Data Interpretation 39

INTRODUCTION

Data interpretation deals with careful reading, understanding, organising and interpreting the data provided so as to derive meaningful conclusions. It is an important section today in all competitive examinations. The data representation can be broadly classified as tables, graphs and charts.

Types of Data Representation

1. **Tables It** is the systematic and scientific presentation of *numerical data*. It helps the person to make comparisons and draw quick conclusions. Tabular presentation makes complicated information easier to understand. In a table, data is arranged systematically in columns and rows.

Illustration 1: In the Table below are given daily wages of male and female workers (in rupees) of two different factories:

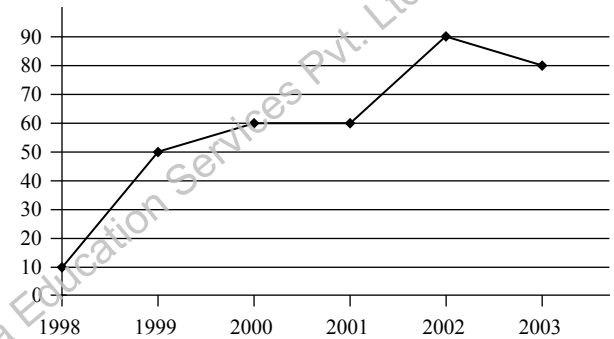
	FACTORY A		*FACTORY B*	
YEAR	*Male*	*Female*	*Male*	*Female*
1997	120	120	240	200
1998	100	108	170	160
1999	80	110	120	130
2000	90	108	140	160
2001	170	130	240	260
2002	120	170	250	270

2. **Line Graph** A line graph depicts the variation of a quantity with respect to the two parameters calibrated on the x and y axes, respectively. In most of the cases the quantity is measured as a function of time, that is, the variation in the quantity as time changes.

In the line graph:

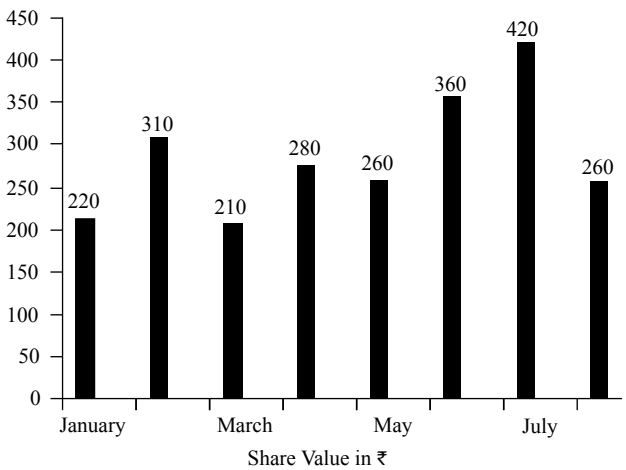
(a) x-axis represents the time parameter (may be year or month) and y-axis represents any other variable parameter which have different values with respect to time.
(b) the line going up indicates increase in the quantity with time.
(c) the line going down indicates decrease in the quantity with time.
(d) a horizontal line indicates no change in the quantity over that period.

Illustration 2: The following 1 ne graph shows the number of children suffering from liver disorders in a State (in thousands).



3. **Bar Graph** A bar is a thick line whose width is shown merely for attention. A bar graph consists of bars. The height of the bar is a measure of the quantity that it represents. Therefore, quantities can be compared by the height of bars in the graph. Bars may be horizontal or vertical. They may be placed adjacent to each other or may be separated from each other by spaces depending upon the problem.

Illustration 3: The graph given below shows the share price (in rupees) of a company during first eight months of a year.



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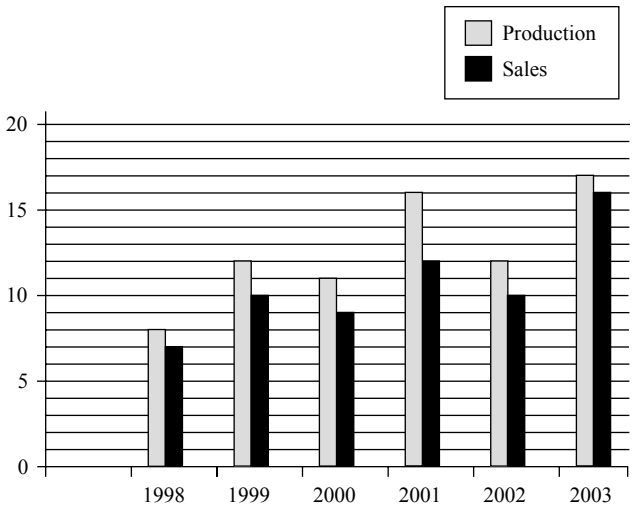
SHARE VALUE IN RUPEES

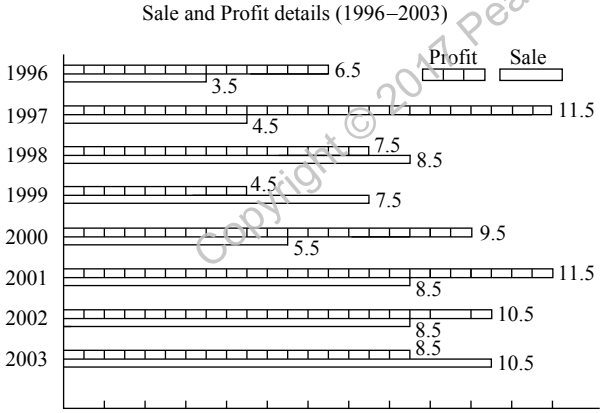
Illustration 4: The graph given below shows the yearly production and sale *of* a company in Lakh tons.



Yearly Production and Sales (in Lakh tons)

Illustration 5: The graph given below gives information about the sale and profit details of a departmental store during the years from 1996 to 2003.

Sale and Profit details (1996–2003)

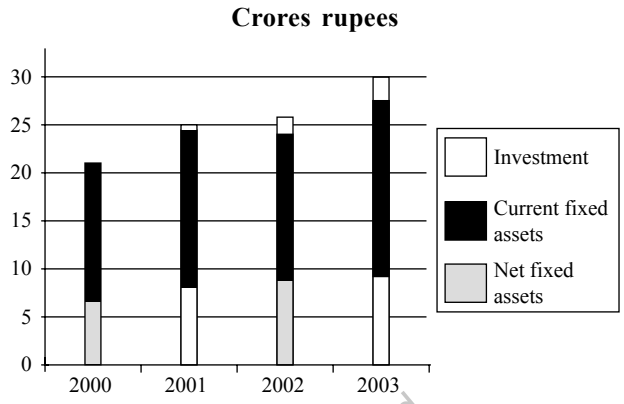


Sale: (₹ in Lakhs)
Profit: (₹ in Ten thousands)

Sale: (₹ in Lakhs,)
Profit: ₹ in Ten thousands

4. **Cumulative Bar Graph** In a cumulative bar graph, the length of the bar is divided proportionately among various quantities represented in the graph. Thus, it may be conveniently used for making comparisons,

Illustration 6:



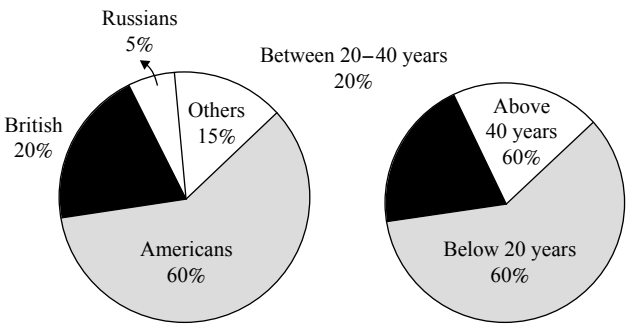
5. **Pie Charts** In a pie chart, the given data is distributed over a circle. Each part of the data makes a certain central angle.

For example, if from all the questions asked in a Bank PO exam, 25% are on data interpretation, then central angle made by this tern

$$= \left(\frac{25}{100} \times 360\right) = 90°$$

Pie charts are useful for representing percentages or proportions of variou s elements with respect to the total quantity. They also represent shares of various parts of a particular quantity.

Illustration 7: The following pie charts describe the characteristics of foreign tourists visiting India in a particular year.



6. **Combination graph** Quite often, data interpretation question is based not on a single graph but on a combination of two or more graphs. It can be line and bar, line and pie, bar and pie, cumulative and pie charts.

Illustration 8: The following graph shows annual sales of companies *A* and *B* (₹ in lakh) for 1994–1999.

Annual sales of $$$mies

A and B (₹ in lakh$$$ 1994–99

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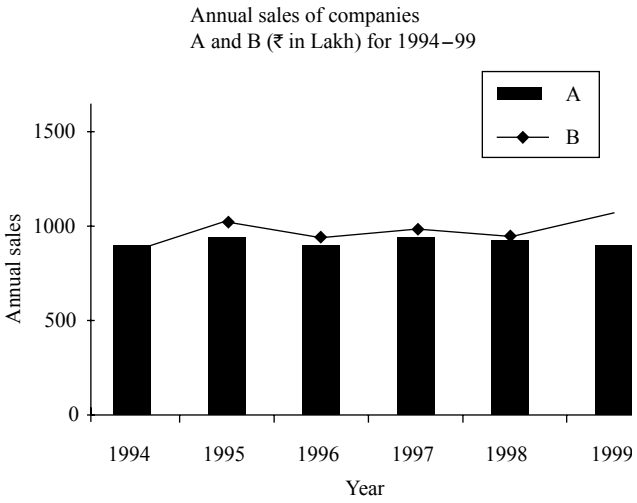


Line and Bar chart

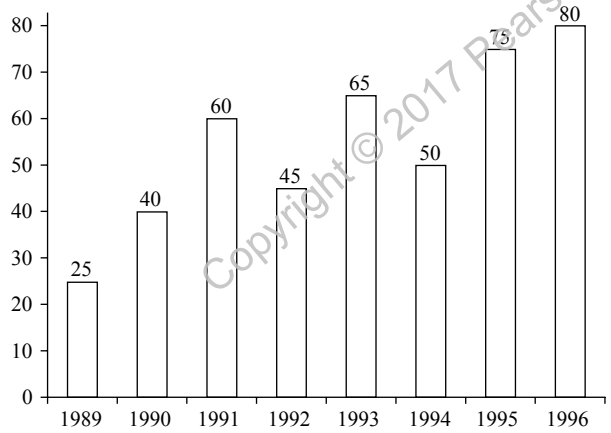
Some Useful Instructions

1. Do not waste time memorising a Table. You can refer to it as many times as you want during the examination.
2. Your answer should be accurate and based on precise data given in the Table.
3. Do not include your own information in answering questions, however, accurate you may be. Stick to the data i resented to you.
4. Be careful about minor details. Students often miss them and give wrong answers.

EXERCISE-I

1. Directions: Study the following graph carefully and answer the questions given below it.

Production of foodgrains by a State over the years (1000 tons)



(i) The average production of 1990 and 1991 was exactly equal to the average production of which of the following pairs of years?

(a) 1991 and 1992 (b)1992 and 1994
(c) 1993 and 1994 (d)1994 and 1995
(e) None of these

(ii) What was the difference in the production of foodgrains between 1991 and 1994?

(a) 10000 tons
(b) 15000 tons
(c) 500 tons
(d) 5000 tons
(e) None of these

(iii) In which of the following years was the percentage increase in production from the previous year the maximum among the given years?

(a) 1991
(b) 1993
(c) 1995
(d) 1990
(e) None of these

(iv) In how many of the given years was the production of foodgrains more than average production of the given years?

(a) 2 (b) 3
(c) 4 (d) 1
(e) None of these

(v) What was the percentage drop in the production of foodgrains from 1991 to 1992?

(a) 15 (b) 20
(c) 25 (d) 30
(e) None of these

2. Directions: Study the following graphs carefully and answer the questions given below:

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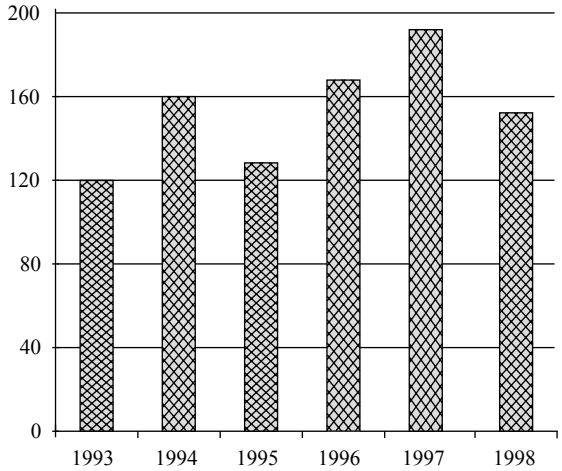
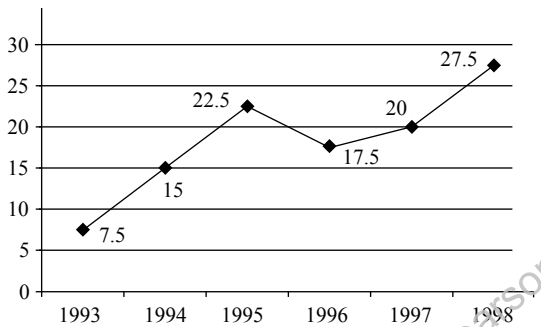
INCOME OF A COMPANY (IN ₹ LAKHS)



PERCENTAGE PROFIT OVER THE YEARS



(i) In which of the following years was the amount of profit the maximum?

(a) 1997 (b) 1994
(c) 1993 (d) 1995
(e) None of these

(ii) **Approximately** what was the average expenditure of the given years?

(a) ₹110 Lakh (b) ₹130 Lakh
(c) ₹120 Lakh (d) ₹140 Lakh
(e) Data inadequate

(iii) In which of the following years was the increase/decrease in per cent profit from the previous year the minimum?

(a) 1994 (b) 1996
(c) 1997 (d) 1995
(e) None of these

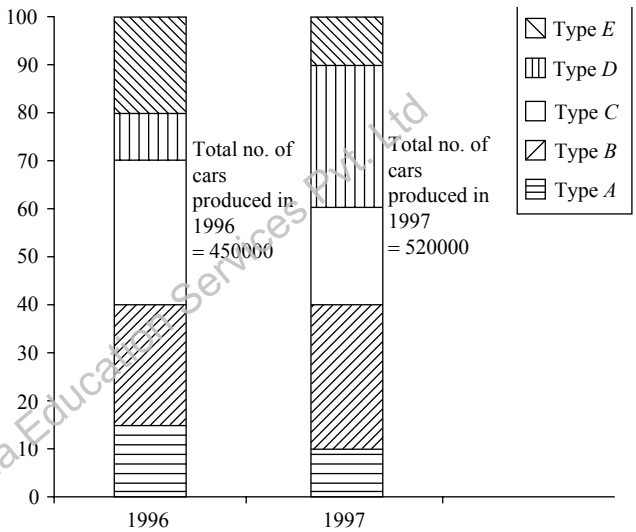
(iv) **Approximately** what was the expenditure in 1994?

(a) ₹120 Lakh (b) ₹160 Lakh
(c) ₹140 Lakh (d) ₹180 Lkh
(e) Data inadequate

(v) If the profit percentage in 1997 was 25, what would have been the expenditure in that year?

(a) ₹130 Lakh (b) ₹148 Lakh
(c) ₹120 Lakh (d) ₹152 Lakh
(e) None of these

3. Directions: Study the following graph carefully and then answer the questions based on it. The percentage of five different types of cars produced by a company during two years is given below.



(i) What was the difference in the production of *C* type cars between 1996 and 1997?

(a) 5000 (b) 7500
(c) 10000 (d) 2500
(e) None of these

(ii) If 85% of *E* type cars produced during 1996 and 1997 are being sold by the company, then how many *E* type cars are left unsold by the company?

(a) 142800 (b) 21825
(c) 29100 (d) 25200
(e) None of these

(iii) If the number of *A* type cars manufactured in 1997 was the same as that of 1996, what would have been its **approximate** percentage share in the total production of 1997?

(a) 11 (b) 13
(c) 15 (d) 9
(e) None of these

(iv) In the case of which of the following types of cars was the percentage increase from 1996 to 1997 the maximum?

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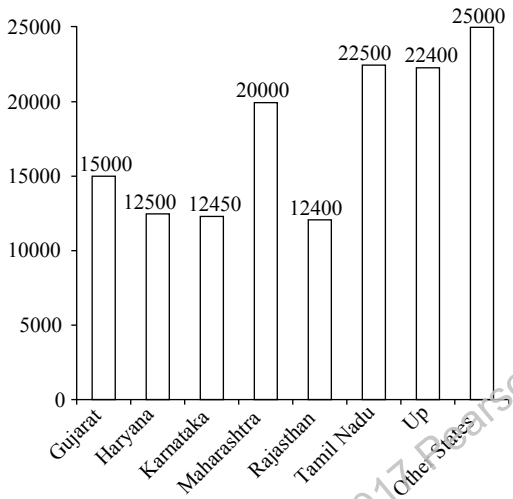
(a) A (b) E
(c) D (d) B
(e) C

(v) If the percentage production of *B* type cars in 1997 was the same as that of 1996, what would have been the number of cars produced in 1997?

(a) 112500 (b) 120000
(c) 130000 (d) Data inadequate
(e) None of these

4. Directions: Study the following graph carefully and answer the questions given below it.

Rose production



(i) Which of the following State(s) contribute(s) less than 10 per cent in the total rose production?

(a) Only Raj as than
(b) Rajasthan, Karnataka
(c) Rajasthan, Karnataka, Haryana
(d) Rajasthan, Karnataka, Haryana and Gujarat
(e) None of these

(ii) By what percentage rose production of other States is more than that of the Maharashtra?

(a) 25 (b) 30
(c) 20 (d) 15
(e) None of these

(iii) What is the **approximate** average production of roses (in thousands) across all the states?

(a) 21 (b) 20
(c) 19 (d) 18
(e) 17

(iv) Approximately what percentage of the total rose production is shared by the other States?

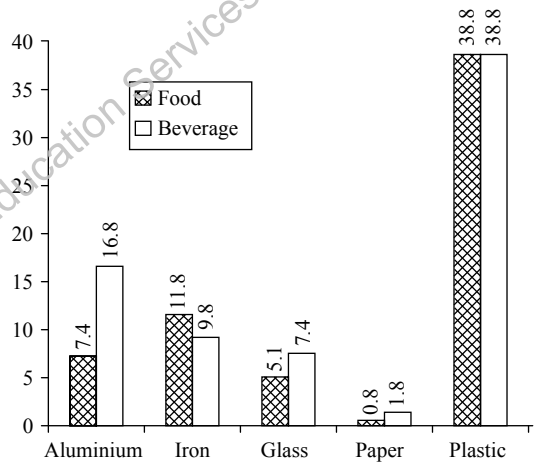
(a) 10 (b) 20
(c) 30 (d) 40
(e) 35

(v) If total percentage contribution of the States having production of roses below twenty thousand is considered, which of the following statements is true?

(a) It is little above 40%
(b) It is exactly 35%
(c) It is below 35%
(d) It is little below 30%
(e) None of these

5. Directions: Study the following graph carefully and answer the questions given below it.

Packaging Materials Used (In tonnes)



(i) What per cent of the total glass packaging material was used for packaging food items?

(a) 40.8 (b) 41.8
(c) 40.7 (d) 41.0
(e) None of these

(ii) **Approximately** how much per cent more plastic was used than iron for packaging food items?

(a) 32 (b) 320
(c) 33 (d) 325
(e) 225

(iii) In the case of which one of the following packaging materials used for packing food items and beverages respectively the ratio is 4:9?

(a) Glass (b) Paper
(c) Aluminium (d) Iron
(e) None of these

(iv) What is the ratio between the glass and aluminium packaging used for packing beverages?

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(a) 17:56 (b) 56:17
(c) 84:37 (d) 37:84
(e) None of these

(v) **Approximately** what per cent of all the packaging materials used for packing food items was contributed by plastic?

(a) 60 (b) 65
(c) 70 (d) 55
(e) 50

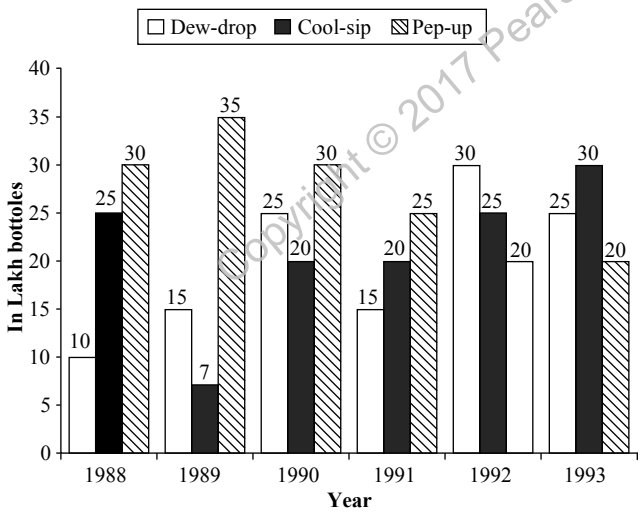
(vi) **Approximately** what per cent of all the packaging materials used for packing food items and beverages was contributed by plastic and aluminium together?

(a) 60 (b) 70
(c) 80 (d) 65
(e) 75

(vii) What per cent of all the packaging materials used for packing beverages was contributed by paper (Find the answer up to two decimal places).

(a) 2.42 (b) 3.41
(c) 2.41 (d) 3.42
(e) None of these

6. Directions: Study the following graph carefully and answer the questions given below.



(i) In which year was the sale of 'Pep-up' the maximum?

(a) 1990 (b) 1991
(c) 1992 (d) 1993
(e) None of these

(ii) In the case of which soft drink was the average annual sale maximum in the given period?

(a) Pep-up only (b) Cool-sip only
(c) Dew-drop only (d) Gool-sip and Dew-drop
(e) Pep-up and Dew-drop

(iii) In the case of Cool-sip drink, what was the approximate per cent increase in sale in 1992 over its sale in 1991?

(a) Less than 20 (b) 20–25
(c) 25 (d) 31–35
(e) 36–40

(iv) In the year 1990, what was the difference between the number of 'Pep-up' and 'Cool-sip' bottles sold?

