

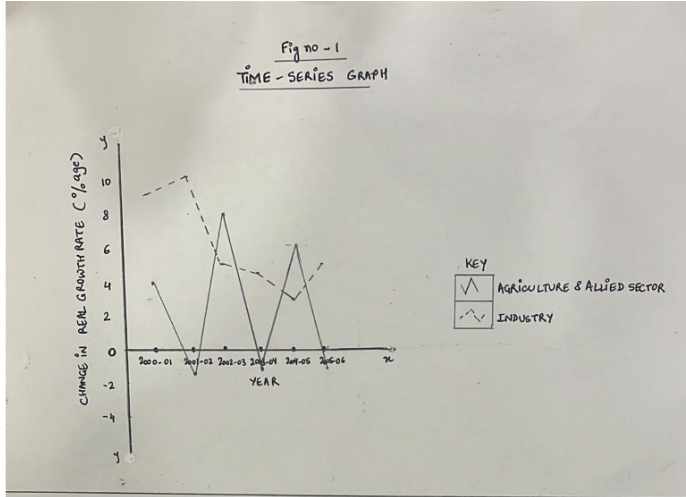
Marking Scheme

Value Points (Any other valid answer to be awarded)

Section - A

S. No.	Value Points	Marks	Total Marks								
1	d) Implies that consumer's wants will never be completely satisfied.		1								
2	b) A iii B i C iv D ii		1								
3	b) It does not deal with a single result.		1								
4	a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)		1								
5	b) Component Diagram		1								
6	b) Rs. 150		1								
7	c) 89		1								
8	c) Statement 1 is true and statement 2 is false.		1								
9	b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Reason(R)		1								
10	b) 0		1								
11	<p>Census method would be more appropriate in the given situation because the district consists of diverse ethnic groups i.e. population is heterogeneous.</p> <p align="center">OR</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Census of India</th> <th style="width: 50%;">NSSO</th> </tr> </thead> <tbody> <tr> <td>● Most complete and continuous demographic records of population</td> <td>● Nation wide surveys on socio-economic issues through sampling.</td> </tr> <tr> <td>● Every ten years</td> <td>● Periodic estimates published in 'Survekshan'</td> </tr> <tr> <td>● Helps in understanding economic and social issues regarding population.</td> <td>● Used for planning.</td> </tr> </tbody> </table>	Census of India	NSSO	● Most complete and continuous demographic records of population	● Nation wide surveys on socio-economic issues through sampling.	● Every ten years	● Periodic estimates published in 'Survekshan'	● Helps in understanding economic and social issues regarding population.	● Used for planning.	<p>(To be marked as a whole)</p> <p align="center">1</p> <p align="center">1</p> <p align="center">1</p>	3
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12 Time series graph showing change in real growth rate



1½ labeling & Key

1½ diagram

3

- 13 i) Component bar diagrams are useful for
- Comparing the sizes of different elements which a variable is made up of.
 - Studying the relationship among the integral parts of the variable.

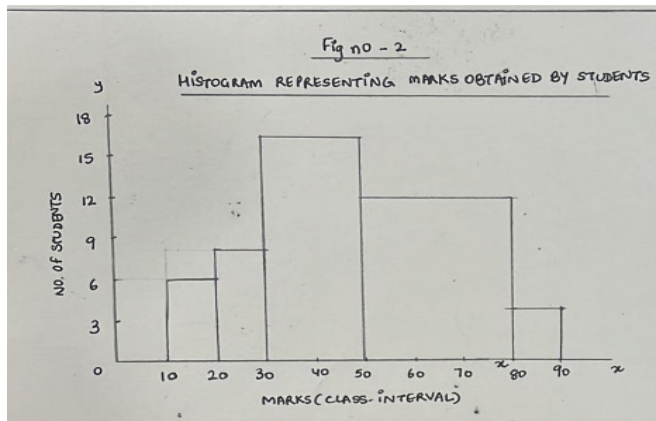
½

½

ii)

Marks	No. of Students	Adjusted Frequency
10-20	6	
20-30	8	
30-50	32	16*
50-80	36	12*
80-90	4	

1



2

4

14

Commodity	P0 (Rs.)	P1 (Rs.)
A	240	360
B	160	200
C	600	800
D	260	360
E	300	400
	$\sum P0 = 1560$	$\sum P1 = 2120$

$$P01 = \left[\frac{\sum P1}{\sum P0} \right] \times 100$$

$$\begin{aligned} & 2120/1560 \times 100 \\ & = 135.89 \end{aligned}$$

35.89% increase in the prices from 2020-2021

OR

- Price Index no. measures the changes in the retail & wholesale prices.
- Index of industrial production measures the changes in the volume of industrial production.
- Index of agricultural production measures the changes in the volume of agricultural production.
- Sensex measures the changes in the share prices & thus indicates the health of the economy.

