



23124414

QP CODE: 23124414

Reg No :

Name :

B.A DEGREE (CBCS) REGULAR EXAMINATIONS, MAY 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)

2021 Admission Only

AFAAEEB9

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Mention any one importance of time series analysis.
2. Define additive models in time series .
3. Name any two methods of measuring trend .
4. Define price relatives.
5. Define weighted index numbers.
6. Define simple aggregate index number.
7. Define Finite and Infinite set.
8. Define matrix.
9. Define Probability.
10. State the addition theorem of probability.
11. Define binomial frequency distribution.
12. If 3 cards are drawn from the pack of 52, what is the probability that all the three will be queens?

(10×2=20)



Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Explain seasonal variations and irregular variations in time series.
14. Apply the method of semi average for finding the trend

year	2011	2012	2013	2014	2015	2016	2017
value	12	15	20	18	25	24	28

15. Calculate Laspeyres's 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

16. What are the uses of consumer price index numbers?
17. Explain any two applications of derivatives in Economics.
18. Explain the following concepts:
 1. exponential function
 2. logarithmic function
 3. monotone function
 4. linear function

19. If $P = \begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$ and $Q = \begin{bmatrix} 1 & 1 \\ -1 & 1 \end{bmatrix}$. Then show that PQ not equal to QP

20. Explain conditional probability. How is it calculated?
21. State the properties of normal distribution.

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. 1) Explain moving average method in time series
2) Find out 3 yearly moving average for the data



year	1990	91	92	93	94	95	96	97	98	99
value	170	231	261	264	278	302	289	297	340	273

23. Find inverse of matrix given below if it exists:

a.
$$\begin{bmatrix} 0 & 2 & 4 \\ 2 & 4 & 6 \\ 6 & 2 & 2 \end{bmatrix}$$

b.
$$\begin{bmatrix} 4 & 2 & 4 \\ 2 & 0 & 2 \\ 8 & 2 & 8 \end{bmatrix}$$

c.
$$\begin{bmatrix} 2 & 2 & 2 \\ 4 & 4 & 6 \\ 2 & 8 & 18 \end{bmatrix}$$

24. Distinguish between weighted and unweighted index numbers. Explain the methods used for their construction.
25. Five hundred families each having 4 children were taken as sample. If the probability of a child having boy is 0.5, in how many families would you expect to have
- (i) exactly one boy
 - (ii) exactly two girls

(2×15=30)