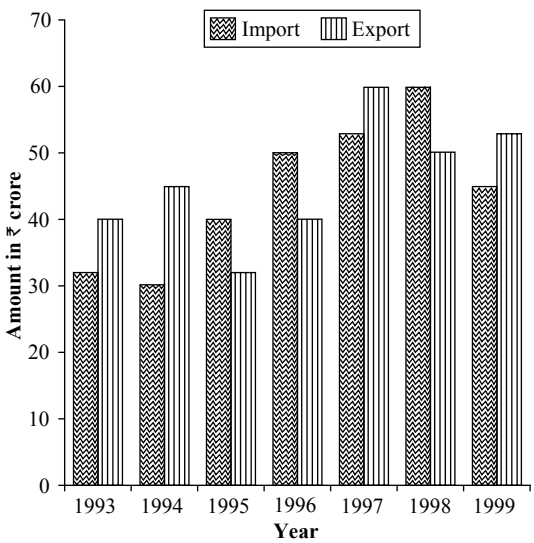
(a) 5000000 (b) 500000
(c) 50000 (d) 5000
(e) 1000000

(v) What was the approximate per cent drop in sale of Pep-up in 1990 over its sale in 1989?

(a) .5 (b) 12
(c) 14 (d) 20
(e) 28

7. Directions: Study the following graph carefully to answer the questions given below it.

Import and Export of spare parts by an automobile company over the given years



(i) During which year the percentage rise/fall in imports from the previous year is the lowest?

(a) 1994 (b) 1998
(c) 1997 (d) 1995
(e) None of these

(ii) What is the ratio of total imports to total exports for all the given years together?

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(a) 31:35 (b) 35:31
(c) 65:63 (d) 63:65
(e) None of these

(iii) In which of the following pairs of years the total import is equal to total export in the same pair of years?

(a) 1996–1997 (b) 1993–1998
(c) 1998–1999 (d) 1995–1996
(e) None of these

(iv) The total exports in the years 1995, 1996 and 1999 together are what per cent of the total import during the same period? (up to two decimal places)

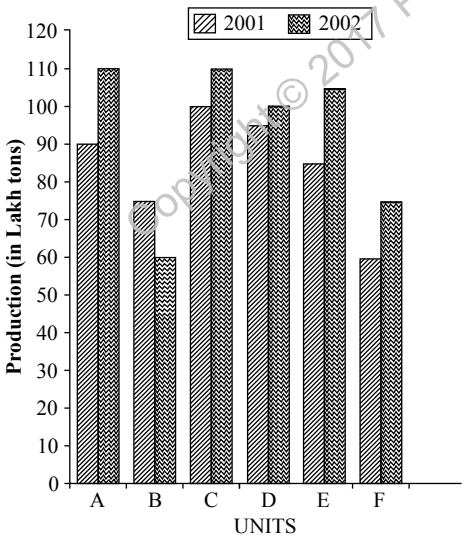
(a) 107.41 (b) 107.14
(c) 93.33 (d) 93.67
(d) None of these

(v) Which of the following pairs of years and the per cent increase in the export over the previous year is correctly matched?

(a) 1996–14.29 (b) 1997–10
(c) 1995–33.33. (d) 1994–11.11
(e) None of these

8. Directions: Study the following graphs carefully to answer these questions.

Production (in Lakh tons) of six units of a company 2001 and 2002



(i) What is the average production of all the units (in Lakh tons) for the year 2002?

(a) 89 (b) 92
(c) 87 (d) 95
(e) None of these

(ii) Average production of three units *A, B* and *C* in 2001 is what per cent of the average production of units *D, E* and *F* in 2002? (rounded off to two digits after decimal)

(a) 109.43 (b) 90.37
(c) 91.38 (d) 106.43
(e) None of these

(iii) What is the ratio of total production for two years together for unit *B* to that for *C?*

(a) 17:13 (b) 13:17
(c) 11:13 (d) 19:13
(e) None of these

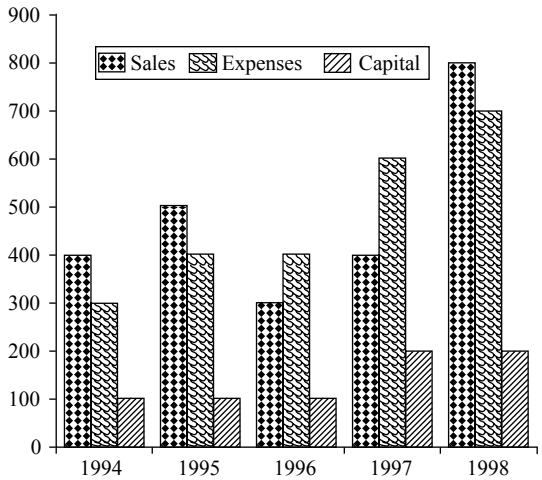
(iv) Total production for two years together by unit *F* is what per cent of the total production of the two years together by unit *D*? (rounded off to two digits after decimal)

(a) 79.49 (b) 78.49
(c) 78.47 (d) 79.29
(e) None of these

(v) What is the total production of units C, D_9 and *E* together for both the years? (in Lakh tons)

(a) 495 (b) 595
(c) 545 (d) 515
(e) None of these

9. The following graph gives Sales, Expense and Capital of a company for a period of five years–1994 to 1998. Read the graph and answer questions 140 to 144.



(i) What has been the simple average growth rate perannum of expense between 1994 and 1998?

(a) 25% (b) $33\frac{1}{3}\%$
(c) 40% (d) 130%

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(ii) In which year was the sales-to-expense ratio the lowest?

(a) 199 (b) 1996
(c) 1997 (d) 1998

(iii) What was the average per annum increase in sales (in ₹ crore) from 1994 to 1998?

(a) 50 (b) 60
(c) 80 (d) 100

(iv) In which year was the ratio of profits to capital the highest?

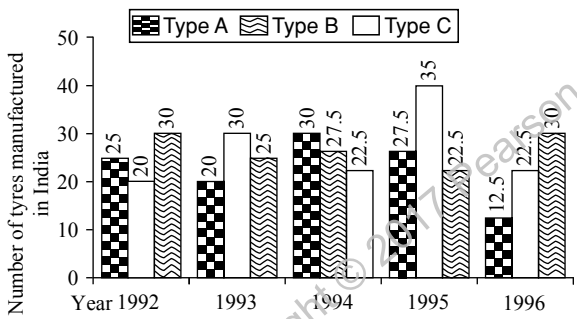
(a) 1998 (b) 1995
(c) 1996 (d) 1997

(v) In which year was the ratio of sales to capital the lowest?

(a) 1998 (b) 1997
(c) 1996 (d) 1995

10. Directions: Study the following graph carefully and answer the questions given below.

Production of three types of tyres by a company over the year (in Lakh)



(i) What was the percentage drop in the number of *C* type tyres manufactured from 1993 to 1994?

(a) 25 (b) 10
(c) 15 (d) 25
(e) None of these

(ii) What was the difference between the number of *B* type tyres manufactured in 1994 and 1995?

(a) 100000 (b) 2000000
(c) 1000000 (d) 1500000
(e) None of these

(iii) The total number of all the three types of tyres manufactured was the least in which of the following years?

(a) 1995 (b) 1996
(c) 1992 (d) 1994
(e) 1993

(iv) In which of the following years was the percentage production of *B* type to *C* type tyres the maximum?

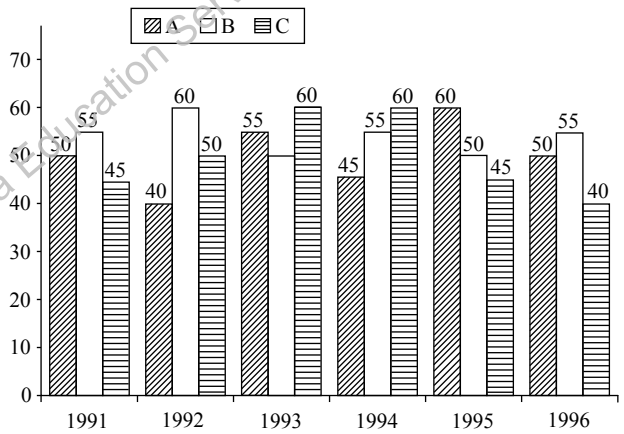
(a) 1994 (b) 1992
(c) 1996 (d) 1993
(e) 1995

(v) The total production of *C* type tyres in 1992 and 1993 together was what percentage of production of *B* type tyres in 1994?

(a) 50 (b) 100
(c) 150 (d) 200
(e) None of these

11. Directions: Study the following graph carefully to answer the questions given below it.

Production of paper (in Lakh tonnes) by 3 different companies A, B, and C over the years



(i) What is the difference between the production of company *C* in 1991 and the production of company *A* in 1996?

(a) 50000 tonnes (b) 50000000 tonnes
(c) 5000000 tonnes (d) 500000 tonnes
(e) None of these

(ii) What is the percentage increase in production of company *A* from 1992 to 1993?

(a) 37.5 (b) 38.25
(c) 35 (d) 36
(e) None of these

(iii) For which of the following years the percentage of rise/fall in production from the previous year the maximum for company *B*?

(a) 1992 (b) 1993
(c) 1994 (d) 1995
(e) 1996

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(iv) The total production of company *C* in 1993 and 1994 is what percentage of the total production of company *A* in 1991 and 1992?

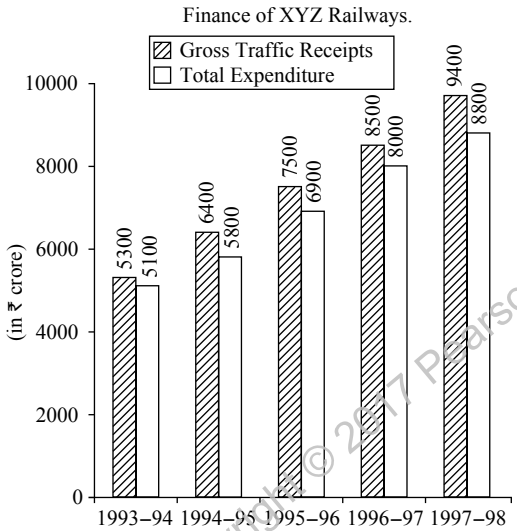
(a) 95 (b) 90
(c) 110 (d) 115
(e) None of these

(v) What is the difference between the average production per year of the company with highest average production and that of the company with lowest average production in Lakh tonnes?

(a) 3.17 (b) 4.33
(c) 4.17 (d) 3.33
(e) None of these

12. Directions: These questions are based on the following bar graph. Read the graph and answer the questions.

Finances of XYZ Railways



(i) What is the percentage increase in the gross traffic receipts in 1995–96 as compared to 1993–94?

(a) 33.9% (b) 41.5%
(c) 20.7% (d) 17%

(ii) If profit = gross traffic receipts – total expenditure, then in 1996–97, what percentage of gross traffic receipts is the profit made?

(a) 5.9% (b) 6.4%
(c) 7.2% (d) 8%

(iii) In which year was the profit as a percentage of gross traffic receipts the highest?

(a) 1997–98 (b) 1996–97
(c) 1995–96 (d) 1994–95

(iv) In order to make a profit of 10%, what should have been the gross traffic receipts (in ₹crore) in 1994–95, total expenditure remaining the same?

(a) 5667 (b) 5876
(c) 6444 (d) 7667

(v) By what amount (in ₹crore) has the expenditure increased over the period 1993–94 to 1997–98?

(a) 4100 (b) 3900
(c) 3850 (d) 3700

13. Directions: Study the following table carefully and answer the question given below it.

Number of candidates from different locations appeared and passed in a competitive examination over the years

	Rural		*Semi-urban*		*State capitals*		*Metropolises*	
Year	*App.*	*Passed*	*App.*	*Passed*	*App.*	*Passed*	*App.*	*Passed*
1990	1652	208	7894	2513	5054	1468	9538	3214
1991	1839	317	8562	2933	7164	3248	10158	4018
1992	2153	932	8139	2468	8258	3159	9695	3038
1993	5032	1798	9432	3528	8529	3628	11247	5158
1994	4915	1668	9784	4015	9015	4311	12518	6328
1995	5628	2392	9969	4263	1725	4526	13624	6419

(i) For the candidates from which of the following locations was there continuous increase both in appeared and passed?

(a) Semi-urban (b) State capital
(c) State capital and Rural (d) Metropolises
(e) None of these

(ii) In which of the following years was the percentage passed to appeared candidates from semi-urban area the least?

(a) 1991 (b) 1993
(c) 1990 (d) 1992
(e) None of these

(iii) What approximate value was the percentage drop in the number of semi-urban candidates appeared from 1991 to 1992?

(a) 5 (b) 10
(c) 15 (d) 8
(e) 12

(iv) In 1993 percentage of candidates passed to **appeared** was **approximately** 35 from which location?

(a) Rural
(b) Rural and Metropolises
(c) Semi-urban and Metropolises
(d) Rural and Semi-urban
(e) None of these

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(v) The total number of candidates passed **from Rural** in 1993 and Semi-urban in 1990 was **exactly equal** to the total number of candidates passed from **State** capital in which of the following years?

(a) 1990 (b) 1993
(c) 1994 (d) 1992
(e) None of these

14. Directions: Study the following table carefully and answer the questions given below it.

Fare in rupees for three different types of vehicles

Fare for distance up to	*Vehicle*		
	Type *A*	Type *B*	Type *C*
2 Km	₹5.00	₹7.50	₹10.00
4 Km	₹900	₹14.50	₹19.00
7 Km	₹13.50	₹24.25	₹31.00
10 Km	₹17.25	₹33.25	₹41.50
15 Km	₹22.25	₹45.75	₹56.50
20 Km	₹26.00	₹55.75	₹69.00

Note:

Fare per Km for intermittent distance is the same.

(i) Shiv Kumar has to travel a distance of 15 Km in all. He decides to travel equal distance by each of the three types of vehicles. How much money is to be spent as fare?

(a) ₹51.75 (b) ₹47.50
(c) ₹47.25 (d) ₹51.25
(e) None of these

(ii) Ajit Singh wants to travel a distance of 15 Km. He starts his journey by Type *A* vehicle. After travelling 6 Km, he changes the vehicle to Type *B* for the remaining distance. How much money will he be spending in all?

(a) ₹42.25 (b) ₹36.75
(c) ₹40.25 (d) ₹42.75
(e) None of these

(iii) Mr *X* wants to travel a distance of 8 Km by Type *A* vehicle. How much more money will be required to be spent if he decides to travel by Type *B* vehicle instead of Type *A*?

(a) ₹16 (b) ₹12.50
(c) ₹14 (d) ₹13.50
(e) None of these

(iv) Rita hired a Type *B* vehicle for travelling a distance of 18 Km. After travelling 5 Km, she changed the vehicle to type A. Again, after travelling 9 Km by Type A vehicle, she changed the vehicle to Type *C* and completed her journey. How much money did she sp did in all?

(a) ₹50 (b) ₹45.50
(c) ₹55 (d) ₹50.50
(e) None of these

(v) Fare for 14th Km by Type *C* vehicle is equal to the fare for which of the following?

(a) Type *B*— 11th Km (b) Type *B*—9th Km
(c) Type *A*—4th Km (d) Type *C*— 8th Km
(e) None of these

15. Directions: Read the following table carefully and answer the questions given below it.

Details of leading openers' performance in 20 one-day cricket matches

Openers	Total Runs	Highest Runs	No. of matches with runs		
			100 or more	50–99	0's
A	994	141	5	3	1
B	751	130	1	8	2
C	414	52	—	2	2
D	653	94	—	4	1
E	772	85	—	7	—

(i) What is the difference between the **average runs** of top two openers in terms of **highest runs,** if matches having 0's were ignored?

(a) 4.7 (b) 13.7
(c) 11.1 (d) 16.62
(e) None of these

(ii) If matches having zero runs and the one with highest runs is ignored, what will be the average runs for opener *C*?

(a) 21.29 (b) 21.79
(c) 20.7 (d) 21.17
(e) 20.19

(iii) By how much the difference between the two highest total runs differs from the difference between the two lowest total runs?

(a) Lower by 18 (b) More by 18
(c) Lower by 4 (d) More by 4
(e) None of these

(iv) Which of the given pairs of openers have ratio 3:2 in their highest runs?

(a) *B* and *D* (b) *B* and *C*
(c) *A* and *D* (d) *D* and *C*
(e) None of these

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(v) Excluding the match with the highest runs and matches with 50–99 runs, what will be the **approximate** average runs for opener *B*?

(a) 25 (b) 15
(c) 10 (d) 30
(e) None of these

16. Directions: Read the following Table carefully and answer the questions given below.

Highest marks and average marks obtained by students in subjects over the years.

The maximum marks in each subjects is 100.

	Subjects									
	English		Hindi		Maths		Science		History	
	High	Avg	High	Avg	High	Avg	High	Avg	High	Avg
1992	85	62	75	52	98	65	88	72	72	46
1993	80	70	80	53	94	60	89	70	65	55
1994	82	65	77	54	85	62	95	64	66	58
1995	71	56	84	64	92	68	97	68	68	49
1996	75	52	82	66	91	64	92	75	70	58
1997	82	66	81	57	89	66	98	72	74	62

(i) What was the grand average marks of the five subjects in 1996?

(a) 63 (b) 64
(c) 65 (d) 68
(e) None of these

(ii) The difference in the average marks in History between 1994 and 1995 was exactly equal to the difference in the highest marks in Hindi between which of the following pairs of years?

(a) 1992 and 1995 (b) 1993 and 1995
(c) 1992 and 1996 (d) 1993 and 1997
(e) None of these

(iii) What was the **approximate** percentage increase in average marks in History from 1992 and 1993?

(a) 20 (b) 25
(c) 24 (d) 16
(e) 18

(iv) The average highest marks in English in 1992, 1993 and 1996 was exactly equal to the highest marks in Hindi in which of the following years?

(a) 1996 (b) 1997
(c) 1994 (d) 1996
(e) 1993

(v) The difference between the highest marks and the average marks in Hindi was maximum in which of the following years?

(a) 1994 (b) 1997
(c) 1995 (d) 1996
(e) 1993

(vi) The highest marks in Hindi in 1993 was what per cent of the average marks in Mathematics in 1996?

(a) 135 (a) 130
(c) 125 (d) 140
(e) None of these

(vii) If there were 50 students in 1993, what was the total marks obtained by them in Mathematics?

(a) 2400 (b) 3000
(c) 2500 (d) 3200
(e) None of hese

(viii) The difference between the highest marks in Science was maximum between which of the following pairs of years among the given years?

(a) 1992 and 993 (b) 1992 and 1996
(c) 1996 and 997 (d) 1992 and 1995
(e) None of these

17. Directions: Read the following information carefully and answer the questions based on it.

In 6 educational years, number of students taking admission and leaving from the .5 different schools which are for nded in 1990 are given below.

School	*A*		*B*		*C*		*D*		*E*	
	Ad	L	Ad	L	Ad	L	Ad	L	Ad	L
1992	1025	—	950	—	1100	—	1500	—	1450	—
1993	230	120	350	150	320	130	340	150	150	125
1994	190	110	225	115	300	150	300	160	280	130
1995	245	100	185	110	260	125	295	120	310	120
1996	280	150	200	90	240	140	320	125	340	110
1997	250	130	240	120	310	180	360	140	325	115

In the above table shown Ad = Admitted, L = Left

(i) What is the average number of students studying in all the five schools in 1992?

(a) 1494 (b) 1294
(c) 1590 (d) 1640
(e) None of these

(ii) What was the number of students studying in school *B* in 1994?

(a) 2030 (b) 1060
(c) 1445 (d) 1150
(e) None of these

(iii) Number of students leaving school *C* from the year 1990 to 1995 is approximately what

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percentage of number of students taking admission in the same school and in the same year?

(a) 50% (b) 25%
(c) 48% (d) 36%
(e) 29%

(iv) What is the difference in the number of students taking admission between the years 1991 and 1995 in school *D* and *B*?

(a) 514 (b) 1065
(c) 965 (d) 415
(e) None of these

(v) In which of the following schools, percentage increase in the number of students from the year 1990 to 1995 is maximum?

(a) *A* (b) *B*
(c) *C* (d) *D*
(e) *E*

18. Directions: Study the following Table and answer the following questions carefully.

Following Table shows the percentage population of six States below poverty line and the proportion of male and female.

State	Percentage population below poverty line	Proportion of male and female Below poverty line M:F	Above poverty line M:F
A	12	3:2	4:3
B	15	5:7	3:4
C	25	4:5	2:3
D	26	1:2	5:6
E	10	6:5	3:2
F	32	2:3	4:5

(i) The total population of state *A* is 3000, then what is the approximate no, of females above poverty line in state *A*?

(a) 1200 (b) 2112
(c) 1800 (d) 1950
(e) 2025

(ii) If the total population of C and *D* together is 18000, then what is the total no. of females below poverty line in the above stated states?

(a) 5000 (b) 5500
(c) 4800 (d) Data inadequate
(e) None of these

(iii) If the population of males below poverty line in State *A* is 3000 and that in State *E* is 6000, then .what is the ratio of the total population of State *A* and *E*?

(a) 3:4 (b) 4:5
(c) 1:2 (d) 2:3
(e) None of these

(iv) If the population of males below poverty line in State *B* is 500 then what is the total population of that State?

(a) 14400 (b) 6000
(c) 8000 (d) 7600
(e) None of these

(v) If in State *E* population of females above poverty line is 19800 then what is the population of males below poverty line in that State?

(a) 55000 (b) 30000
(c) 29700 (d) Date inadequate
(e) None of these

19. Direction the following Table carefully and answer the questions given below.

Production of main crops in India (in millionon tonnes)

Crops	91–92	92–93	93–94	94–95	95–96	96–97
Pulses	20.5	22.4	24.6	23.5	27.8	28.2
Oilseeds	32.4	34.6	40.8	42.4	46.8	52.4
Rice	80.5	86.4	88.2	92.6	94.2	90.8
Sugercane	140.8	150.2	152.2	160.3	156.4	172.5
Wheat	130.2	138.4	146.8	141.6	152.2	158.4
Coarse grain	45.6	52.8	60.4	62.4	58.2	62.8
Sum	**450**	**484.8**	**513.2**	**522.8**	**535.6**	**565.1**

(i) Production of sugarcane in 1993–94 was approximately what percentage of production of rice in 1992–93?

(a) 50 (b) 75
(c) 150 (d) 125
(e) 175

(ii) Production of what type of crop was going to increase in each year in the given years?

(a) Rice (b) Pulse
(c) Sugarcane (d) Oilseeds
(e) None of these

(iii) What was the average production of pulse in the given years?

(a) 26.8 million tones (b) 20.5 million tonnes
(c) 24.5 million tones (d) 22.5 million tonnes
(e) None of these

(iv) Production of oilseeds was what percentage of the total crops produced in the year 1991–92?

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(a) 7.2 (b) 8.4
(c) 2.7 (d) 6.4
(e) None of these

(v) In which of the following years the total production *of* oil seeds in the years 1994–95, 1995–96 and 1996–97 was equal to the production of wheat?

