

2003000204040060
EXAMINATION APRIL 2025
BACHELOR OF SCIENCE (FOURTH SEMESTER)
STATISTICAL METHODS-II

[Time: As Per Schedule]

[Max. Marks: 50]

Instructions:

1. Fill up strictly the following details on your answer book
 - a. Name of the Examination : **BACHELOR OF SCIENCE (FOURTH SEMESTER)**
 - b. Name of the Subject : **STATISTICAL METHODS-II**
 - c. Subject Code No : **2003000204040060**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.
5. Logarithmic tables and statistical tables will be supplied on request.
6. Non programmable scientific calculator is allowed.

Seat No:

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Student's Signature

Q.1 Answer the following questions.

10

1. For a B.D. mean is 20 and S.D is 2. Find its parameters.
2. For a Poisson variate $3P(x = 2) = P(x = 4)$ find its mean and variance.
3. The value of Spearman's rank correlation coefficient of a certain number of observations was found to be $\frac{2}{3}$. The sum of the squares of difference between the corresponding ranks was 55. Find the number of pairs.
4. Define correlation coefficient and give its properties.
5. From the following data find indices by using chain base method:

Year	2009	2010	2011	2012	2013
Price	120	150	210	240	300

Q.2 Answer any two of the following.**10**

1. Define Poisson distribution and give its uses.
2. Define normal distribution and give its properties.
3. (i) For a B.D. with $n = 6, 9P(3):P(4) = 8:3$, find value of p .
(ii) X is a normal variate whose variance is 100 and $P(x > 50) = 0.15866$ then find mean of the distribution

Q.3 Answer any two of the following.**10**

1. Explain linear regression. give properties of regression coefficients.
2. A sample of 10 fathers and their eldest sons gave the following data about height in inches:

father	65	63	67	64	68	62	70	66	68	67
son	68	66	68	65	69	66	68	65	71	67

3. The two regression lines are $x + 2y = 5$ and $2x + 3y = 8$ then find,
 1. Means of x and y
 2. Correlation coefficient
 3. Find $V(y)$ if $V(x) = 9$.

Q.4 Answer any two of the following.**10**

1. What is time series? give uses of time series.
2. Fit a Straight line trend to the following data by the method of least squares and obtained the trend values and estimate for the year 2000.

Year	1991	1992	1993	1994	1995	1996	1997
Price	3	5	6	8	9	12	14

3. From the following data find trend and short term fluctuations by five yearly moving average method.

year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
price	2	6	1	5	3	7	2	6	4	8	3

1. Write a detail note on index numbers and their uses.
2. Using the following data calculate Laspeyre's, Paasche's, Marshall-Edgeworth and Fisher's price and quantity index.

Commodity	Base year		Current year	
	Price (Rs.)	Quantity	Price (Rs.)	Quantity
A	2	35	6	45
B	4	48	8	38
C	6	22	9	32
D	8	8	6	18
E	10	8	5	18

3. Compute cost of living index number using both the aggregate expenditure and family budget method, from the following information:

Commodity	Unit consumption in base year	Price in base year (Rs.)	Price in current year (Rs.)
A	200	10	12
B	50	30	35
C	50	40	50
D	20	200	300
E	40	25	50
F	50	100	150
