15 If x^a, x^b, x^c are in G.P, prove that a, b, c are in A.P.

16 Distinguish between Simple and Compound interest.

17 Distinguish between Quantitative and Qualitative data.

18 How will you construct a frequency polygon ?

19 Define Central tendency.

20 Find the median of :

Class	:	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25
f	:	5	10	15	12	8

21 Why index numbers are known as 'barometers of economic changes' ?

(9 × 1 = 9 weightage)

III. Short essay questions. (Answer any *five* questions from seven) :

22 Find the values of a, b if $2\times\begin{bmatrix} a & 5 \\ 7 & b-3 \end{bmatrix}+\begin{bmatrix} 3 & -4 \\ 1 & 2 \end{bmatrix}=\begin{bmatrix} 7 & 6 \\ 15 & 14 \end{bmatrix}$.

23 If $q_d = 400-\frac{p^2}{4}$ and $q_s = \frac{p^2}{2}-275$ are the demand and supply functions, obtain equilibrium price and quantity.

24 Find the sum of all integers (whole numbers) in between 10 and 200 which are exactly divisible by 7.

25 Explain any *two* methods of collecting primary data.

26 Distinguish between Multiple and Subdivided bar diagrams.

27 Write a short note on trend and seasonal variations in a time series.

28 Find the coefficient of variation (C.V.) of the following c.f.d.:

Class	:	1–3	3–5	5–7	7–9
f	:	40	30	20	10

(5 × 2 = 10 weightage)

IV. Essay questions. Answer *two* questions from three :

29 A^{-1} if $A=\begin{bmatrix} 1 & 2 & -1 \\ 2 & 0 & 1 \\ 3 & 2 & 1 \end{bmatrix}$.

30 Explain any *four* methods of random (probability) sampling.

31 Find Laspeyre's, Paasche's and Fisher's index numbers for the following data :

Commodity	:	A	B	C
Price (2000)	:	2	5	7
Quantity (2000)	:	74	125	40
Price (2001)	:	3	4	6
Quantity (2001)	:	82	140	33

(2 × 4 = 8 weightage)