(a) 1993–94 (b) 1994–95
(c) 1996–97 (d) 1992–93
(e) None of these

20. Directions: Study the following Tables carefully and answer the questions given below.

Number of Cars (in thousands) of Different Models and Colours sold in two Metro Cities in a year

Type	Metro M Colour				
	Black	Red	Blue	White	Silver
A	40	25	55	75	15
B	20	35	60	80	20
C	35	30	50	90	35
D	45	40	45	85	40
E	50	35	35	60	30
F	55	42	40	65	52

Type	Metro H Colour				
	Black	Red	Blue	White	Silver
A	45	32	40	60	20
B	30	37	39	81	35
C	40	42	41	6	37
D	35	39	37	90	42
E	50	44	43	77	22
F	47	34	45	87	17

(i) The difference between the white-coloured cars sold in the two metros of which of the following models is the **minimum**?

(a) *A* (b) *C*
(c) *D* (d) *F*
(e) None of these

(ii) The total number of blue-coloured cars of Model *E* and *D* sold in Metro *H* is exactly equal to the number of white-coloured cars of which model in Metro *M*?

(a) *B* (b) *F*
(c) *C* (d) *A*
(e) None of these

(iii) What is the difference between the number of blue-colour cars of model '*C*' sold in Metro *M* and number of red colour cars of model '*F*' sold in Metro *H*?

(a) 8,000 (b) 10,000
(c) 12,000 (d) 15,000
(e) None of these

(iv) The total number of silver-coloured cars sold in Metro *H* is approximately what percentage of that in Metro *M*?

(a) 130 (b) 140
(c) 90 (d) 100
(e) 110

(v) In Metro *M* the number of cars sold was maximum for which of the colour-model combinations?

(a) White-*C* (b) Blue-*B*
(c) Silver-*B* (d) White-*D*
(e) None of these

21. Directions: Study the following Table to answer the given questions.

Number of students of different classes of a school playing different games

Class → Games ↓	XII	XI	X	IX	VIII	VII	VI
Chess	11	12	5	4	2	2	1
Cricket	38	40	12	17	25	18	20
Basketball	11	9	7	6	0	0	0
Table Tennis	9	9	21	19	11	9	0
Football	40	27	18	19	12	16	14
Carrom	16	15	8	19	12	16	14
Tennis	8	9	11	5	6	0	0
Badminton	47	39	33	21	19	0	0

(i) **Approximately** what per cent of Class VIII students play Cricket out of the total students playing Cricket?

(a) 13 (b) 4
(c) 25 (d) 15
(e) 17

(ii) What is the ratio of the students playing Football in Class XI to those in Class *X*?

(a) 1:2 (b) 2:5
(c) 2:3 (d) 3:2
(e) None of these

(iii) Which game is the most popular?

(a) Badminton (b) Football
(c) Carrom (d) Table Tennis
(e) Cricket

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(iv) **Approximately** what per cent of Class *X* students play Table Tennis out of the total Class *X* students playing the different given games?

(a) 20 (b) 21
(c) 27 (d) 26
(e) 18

(v) Which game has ascending number of students from class IX to XII?

(a) Basketball Only (b) Badminton Only
(c) Chess and Badminton (d) No game
(e) None of these

22. Directions: A Table showing the percentages of the total population of a State by age groups for the year 1991 is given below. Answer the questions given below it.

Age Group (in years)	*Per cent*
up to 15	30.00
16–25	17.75
26–35	17.25
36–45	14.50
46–55	14.25
56–65	5.12
66 and above	1.13
Total	100.0

(i) Which age group accounts for the maximum population in the State?

(a) 16–25 (b) 26–35
(c) 36–45 (d) 56–65

(ii) Out of every 4200 persons, the number of persons below 26 years is:

(a) 2006 approx (b) 1260 approx
(c) 746 approx (d) 515 approx

(iii) There are 200 million people below 36 years. How many million (approx) people are in the age group 56–65?

(a) 30.07 (b) 15.75
(c) 12.72 (d) 59.30

(iv) If there are 10 million people in the age group 56 years and above, what is the difference between the number of people in the age groups 16–25 and 46–55?

(a) 6.8 million (b) 5.6 million
(c) 28.4 million (d) 34.7 million

(v) If the difference between the number of people in the age groups 46–55 and 26–35 is 11.75 million, then total population of State is approximately

(a) 360.23 million (b) 391.67 million
(c) 400 million (d) 460.67 million

23. Directions: Study the following table to answer these questions based on it

***XYZ* Co. (Pvt.) Ltd. (in Lakh of ₹)**

Year	*Total Sales*	*Gross Profit*	*Net Profit*
1990	351.6	155.5	54.2
1991	407.9	134.3	42.6
1992	380.1	149.9	38.9
1993	439.7	160.5	50.3
1994	485.9	203.3	65.8

(i) In which year the difference between the total sales and the gross profit is the least?

(a) 1990 (b) 1991
(c) 1992 (d) 1993

(ii) The total sales in 1993 is approximately what per cent of the total sales in 1990?

(a) 75 (b) 85
(c) 110 (d) 125

(iii) Which years show increase in all the categories simultaneously, that is total sales, gross profit and net profit as compared to the previous year?

(a) 1993 and 1994 both
(b) 1994 and 1992 both
(c) 1992 and 1993 both
(d) 1990 and 1991 both

(iv) The net profit in 1991 is **approximately** what per cent of the total sales in 1993?

(a) 6.5 (b) 7
(c) 8 (d) 9.7

(v) The per cent increase in the gross profit was the largest in which year as compared to the previous one?

(a) 1991 (b) 1992
(c) 1993 (d) 1994

24. Directions: Refer to the following Table. Read the Table and answer the questions.

Foodgrain Production in a Country in 1999 (in Lakh tons)

State	*Rice*	*Wheat*	*Jowa*	*Pulses*	Others
P	45	103	—	27	29
Q	48	86	73	19	15
R	59	32	67	14	31
S	41	37	59	21	15
T	37	22	41	13	11
U	68	15	12	—	18
V	57	8	7	12	10
W	38	28	31	22	45

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(i) Which State had the highest grain production?

(a) *P* (b) *Q*
(d) *R* (d) *S*

(ii) What was the proportion of rice production to wheat production in the country?

(a) 1:1 (b) 0.8:1
(c) 1.2:1 (d) 2:1

(iii) Jowar was the most important foodgrain in the State/States;

(a) *Q, R, S* (b) *Q*
(c) *R, S* (d) *R, S, T*

(iv) States *P* alone accounted for **approximately** what percentage of wheat production in the country?

(a) 73% (b) 50%
(c) 41% (d) 30%

(v) If the average per hectare yield of rice in the country was 30 tons, then the area (approx.) under rice cultivation during the year was (in Lakh hectares)

(a) 1.5 (b) 8
(c) 13 (d) 40

25. Directions: Following Table gives the population of a locality from 1988 to 1992. Read the Table and answer the questions.

Year	*Men*	*Women*	*Children*	*Total*	*Increase (+) or decrease (–) over preceding year*
1988	65104	60387	—	146947	—
1989	70391	62516	—	—	+ (11630)
1990	—	63143	20314	152922	—
1991	69395	—	21560	—	– (5337)
1992	71274	65935	23789	160998	—

(i) The number of children in 1988 is:

(a) 31236 (b) 125491
(c) 14546 (d) 21456

(ii) The number of children in 1989 is:

(a) 144537 (b) 158577
(c) 146947 (d) 149637

(iii) The number of women in 1991 is:

(a) 25670 (b) 14040
(c) 13970 (d) 15702

(iv) The number of women in 1991 is:

(a) 57630 (b) 56740
(c) 52297 (d) 62957

(v) Increase or decrease of population in 1992 over 1991 is:

(a) – (12413) (b) + (12413)
(c) + 155661 (d) + 7086

26. Directions: The Table given below shows production of five types of cars by a company in the years 1989 to 1994. Study the Table and answer questions.

Production of cars by a company

Year → Type ↓	1989	1990	1991	1992	1993	1994	Total
P	8	20	16	17	21	6	88
Q	16	10	14	12	12	14	18
R	21	17	16	15	13	8	90
S	4	6	10	16	20	31	87
T	25	18	19	30	14	27	133
Total	74	71	75	90	80	86	476

(i) In which year the production of cars of all types taken together was approximately equal to the average of the total production during the period?

(a) 1989 (b) 1991
(c) 1993 (d) 1994

(ii) In which year the total production of cars of types *P* and *O* together was equal to the total production of cars of types *R* and *S* together?

(a) 1990 (b) 1991
(c) 1994 (c) None of the above

(iii) During the period 1989–94, in which type of cars was a continuous increase in production?

(a) *P* (b) *Q*
(c) *R* (d) *S*

(iv) The production of which type of cars was 25% of the total production of all types of cars during 1993?

(a) *S* (b) *R*
(c) *Q* (d) *P*

(v) The per cent increase in total production of all types of cars in .1993 to that in 1991 was?

(a) 15 (c) 20
(c) 25 (d) 30

27. Directions: These questions are based on the following graphs:

Classification of appeared candidates in a competitive test from different States and qualified candidates from those States.

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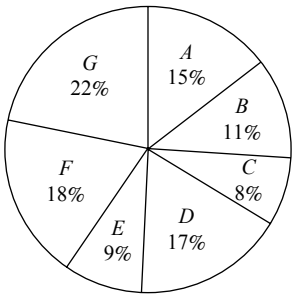
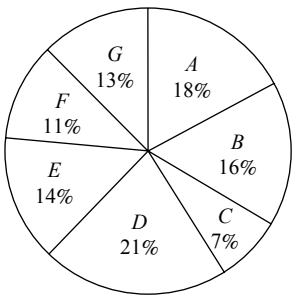
Appeared candidates = 45000.
Qualified candidates = 9000.





(i) What is the ratio of the number of appeared candidates from States *C* and *E* together to that of the appeared candidates from States *A* and *F* together?

(a) 17:33 (b) 11:13
(c) 13:27 (d) 17:27
(e) None of these

(ii) In which State, the percentage of qualified candidates with respect to that of appeared candidates is minimum?

(a) *C* (b) *F*
(c) *D* (d) *E*
(e) *G*

(iii) What is the difference between the number of qualified candidates' of States *D* and those of *G*?

(a) 690 (b) 670
(c) 780 (d) 720
(e) None of these

(iv) What is the percentage of qualified candidates with respect to appeared candidates from States *B* and *C* taken together? (rounded to two decimal places)

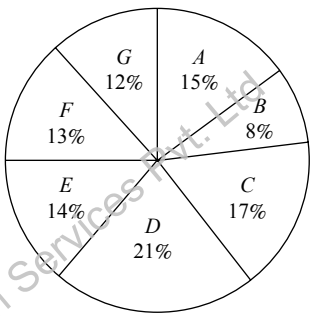
(a) 23.11 (b) 24.21
(c) 21.24 (d) 23
(e) None of these

(v) What is the ratio between the number of candidates qualified from States *B* and *D* together to the number of candidates appeared from State '*C*', respectively?

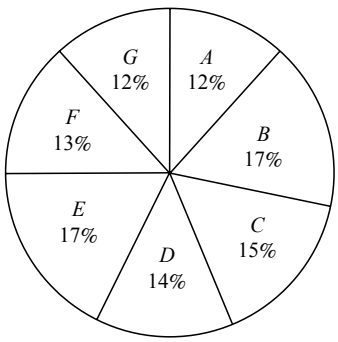
(a) 8:37 (b) 11:12
(c) 37:40 (d) 7:37
(e) None of these

28. Directions: These questions are based on the following graphs:

Distribution of candidates studying Arts and Commerce from seven different institutes *A*, *B*, *C*, *D*, *E*, *F* and *G*. Total Number of Students Studying Arts = 3800



Total Number of Students Studying Commerce = 4200



(i) What is the ratio between the number of students studying Arts from Institute *E* and the number of students studying Commerce from Institute *D*, respectively?

(a) 17:19 (b) 19:27
(c) 14:19 (d) 19:21
(e) None of these

(ii) What is the total number of students studying Arts from Institutes *A* and *G*. together?

(a) 1102 (b) 918
(c) 966 (d) 1130
(e) None of these

(iii) How many students are studying Commerce from Institutes *B* and *D* together?

(a) 1158 (b) 1302
(c) 1232 (d) 1272
(e) None of these

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(iv) How many students are studying Art and Commerce from Institute '*B*'?

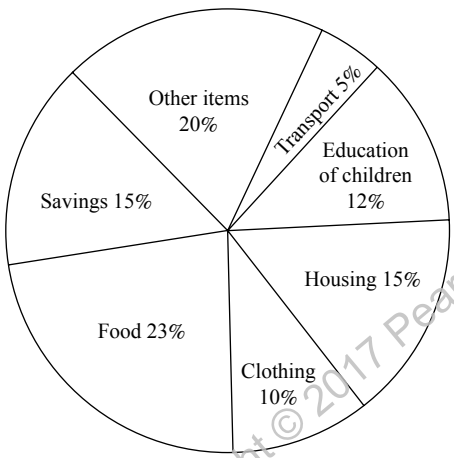
(a) 1418 (b) 2000
(c) 1018 (d) 1208
(e) None of these

(v) What is the ratio between the number of students studying Arts and Commerce, respectively from Institute '*E*'?

(A) 19:27 (b) 17:29
(c) 19:29 (d) 17:27
(e) None of these

29. Directions: The pie-chart drawn below shows the expenses of a family on various items and its savings during the year 2001. Study the graph and answer the questions given below:

Percentage of Money Spent on Various Items and Savings by a Family during 2001



(i) Maximum expenditure of the family was on

(a) Food (b) Housing
(c) Education of Children (d) Other items

(ii) The total savings of the family for the year were equal to the expenditure on:

(a) Food
(b) Clothing
(c) Housing
(d) Other items including transport

(iii) What per cent of the income was spent on transport and other items together?

(a) 25% (b) 20%
(c) 30% (d) 32%

(iv) If the total income of the family was ₹100000, how much money was spent on the eduction of children?

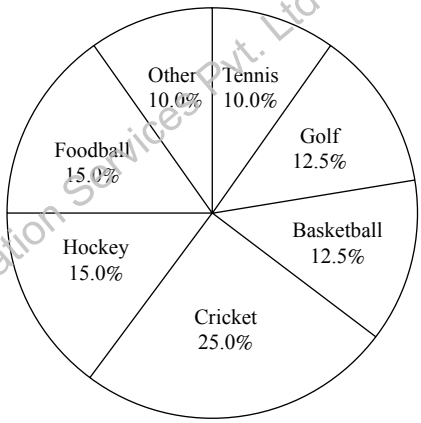
(a) ₹10000 (b) ₹12000
(c) ₹15000 (d) ₹23000

(v) If the total income for the year was ₹100000, the difference of the expenses (in rupees) between housing and transport was:

(a) 15000 (b) 12000
(c) 7000 (d) 10000

30. Directions: The circle graph given here shows the spendings of a country on various sports during a year. Study the graph carefully to answer these questions.

Percent of Money Spent on Various Sports for One Year



(i) If the total amount spent on sports during the year was ₹15000000, then the amount spent on Cricket and Hockey together was:

(a) ₹6000000 (b) ₹5000000
(c) ₹3750000 (d) ₹7500000

(ii) If the total amount spent during the year was ₹1,20,00,000 how much was spent on basketball?

(a) ₹12,50,000 (b) ₹10,00,000
(c) ₹12,00,000 (d) ₹15,00,000

(iii) The ratio of the total amount spent on football to that spent on Hockey was:

(a) 1:15 (b) 1:1
(c) 15:1 (d) 3:2

(iv) The graph shows that the most popular game is:

(a) Hockey (b) Football
(c) Cricket (d) Basketball

(v) The country spent the same amount of money on:

(a) Hockey and Tennis (b) Golf and Basketball
(c) Cricket and Football (d) Hockey and Golf.

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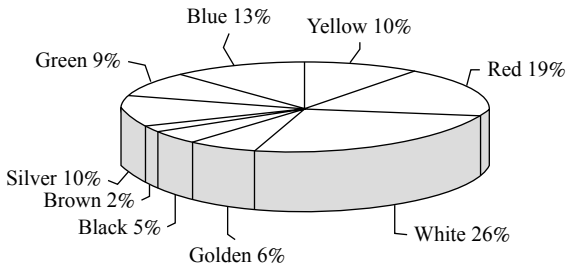
31. Directions: Study the chart and give the answers of following questions.

Selling of cars in UK according to their colours



(i) 50% of all the cars consisted of which colours of car?

(a) Black, Golden, Blue, Red,
(b) Blue, Black, Red, Silver
(c) White, Golden, Blue, Black
(d) White, Blue, Green, Black
(e) None of these

(ii) Cars of which colour are 20% less popular than white coloured cars?

(a) Black (b) Golden
(c) Red (d) Blue
(e) None of these

(iii) Cars of which colour are 13% less popular than white coloured cars?

(a) Blue (b) Green
(c) Silver (d) Yellow
(e) None of these

(iv) Cars of which colour when increased by two percent and then combined with that of red cars will make 30 per cent of the total?

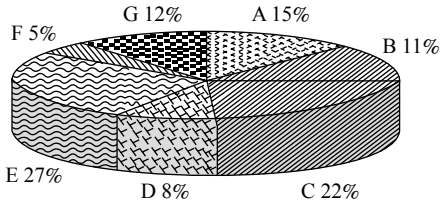
(a) Golden (b) Blue
(c) Black (d) Yellow
(e) None of these

(v) If in a certain period the total production of all cars was 95400 then how many more blue cars were sold than green?

(a) 2580 (b) 3618
(c) 2850 (d) 3816
(e) None of these

32. Directions: Seven companies *A*, *B*, *C*, *D*, *E*, *F* and *G* are engaged in production of two items I and II. The comparative data about production of these items by the seven companies is given in the following graph and Table. Study them carefully and answer the questions given below.

Percentage of the total production produced by the seven companies



Cost of the total production (both items together) by seven companies = ₹25 crores

Ratio of production between items I and II and the per cent profit earned for the two items.

Company	Ratio of Production		Per cent profit earned	
	Item I	Item II	Item I	Item II
A	2	3	25	20
B	3	2	32	35
C	4	1	20	22
D	3	5	15	25
E	5	3	28	30
F	1	4	35	25
G	1	2	30	24

(i) What is the total cost of the production of item I by companies *A* and *C* together in ₹crore?

(a) 9.25 (b) 5.9
(c) 4.1625 (d) 4.9
(e) None of these

(ii) What is the amount of profit earned by company *D* on item II?

(a) ₹3.125 Crore (b) ₹31.25 Crore
(c) ₹3.125 Lakhs (d) ₹31.25 Lakhs
(e) None of these

(iii) Cost of production of item I by company *F* is what per cent of the cost of production of item II by company *D*?

(a) 16% (b) 33.33%
(c) 66.67% (d) 12.5%
(e) None of these

(iv) What is total profit earned by company *G* for items I and II together?

(a) ₹78 Lakhs (b) ₹1.62 Crore
(c) ₹7.8 Crore (d) ₹16.2 Lakhs
(e) None of these

(v) What is the ratio of the cost of production of item I by company *A* to the cost of production of item I by company *D*?

(a) 3:5 (b) 1:2
(c) 2:1 (d) 2:3
(e) None of these

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(vi) What is the total of the profit earned by company *B* on production of item I and the profit earned by company *A* on production of item II?

(a) ₹9.78 Crore (b) ₹97.8 Lakhs
(c) ₹52.8 Lakhs (d) ₹5.28 Crore
(e) None of these

(vii) The cost of production of both items together by company *E* is equal to the total cost of production of both items together by which of the two companies?

(a) *C* and *D* (b) *B* and *G*
(c) *A* and *D* (d) *C* and *F*
(e) *A* and *B*

(viii) What is the total of the cost of production of item I by company *A* and the cost of production of item II by company *B*?

(a) ₹2.6 Crore (b) ₹26 Lakhs
(c) ₹3. 35 Crores (d) ₹33. 65 Lakhs
(e) None of these

33. Directions: Study the following information to answer the given questions.

Percentage of students in various courses (*A*, *B*, *C*, *D*, *E*, *F*) in pie chart I and percentage of girls in pie chart II.
Total students: 1200 (800 girls + 4000 boys)

Chart I

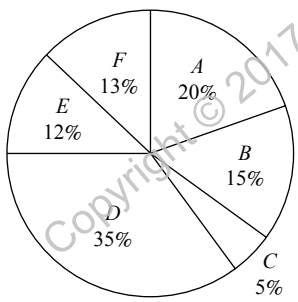
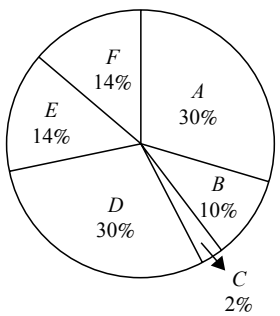


Chart II



(i) For course *D*, what is the respective ratio of boys and girls?

(a) 3:4 (b) 4:5
(c) 3:5 (d) 5:6
(e) None of these

(ii) For which pair of courses is the number of boys the same?

(a) *E* and *F* (b) *A* and *D*
(c) *C* and *F* (d) *B* and *D*
(e) None of these

(iii) For course *E,* the number of girls is how much per cent more than the number of boys for course *E*?

(a) 250 (b) 350
(c) 150 (d) 80
(e) None of these

(iv) For which course is the number of boys the minimum?

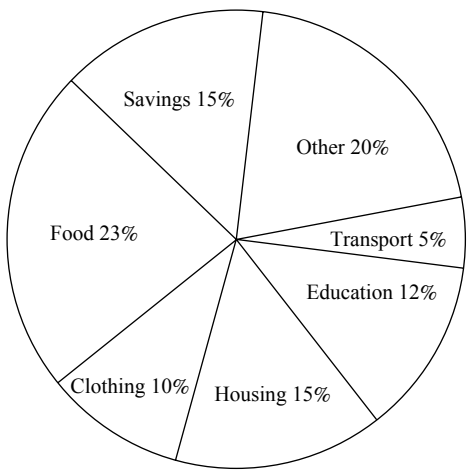
(a) *E* (b) *F*
(c) *C* (d) *A*
(e) None of these

(v) How many girls are there in course *C*?

(a) 44 (b) 16
(d) 40 (e) 160
(e) None of these

34. Directions: The circle graph given here shows the spendings by a family on various items during the year 1999 Study the graph and answer these questions.

Per cent of money spent by a family on various items during 1999



(i) If the total amount spent during the year 1999 was ₹46000, the amount spent on food was:

(a) ₹2000 (b) ₹10580
(c) ₹23000 (d) ₹2300

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(ii) If the total amount spent was ₹46000, how much money was spent on clothing and housing together?