15.

i)

Marks (X)	F	FX
2	3	6
4	5	20
6	8	48
8	2	16
10	1	10
	$\sum F = 19$	$\sum FX = 100$

$$\begin{aligned} A.M &= \frac{\sum FX}{\sum F} \\ &= 100/19 \\ &= 5.263 \text{ marks} \end{aligned}$$

Marks (X)	F	CF
2	3	3
4	5	8
6	8	16
8	2	18
10	1	19

- ii) $Me =$ the size of $(N+1)/2^{\text{th}}$ value
 $(19+1)/2 = 20/2 = 10^{\text{th}}$ value
 $= 6$ marks

1

1

1

½

½

1

1

1

1

4

1

½

½

1

½

½

4

16.

Marks in Statistics (X)	Marks in Economics (Y)	R ₁	R ₂	D = R ₁ - R ₂	D ²
30	29	3.5	2	+1.5	2.25
38	27	1	4.5	-3.5	12.25
28	22	6	6.5	-0.5	0.25
27	29	8	2	+6	36.00
28	20	6	9	-3	9.00
23	29	10	2	+8	64.00
30	18	3.5	10	-6.5	42.25
33	21	2	8	-6	36.00
28	27	6	4.5	+1.5	2.25
25	22	9	6.5	+2.5	6.25
N = 10					ΣD ² = 210.50

2

$$r_{K} = 1 - \frac{6 \left[\sum D^2 + \frac{1}{12} m^3 - m \right] + \frac{1}{12} (m^3 - m)}{N(N^2 - 1)}$$

$$r_{K} = 1 - \frac{6 \left[176 + \frac{1}{12} (2^3 - 2) + \frac{1}{12} (2^3 - 2) + \frac{1}{12} (2^3 - 2) \right]}{10^3 - 10}$$

$$r_{K} = 1 - \frac{6(176 + 0.5 + 0.5 + 0.5)}{990}$$

$$r_{K} = 1 - \frac{6 \times 177.5}{990}$$

$$= 1 - \frac{1065}{990}$$

$$= \frac{-75}{990} = -0.076 \text{ (low degree of negative correlation between X \& Y)}$$

1

2

1/2, 1/2

OR

X	Y	X ²	Y ²	XY
8	2	64	4	16
10	4	100	16	40
9	3	81	9	27
7	5	49	25	35
5	2	25	4	10
$\Sigma X = 39$	$\Sigma Y = 16$	$\Sigma X^2 = 319$	$\Sigma Y^2 = 58$	$\Sigma XY = 128$

$$r = \frac{N \Sigma XY - \Sigma X \Sigma Y}{\sqrt{N \Sigma X^2 - (\Sigma X)^2} \sqrt{N \Sigma Y^2 - (\Sigma Y)^2}}$$

$$= \frac{5(128) - (39 \times 16)}{\sqrt{5(319) - (39)^2} \sqrt{5(58) - (16)^2}}$$

$$= \frac{640 - 624}{\sqrt{1595 - 1521} \sqrt{290 - 256}}$$

$$= \frac{16}{\sqrt{74} \sqrt{34}}$$

$$= \frac{16}{\sqrt{2516}} = \frac{16}{50.16} = 0.318$$

Low degree of positive correlation between X & Y.

