation and regression analysis .
21. A bag contains 7 white and 9 black balls. 3 balls are drawn together. What is the probability that (1) all are black, (2) all are white (3) 1 white and 2 black (4) 2 white and 1 black
22. A class consists of 80 students, 25 of them are girls and 55 boys. 10 of them are rich and remaining poor. 20 of them are fair complexioned. What is the probability of selecting a fair complexioned rich girl?
23. The probability that a batsman scores a century in a cricket match is  $\frac{1}{3}$ . What is the probability that out of 5 matches, he may score century in (1) exactly 2 matches (2) no match.

**(Ceiling: 35 Marks)**

**Part C (Essay questions)**

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

24. Explain in detail about the methods in the construction of index numbers.
25. The ranking of 10 students in two subjects A and B are as follows
- |     |   |   |   |   |   |    |   |    |   |   |
|-----|---|---|---|---|---|----|---|----|---|---|
| A : | 3 | 5 | 8 | 4 | 7 | 10 | 2 | 1  | 6 | 9 |
| B : | 6 | 4 | 9 | 8 | 1 | 2  | 3 | 10 | 5 | 7 |
- Find out the rank correlation.
26. The chance that a female worker in a chemical factory will contract an occupational disease is 0.4 and the chance for a male worker is 0.06. Out of 1000 workers in a factory 200 are females. One worker is selected at random and is found to have contracted the disease. What is the probability that the worker is female?
27. The weekly wages of 1000 workmen are normally distributed around a mean of Rs.70 and SD of Rs. 5. Estimate the number of workers whose weekly wages will be between Rs.70 and Rs.72. Also estimate the lowest wages of the 100 highest paid workers.

**(2 × 10 = 20 Marks)**

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