(a) ₹11500 (b) ₹1150
(c) ₹10000 (d) ₹15000

(iii) The ratio of the total amount of money spent on housing to that spent on education was:

(a) 5:2 (b) 2:5
(c) 4:5 (d) 5:4

(iv) Graph shows that the maximum amount was spent on:

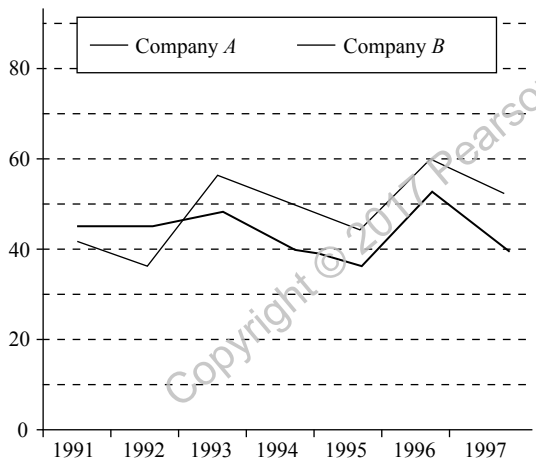
(a) Food (b) Housing
(c) Clothing (d) Others

(v) If the total expenditure of the family for the year 1999 was ₹46000, the family saved during the year:

(a) ₹1500 (b) ₹15000
(c) ₹6900 (d) ₹3067 approx

35. Directions: Study the following graph carefully and answer the questions given below.

Percentage net profit of two companies over the years



(i) If the total income in 1992 for Company *B* was 140 crores, what was the total expenditure in that year?

(a) 100 Crores (b) 110 Crores
(c) 98 Crores (d) Data inadequate
(e) None of these

(ii) If the total expenditure of 1993 and 1994 together of Company *B* was ₹279 crore, what was the total income in these years?

(a) ₹121.5 Crores (b) ₹135 Crores
(c) ₹140 Crores (d) Data inadequate
(e) None of these

(iii) In how many of the given years the percentage of expenditure to the income of Company *A* was less than fifty?

(a) One (b) Two
(c) Three (d) Four
(e) None of these

(iv) If the total expenditue of Company *B* in 1994 was ₹200 crore, what was the total income?

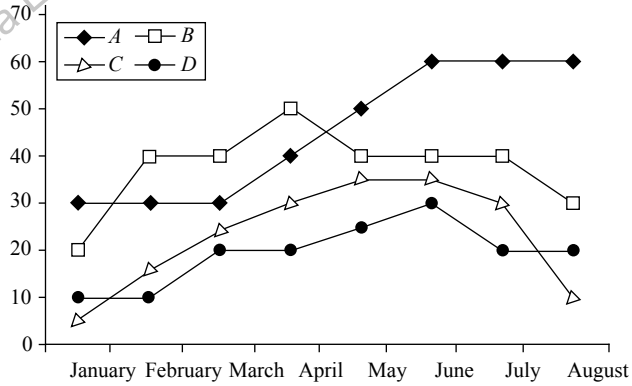
(a) ₹160 Crores (b) ₹240 Crores
(c) ₹260 Crores (d) Data inadequate
(e) None of these

(v) In which of the following years was the total income more than double the total expenditure in that year for Company *B*?

(a) 1995 (b) 1993
(c) 1997 (d) 1992
(e) None of these

36. Directions: Study the following graph carefully and answer the questions given below

Percentage increase in the sale of four commodities *A*, *B*, *C* and *D* for the given months



(i) For which months did the sale of commodities *A* and *D* show increase?

(a) April only
(b) May and June only
(c) May, June and July only
(d) April, May and June only
(e) None of these

(ii) In which month is the average percentage increase for the four commodities the lowest? (Those months where decrease rook place to be ignored)

(a) May (b) March
(c) January (d) June
(e) None of these

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(iii) In which month(s) did all the commodities show decline or no increase from the previous months?

(a) July only
(b) August only
(c) April and July only
(d) July and August only
(e) None of these

(iv) If the sale of *C* was 100 in May, what was its sale in July?

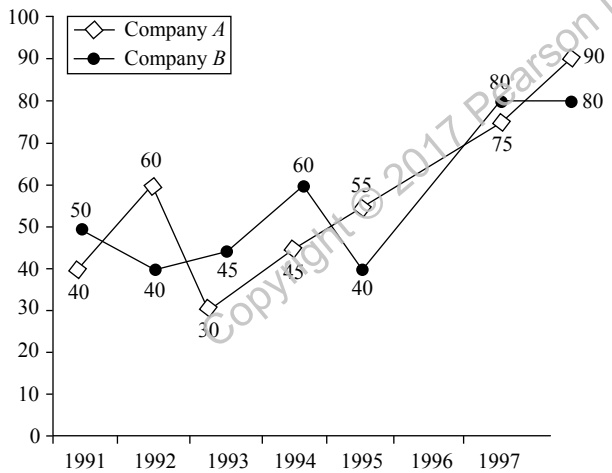
(a) 195 (b) 100
(c) 90 (d) Cannot be determined
(e) None of these

(v) For which commodity is the per cent increase in sale the highest in May from January?

(a) *C* (b) *A*
(c) *B* (d) *A* and *B*
(e) None of these

37. Directions: Study the following graph carefully and answer the questions given below it.

Per cent profit earned by two companies *A* and *B* over the years 1991 to 1997



(i) Investment of company '*B*' in 1997 is more by 40% than that in the previous year. Income in 1997 was what per cent of the investment in 1996?

(a) 280% (b) 252%
(c) 242% (d) 52%
(e) None of these

(ii) Average investment of company '*A*' over the years was ₹26 Lakhs. What was its average income over the years?

(a) ₹40.56 Lakhs (b) ₹41.60 Lakhs
(c) ₹50.26 Lakhs (d) Data inadequate
(e) None of these

(iii) Income of company '*A*' in 1995 was ₹21.7 Lakh. What was the investment?

(a) ₹14.5 Lakhs (b) ₹15.4 Lakhs
(c) ₹15.8 Lakhs (d) ₹14.6 Lakhs
(e) None of these

(iv) Income of company '*A*' in 1995 is equal to the investment of the company '*B*' in 1996. What is the ratio of the investment of company '*A*' in 1995 to the investment of company '*B*' in 1996?

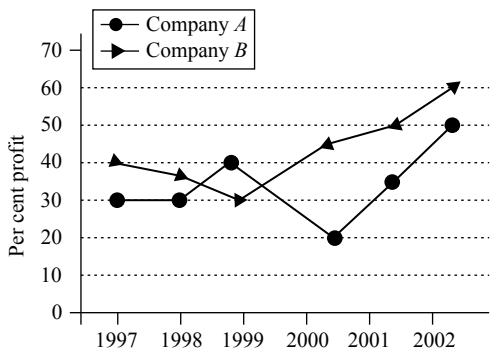
(a) 31:36 (b) 31:20
(c) 20:31 (d) Data inadequate
(e) None of these

(v) Investment of company '*B*' in 1993 was ₹1540000. What was its income in that year?

(a) ₹23.33 Lakhs (b) ₹22.33 Lakhs
(d) ₹22.23 Lakhs (d) ₹23.23 Lakhs
(e) None of these

38. Directions: Study the following graph to answer the given questions.

Per cent profit earned by two companies over the given years



(i) If the expenditure of Company *B* in 2000 was ₹200 crore, what was its income?

(a) ₹240 crore (b) ₹220 crore
(c) ₹160 crore (d) Cannot be determined
(e) None of these

(ii) If the income of Company *A* in 2002 was ₹600 crore, what was its expenditure?

(a) ₹360 corer (b) ₹480 corer
(c) ₹375 corer (d) Cannot be determined
(e) None of these

(iii) If the income of Company *B* in 1998 was ₹200 crores, what was its profit in 1999?

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(a) ₹21.5 corer (b) ₹153 crore
(c) ₹46.15 crore (d) Cannot be determined
(e) None of these

(iv) If the income of the two companies in 1998 were equal, what was the ratio of their expenditures?

(a) 1:2 (b) 26:27
(c) 100:67 (d) Cannot be determined
(e) None of these

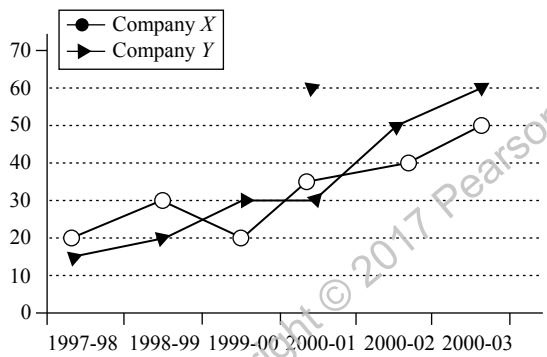
(v) What is the percent increase in profit for company *B* from year 2000 to 2001?

(a) 75 (b) 175
(c) 42.86 (d) Cannot be determined
(e) None of these

39. Directions: Study the following graph to answer the given questions.

Per cent profit earned by two companies over the given years

$$\textbf{\% profit} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$



(i) If the income of Company *X* in 1998–99 was equal to the expenditure of Company *Y* in 2001–2002, what was the ratio of their respective profits?

(a) 13:15 (b) 15:26
(c) 13:26 (d) Cannot be determined
(e) None of these

(ii) For Company *X,* its income in 2001–2002 was equal to its expenditure in 2002–2003, what was the ratio of its respective incomes in these two years?

(a) 4:5 (b) 3:4
(c) 2:3 (d) Cannot be determined
(e) None of these

(iii) For Company *Y*, in which year is the per cent of increase in per cent profit over that of previous year the highest?

(a) 2002–03 (b) 1999–2000
(c) 2001–02 (d) Cannot be determined
(e) None of these

(iv) In 1997–98, the expenditure of Company *X* was ₹40 crores. What was its income in that year?

(a) ₹50 crore (b) ₹48 crore
(c) ₹46 crore (d) Cannot be determined
(e) None of these

(v) What was the difference in the expenditures of the two companies in 1999–2000?

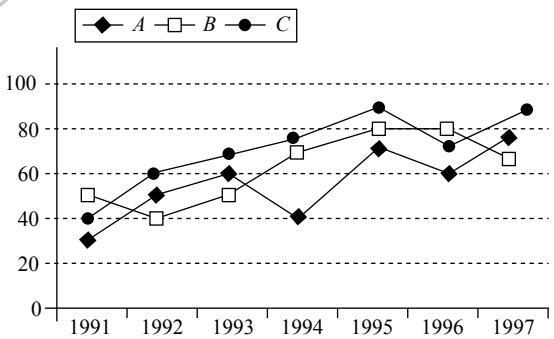
(a) 10 (b) 100
(c) 1000 (d) Cannot be determined
(e) None of these

(vi) In 2002–03 the income of Company *Y* was ₹128 crores. What was its expenditure in that year?

(a) ₹76.8 crore (b) ₹64 crore
(c) ₹48 crore (d) Cannot be determined
(e) None of these

40. Directions: Study the following graph carefully and answer the questions given below it.

Imports of 3 companies over the years (₹ in crore)



(i) In which of the following years, the imports made by Company *A* was exactly equal to average imports made by it over the given years?

(a) 1992 (b) 1993
(c) 1994 (d) 1995
(e) None of these

(ii) In which of the following years was the difference between the imports made by Company *B* and *C* the maximum?

(a) 1995 (b) 1994
(c) 1991 (d) 1992
(e) None of these

(iii) In which of the following years was the imports made by Company *A* exactly half of the total imports made by Company *B* and *C* together in that year?

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(a) 1992 only (b) 1993 only
(c) 1992 and 1993 (d) 1995 only
(e) None of these

(iv) What was the percentage increase in imports by Company *B* from 1992 to 1993?

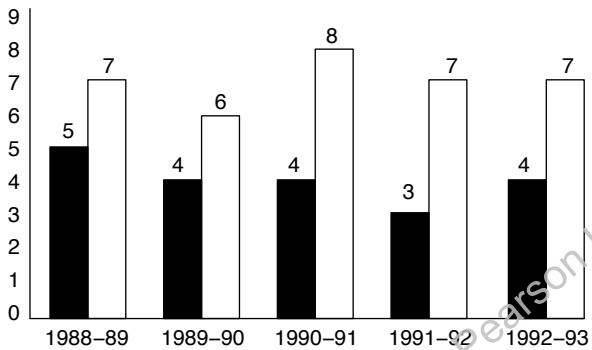
(a) 10 (b) 25
(c) 40 (d) 20
(e) None of these

(v) In which of the following years was the total imports made by all the three companies together the maximum?

(a) 1996 only (b) 1997 only
(c) 1995 only (d) 1995 and 1997 only
(e) None of these

EXERCISE-2
(BASED ON MEMORY)

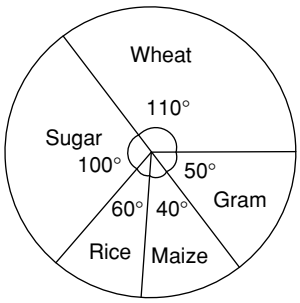
1. The average Kharif production of the given years is production of pulses in Rabi and Kharif season (in million tonnes)



(a) 4 million tonnes (b) 5 million tonnes
(c) 4.5 million tonnes (d) 5.5 million tonnes

[SSC, 2013]

Directions (Question 2): The annual agricultural production (in tonnes) of an Indian state is given in the pie chart. The total production is 9000 tonnes. Read the pie chart and answer the question.

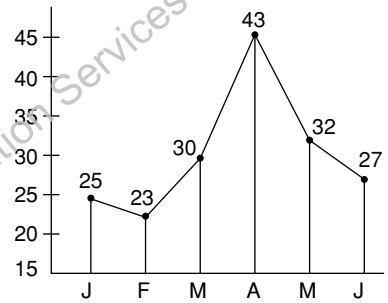


2. What is the annual production of wheat?

(a) 2750 tonnes (b) 3000 tonnes
(c) 3540 tonnes (d) 3500 tonnes

[SSC, 2013]

3. Given is a line graph showing the number of accidents in a city during the first 6 months of 1999.

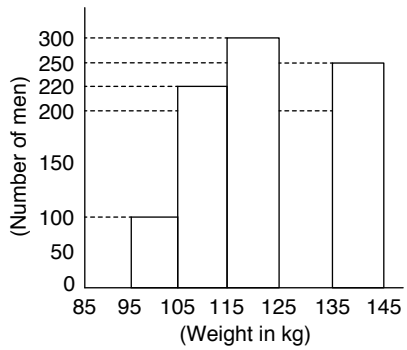


The decrease percentage of accidents from May to June is

(a) $15\frac{3}{8}\%$ (b) $15\frac{1}{8}\%$
(c) $15\frac{5}{8}\%$ (d) $15\frac{7}{8}\%$

[SSC, 2013]

Directions (Question 4): Study the histogram of weight distribution of different men and answer the question.



4. Average number of men per interval who participated in this survey is:

(a) 200 (b) 180
(c) 214 (d) 194

[SSC, 2013]

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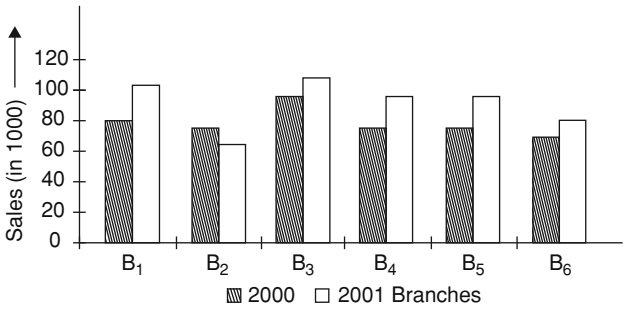
Directions (Question 5 to 8): Bar chart showing the sales of books (in 1000) from six branches B_1, B_2, B_3, B_4, B_5 and B_6 of a publishing company in 2000 and 2001 is given below. Study the chart and answer the questions.



[SSC Assistant Grade III, 2013]

5. Total sales of Branch B_6 for both the years is what per cent of the total sales of Branch B_3 for both the years?

(a) 71.11% (b) 73.17%
(c) 68.54% (d) 77.26%

[SSC Assistant Grade III, 2013]

6. What is the ratio of the total sales of Branch B_2 for both the years to the total sales of Branch B_4 for both the years?

(a) 2:3 (b) 3:5
(c) 5:7 (d) 7:9

[SSC Assistant Grade III, 2013]

7. What percent of the average sales of branches B_1, B_2 and B_3 in 2001 is the average sales of branches B_1, B_3 and B_6 in 2000?

(a) 107.28% (b) 104.28%
(c) 117.28% (d) 114.28%

[SSC Assistant Grade III, 2013]

8. What is the average sale of books from all the branches for the year 2000?

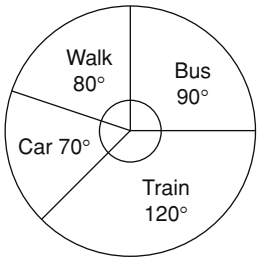
(a) 70 (b) 80
(c) 70.5 (d) 80.5

[SSC Assistant Grade III, 2013]

Directions (Question 9 to 13): The pie chart given below represents the number of students using different transport to a school in which total number of students is 2160.

Answer the questions based on the following diagram.

[SSC Assistant Grade III, 2013]



9. The total number of students who come to school by car is:

(a) 70 (b) 290
(c) 420 (d) 480

[SSC Assistant Grade III, 2013]

10. The ratio of the total number of students who come to school by car to the total number of students who come to school by bus is:

(a) 21:24 (b) 21:27
(c) 36:27 (d) 36:21

[SSC Assistant Grade III, 2013]

11. The total number of students coming to school either by walking or by bus is:

(a) 480 (b) 540
(c) 1020 (d) 170

[SSC Assistant Grade III, 2013]

12. The total number of students who don't come to school by train is:

(a) 720 (b) 1020
(c) 2040 (d) 1440

[SSC Assistant Grade III, 2013]

13. The total number of students coming to school by bus exceeds the total number of students coming to school by walking, by:

(a) 10% (b) 12.5%
(c) 11% (d) 11.5%

[SSC Assistant Grade III, 2013]

Directions (Question 14 to 17): Study the following table and answer the questions.

Number of students from various schools playing various games (one student playsone game only)

	School				
Games	**A**	**B**	**C**	**D**	**E**
Cricket	150	200	250	230	200
Football	250	125	175	100	250
Basketball	200	195	245	200	225
Badminton	100	130	60	40	65
Tennis	120	180	150	130	165

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14. The difference between the total number of students playing Basketball from all the school and the total number of students playing Cricket from all the schools is:

(a) 27 (b) 35
(c) 28 (d) 26

[SSC Assistant Grade III, 2012]

15. The number of students playing Football from School C is x per cent of the total number of students playing Football from all the schools. Then$x$ equals

(a) $19\frac{7}{9}$ (b) $19\frac{4}{9}$

(c) 18 (d) $20\frac{2}{9}$

[SSC Assistant Grade III, 2012]

16. Which school has the maximum number of players?

(a) A (b) B
(c) C (d) E

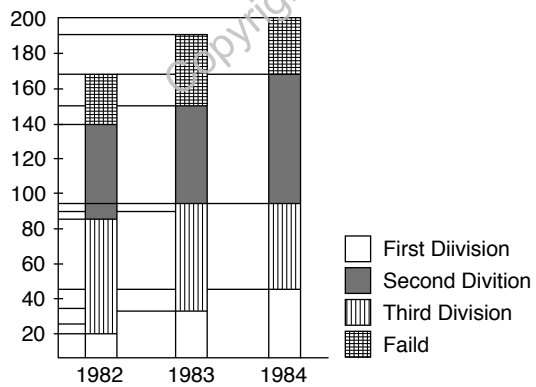
[SSC Assistant Grade III, 2012]

17. The number of students playing Badminton from School E is x % of the students playing Badminton from School B. Then x equals:

(a) 40 (b) 50
(c) 42 (d) 41

[SSC Assistant Grade III, 2012]

Directions (Question 18 to 22): The following bar graph depicts the result for BSc students of a college for three years. Read the graph and answer the questions based on this graph.



18. The number of students passed in third division in 1984 was

(a) 165 (b) 75
(c) 70 (d) 65

[SSC Assistant Grade III, 2012]

19. The percentage of students failed in 1984 was

(a) $18\frac{1}{2}\%$ (b) $17\frac{3}{4}\%$

(c) $17\frac{1}{2}\%$ (d) 17%

[SSC Assistant Grade III, 2012]

20. The aggregate pass percentage during the three years was

(a) $82\frac{44}{113}\%$ (b) $82\frac{55}{113}\%$

(c) $80\frac{60}{113}\%$ (d) $77\frac{29}{113}\%$

[SSC Assistant Grade III, 2012]

21. The percentage of students passed in first division in 1982 was

(a) 20% (b) 34%

(c) $14\frac{2}{7}\%$ (d) $11\frac{13}{17}\%$

[SSC Assistant Grade III, 2012]

22. The percentage of students passed in 1982 was

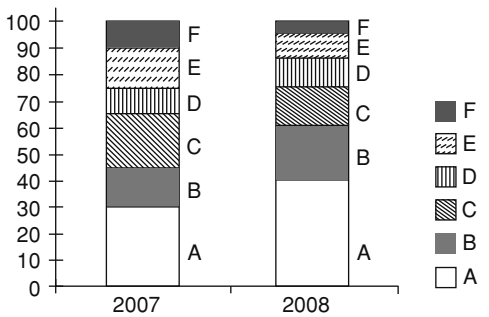
(a) 65% (b) 70%

(c) $74\frac{2}{17}\%$ (d) $82\frac{6}{17}\%$

[SSC Assistant Grade III, 2012]

Directions (Question 23 to 27): The bar chart given below shows the percentage distribution of the production of various models of a mobile manufacturing company in 2007 and 2008. The total production in 2007 was 35 Lakh mobile phones and in 2008 the production was 44 Lakhs. Study the chart and answer the following questions.

Percentage of six different types of mobiles manufactured by a company over two years



23. Total number of mobiles of models A, B and E manufactured in 2007 was

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(a) 24,50,000 (b) 22,75,000
(c) 21,00,000 (d) 19,25,000

[SSC, 2012]

24. For which models was the percentage variation in production from 2007 to 2008 the maximum?

(a) B and C (b) C and D
(c) D and E (d) A and B

[SSC, 2012]

25. What was the difference in the number of B type mobiles produced in 2007 and 2008?

(a) 3,55,000 (b) 2,70,000
(c) 2,25,000 (d) 1,75,000

[SSC, 2012]

26. If the percentage production of A type mobiles in 2008 was same as that in 2007, then the number of A type mobiles produced in 2008 would have been

(a) 14,00,000 (b) 13,20,000
(c) 11,70,000 (d) 10,50,000

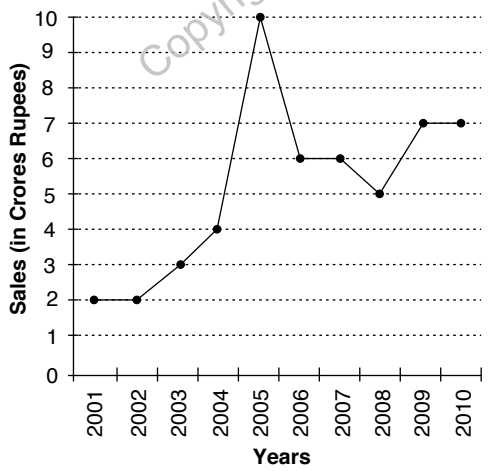
[SSC, 2012]

27. If 85% of the D type mobiles produced in each year were sold by the company, how many D type mobiles remained unsold?

