15. (a) Calculate the mean deviation from the mean.

X :	5	15	25	35	45	55	65
F :	8	12	10	8	3	2	7

Or

(b) Calculate the coefficient of variation.

Runs :	0	27	41	50	70	98	100
No. of innings :	2	3	5	4	3	2	1

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. The sum of 3 numbers in G.P. is 35 and their Product is 1000. Find the Numbers.

17. Find the inverse of $A = \begin{bmatrix} 1 & 2 \\ 1 & 3 \end{bmatrix}$ and shown that $A^{-1} \cdot A = I$.

18. Discuss limitations of Statistics.

19. Examine whether A.M > G.M > H.M.

Value :	10	15	20	25	40	72
Frequency :	1	3	4	10	5	2

20. Calculate Bowley's Co-efficient of skewness for the data given below :

C.I :	10-20	20-30	30-40	40-50	50-60	60-70	70-80
F :	358	2417	916	129	62	18	10

S.No. 1440 **17USTA12**

(For the candidates admitted from 2017–2018 onwards)

B.B.A. DEGREE EXAMINATION, NOVEMBER 2017.

First Semester

BUSINESS MATHEMATICS AND STATISTICS — I

(Common for B.B.A. Retail Management and B.B.A (International Business))

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

All questions carry equal marks.

1. Find the indicated terms in each of the sequence whose n^{th} terms are given by $a_n = (-1)^n (1 - n + n^2)$; a_5, a_8.

2. How terms in the following A.P.? 7, 13, 19, ..., 205

3. Construct a 2×2 matrix $A = (a_{ij})$ whose elements are given by $a_{ij} = 2i - j$.

4. Find the values of x, y and z if $\begin{pmatrix} x & 3 & -2 \\ 4 & 9 & 8 \end{pmatrix} = \begin{pmatrix} -2 & 3 & z \\ 4 & y & 8 \end{pmatrix}$.

5. What are the types of classification?

6. Give the names of diagrams which are one dimensional.

7. Calculate the mode 34, 75, 67, 68, 67, 34, 23, 72, 34, 68, 67, 34.

8. Define Harmonic mean.

9. Give formulae for Karl Pearson's measures of Skewness.

10. Define Range.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) If the fourth and seventh terms of a G.P. are 54 and 1458 respectively. Find the G.P.

Or

(b) Find the sum of arithmetic series $38 + 35 + 32 + \ldots + 2$.

12. (a) If $A = \begin{bmatrix} 5 & 2 \\ 7 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & -1 \\ -1 & 1 \end{bmatrix}$ verify that $(AB)^T = B^T A^T$.

Or

(b) If $A = \begin{bmatrix} 1 & 4 & 3 \\ 4 & 2 & 1 \\ 3 & 2 & 2 \end{bmatrix}$ find adjoint of A.

13. (a) Name Two kinds of statistical data and describe them in brief.

Or

(b) What are the types of classification? Explain the types of classification.

14. (a) Draw a multiple bar diagram for the following data.

Year	Sales	Gross Profit	Net Profit
2010	100	30	10
2011	120	40	15
2012	130	45	25
2013	150	50	25

Or

(b) Calculate the median from the following data.

Marks :	10-25	25-40	40-55	5-70	70-85	85-100
Frequency :	6	20	44	26	3	1