Chapter 6: Diagrammatic Presentation of Data- Bar Diagrams and Pies Diagrams

Question 1: Represent the following data by a percentage bar diagram.

G1	Number of Students			
Subjects	2016-17	2017-18		
Statistics	25	30		
Economics	40	42		
History	35	28		

Solution

	2016-17		2017-18		
Subject	Number of students (%)	Cumulative Percentage	Number of students (%)	Cumulative Percentage	
Statistics	25	25	30	30	
Economics	40	60	42	72	
History	35	100	28	100	
Total	100		100		







Factory S	Selling price per unit (in ₹)	Quantity Sold	Cost Components (in ₹)			
			Wages	Material	Miscellaneous	Total
X	400	20	3,200	2,400	1,600	7,200
Y	600	30	6,000	6,000	9,000	21,000

Question 2: Draw a suitable diagram to represent the following information

Also, show profit and loss.

Solution: First of all, we shall calculate the cost (wages, materials, miscellaneous) and profit per unit as given in the following table.

	Factory X (20 units)		Factory Y (30 units)		
	Total Cost (₹)	Per Unit Cost (₹)	Total Cost (₹)	Per Unit Cost (₹)	
Wages	3,200	160	6,000	200	
Materials	2,400	120	6,000	200	
Miscellaneous	1,600	80	9,000	300	
	800		-3,000		
Profit/Loss		40		-100	
	(8,000-7,200)		(18,000-21,000)		

Note: (Negative profit is regarded as a loss)

An appropriate diagram for representing this data would be the rectangle whose widths are in the ratio of the quantities sold, i.e, 20:30, i.e, 2:3. Selling prices would be represented by the corresponding heights of the rectangles with various costs (wages, materials, miscellaneous) and profit or loss represented by the various divisions of the rectangles as shown in the diagram given on the next page.

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(Note: In the case of profit, i.e., when selling price > cost price, the entire rectangle will lie above the X-axis. But in case of loss, we will have a rectangle with a portion lying below the X-axis which will reflect the loss incurred, it cannot be recovered through sales)

Question 3: Following are the data about the market share of four brands of TV sets sold in Panipat and Ambala. Present the data in the pie chart.

Brand of Sets	Units sold in Panipat	Units sold in Ambala		
Samsung	480	625		
Akai	360	500		
Onida	240	438		
Sony	120	312		

Solution: Total sets sold in Place A and Place B are 1,200 and 1,875 respectively. Data are to be represented by two circles whose radii are in the ratio of square roots of total TV sets sold in each city in the ratio of : or 1:1. The calculations regarding the construction of the pie diagram are as follows.

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Brands of Sets	Place A	Place A			Place B		
	Sets Sold	Sales(₹)	Sales in terms of components of 360°	Sets Sold	Sales %	Sales in terms of components of 360°	
Samsung	480	40	$\frac{40}{100}$ × 360° = 144°	625	33.3	${33.3 \over 100} imes 360^\circ \ = 119.88^\circ$	
Akai	360	30	${30\over 100} imes 360^\circ = 108^\circ$	500	26.7	${26.7\over 100} imes 360^\circ \ = 96.12^\circ$	
Onida	240	20	$rac{20}{100} imes 360^\circ = 72^\circ$	438		$\begin{array}{r} \frac{23.4}{100} \times \ 360^{\circ} \\ = \ 84.24^{\circ} \end{array}$	
Sony	120	10	$\frac{10}{100}$ × 360° = 36°	312	16.6	$egin{array}{ccc} rac{16.6}{100} imes 360^{\circ} \ = 59.76^{\circ} \end{array}$	
Total	1,200		360°	1,875		360°	



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Games	Table Tennie	Volleyball	Hockey	Basketball	Cricket
No of Students	500	300	350	400	550

Question 4: The following table shows the interest of students in a school in different games.

Solution



Simple bar diagram

Question 5: The following table shows the monthly expenditure of different families on different items.

Items of Expenditure	Education	Clothing	Food	Rent	Other	Total Expenditure
Family A	1,500	1,000	1,250	750	500	5,000
Family B	1,700	850	1,200	850	600	5,200
Family C	1,600	700	1,500	800	600	5,200

Represent the data in the form of a sub-divided bar diagram.

Solution

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