(a) 76,500 (b) 93,500
(c) 1,18,500 (d) 1,22,500

[SSC, 2012]

Directions (Question. 28 to 32): The following line-diagram represents the yearly sales figures of a company in the years 2001–2010. Examine the diagram and answer the questions 81 to 85.



28. By what per cent did the sales in 2008 decrease in comparison to the sales in 2006?

(a) 20 (b) 18
(c) $16\frac{2}{3}$ (d) $15\frac{2}{3}$

[SSC, 2011]

29. The ratio of sales in 2002 to that in 2007 is:

(a) 2:3 (b) 1:3
(c) 1:1 (d) 3:2

[SSC, 2011]

30. Average sale (in crores) of the company during the period 2003–2007 is:

(a) 5.8 (b) 5
(c) 6 (d) 5.5

[SSC, 2011]

31. The percentage increase in sales in the year 2005 with respect to the previous year is:

(a) 80 (b) 100
(c) 120 (d) 150

[SSC, 2011]

32. Total sales (in crores of) from 2005 to 2008 is:

(a) 17 (b) 27
(c) 22 (d) 31

[SSC, 2011]

Directions (Question 33 to 37): The following table shows the number of students of seven colleges participating in extra-curricular activities:

Extra-Curricular Activity	Colleges						
	A	B	C	D	E	F	G
I	200	300	500	100	400	300	200
II	100	200	200	100	100	100	100
III	65	130	420	75	540	220	153
IV	317	155	438	105	385	280	120

Read the table and answer the questions given below:

33. The difference of the range of number of students in activity IV and the average is of number of students in activity III per college is:

(a) 111 (b) 153
(c) 104 (d) 217

[SSC, 2011]

34. Percentage of the number of students in activity II to that of IV is:

(a) 37 (b) 42
(c) 48 (d) 50

[SSC, 2011]

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35. The median of data pertaining to activity III is:

(a) 540 (b) 229
(c) 153 (d) 75

[SSC, 2011]

36. The college in which minimum number of students participate in extra-curricular activities is:

(a) D (b) G
(c) F (d) A

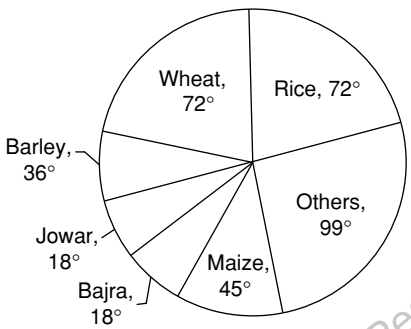
[SSC, 2011]

37. The ratio of total number of students in II and I is:

(a) 1:2 (b) 9:20
(c) 19:7 (d) 21:10

[SSC, 2011]

Directions (Question 38 to 42): The pie-chart provided below gives the distribution of land (in a village) under various food crops. Study the pie-chart carefully and answer the questions that follow:



38. If the total area under bajra was three hundred acres, then the total area (in hundred acres) under rice and barely together is:

(a) 18 (b) 12
(c) 15 (d) 20

[SSC, 2011]

39. The combination of three crops which contribute to more than 50% of the total area under the food crops is:

(a) Wheat, rice and maize
(b) Wheat, rice and jowar
(c) Wheat, rice and bajra
(d) Rice, barley and maize

[SSC, 2011]

40. The ratio of the land used for rice and barley is:

(a) 3:1 (b) 1:2
(c) 2:1 (d) 3:2

[SSC, 2011]

41. If 10% of the land reserved for rice be distributed to wheat and barley in the ratio 2:1, then the angle corresponding to wheat in the new pie-chart will be:

(a) 38.4° (b) 76.8°
(c) 75.6° (d) 45.5°

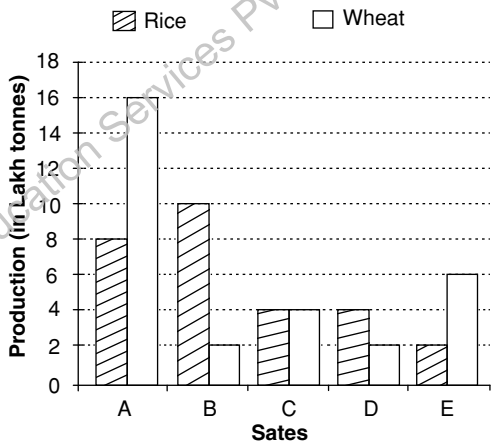
[SSC, 2011]

42. If the production of rice is 5 times that of jowar and the production of jowar is 2 times that of bajra, then the ratio between the yield per acre of rice and bajra is:

(a) 5:2 (b) 3:1
(c) 4:1 (d) 6:1

[SSC, 2011]

Directions (Question 43 to 47): The bar graph provided below represents the production of rice and wheat in different states of a country in a certain year. Answer the question given below based on the bar graph.



43. The total production of rice and wheat in all the mentioned states is minimum in the state _____.

(a) B (b) C
(c) D (d) E

[SSC, 2011]

44. The ratio of total production of rice in the mentioned states to that of wheat in those states, is:

(a) 15:16 (b) 12:13
(c) 13:14 (d) 14:15

[SSC, 2011]

45. The difference between the production in rice and wheat is maximum in:

(a) A only (b) All of A, B and E
(c) B and E both (d) A and B both

[SSC, 2011]

46. The state which is the largest producer of rice is:

(a) A (b) B
(c) C (d) D

[SSC, 2011]

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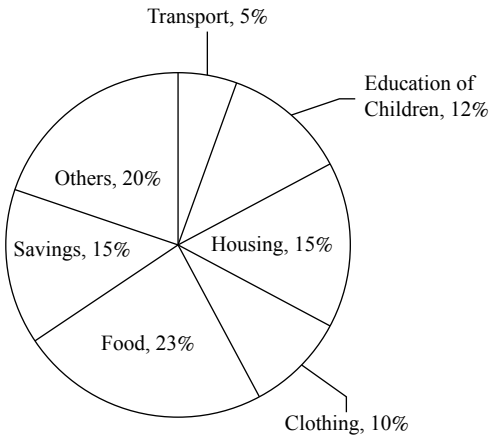
47. The average of production of rice in the mentioned states (in lakh tonnes) is:

(a) 5.5 (b) 5.6
(c) 5.7 (d) 5.8

[SSC, 2011]

Directions (Question 48 to 52): The pie-chart given below, shows the expenditure on various items and savings of a family during the year 2009. Study the pie-chart and answer the questions based on it.

Percentage of money spent on various items and savings by a family during 2009



48. If the total income of the family for the year 2009 was ₹1,50,000 then the difference between the expenditures on housing and transport was:

(a) ₹15,000 (b) ₹10,000
(c) ₹12,000 (d) ₹7,500

[SSC, 2010]

49. Maximum expenditure of the family other than on food, was on:

(a) Housing (b) Clothing
(c) Others (d) Education of children

[SSC, 2010]

50. The savings of the family for the year were equal to the expenditure on:

(a) Food (b) Housing
(c) Education of children (d) Clothing

[SSC, 2010]

51. The percentage of the income which was spent on clothing, education of children and transport together is:

(a) 17 (b) 20
(c) 22 (d) 27

[SSC, 2010]

52. If the total income of the family was ₹1,50,000 then the money spent on food was:

(a) ₹20,000 (b) ₹23,000
(c) ₹30,000 (d) ₹34,500

[SSC, 2010]

Directions (Question 53 to 58): Study the bar diagram and answer questions based on it.

Persons killed in industrial accidents
Person killed in coal mines

53. The number of persons killed in coal mines in 2006 was what per cent of those killed in industrial accidents in that year?

(a) 4 (b) 25
(c) 36 (d) 300

[SSC, 2010]

54. In which year, minimum number of persons killed in industrial accidents and coal mines together?

(a) 2006 (b) 2007
(c) 2008 (d) 2009

[SSC, 2010]

55. In which year, maximum number of persons were killed in industrial accidents other than those killed in coal mines?

(a) 2006 (b) 2007
(c) 2008 (d) 2009

[SSC, 2010]

56. In which year, minimum number of persons were killed in coal mines other than those killed in industrial accidents?

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(a) 2006 (b) 2007
(c) 2008 (d) 2009

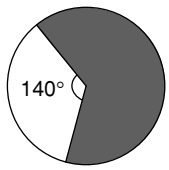
[SSC, 2010]

57. In a year, on an average, how many persons were killed in industrial accidents and coal mines together?

(a) 121.25 (b) 1212
(c) 1212.5 (d) 1000

[SSC, 2010]

58. In The figure given below, the perimeter of the circle is 220 cm. What is the area of the shaded portion in cm^2?



(a) $2542\frac{7}{9}$ (b) $2584\frac{1}{3}$
(c) $2447\frac{1}{9}$ (d) $2352\frac{7}{9}$
(e) $2376\frac{2}{3}$

[IBPS PO/MT, 2014]

Directions (Question 59 to 63): Study the table to answer the given questions.

Percentage of people (male and female) who watch the TV Series out of the total population of the city

City	Total population of the city	Big Bang Theory		Arrow		Breaking Bad		Mentalist	
		Male	Female	Male	Female	Male	Female	Male	Female
P	40000	12	14	22	18	18	20	12	10
Q	20000	10	20	20	16	14	10	15	30
R	50000	18	12	10	22	16	12	16	22
S	30000	16	20	10	20	12	30	18	12
T	50000	22	30	12	14	20	12	15	20

59. What is the difference between the total number of people living in City R, Q and T together who do not watch Arrow and the total number of people living in these three cities together who watch Arrow?

(a) 47200 (b) 45300
(c) 47400 (d) 47600
(e) 45600

[IBPS PO/MT, 2014]

60. What is the average number of males who watch Big Bang Theory in all the cities together?

(a) 6320 (b) 6380
(c) 6340 (d) 6350
(e) 6360

[IBPS PO/MT, 2014]

61. The ratio of the total number of males to the total number of females in City P is 5:3. What per cent of the female population watches Breaking Bad in City P?

(a) $55\frac{1}{3}$ (b) $55\frac{2}{3}$
(c) $58\frac{1}{3}$ (d) $53\frac{1}{3}$
(e) $53\frac{2}{3}$

[IBPS PO/MT, 2014]

62. The total population (males and females) of City R watching Mentalist is what per cent more than the total population (male and female) of City T watching the same TV Series?

(a) $8\frac{3}{7}$ (b) $8\frac{5}{7}$
(c) $8\frac{4}{7}$ (d) $7\frac{3}{7}$
(e) $7\frac{4}{7}$

[IBPS PO/MT, 2014]

63. What is the ratio of the number of females who watch Breaking Bad in City Q and City S together to the number of females who watch Mentalist in the same cities together?

(a) 59:47
(b) 55:48
(c) 59:42
(d) 55:43
(e) 59:45

[IBPS PO/MT, 2014]

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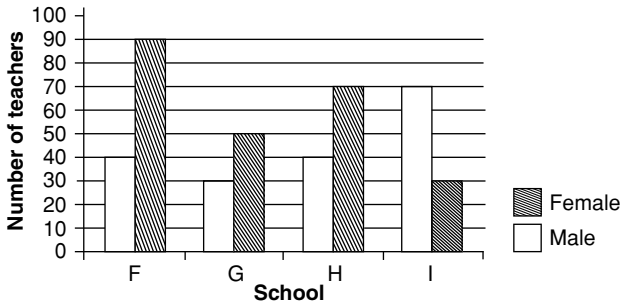
Directions (Question 64): This question is the graph below:

Number of male and female teachers in four schools

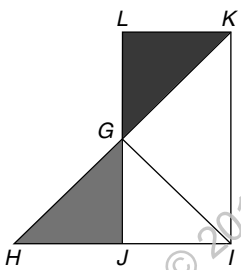


64. What is the difference between the average number ofmale and female teachers in the given schools?

(a) 10 (b 20
(c) 5 (d) 25
(e) 15

[IBPS PO/MT, 2014]

65. In the figure given below GHI is an equilateral triangle with side 14 cm. G is themidpoint of JL. What is the area of the shaded portion(in cm^2)?

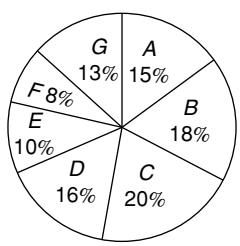


(a) $56\sqrt{3}$ (b) $70\sqrt{3}$
(c) $35\sqrt{3}$ (d) $49\sqrt{3}$
(e) $42\sqrt{3}$

Directions (Question 66 to 70): Refer to the pie-chart and answer the given questions:

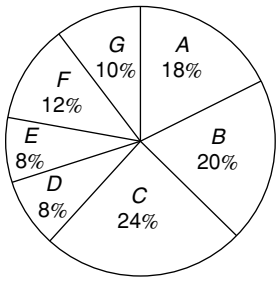
Distribution of the total number of novels (Romantic and Horror) sold by 7 stores

Total number = 63000



Distribution of the total number of Romantic novels sold by 7 stores

Total number = 36000



[IBPS PO/MT, 2014]

66. What is the ratio of the number of novels (Romantic and Horror) sold by store E to the total number of Horror novels sold by stores C and F together?

(a) 35:32 (b) 45:32
(c) 35:24 (d) 35:26
(e) 45:34

[IBPS PO/MT, 2014]

67. What is the average number of Horror novels sold by stores B, C, E and F together?

(a) 2960 (b) 3060
(c) 2680 (d) 3240
(e) 3180

[IBPS PO/MT, 2014]

68. What is the central angle corresponding to the number of novels (Romantic and Horror) sold by store B?

(a) 68.2° (b) 72.6°
(c) 62.4° (d) 64.8°
(e) 70.8°

[IBPS PO/MT, 2014]

69. The number of novels (Romantic and Horror) sold by store F is what percent less than the total number of Romantic novels sold by stores B and G together?

(a) $51\frac{2}{3}$ (b) $53\frac{1}{3}$
(c) $55\frac{2}{3}$ (d) $58\frac{1}{3}$
(e) $56\frac{1}{3}$

[IBPS PO/MT, 2014]

70. What is the difference between the total number of romantic novels sold by stores A, D and G together and the total number of Horror novels sold by the same stores together?

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(a) 2000 (b) 1600
(c) 2400 (d) 1800
(e) 2200

[IBPS PO/MT, 2014]

Directions (Question 71–72): Study the following table to answer the given questions.

Number of girls studying IT and Electronics Engineering from Five colleges

College	IT	Electronics
A	240	315
B	350	285
C	260	225
D	325	255
E	275	220

71. The total number of girls studying IT Engineering from college B, C and D together is by what per cent more than the total number of girls studing Electronics Engineering from these three colleges?

(a) $22\frac{2}{9}$ (b) $23\frac{1}{9}$
(c) $22\frac{2}{3}$ (d) $23\frac{5}{9}$
(e) $23\frac{1}{3}$

[IBPS PO/MT, 2014]

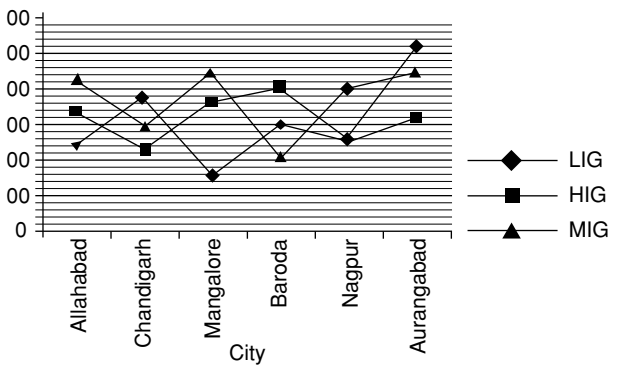
72. What per cent of the girls in college C study Electronics Engineering out of the girls studying IT and Electronics Engineering? (Rounded off to the nearest integer)

(a) 46 (b) 52
(c) 51 (d) 42
(e) 49

[IBPS PO/MT, 2014]

Directions (Question 73–77): Study the following graph carefully to answer the given questions.

Number of the flat booked in HIG, MIG and LIG categories from different cities in 2004.



73. If for Aurangabad the number of HIG flats booked in 2005 was more than that in 2004 by 15%, the number of MIG flats booked in 2005 was more than that in 2004 by 10% and the number of LIG flats booked in 2005 was more than that in 2004 by 20% then what was the total number of flats booked in Aurangabad in 2005?

(a) 1565 (b) 1521
(c) 1625 (d) 1642
(e) 1544

[IBPS PO/MT, 2014]

74. Out of the LIG flats booked from Chandigarh, 35% were by employees of a Financial Institution and out of the remaining flats, those booked by officers from a software company and HRM department of Government of India were in the ratio of 6:7. What was the total no. of LIG flats booked by officers from the software company?

(a) 130 (b) 120
(c) 160 (d) 140
(e) 150

[IBPS PO/MT, 2014]

75. The total number of MIG flats booked in Mangalore, Baroda and Nagpur is by what per cent more than the total number of LIG flats booked from these three cities together? (Rounded off to the nearest integer)

(a) 37 (b) 35
(c) 39 (d) 32
(e) 34

[IBPS PO/MT, 2014]

76. What is the difference between the total number of MIG flats booked in Allahabad, Mangalore, Nagpur and Aurangabad together and the total number of LIG flatsbooked in these four cities together?

(a) 420 (b) 480
(c) 460 (d) 360
(e) 260

[IBPS PO/MT, 2014]

77. What is the ratio of the total number of flats (all three types) booked in Allahabad to that in Baroda?

(a) 54:49 (b) 51:46
(c) 54:47 (d) 58:49
(e) 55:48

[IBPS PO/MT, 2014]

Directions (Question 78–82): Study the following graph carefully to answer the questions given below:

Number of selected employees in different grades/ ranks by three companies during 2012

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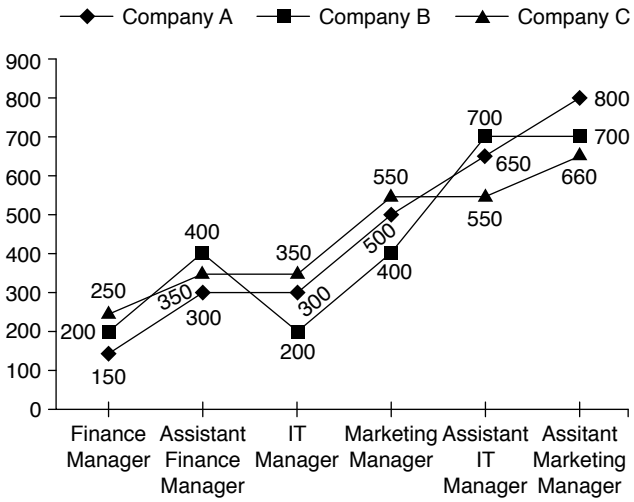


78. What is the average number of selected employees by Company A in all grades taken together?

(a) 450 (b) 460
(c) 475 (d) 375
(e) None of these

[IBPS PO/MT, 2013]

79. What is the ratio of selected employees for the post of Assistant IT Managers by Companies A, B and C respectively?

(a) 8:10:11 (b) 10:8:11
(c) 11:10:8 (d) 10:11:8
(e) None of these

[IBPS PO/MT, 2013]

80. By what percent is the number of selected employees for Finance Managers by Company C more than that of the selected employees by Company B for the same post?

(a) 35% (b) 30%
(c) 25% (d) 40%
(e) None of these

[IBPS PO/MT, 2013]

81 What is the average number of selected employees for the post of Assistant Marketing Managers by all companies taken together?

(a) 570 (2) 520
(c) 620 (d) 720
(e) None of these

[IBPS PO/MT, 2013]

82. What is the ratio of selected employees for IT Managers by all Companies A, B and C?

(a) 6:4:7 (b) 5:3:7
(c) 4:7:9 (d) 8:7:6
(e) None of these

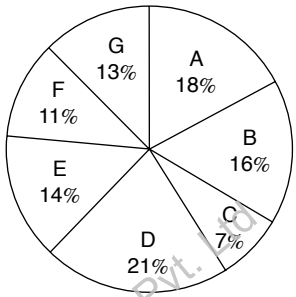
[IBPS PO/MT, 2013]

Directions (Question 83 to 87): The following questions are based on the pie-charts given below:

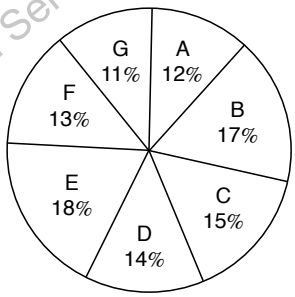
Percentage-wise distribution of students studying in Arts and Commerce in seven different institutions

Different institutions–A, B, C, D, E, F and G

Total number of students studying Arts = 3800



Total number of students studying Commerce = 4200



[IBPS PO/MT, 2013]

83. What is the total number of students studying Arts in Institutes A and G together?

(a) 1026 (b) 1126
(c) 1226 (d) 1206
(e) 1306

[IBPS PO/MT, 2013]

84. How many students from Institute B study Arts and Commerce?

(a) 1180 (b) 1108
(c) 1018 (d) 1208
(e) 1408

[IBPS PO/MT, 2013]

85. The ratio of the number of students studying Arts to that studying Commerce in Institute E is:

(a) 27:14 (b) 19:27
(c) 19:16 (d) 19:28
(e) None of these

[IBPS PO/MT, 2013]

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86. The ratio of the number of students studying Arts in Institute E to that studying commerce in Institute D is:

(a) 12:17 (b) 12:7
(c) 19:21 (d) 17:19
(e) None of these

[IBPS PO/MT, 2013]

87. How many students in institutes B and D together study commerce?

(a) 1320
(b) 1302
(c) 1202
(d) 1220
(e) None of these

[IBPS PO/MT, 2013]

Directions (Question 88 to 92): Study the following table carefully to answer these questions.