2

1

2

1/2

1/2

6

17	i) False, the coefficient of correlation does not change when a constant is added or subtracted. ii) False, the range of simple correlation is minus one to plus one. iii) False, because there is no linear relation although there may be non linear relation between the variables.	2 2 2	6
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Section - B

18	d) income from postal department		1																																										
19	a) Zero		1																																										
20	b). Both Assertion (A) & Reason (R) are True & Reason (R) is not the correct explanation of Assertion (A)		1																																										
21	a) Shift to the right side		1																																										
22	b) 30		1																																										
23	b) both the statements are false		1																																										
24	c) Willingness to buy		1																																										
25	d) Total variable cost		1																																										
26	b) firm is a price taker and industry is the price maker		1																																										
27	a) $AR = MR$		1																																										
28	<ul style="list-style-type: none"> • it represents the situation of under employment of resources • the scheme leads towards full and efficient utilisation of resources • production in the economy moves towards PPC. <p align="center">OR</p> <p>TABLE 1.</p> <table border="1"> <thead> <tr> <th>GOOD X</th> <th>GOODY</th> <th>MRT</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>25</td> <td>-</td> </tr> <tr> <td>1</td> <td>23</td> <td>2 :1</td> </tr> <tr> <td>2</td> <td>20</td> <td>3:1</td> </tr> <tr> <td>3</td> <td>15</td> <td>5:1</td> </tr> <tr> <td>4</td> <td>9</td> <td>6:1</td> </tr> <tr> <td>5</td> <td>0</td> <td>9:1</td> </tr> </tbody> </table> <p>TABLE 2</p> <table border="1"> <thead> <tr> <th>GOOD X</th> <th>GOODY</th> <th>MRT</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>25</td> <td>-</td> </tr> <tr> <td>1</td> <td>23</td> <td>2.5:1</td> </tr> <tr> <td>2</td> <td>20</td> <td>2.5:1</td> </tr> <tr> <td>3</td> <td>15</td> <td>2.5:1</td> </tr> <tr> <td>4</td> <td>9</td> <td>2.5:1</td> </tr> <tr> <td>5</td> <td>0</td> <td>2.5:1</td> </tr> </tbody> </table> <p>Table 1 justifies the shape of PPC as MRT is increasing</p>	GOOD X	GOODY	MRT	0	25	-	1	23	2 :1	2	20	3:1	3	15	5:1	4	9	6:1	5	0	9:1	GOOD X	GOODY	MRT	0	25	-	1	23	2.5:1	2	20	2.5:1	3	15	2.5:1	4	9	2.5:1	5	0	2.5:1	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	3
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<p>31</p>	<p>The vertical distance between AC and AVC curves continues to fall with increase in output because the gap between them is AFC , which declines with rise in output.</p> <p>*Total fixed cost curve</p> <p>*Total fixed cost refers to those cost which do not vary directly with the level of output.</p>	<p>2</p> <p>1</p> <p>1</p>	<p>4</p>
<p>32</p>	<p>Cash incentives by the government for using organic methods for discouraging use of chemical fertilizers will decrease demand for chemical fertilizers.</p> <p>Demand curve will shift towards left . At the original equilibrium price there will be excess supply leading to competition among sellers i.e. decrease in price.</p> <p>This will lead to contraction in supply and expansion in demand till the new equilibrium is attained at a lower price and quantity.</p>	<p>1</p> <p>1</p> <p>2</p>	<p>4</p>
<p>33</p>	<p>Explanation of the phases</p> <p>Phase 1 MP increases ,TP rises at increasing rate</p> <p>Phase 2 MP decreases and is positive</p> <p>TP rises at decreasing rate</p> <p>Phase 3 MP becomes negative ,TP falls</p> <p>Diagram showing behavior of TP and MP</p>	<p>3</p> <p>3</p>	<p>6</p>
		<p>3</p>	<p>6</p>

OR

Output	TR	TC	MR	MC
1	5	7	5	7
2	10	12	5	5
3	15	15	5	3
4	20	18	5	3
5	25	23	5	5
6	30	30	5	7
7	35	35	5	10

Therefore the firm would be in equilibrium when it produces 5 units of output .When it produces 5 units of output its $MR=MC$ and MC is rising. This level of output satisfies both the conditions of equilibrium.

34

i)

Units	1	2	3	4	5	6
TU	20	36	46	50	50	
MU	20	16	10	4	0	-6

MU is additional utility of the successive units consumed and hence it can be negative .TU is the total utility from the consumption of given quantity of the good thus it can never be negative .

ii) This is a situation where $MRS > P_x/P_y$

*The consumer will buy more units of x

*As a result MRS will fall due to law of diminishing marginal utility.

*This will continue till $MRS = P_x/P_y$. consumer is in equilibrium

3

3

6

3

3

6