

QP CODE: 23106974



Reg No : .....

Name : .....

**BA DEGREE (CBCS) IMPROVEMENT / REAPPEARANCE EXAMINATIONS, MARCH  
2023**

**Fourth Semester**

**COMPLEMENTARY COURSE- ST4CMT52 - QUANTITATIVE TECHNIQUES FOR  
ECONOMIC ANALYSIS II**

(Common for B.A Economics Model II Foreign Trade, B.A Economics Model II Insurance, B.A  
History Model II Forestry and Environmental History)

2017 Admission Onwards

7599D27B

Time: 3 Hours

Max. Marks : 80

**Part A**

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Define time series?
2. Define seasonal variations.
3. What is meant by secular trend?
4. Why index numbers are called economic barometers?
5. Mention any two uses of consumer price index numbers .
6. Find the derivative of  $y = x^3 + 4x^2 - 12x$
7. Find x, y and z ,  $\begin{bmatrix} 5 & 3 \\ 7 & x-z \end{bmatrix} = \begin{bmatrix} y & z \\ 7 & 8 \end{bmatrix}$  when they are equal matrix.
8. If  $A = \{1,2\}$  and  $B = \{a, b\}$  . Find  $A * B$
9. What are the basic principles of Axiomatic approach of probability?
10. Define Random Experiment.
11. Define binomial distribution.
12. From a pack of 52 cards, two cards are drawn at random in succession without replacement. Find the probability that first card is a king and second card is a queen?

(10×2=20)

**Part B**



Answer any **six** questions.

Each question carries **5** marks.

13. What are the factors affecting seasonal variations?

14. Apply the method of semi average for determining the trend

year	2000	2001	2002	2003	2004	2005	2006	2007	2008
value	10	12	15	20	18	25	24	28	34

15. Define time reversal test. Examine whether Paasche's and Fisher's index numbers satisfy this test.

16. What are the methods for construction of Index numbers?

17. Calculate Laspeyres and Paasche's index number for the data

item	base price	base quantity	current price	current quantity
A	10	3	14	4
B	12	4	13	6
C	15	5	18	7

18. Explain the different types of set.

19. Find BA if  $A = \begin{bmatrix} 2 & 1 \\ -1 & 0 \\ 3 & 1 \end{bmatrix}$  and  $B = \begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$

20. Two coins are tossed, what is the probability of getting (1) both heads. (2) one head. (3) at least one head. (4) no head.

21. In a binomial distribution values of n and p are given as 100 and 2/5 respectively. Find the mean and SD of the distribution.

(6×5=30)

### Part C

Answer any **two** questions.

Each question carries **15** marks.

22. What are the major uses of time series analysis?

23. Solve the system of equation :  $12x - 16y + 20z = -24$ ,  $4x + 4y - 8z = -4$  and  $8x + 12y + 4z = 20$

24. Solve following Equations using matrices a. inverse method b. Cramer's rule  $2x - 3y + 5z = 11$ ,  $5x + 2y - 7z = -12$ ,  $-4x + 3y + z = 5$

25. Explain the properties of a normal curve.

(2×15=30)