Percentage of marks obtained by six students in six different subjects

Student ↓ Subject →	History (Out of 50)	Geography (Out of 50)	Maths (Out of 150)	Science (Out of 100)	English (Out of 75)	Hindi (Out of 75)
Amit	76	85	69	73	64	88
Bharat	84	80	85	78	73	92
Umesh	82	67	92	87	69	76
Nikhil	73	72	78	69	58	83
Pratiksha	68	79	64	91	66	65
Ritesh	79	87	88	93	82	72

88. What is the approximate integral percentage of marks obtained by Umesh in all the subjects?

(a) 80% (b) 84%
(c) 86% (d) 78%
(e) 77%

[IBPS PO/MT, 2013]

89. What is the average percentage of marks obtained by all students in Hindi? (Approximated to two places of decimal)

(a) 77.45% (b) 79.33%
(c) 75.52% (d) 73.52%
(e) None of these

[IBPS PO/MT, 2013]

90. What is the average mark of all the students in Mathematics?

(a) 128 (b) 112
(c) 119 (d) 138
(e) 144

[IBPS PO/MT, 2013]

91. What is the average mark obtained by all the students in Geography?

(a) 38.26 (b) 37.26
(c) 37.16 (d) 39.16
(e) None of these

[IBPS PO/MT, 2013]

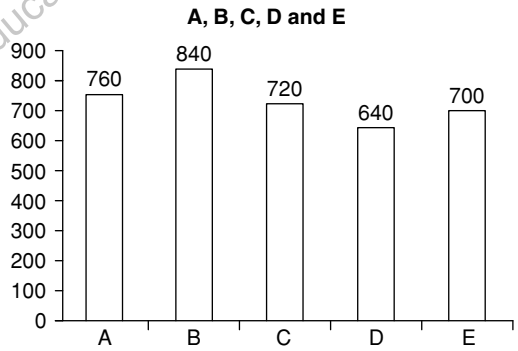
92. What is the total mark obtained by Ritesh in all the subjects taken together?

(a) 401.75 (b) 410.75
(c) 402.75 (d) 420.75
(e) None of these

[IBPS PO/MT, 2013]

Directions (Question 93 to 97): Study the following bar diagram and table carefully to answer the questions.

Number of employees working in five different companies A,B,C,D and E



Company

Ratio of male to female employees

Company	Male:Female
A	13:6
B	4:3
C	7:8
D	9:11
E	23:12

93. What is the number of male employees, taking all the Companies together?

(a) 2084 (b) 2048
(c) 2064 (d) 2046
(e) 2066

[IBPS PO/MT, 2013]

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94. What is the approximate average number of female employees, taking all the companies together?

(a) 340 (b) 315
(c) 335 (d) 325
(e) 321

[IBPS PO/MT, 2013]

95. By what percent is the number of male employees working in Company A and C more than that of female employees working in Company B and D?

(a) 164
(b) 146
(c) 144
(d) 154
(e) 184

[IBPS PO/MT, 2013]

96. What is the ratio of female employees working in Company D and E respectively?

(a) 17:22 (b) 22:17
(c) 15:22 (d) 22:15
(e) None of these

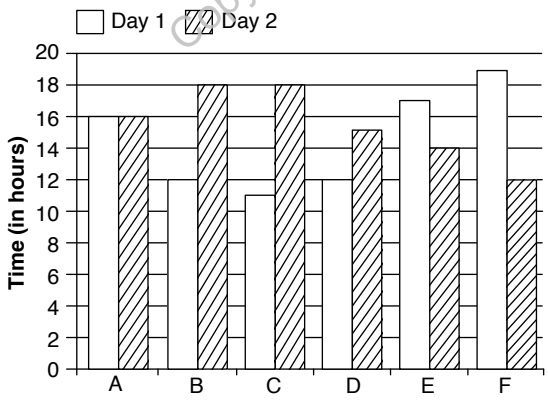
[IBPS PO/MT, 2013]

97. By what percent is the number of total employees of Company C more than that of Company D?

(a) 12.5% (b) 16.5%
(c) 21% (d) 20%
(e) 16%

[IBPS PO/MT, 2013]

Directions (Question 98 to 102): Study the following graph and table carefully and answer the questions given below:



Distance covered (in kilometres) by six vehicles on each day

[IBPS PO/MT, 2012]

Vehicle	Day 1	Day 2
A	832	864
B	516	774
C	693	810
D	552	765
E	935	546
F	703	636

98. Which of the following vehicles travelled at the same speed on both the days?

(a) Vehicle A (b) Vehicle C
(c) Vehicle F (d) Vehicle B
(e) None of these

[IBPS PO/MT, 2012]

99. What was the difference between the speed of Vehicle A on Day 1 and the speed of Vehicle C on the same day?

(a) 7 Km/h (b) 12 Km/h
(c) 11 Km/h (d) 8 Km/h
(e) None of these

[IBPS PO/MT, 2012]

100. What was the speed of Vehicle C on Day 2 in terms of metres per second?

(a) 15.3 (b) 12.8
(c) 11.5 (d) 13.8
(e) None of these

[IBPS PO/MT, 2012]

101. The distance travelled by Vehicle F on Day 2 was approximately what percent of the distance travelled by it on Day 1?

(a) 80 (b) 65
(c) 85 (d) 95
(e) 90

[IBPS PO/MT, 2012]

102. What is the ratio of the speeds of Vehicle D and Vehicle E on Day 2?

(a) 15:13 (b) 17:13
(c) 13:11 (d) 17:14
(e) None of these

[IBPS PO/MT, 2012]

Directions (Question 103 to 107): Study the following pie-chart and table carefully and answer the questions given below:

Percentage wise distribution of the number of mobile phones sold by a shopkeeper during six months

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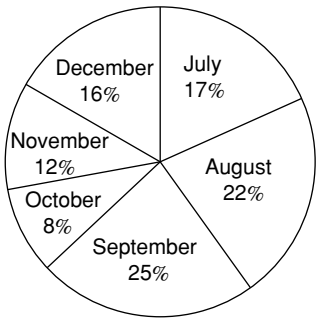
Total number of mobile phones sold = 45000



The ratio between the numbers of mobile phones sold of Company A and Company B during six months

[IBPS PO/MT, 2012]

Month	Ratio
July	8:7
August	4:5
September	3:2
October	7:5
November	7:8
December	7:9

103. What is the ratio of the number of mobile phones sold of Company B during July to those sold during December of the same company?

(a) 119:145 (b) 116:135
(c) 119:135 (d) 119:130
(e) None of these

[IBPS PO/MT, 2012]

104. If 35% of the mobile phones sold by Company A during November were sold at a discount, how many mobile phones of Company A during that month were sold without a discount?

(a) 882 (b) 1635
(c) 1638 (d) 885
(e) None of these

[IBPS PO/MT, 2012]

105. If the shopkeeper earned a profit of ₹433 one each mobile phone sold of Company B during October, what was his total profit earned on the mobile phones of that company during the same month?

(a) ₹6,49,900 (b) ₹6,45,900
(c) ₹6,49,400 (d) ₹6,49,500
(e) None of these

[IBPS PO/MT, 2012]

106. The number of mobile phones sold of Company A during July is approximately what per cent of the number of mobile phones sold of Company A during December?

(a) 110 (b) 140
(c) 150 (d) 105
(e) 130

[IBPS PO/MT, 2012]

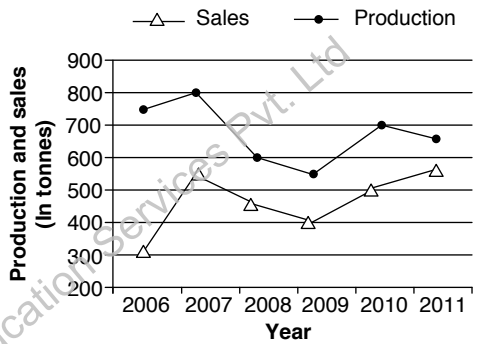
107. What is the total number of mobile phones sold of Company B during August and September together?

(a) 10000 (b) 15000
(c) 10500 (d) 9500
(e) None of these

[IBPS PO/MT, 2012]

Directions (Question 108 to 112): Study the following information and answer the questions that follow:

The graph given below represents the production (in tonnes) and sales (in tonnes) of a company from 2006–2011.



The table given below represents the ratio of the production (in tonnes) of Company A to the production (in tonnes) of Company B, and the ratio of the sales (in tonnes) of Company A to the sales (in tonnes) of Company B.

[IBPS PO/MT, 2012]

Year	Production	Sales
2006	5:4	2:3
2007	8:7	11:12
2008	3:4	9:14
2009	11:12	4:5
2010	14:13	10:9
2011	13:14	1:1

108. What is the approximate percentage increase in the production of Company A (in tonnes) from the year 2009 to the production of Company A (in tonnes) in the year 2010?

(a) 18% (b) 38%
(c) 23% (d) 27%
(e) 32%

[IBPS PO/MT, 2012]

109. The sales of Company A in the year 2009 was approximately what per cent of the production of Company A in the same year?

(a) 65% (b) 73%
(c) 79% (d) 83%
(e) 69%

[IBPS PO/MT, 2012]

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110. What is the average production of Company B (in tonnes) from the year 2006 to the year 2011?

(a) 574 (b) 649
(c) 675 (d) 593
(e) 618

[IBPS PO/MT, 2012]

111. What is the ratio of the total production (in tonnes) of Company A to the total sales (in tonnes) of Company A?

(a) 81:64 (b) 64:55
(c) 71:81 (d) 71:55
(e) 81:55

[IBPS PO/MT, 2012]

112. What is the ratio of production of Company B (in tonnes) in the year 2006 to production of Company B (in tonnes) in the year 2008?

(a) 2:5 (b) 4:5
(c) 3:4 (d) 3:5
(e) 1:4

[IBPS PO/MT, 2012]

Directions (Question 113 to 117): Study the table carefully to answer the questions that follow:
The number of persons visiting six different Supermarkets and the percentage of Men, Women and Children visiting those Super markets

Names of the Super markets	Total Number of Persons	Percentage of		
		Men	Women	Children
A	34560	35	55	10
B	65900	37	43	20
C	45640	35	45	20
D	55500	41	26	33
E	42350	06	70	24
F	59650	24	62	14

113. The number of men visiting Super market D forms approximately what per cent of the total number of person visiting all the Super markets together?

(a) 11 (b) 5.5
(c) 13 (d) 9
(e) 7.5

[IBPS PO/MT, 2011]

114. The number of children visiting market C forms what per cent of the number of children visiting Supermarket F? (Rounded off two digits after decimal)

(a) 91.49 (b) 49.85
(c) 121.71 (d) 109.30
(e) None of these

[IBPS PO/MT, 2011]

115. What is the total number of children visiting Supermarket B and D together?

(a) 18515 (b) 28479
(c) 31495 (d) 22308
(e) None of these

[IBPS PO/MT, 2011]

116. What is the average of women visiting all the Supermarket together?

(a) 24823.5 (b) 22388.5
(c) 26432.5 (d) 20988.5
(e) None of these

[IBPS PO/MT, 2011]

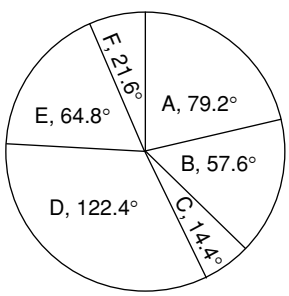
117. What is the ratio the number of women visiting Supermarket A to that of those visiting Supermarket C?

(a) 35:37 (b) 245:316
(c) 352:377 (d) 1041:1156
(e) None of these

[IBPS PO/MT, 2011]

Directions (Question 118 to 122): Study the following pie-chart and answer the questions given below:
Preferences of students of six beverages A, B, C, D, E and F in terms of degrees of angle in the pie-chart

Total No. of students = 6800



118. What is the difference between the total number of students who prefer beverage A and C together and the total number of students who prefer beverage D and F together?

(a) 959 (b) 955
(c) 952 (d) 954
(e) None of these

[IBPS PO/MT, 2011]

119. What is the ratio of the number of students who prefer beverage F to the number of students who prefer beverage A?

(a) 3:11 (b) 3:13
(c) 6:11 (d) 5:11
(e) None of these

[IBPS PO/MT, 2011]

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120. The number of students who prefer beverage E and F together is what percent of the total number of students?

(a) 18 (b) 14
(c) 26 (d) 24
(e) None of these

[IBPS PO/MT, 2011]

121. The number of students who prefer beverage C is approximately what per cent of the number of students who prefer beverage D?

(a) 7 (b) 12
(c) 18 (d) 22
(e) 29

[IBPS PO/MT, 2011]

122. How many students prefer beverage B and Beverage E together?

(a) 2312 (b) 2313
(c) 2315 (d) 2318
(e) None of these

[IBPS PO/MT, 2011]

Directions (Question 123 to 127): Study the table carefully to answer the questions that follow:
Percentage of Marks Obtained by Different Students in Different Subject of MBA

	SUBJECTS (Maximum Marks)					
Students	**Strategic Management (150)**	**Brand Management (100)**	**Compensation Management (150)**	**Consumer Behaviour (125)**	**Service Markeing (75)**	**Training & Development (50)**
Anushka	66	75	88	56	56	90
Archit	82	76	84	96	92	88
Arpan	76	66	78	88	72	70
Garvita	90	88	96	76	84	86
Gunit	64	70	68	72	68	74
Pranita	48	56	50	64	64	58

123. How many marks did Anushka get in all the subject together?

(a) 369 (b) 463
(c) 558 (d) 496
(e) None of these

[IBPS PO/MT, 2011]

124. The marks obtained by Garvita in Brand Management is what per cent of the marks obtained by Archit in the same subject? (Rounded off to two digits after decimal)

(a) 86.36 (b) 101.71
(c) 115.79 (d) 133.33
(e) None of these

[IBPS PO/MT, 2011]

125. What is the average marks obtained by all students together in compensation Management?

(a) 116 (b) 120
(c) 123 (d) 131
(e) None of these

[IBPS PO/MT, 2011]

126. Who has scored the highest total marks in all the subjects together?

(a) Archit (b) Gunit
(c) Pranita (d) Garvita
(e) Arpan

[IBPS PO/MT, 2011]

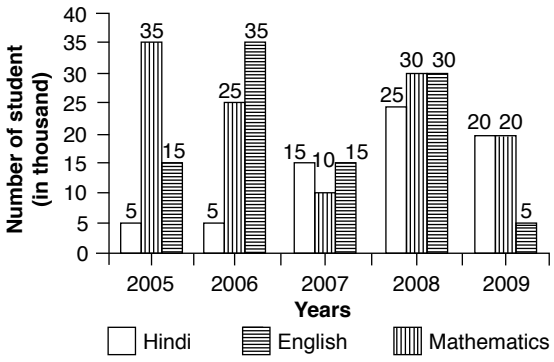
127. How many students have scored the highest marks in more than one subject?

(a) three (b) two
(c) one (d) none
(e) None of these

[IBPS PO/MT, 2011]

Directions (Question 128 to 132): Study the following graph and answer the questions that follow:

No. of students (in thousand) who opted for three different specializations during the given five years in a university



128. Out of the total number of students who opted for the given three subjects, in the year 2009, 38% were girls. How many boys opted for Mathematics in the same year?

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(a) 1322 (b) 1332
(c) 1312 (d) Cannot be determined
(e) None of these

[IBPS PO/MT, 2011]

129. If the total number of student in the university in the year 2007 was 455030, the total number of students who opted for the given three subjects was approximately what per cent of the total students?

(a) 19 (b) 9
(c) 12 (d) 5
(e) 23

[IBPS PO/MT, 2011]

130. What is the total number of students who opted for Hindi and Mathematics in the years 2006, 2007 and 2009 together?

(a) 97000 (b) 93000
(c) 85000 (d) 96000
(e) None of these

[IBPS PO/MT, 2011]

131. The total number of students who opted for Mathematics in the years 2005 and 2008 together is approximately what per cent of the total number of students who opted for all three subjects in the same years?

(a) 38
(b) 28
(c) 42
(d) 32
(e) 48

[IBPS PO/MT, 2011]

132. What is the ratio of the number of students who opted for English in the years 2006 and 2008 together to the number of students who opted for Hindi in the year 2005 and 2009 together?

(a) 11:5 (b) 12:7
(c) 11:7 (d) 12:5
(e) None of these

[IBPS PO/MT, 2011]

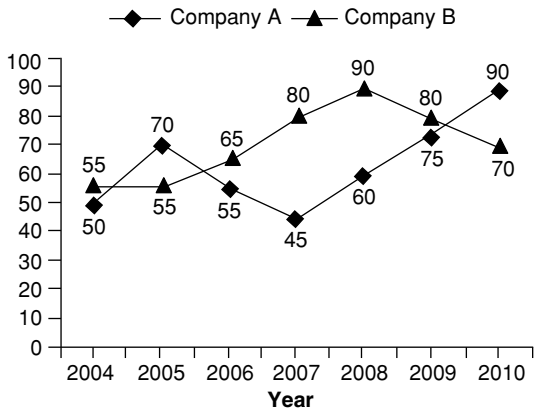
Directions (Question 133 to 140): Study the following graph carefully to answer these question.

Per cent profit earned by two companies producing electronic goods over the years

$$\% \text{ Profit} = \frac{\text{Profit Earned}}{\text{Total Investment}} \times 100$$

[SBI Associates Banks PO/MT, 2011]

Profit Earned = Total Income – Total Investment in the year



133. If the profit earned in 2006 by Company B was ₹8,12,500, what was the total income of the company in that year?

(a) ₹12,50,000
(b) ₹20,62,500
(c) ₹16,50,000
(d) ₹18,25,000
(e) None of these

[SBI Associates Banks PO, 2011]

134. If the amount invested by the two companies in 2005 was equal, what was the ratio of the total income of the Company A to that of B in 2055?

(a) 31:33 (b)33:31
(c) 34:31 (d) 14:11
(e) None of these

[SBI Associates Banks PO, 2011]

135. If the total amount invested by the two companies in 2009 was ₹27 Lakhs, while the amount invested by company B was 50% of the amount invested by Company A, what was the total profit earned by the two Companies together?

(a) ₹21.15 Lakhs (b) ₹20.70 Lakhs
(c) ₹18.70 Lakhs (d) ₹20.15 Lakhs
(e) None of these

[SBI Associates Banks PO, 2011]

136. If the income of Company A in 2007 and that in 2008 were equal and the amount invested in 2007 was ₹12 Lakhs, what was the amount invested in 2008?

(a) ₹10,87,500 (b) ₹10,85,700
(c) ₹12,45,000 (d) ₹12,85,000
(e) None of these

[SBI Associates Banks PO, 2011]

137. If the amount of profit earned by Company A in 2006 was ₹10.15 Lakhs, what was the total investment?

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(a) ₹13.8 Lakhs (b) ₹14.9 Lakhs
(c) ₹15.4 Lakhs (d) ₹14.2 Lakhs
(e) None of these

[SBI Associates Banks PO, 2011]

138. If the amount invested by Company B in 2004 is ₹12 Lakhs and the income of 2004 is equal to the investment in 2005, what is the amount of profit earned in 2005 by Company B?

(a) ₹6.6 Lakhs
(b) ₹18.6 Lakhs
(c) ₹10.23 Lakhs
(d) ₹9.6 Lakhs
(e) None of these

[SBI Associates Banks PO, 2011]

139. If the investments of Company A in 2007 and 2008 were equal, what is the difference between the profits earned in the two years if the income in 2008 was ₹24 Lakhs?

(a) ₹2.25 Lakhs (b) ₹3.6 Lakhs
(c) ₹1.8 Lakhs (d) ₹2.6 Lakhs
(e) None of these

[SBI Associates Banks PO, 2011]

140. If each of the companies A and B invested ₹25 Lakhs in 2010, what was the average profit earned by the two companies?

(a) ₹18 Lakhs (b) ₹22.5 Lakhs
(c) ₹17.5 Lakhs (d) ₹20 Lakhs
(e) None of these

[SBI Associates Banks PO, 2011]

Directions (Question 141 to 147): Study the following table carefully and answer the questions which follow. Number of Candidates found Eligible and the Number of Candidates Short listed for Interview for a recent Recruitment Process for Six Posts form different states

Post	I		II		III		IV		V		VI	
State	E	S	E	S	E	S	E	S	E	S	E	S
A	2500	65	7200	240	5200	76	3600	200	4600	110	5400	380
B	3200	220	8500	420	8400	190	6200	320	5800	180	6200	430
C	2800	280	4500	350	7600	160	8200	440	7300	310	3700	250
D	2400	85	4800	200	2600	55	7500	350	3900	160	4800	360
E	3000	120	5600	280	3800	75	6800	280	6100	260	7800	520
F	4800	325	6400	320	4400	220	4700	180	4900	220	8800	640
G	6500	550	7000	140	6000	325	5500	220	8100	410	2700	200

E-Eligible **S**-Short listed

141. From State B, which post had the highest percentage of candidates short listed?

(a) V (b) IV
(c) VI (d) II
(e) None of these

[SBI Associates Banks PO, 2011]

142. What is the average number of candidates (approximately) found eligible for Past III form all states?

(a) 6700
(b) 6200
(c) 4200
(d) 4500
(e) 5500

[SBI Associates Banks PO, 2011]

143. What is the overall percentage (rounded off to one digit after decimal) of candidates short listed over the total number of candidates eligible for Post I form all the States together?

(a) 9.5% (b) 12.5%
(c) 7.2% (d) 6.52%
(e) None of these

[SBI Associates Banks PO, 2011]

144. What is the ratio of the total number of candidates shortlisted for all the posts together from State E to that from stateG?

(a) 307:369 (b) 73:79
(c) 6:5 (d) 9:7
(e) None of these

[SBI Associates Banks PO, 2011]

145. The total number of candidates found eligible for Post I from all states together is approximately what percent of total number of candidates found eligible for Post VI from all States together?

(a) 45% (b) 50%
(c) 60% (d) 55%
(e) 63.9%

[SBI Associates Banks PO, 2011]

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146. Which state had the lowest percentage of candidates short listed with respect to candidate eligible for Post IV?

(a) G (b) F
(c) E (d) C
(e) None of these

[SBI Associates Banks PO, 2011]

147. What is the ratio of the total number of candidates short listed for post V to that for post VI from all states together?

(a) 6:7 (b) 55:96
(c) 165:278 (d) 16:25
(e) None of these

[SBI Associates Banks PO, 2011]

Directions (Question 148 to 152): These questions are based on following date. Study it carefully and answer the questions that follow.

In a school having 400 students, boys and girls are in the ratio of 3:5. The students speak Hindi, English or both the languages. 12% of the boys speak only Hindi. 22% of the girls speakonly English. 24% of the total students speak only Hindi and the number of boys speaking both the languages is six times the number of boys speaking only Hindi.

148. How many boys speak Hindi?

(a) 18 (b) 126
(c) 108 (d) 26
(e) None of these

[SBI Associates Banks PO, 2011]

149. How many girls speak only Hindi?

(a) 55 (b) 117
(c) 96 (d) 78
(e) None of these

[SBI Associates Banks PO, 2011]

150. How many students speak English?

(a) 304 (b) 79
(c) 225 (d) 117
(e) None of these

[SBI Associates Banks PO, 2011]

151. The number of girls speaking only Hindi is what per cent of the total number of students speaking only Hindi?

(a) 38.2% (b) 71.8%
(c) 31.2% (d) 78%
(e) None of these

[SBI Associates Banks PO, 2011]

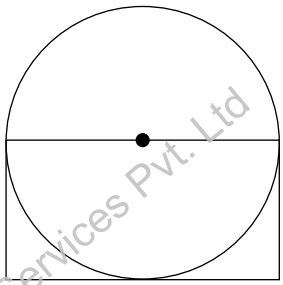
152. What is the ratio of the number of boys to the number of girls speaking both the languages?

