(i) **Printed Pages : 4** **Roll No. ....**

(ii) **Questions : 5** **Sub. Code : 0 3 1 9**

Exam. Code : 0 0 0 4

B.A./B.Sc. (General) 4th Semester

1059

ECONOMICS

Paper–Quantitative Methods

Time Allowed : Three Hours] **[Maximum Marks : 90**

Note :— (1) Attempt **five** questions in all.

(2) Question No. **1** is compulsory.

(3) Select **one** question from each Unit.

(4) Simple calculator is allowed.

UNIT–I

1. Attempt any **nine** questions :

(i) Define "Empty Set".

(ii) If A = {1, 2, 3, 4, 5} and B = {2, 4, 6, 7, 9}. Find $A \cup B$.

(iii) If $y = (6x - 7)^4$. Find $\frac{dy}{dx}$.

(iv) If $A = \begin{bmatrix} 2 & 3 & 5 \\ 3 & -6 & 2 \end{bmatrix}$. Find –3A.

(v) $N_1 = 60$, $N_2 = 40$, $\overline{X}_1 = 40$, $\overline{X}_2 = 35$. Find $\overline{X}_{12}$.

(vi) Marks : 17, 32, 35, 33, 15, 21, 41, 32, 11, 10, 20. Find median marks.

(vii) Find Mode when $\overline{X} = 15.6$, Median = 15.73.

(viii) If Bowley's Co-efficient of Skewness is $= -.72$, $Q_1 = 17.2$ and Median $= 24.6$. Find Q_3.

(ix) Write K. Pearson's Co-efficient of Skewness's formula.

(x) Write Lagrange's formula of interpolation.

(xi) Find the missing term :

X	Y
0	1
1	3
2	9
3	?
4	81

(xii) Find Rank co-efficient between :

Shilpa Shetty's Rank	Kajol's Rank
1	10
2	6
3	5
4	4
5	7
6	9
7	8
8	2
9	1
10	3

2×9=18

UNIT–II

2. If $Y = \dfrac{\sqrt{x+a} + \sqrt{x-a}}{\sqrt{x+a} - \sqrt{x-a}}$, find $\dfrac{dy}{dx}$.

OR

If cost function $C = 60 - 12q + 2q^2$. Then show that slope of AC curve is $= \dfrac{1}{q}(MC - AC)$. 18

UNIT–III

3. **Amitabh Bacchan** **Akshay Kumar**

Amitabh Bacchan	Akshay Kumar
47	12
12	115
76	006
42	73
04	07
51	19
37	119
48	36
13	84
00	29

Which Actor is more consistent ?

OR

$2X - Y + 3Z = 9$

$Y - Z = -1$

$X + Y - Z = 0$

Find the value of X, Y and Z by Inverse or Cramer's Rule. 18

UNIT–IV

4. Calculate co-efficient of correlation (r) between :

Virat Kohli	Anushka Sharma
2	4
3	7
4	8
5	9
6	10
7	14
8	18

OR

Ranbeer	**Deepika**
5	3
8	4
7	5
6	2
4	1

Obtain Two Regression lines between them. 18

UNIT–V

5. Calculate Fisher's Index No. :

	Base Year		**Current Year**	
Goods	**q**	**p**	**p**	**q**
A	12	10	12	15
B	15	7	5	20
C	24	5	9	20
D	5	16	14	5

OR

Find Trend Values :

Year	**Sale**
2014	5
2015	7
2016	9
2017	10
2018	12
2019	17

18