(a) 23:25 (b) 12:25
(c) 12:13 (d) 25:13
(e) None of these

[SBI Associates Banks PO, 2011]

Directions (Question 153 to 156): Study the information given in eachof thesequestions and then answer the questions.

153. The area of the circle is 616 cm^2. What is the area of the rectangle?



(a) 784 cm^2 (b) 196 cm^2
(c) 392 cm^2 (d) Cannot be determined
(e) None of these

[SBI Associates Banks PO, 2011]

154. Population in Million

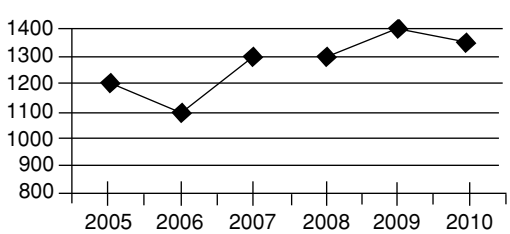
City	Total Population	Male Population
A	12	6.5
B	15	7.2
C	17	9.0
D	19	9.9
E	22	10.8

What is the average female population in million?

(a) 8.32
(b) 8.86
(c) 8.68
(d) 9.12
(e) None of these

[SBI Associates Banks PO, 2011]

155. What is the per cent rise in production in 2007 from 2006? (Round off to two digits after decimal.)



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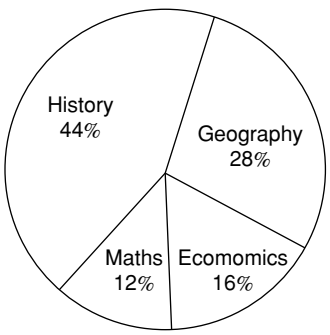
(a) 28.18%
(b) 18.18%
(c) 16.28%
(d) 26.18%
(e) None of these

[SBI Associates Banks PO, 2011]

156. Out of a total 550 students, how many students did not prefer Maths or Economics?

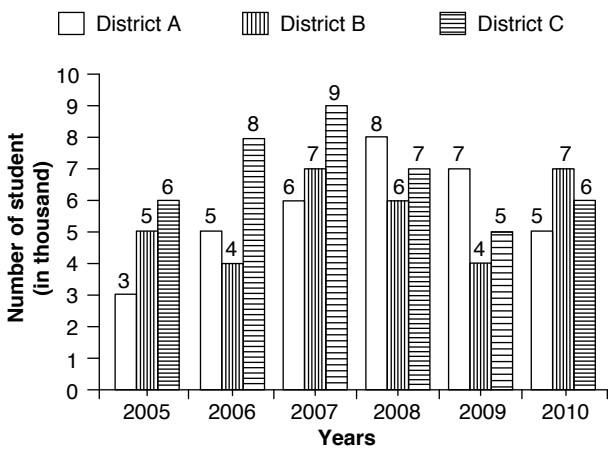
Break-up of students having preference for each subject



(a) 462
(b) 154
(c) 196
(d) 396
(e) None of these

[SBI Associates Banks PO, 2011]

Directions (Question 157 to 161): Study the following graph carefully to answer the questions that follow:
Number of students (in thousand) enrolled in three different districts in six different years



157. What was the percentage increase in enrolment in the number of students in District C in year 2007 as compared to that in the previous year?

(a) 115.5
(b) 112.5
(c) 15.5
(d) 12.5
(e) None of these

[IOB PO, 2011]

158. What was the difference between the number of students enrolled in all the three districts together in the year 2008 and the number of students enrolled in District Bover all the years together?

(a) 12000
(b) 11000
(c) 1100
(d) 1400
(e) None of these

[IOB PO, 2011]

159. What was the approximate average number of students enrolled in District A over all the years together?

(a) 5999
(b) 5666
(c) 5444
(d) 5333
(e) None of these

[IOB PO, 2011]

160. In which year was the number of students enrolled in all the three districts together the second highest?

(a) 2006
(b) 2007
(c) 2008
(d) 2009
(e) 2010

[IOB PO, 2011]

161. Total number of students enrolled in District A and District B together in the year 2010 was what percentage of the total number of students enrolled in District A in the year 2008?

(a) 150
(b) 120
(c) 250
(d) 220
(e) None of these

[IOB PO, 2011]

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Directions (Question 162 to 166): Study the table carefully to answer the questions that follow:
Number of candidates appeared and qualified for a test (in hundred) in six different years from five different zones.

Year	*Zone*									
	P		*Q*		*R*		*S*		*T*	
	App.	*Qual.*	*App.*	*Qual.*	*App.*	*Qual.*	*App.*	*Qual.*	*App.*	*Qual.*
2005	3.2	2.5	3.5	1.4	3.8	2.2	4.2	2.4	6.2	2.6
2006	4.6	3.4	6.9	4.2	6.9	4.4	7.4	3.3	6.2	4.8
2007	6.5	4.9	7.7	4.5	5.9	4.8	8.3	5.6	6.4	4.2
2008	7.4	5.7	5.4	3.4	7.2	3.2	9.3	6.4	7.8	6.2
2009	8.8	4.8	6.6	5.2	8.6	6.8	11.4	5.2	9.9	6.9
2010	9.2	5.6	10.6	6.4	10.3	7.4	14.2	11.4	11.8	9.4

App. — Appeared; Qual. — Qualified

162. In which year was in Zone S the difference between the appeared candidates and qualified candidates the second lowest?

(a) 2005 (b) 2007
(c) 2008 (d) 2009
(e) 2010

[IOB PO, 2011]

163. The number of candidates who qualified the test from Zone R in the year 2010 was approximately what percentage of the number of candidates who appeared from Zone Q in the year 2008?

(a) 152 (b) 147
(c) 142 (d) 132
(e) 137

[IOB PO, 2011]

164. What was the average number of candidates appeared from Zone T over all the years together?

(a) 810
(b) 815
(c) 825
(d) 805
(e) 820

[IOB PO, 2011]

165. What was the ratio of the number of candidates appeared from Zone P in the year 2005 to the number of candidates qualified from Zone S in the year 2007?

(a) 4:7 (b) 4:9
(c) 9:4 (d) 8:13
(e) None of these

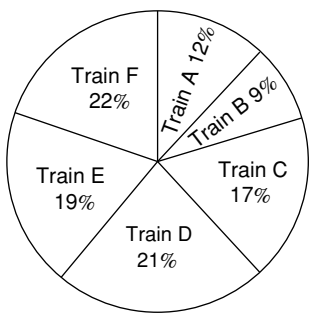
[IOB PO, 2011]

166. From which zone was the total number of candidates who qualified the test, the second highest in the year 2009 and 2010 together?

(a) P (b) Q
(c) R (d) S
(e) T

[IOB PO, 2011]

Directions (Question 167 to 171): Study the following pie-chart carefully to answer these questions:
Total number of passengers in six different trains = 4800
Percentage-wise distribution of passengers



167. What was the average number of passengers travelling in Train A, Train C and Train F together?

(a) 816 (b) 826
(c) 824 (d) 812
(e) None of these

[IOB PO, 2011]

168. If the cost of one ticket is ₹124, what is the total amount paid by passengers of Train B? (Assuming all the passengers purchased tickets and cost of each ticket is equal)

(a) ₹53,658 (b) ₹53,568
(c) ₹53,558 (d) ₹53,468
(e) None of these

[IOB PO, 2011]

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169. The number of passengers in Train E is approximately what percentage of the total number of passengers in Train B and Train D together?
(a) 63 (b) 69
(c) 75 (d) 54
(e) 79

[IOB PO, 2011]

170. What is the difference between the number of passengers Train C and the number of passengers in Train A?
(a) 280 (b) 250
(c) 230 (d) 260
(e) None of these

[IOB PO, 2011]

171. What is the total number of passengers in Train D, Train E and Train F together?
(a) 2796 (b) 3225
(c) 2976 (d) 3125
(e) None of these

[IOB PO, 2011]

Directions (Question 172 to 176): Study the following table carefully to answer the questions that follow.

Semester fees (in ₹ thousand) for five different courses in six different years

	Course				
Years	*B Tech*	*M Sc*	*B Ed*	*M Phil*	*Diploma*
2005	11.5	5.8	7.5	4.7	1.8
2006	14.5	6.4	11.6	5.8	3.2
2007	20.0	10.2	13.9	8.6	4.8
2008	22.2	14.6	15.8	12.7	5.6
2009	35.8	17.7	18.5	25.1	12.5
2010	50.7	20.9	22.6	18.9	14.9

172. What was the approximate per cent increase in the semester fees of BEd course in the year 2007 as compared to the previous year?
(a) 26 (b) 30
(c) 20 (d) 16
(e) 10

[IO PO, 2011]

173. What was the average semester fee charged for MSc course over all the years together?
(a) ₹12,700 (b) ₹12,600
(c) ₹12,060 (d) ₹12070
(e) ₹13,140

[IOB PO, 2011]

174. What was the difference between the total semester fee charged for Diploma course over all the years together and the fee charged for BTech course in the year 2009?
(a) ₹8,500 (b) ₹8,000
(c) ₹6,500 (d) ₹7,000
(e) None of these

[IOB PO, 2011]

175. The semester fee charged for M Phil course in the year 2008 was approximately what percentage of the semester fee charged for MSc course in the year 2009?
(a) 67 (b) 84
(c) 80 (d) 76
(e) 72

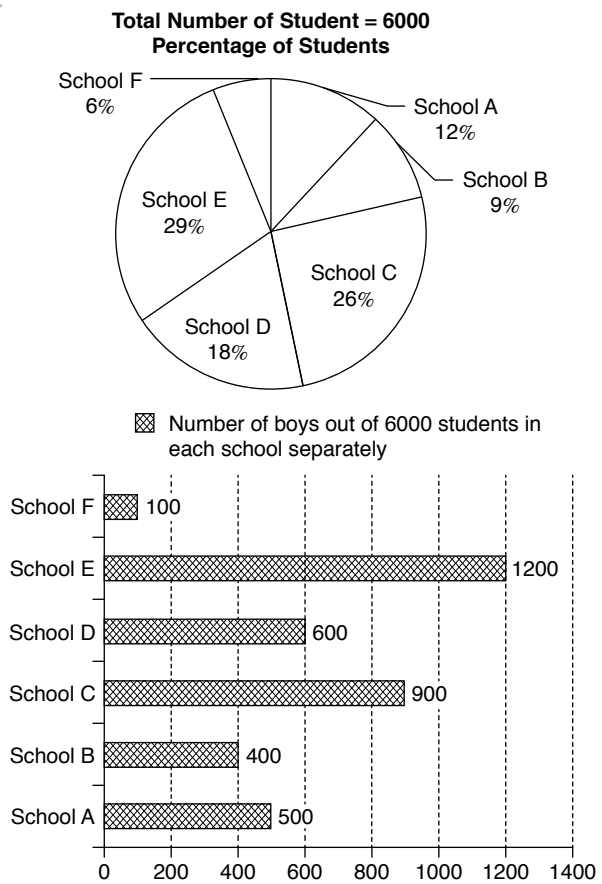
[IOB PO, 2011]

176. What was the total semester fee charged for all the courses together in the year 2006?
(a) ₹42,500 (b) ₹41,500
(c) ₹41,600 (d) ₹42,200
(e)None of these

[IOB PO, 2011]

Directions (Question 177 to 181): Study the following pie-chart and bar diagram and answer the following questions. Percentage-wise distribution of Students in six different Schools

Total number of Students = 6000 Percentage of students



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177. What is the sum of the number of girls in School C, the number of girls in School E and the number of boys in School D together?

(a) 1700 (b) 1900
(c) 1600 (d) 1800
(e) None of these

[Allahabad Bank PO, 2011]

178. What is the ratio of the number of boys in School C, the number of girls in School B and the total number of students in School E?

(a) 45:7:97 (b) 43:9:97
(c) 45:7:87 (d) 43:9:87
(e) None of these

[Allahabad Bank PO, 2011]

179. What is the difference between the total number of students in School F and the number of boys in School E?

(a) 820 (b) 860
(c) 880 (d) 900
(e) None of these

[Allahabad Bank PO, 2011]

180. In which of the following schools is the total number of students equal to the number of girls in School E?

(a) A (b) B
(c) C (d) D
(e) F

[Allahabad Bank PO, 2011]

181. The number of girls in School A is approximately what percentage of the total number of students in School B?

(a) 55 (b) 50
(c) 35 (d) 45
(e) 41

[Allahabad Bank PO, 2011]

Directions (Question 182 to 186): Study the following table carefully and answer the questions given below:

Number of Tickets sold in a week of five movies in multiplexes in six different cities (Number in thousands)

Movie / City	A	B	C	D	E
Mumbai	20	15	35	26	18
Delhi	17	19	21	25	28
Kolkata	32	24	19	21	17
Chennai	18	21	32	28	34
Hyderabad	16	34	26	29	22
Lucknow	15	27	20	35	26

182. The number of tickets of Movie B sold in Hyderabad was approximately what percentage of the total numberof tickets of the same movie sold in all the cities together?

(a) 15 (b) 18
(c) 12 (d) 20
(e) 24

[Allahabad Bank PO, 2010]

183. What is the difference between the number of tickets of Movie D sold in Kolkata and the number of tickets of: Movie B sold in Lucknow?

(a) 700 (b) 7,000
(c) 14,000 (d) 9,000
(e) None of these

[Allahabad Bank PO, 2010]

184. What is the average number of tickets of Movie C soldin all the six cities?

(a) 15,500 (b) 2,550
(c) 24,000 (d) 25,500
(e) None of these

[Allahabad Bank PO, 2010]

185. The number of tickets of Movie E sold in Chennai is what percentage of the number of tickets of Movie A sold in Mumbai?

(a) 170 (b) 70
(c) 30 (d) 130
(e) None of these

[Allahabad Bank PO, 2010]

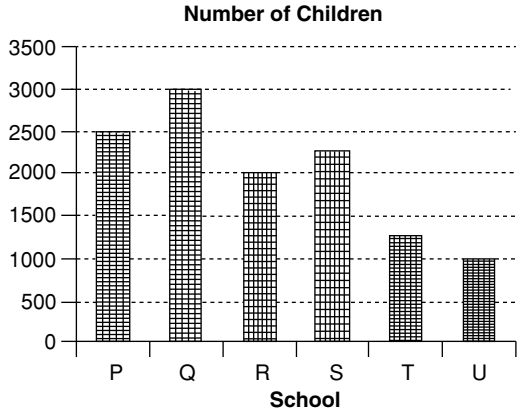
186. In which city was the total number of tickets of all the five movies together sold the minimum?

(a) Delhi (b) Chennai
(c) Lucknow (d) Kolkata
(e) None of these

[Allahabad Bank PO, 2010]

Directions (Question 187 to 191): Study the graphs carefully to answer the questions that follow:

Total number of children in 6 different schools and the percentage of girls in them



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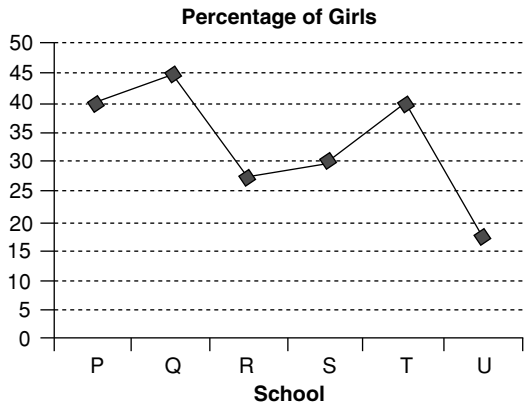

187. What is the total percentage of boys in schools R and U together? (Rounded off to two digits after decimal)
(a) 78.55
(b) 72.45
(c) 76.28
(d) 75.83
(e) None of these
[SBI Associate Banks PO, 2010]

188. What is the total number of boys in School T?
(a) 500 (b) 600
(c) 750 (d) 850
(e) None of these
[SBI Associate Banks PO, 2010]

189. The total number of students in school R is approximately what per cent of the total number of students in school S?
(a) 89 (b) 75
(c) 78 (d) 82
(e) 94
[SBI Associate Banks PO, 2010]

190. What is the average number of boys in schools P and Q together?
(a) 1425 (b) 1575
(c) 1450 (d) 1625
(e) None of these
[SBI Associate Banks PO, 2010]

191. What is the ratio of the number of girls in school P to the number of girls in school Q?
(a) 27:20 (b) 17:21
(c) 20:27 (d) 21:17
(e) None of these
[SBI Associate Banks PO, 2010]

Directions (Question 192 to 193): Study the table carefully to answer the questions that follow.
Percentage of marks obtained by six students in six different subjects

Subject→ Student↓	Hindi (Out of 175)	English (Out of 80)	Science (Out of 125)	Mathematics (Out of 100)	Social Studies (Out of 120)	Sanskrit (Out of 35)
A	87	84	91	66	39	84
B	58	68	87	74	57	79
C	63	71	81	94	44	86
D	48	57	70	79	68	44
E	83	83	49	77	55	50
F	74	68	42	63	61	58

192. What is the average marks obtained by student F in Hindi, English and Science subjects together?
(a) 78
(b) 82.4
(c) 78.8
(d) 84
(e) None of these
[Indian Bank PO, 2010]

193. What is the average marks obtained by all the students in Science?
(a) 87 (b) 86.5
(c) 90 (d) 87.5
(e) None of these
[Indian Bank PO, 2010]

Directions (Question 194 to 198): Study the following table carefully to answer the questions that follow:

Production of Sugar (in tonnes) of three different States over the years

Year→ State↓	2003	2004	2005	2006	2007	2008
P	4.3	4.9	5.6	5.8	6.7	7.4
Q	3.1	3.7	4.4	5.1	6.0	6.2
R	3.9	4.7	5.8	6.6	7.3	8.3

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194. What is the approximate percentage increase in production of sugar in state Q from 2006 to 2007?

(a) 12 (b) 18
(c) 24 (d) 10
(e) 21

[Indian Bank PO, 2010]

195. What is the average production of sugar of all the three states in 2003 and 2004 together?

(a) 4.1 tonnes (b) 4.7 tonnes
(c) 5.1 tonnes (d) 4.8 tonnes
(e) None of these

[Indian Bank PO, 2010]

196. What is the ratio of the total production of sugar of all three states in the year 2006 to that in 2007?

(a) 7:9 (b) 6:7
(c) 8:7 (d) 7:8
(e) 11:12

[Indian Bank PO, 2010]

197. What is the average production of sugar of state R for all the years together?

(a) 24 tonnes (b) 6.3 tonnes
(c) 7.1 tonnes (d) 6.1 tonnes
(d) None of these

[Indian Bank PO, 2010]

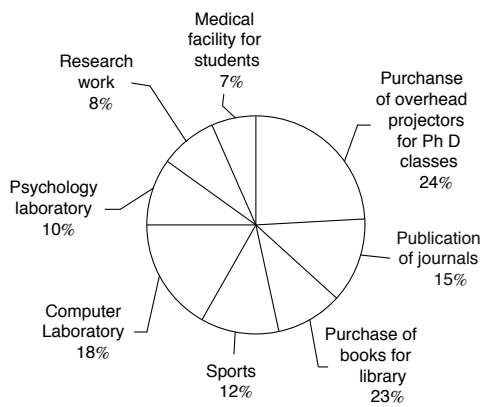
198. What is the difference between the total production of sugar of all the three states together in 2008 and that in 2005?

(a) 9 tonnes (b) 4.3 tonnes
(c) 6.1 tonnes (d) 5.1 tonnes
(e) None of these

[Indian Bank PO, 2010]

Directions (Question 199 to 203): Study the following pie-chart to answer these questions.

TOTAL EXPENDITURE: ₹60 Lakhs



199. What is the ratio of the expenditure made by the university on Research work and that on purchase of books for library?

(a) 4:5
(b) 5:4
(c) 8:3
(d) 8:5
(e) None of these

[Indian Bank PO, 2010]

200. What is the total sum of expenditure on Research work, Purchase of overhead projectors for PhD classes and Purchase of books for library together?

(a) ₹22.6 Lakhs (b) ₹22.8 Lakhs
(c) ₹23.4 Lakhs (d) ₹20.8 Lakhs
(e) None of these

[Indian Bank PO, 2010]

201. What is the difference between the expenditure made by the university for Publication of journals and for Psychology laboratory?

(a) ₹4 Lakhs
(b) ₹3 Lakhs
(c) ₹4.2 Lakhs
(d) ₹3. 8 Lakhs
(e) None of these

[Indian Bank PO, 2010]

202. If the expenditure on the Purchase of overhead projectors for PhD students is decreased by 7%, what will be the expenditure on the same after the decrease?

(a) ₹1,33,920
(b) ₹13,39,200
(c) ₹1,02,000
(d) ₹1,08,000
(e) None of these

[Indian Bank PO, 2010]

203. Which of the following is definitely true?

(a) The ratio of expenditure of university for the purchase of library books and expenditure on computer laboratory is 3:1 respectively.
(b) Expenditure on medical facilities for students is ₹4.6 Lakhs
(c) The difference between the expenditure on research work and that on medical facility for student is ₹60,000.
(d) All are true
(e) None of these

[Indian Bank PO, 2010]

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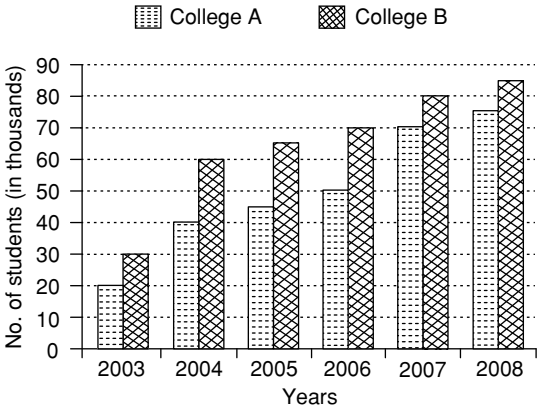
Directions (Question 204 to 208): Study the following graph carefully to answer these questions.
No. of students in College A and College B over the years



204. For which college(s) and in which year was the per cent rise in number of students from the previous year the highest?
(a) College A in year 2004 and College B in year 2005
(b) Only College B in year 2004
(c) College A in year 2004 and College B in year 2004
(d) College A in year 2007 and College B in year 2004
(e) None of these

[Indian Bank PO, 2010]

205. What is the ratio of the total number of students of College A in years 2004, 2006 and 2007 together and the total number of students of College B in years 2003, 2004 and 2008?
(a) 35:32 (b) 33.37
(c) 34:31 (d) 32:35
(e) None of these

[Indian Bank PO, 2010]

206. What is the average number of students in College A for all the years together?
(a) 45,000 (b) 50,000
(c) 52,000 (d) 48,000
(e) None of these

[Indian Bank PO, 2010]

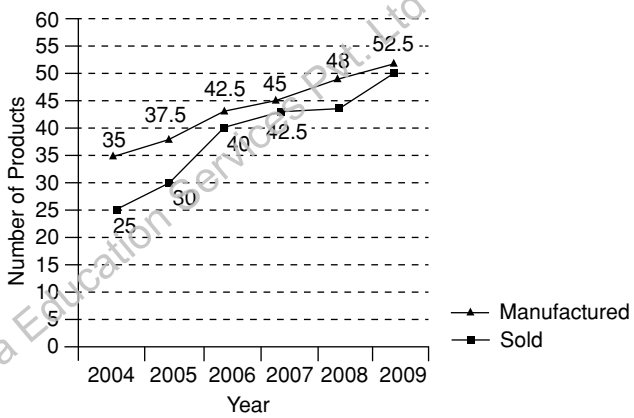
207. What is the approximate percentage rise in the number of students of College B from 2005 to 2006?
(a) 8 (b) 12
(c) 4 (d) 15
(e) 20

[Indian Bank PO, 2010]

208. The number of students of College B in year 2008 is what per cent of the total students of College B in all the years together? (Round off to two digits after decimal)
(a) 20.61 (b) 23.79
(c) 21.79 (d) 17.29
(e) None of these

[Indian Bank PO, 2010]

Directions (Question 209 to 213): Study the following graph carefully to answer the questions:
Number (in thousands) of products manufactured and sold by a company over the years



209. What is the difference between the number of products manufactured by the company in the year 2009 and that in 2008?
(a) 4000 (b) 5500
(c) 3500 (d) 4500
(e) None of these

[IDBI Bank PO, 2009]

210. The number of products sold by the company in the year 2004 is what per cent of the number of products manufactured by it in that year? (Rounded off to two digits after decimal)
(a) 71.43 (b) 67.51
(c) 81.67 (d) 56.29
(e) None of these

[IDBI Bank PO, 2009]

211. What is the per cent increase in the number of products sold by the company in the year 2006 from the previous year? (Rounded off to two digits after decimal)
(a) 19.25 (b) 33.33
(c) 10.45 (d) 42.66
(e) None of these

[IDBI Bank PO, 2009]

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212. What is the ratio of the number of products not sold by the company in the year 2007 to that not sold in the year 2005?

(a) 3:1 (b) 6:5
(c) 1:3 (d) 5:6
(e) None of these

[IDBI Bank PO, 2009]

213. What is the approximate average number of products manufactured by the company over all the years together?

(a) 36550 (b) 39480
(c) 41220 (d) 43330
(e) 34420

[IDBI Bank PO, 2009]

Directions (Question 214 to 218): Study the following information carefully and answer the questions that follow:

An office consists of 520 employees working in different departments, viz. HR, IT, Production and Marketing. The ratio of men to women in the organisation is 5:3.20 per cent of the men work in the IT department. 40 per cent of the women work in the HR department. The total number of employees in the Production department is 135. Two-fifths of the women work in the IT department and the remaining work in the Marketing department. 40 per cent of the men work in the Production department. Four per cent of the men work in the HR department and the remaining work in the Marketing department.

214. The number of men working in the Marketing department forms what per cent of the total number of employees in the organisation?

(a) 22.5 (b) 34.5
(c) 19.5 (d) 38.5
(e) None of these

[IDBI Bank PO, 2009]

215. What is the ratio of the number of men working in the HR department to that of the women working in the same?

(a) 1:5 (b) 2:3
(c) 4:7 (d) 9:11
(e) None of these

[IDBI Bank PO, 2009]

216. What is the number of women working in the Marketing department?

(a) 41 (b) 34
(c) 46 (d) 39
(e) None of these

[IDBI Bank PO, 2009]

217. Total number of employees working in the Production department forms approximately what per cent of the total number of employees working in the organisation?

(a) 12 (b) 17
(c) 21 (d) 26
(e) 38

[IDBI Bank PO, 2009]

218. What is the total number of employees working in the IT department?

(a) 130 (b) 124
(c) 143 (d) 101
(e) None of these

[IDBI Bank PO, 2009]

Directions (Question 219 to 223): Study the following table carefully to answer the questions that follow:

Number of Executives recruited by six different organisations over the years

Organisation→ Year↓	P	Q	R	S	T	U
2004	458	512	418	502	476	492
2005	522	536	472	500	482	523
2006	480	495	464	508	488	518
2007	506	505	428	444	490	534
2008	427	485	422	512	510	498
2009	492	488	444	499	512	510

219. What is the total number of Executives recruited by all the organisations together in the year 2006?

(a) 2927 (b) 3042
(c) 2864 (d) 3143
(e) None of these

[IDBI Bank PO, 2009]

220. What is the ratio of the total number of Executives recruited by organisation U in the years 2007 and 2009 together to the total number of Executives recruited by organisation P in the same years?

(a) 436:517 (b) 499:522
(c) 51.7:436 (d) 522:499
(e) None of these

[IDBI Bank PO, 2009]

221. What is the average number of Executives recruited by organisation S over all the years together? (Rounded off the nearest integer)

(a) 494 (b) 482
(c) 514 (d) 506
(e) 478

[IDBI Bank PO, 2009]

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222. What is the per cent increase in the number of Executives recruited by organisation R in 2005 from the previous year? (Rounded off to two digits after decimal)

(a) 18.67 (b) 12.92
(c) 16.48 (d) 13.21
(e) None of these

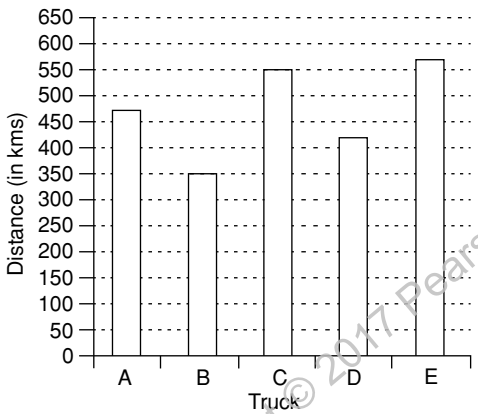
[IDBI Bank PO, 2009]

223. The number of Executives recruited by organisation T in the year 2008 forms approximately what per cent of the total number of Executives recruited by all the organisations together in that year?

(a) 11 (b) 31
(c) 18 (d) 26
(e) 23

[IDBI Bank PO, 2009]

Directions (Question 224 to 228): Study the following graph carefully to answer the questions that follow:
Distance (in Km) travelled by five different trucks in a day



224. What is the ratio of the distance travelled by Truck A to the distance travelled by Track D?

(a) 17:19 (b) 11:15
(c) 19:17 (d) 15:11
(e) None of these

[IDBI Bank PO, 2009]

225. What is the average distance travelled by all me trucks together?

(a) 510 Km
(b) 515 Km
(c) 425 Km
(d) 475 Km
(e) None of these

[IDBI Bank PO, 2009]

226. If Truck A covered the given distance at the average speed of 47.5 Km/h, what was the time taken by it to cover this distance?

(a) 12 hours (b) 10 hours
(c) 8 hours (d) 6 hours
(e) None of these

[IDBI Bank PO, 2009]

227. The distance travelled by Truck E is approximately what per cent of the total distance travelled by Track B and C together?

(a) 58 (b) 60
(c) 52 (d) 62
(e) 55

[IDBI Bank PO, 2009]

228. If the time taken by Truck C to cover the given distance was 8 hours, what was the average speed of the truck?

(a) 54.75 Km/h
(b) 65.25 Km/h
(c) 52.25 Km/h
(d) 68.75 Km/h
(e) None of these

[IDBI Bank PO, 2009]

Directions (Question 229 to 233): Study the following table carefully to answer the questions that follow:
Total number of people In Different Villages and (Of these) Percentage of Men, Women and Children

Village	Total No. of people	Percentage of men	Percentage of women	Percentage of children
L	1240	35	45	20
M	2140	45	30	25
N	1450	50	30	20
O	1680	65	20	15
P	2060	40	40	20
Q	1990	40	50	10

229. Which village has the least number of children?

(a) L (b) N
(c) Q (d) O
(e) None of these

[IDBI Bank PO, 2009]

230. What is the ratio of the number of women in Villages L and P together to the number of men in the same villages together?

(a) 617:664
(b) 629:691
(c) 664:617
(d) 691:629
(e) None of these

[IDBI Bank PO, 2009]

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231. What is the total number of women and children together in Village Q?
(a) 995
(b) 1184
(c) 1086
(d) 988
(e) None of these

[IDBI Bank PO, 2009]

232. The total number of people from Village O is approximately what per cent of the total number of people from all the villages together?
(a) 16 (b) 21
(c) 11 (d) 25
(e) 9

[IDBI Bank PO, 2009]

233. What is the total number of children from Villages M and N together?
(a) 785 (b) 825
(c) 855 (d) 795
(e) None of these

[IDBI Bank PO, 2009]

ANSWER KEYS

EXERCISE-I

1. i, (e) ii, (a) iii, (d), iv, (c) v, (c)	**2.** i, (e), ii, (b), iii, (a), iv, (c) v, (d)
3. i, (a), ii, (e), iii, (b), iv, (c) v	**4.** i, (c), ii, (a), iii, (d), iv, (b), v, (e)
5. i, (a), ii, (e), iii, (b), iv, (d), v, (a), vi, (e), vii, (c)	**6.** i, (e), ii, (a), iii, (c), iv, (e), v, (c),
7. i, (b), ii, (d), iii, (c), iv, (e), v, (a),	**8.** i, (d), ii, (c), iii, (e), iv, (a), v, (b),
9. i, (a), ii, (c), iii, (d), iv, (b), v, (b),	**10.** i, (b), ii, (e), iii, (b), iv, (e), v, (d),
11. i, (d), ii, (a), iii, (b), iv, (e), v, (c),	**12.** i, (b), ii, (a), iii, (d), iv, (c), v, (d),
13. i, (d), ii, (c), iii, (a), iv, (z), v, (c),	**14.** i, (d), ii, (a), iii, (b), iv, (e), v, (b),
15. i, (e), ii, (a), iii, (e), iv, (c), v, (e),	**16.** i, (a), ii, (a), iii, (a), iv, (e), v, (e), vi, (c), vii, (b), Viii, (e)
17. i, (a), ii, (c), iii, (e), iv, (d), v, (b),	**18.** i, (a), ii, (d), iii, (e), iv, (c), v, (b)
19. i, (e), ii, (d), iii, (c), iv, (a), v, (b)	**20.** i, (e), ii, (a), iii, (e), iv, (c), v, (a)
21. i, (d), ii, (d), iii, (e), iv, (e), v, (e)	**22.** i, (a), ii, (a), iii, (b), iv, (a), v, (b)
23. i, (a), ii, (d), iii, (a), iv, (d), v, (d)	**24.** i, (b), ii, (c), iii, (d), iv, (d), v, (c),
25. i, (d), ii, (b), iii, (a), iv, (a), v, (b)	**26.** i, (c), ii, (d), iii, (d), iv, (d), v, (b)
27. i, (a), ii, (e), iii, (d), iv, (b), v, (c)	**28.** i, (d), ii, (e), iii, (b), iv, (c), v, (e)
29. i, (c), ii, (a), iii, (d), iv, (a), v, (d)	**30.** i, (a), ii, (d), iii, (b), iv, (c), v, (b)
31. i, (c), ii, (b), iii, (a), iv, (e), v, (d)	**32.** i, (b), ii, (d), iii, (e), iv, (a), v, (c), vi, (b), vii, (d), viii, (a)
33. i, (a), ii, (c), iii, (a), iv, (d), v, (b)	**34.** i, (b), ii, (a), iii, (d), iv, (a), v, (c)
35. i, (e), ii, (d), iii, (e), iv, (b), v, (e)	**36.** i, (b), ii, (c), iii, (d), iv, (e), v, (e)
37. i, (b), ii, (d), iii, (e), iv, (c), v, (b)	**38.** i, (a), ii, (c), iii, (d), iv, (b), v, (a)
39. i, (e), ii, (c), iii, (c), iv, (b), v, (d)	**40.** i, (e), ii, (d), iii, (a), iv, (b), v, (c)

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EXERCISE-2											
1. (a)	**2.** (a)	**3.** (c)	**4.** (c)	**5.** (b)	**6.** (d)	**7.** (d)	**8.** (b)	**9.** (c)	**10.** (b)	**11.** (c)	**12.** (d)
13. (b)	**14.** (b)	**15.** (b)	**16.** (d)	**17.** (b)	**18.** (c)	**19.** (c)	**20.** (c)	**21.** (d)	**22.** (d)	**23.** (c)	**24.** (d)
25. (a)	**26.** (b)	**27.** (c)	**28.** (d)	**29.** (d)	**30.** (a)	**31.** (d)	**32.** (b)	**33.** (c)	**34.** (d)	**35.** (c)	**36.** (a)
37. (b)	**38.** (a)	**39.** (a)	**40.** (c)	**41.** (b)	**42.** (a)	**43.** (c)	**44.** (d)	**45.** (d)	**46.** (b)	**47.** (b)	**48.** (a)
49. (c)	**50.** (b)	**51.** (d)	**52.** (d)	**53.** (b)	**54.** (d)	**55.** (a)	**56.** (b)	**57.** (c)	**58.** (d)	**59.** (d)	**60.** (a)
61. (d)	**62.** (c)	**63.** (b)	**64.** (e)	**65.** (d)	**66.** (d)	**67.** (b)	**68.** (d)	**69.** (b)	**70.** (d)	**71.** (a)	**72.** (a)
73. (b)	**74.** (b)	**75.** (a)	**76.** (b)	**77.** (a)	**78.** (a)	**79.** (b)	**80.** (c)	**81.** (d)	**82.** (a)	**83.** (a)	**84.** (c)
85. (b)	**86.** (c)	**87.** (b)	**88.** (a)	**89.** (b)	**90.** (c)	**91.** (d)	**92.** (e)	**93.** (a)	**94.** (b)	**95.** (c)	**96.** (d)
97. (a)	**98.** (d)	**99.** (c)	**100.** (e)	**101.** (e)	**102.** (e)	**103.** (c)	**104.** (c)	**105.** (d)	**106.** (e)	**107.** (a)	**108.** (d)
109. (b)	**110.** (c)	**111.** (e)	**112.** (c)	**113.** (e)	**114.** (d)	**115.** (c)	**116.** (a)	**117.** (e)	**118.** (c)	**119.** (a)	**120.** (d)
121. (b)	**122.** (a)	**123.** (b)	**124.** (c)	**125.** (a)	**126.** (d)	**127.** (b)	**128.** (d)	**129.** (b)	**130.** (e)	**131.** (d)	**132.** (a)
133. (b)	**134.** (c)	**135.** (b)	**136.** (a)	**137.** (e)	**138.** (c)	**139.** (a)	**140.** (d)	**141.** (c)	**142.** (e)	**143.** (d)	**144.** (a)
145. (e)	**146.** (c)	**147.** (c)	**148.** (b)	**149.** (e)	**150.** (a)	**151.** (e)	**152.** (c)	**153.** (c)	**154.** (a)	**155.** (b)	**156.** (d)
157. (d)	**158.** (a)	**159.** (b)	**160.** (c)	**161.** (a)	**162.** (b)	**163.** (e)	**164.** (d)	**165.** (a)	**166.** (e)	**167.** (a)	**168.** (b)
169. (a)	**170.** (e)	**171.** (c)	**172.** (c)	**173.** (b)	**174.** (d)	**175.** (e)	**176.** (b)	**177.** (d)	**178.** (c)	**179.** (e)	**180.** (b)
181. (e)	**182.** (e)	**183.** (e)	**184.** (d)	**185.** (a)	**186.** (a)	**187.** (d)	**188.** (c)	**189.** (a)	**190.** (b)	**191.** (c)	**192.** (c)
193. (d)	**194.** (b)	**195.** (a)	**196.** (d)	**197.** (d)	**198.** (c)	**199.** (e)	**200.** (b)	**201.** (b)	**202.** (b)	**203.** (c)	**204.** (c)
205. (d)	**206.** (b)	**207.** (a)	**208.** (c)	**209.** (e)	**210.** (a)	**211.** (b)	**212.** (c)	**213.** (d)	**214.** (a)	**215.** (e)	**216.** (b)
217. (d)	**218.** (c)	**219.** (e)	**220.** (d)	**221.** (a)	**222.** (b)	**223.** (c)	**224.** (c)	**225.** (d)	**226.** (b)	**227.** (d)	**228.** (d)
229. (c)	**230.** (d)	**231.** (e)	**232.** (a)	**233.** (b)							

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EXPLANATORY ANSWERS

EXERCISE-1

1. (ii) (a) Required difference = 60 − 50 = 10,000 tonne.

(iii) (d) Percentage increase in production

$$= \frac{15}{25} \times 100 = 60\%$$

(iv) (c) Average production

$$= \frac{25 + 40 + 60 + 45 + 65 + 50 + 70 + 80}{8}$$

$$= \frac{440}{8} = 55.$$

(v) (c) Required percentage drop

$$= \frac{60 - 45}{60} \times 100 = 25\%$$

2. (i) (e) We can use the direct formula for

$$\text{Profit} = \text{Income}\left[1 - \frac{100}{100 + \%\ \text{Profit}}\right]$$

We see that the profit is maximum in 1998.

(ii) (b) Total expenditure

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$$= 120 \times \frac{100}{107.5} + 160 \times \frac{100}{115} + 130 \times \frac{100}{122.5}$$

$$+ 170 \times \frac{100}{117.5} + 190 \times \frac{100}{120} + 150 \times \frac{100}{127.5}$$

= ₹777.51 Lakhs

$\therefore$ Average $= \frac{777.51}{6} \approx$ ₹1300 Lakh.

(iii) **(a)** Per cent profit increase/decrease from the previous year

1994	1995	1996	1997	1998
100	50	(–)22.22	14.28	37.5

(iv) **(c)** Expenditure in $1994 = 160 \times \frac{100}{115} \approx 140$ Lakh

(v) **(d)** Expenditure in $1997 = 110 \times \frac{100}{125} =$ ₹152 Lakh.

3. **(i)** **(a)** Production of C type cars in 1996
= (70 − 40)% of 450000
= 30% of 450000 = 135000
Production of C type cars in 1997
= (65 − 40)% of 520000
= 25% of 520000 = 130000
$\therefore$ Required difference = 5000.

(ii) **(e)** Production of E type cars in 1996
= (100 − 80)% of 450000
= 20% of 450000 = 90000
And in 1997 = 10% of 520000 = 52000
$\therefore$ Total production = 90000 + 52000 = 142000.
$\therefore$ Required number of cars = 15% of 142000 = 21300

(iii) **(b)** Production of *A* type cars in 1997 = production of *A* type cars in 1996 (given) = (100 − 85) 5% of 450000 = 67500

$\therefore$ Required percentage $= \frac{67500}{520000} \times 100 \approx 13.$

(iv) **(c)** Clearly, by visual inspection *D* is the desired option.

(v) **(c)** Percentage production of *B* type cars in 1997 = that in 1996 (given)
= (40 − 15) 25% of 520000 = **130000.**

4. **(i)** **(c)** Total rose production = (15 + 12.5 + 12.45 + 20 + 12.4 + 22.5 + 22.4 + 25) × 1000
= 142250
Percentage production of rose in the States (the lowest four states)

Rajasthan	Karnataka	Haryana	Gujarat
8.71	8.75	8.78	10.54

(ii) **(a)** Required percentage

$= \frac{25 - 20}{20} \times 100 = 25\%$(more)

(iii) **(d)** Total production of rose by all the States = 142250

$\therefore$ Average $= \frac{142250}{8 \times 1000} \approx 18$ thousand.

(iv) **(b)** Required percentage

$= \frac{25}{142.25} \times 100 \approx 20\%$

(v) **(e)** It is 36.8% approximately.

5. **(i)** **(a)** Required $\% = \frac{5.1}{12.5} \times 100 = 40.8\%$

(ii) **(e)** Percentage increase

$= \frac{38.8 - 11.8}{11.8} \times 100 \approx 225\%$

(iv) **(d)** Required Ratio $= \frac{7.4}{16.8} = 37 : 84.$

(v) **(a)** Required $\% = \frac{38.8}{63.9} \times 100 \approx 60\%$

(vi) **(e)** Required $\% = \frac{101.80}{138.50} \times 100 \approx 75\%$

(vii) **(c)** Required $\% = \frac{1.8}{74.6} \times 100 = 2.41\%$

6. **(i)** **(e)** Sale of Pep-up was the maximum in the year 1989.

(ii) **(a)** Avg. annual sale of Dew-drop

$= \frac{10 + 15 + 25 + 15 + 30 + 25}{6} = 20$ Lakh

Average annual sale of Cool-sip

$= \frac{25 + 7 + 2C + 20 + 25 + 30}{6} = 21.16$ Lakh

Average annual sale of Pep-up

$= \frac{30 + 35 + 30 + 25 + 20 + 20}{6} = 26.66$ Lakh.

(iii) **(c)** Required $\% = \frac{25 - 20}{20} \times 100 = 25\%$

(iv) **(e)** Required number = 30 − 20 = 1000000.

(v) **(c)** Required % drop $= \frac{35 - 30}{35} \times 100 \approx 14\%$

7. **(i)** **(b)** Obvious from the chart.

(ii) **(d)** Total imports in the given years
= 35 + 30 + 40 + 50 + 55 + 60 + 45
= 315 Crore

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Total exports in the given years
= 40 + 45 + 35 + 40 + 60 + 50 + 55
= 325 Crore

Hence, require ratio $= \frac{315}{325} = \frac{63}{65}$.

(iii) **(c)** Obvious from the chart.

(iv) **(e)** Total exports in the years 1995, 1996 and 1999
= 35 + 40 + 55 = 130 Crore
Total imports in the years 1995, 1996 and 1999
= 40 + 50 + 45 = 135 Crore

Now required $\% = \frac{130 \times 100}{135} = 96.29\%$

(v) **(a)** If you calculate approximate value you reject (b), (c) and (d). Now check (a).
In 1996, % increase in export

$= \frac{5}{35}100 = \frac{100}{7} = 14.29\%$

8. **(i)** **(d)** $\frac{(110 + 60 + 110 + 100 + 105 + 85) = 570}{6}$

= 95 Lakh tons

(ii) **(c)** Average production of units A, B and C in 2001[use white bars]

$= \frac{(90 + 75 + 100) = 265}{3}$

Average production of units *D*, *E* and *F* in 2002

$= \frac{(100 + 105 + 85) = 290}{3}$

$\therefore$ Required answer $= \frac{265 \times 3}{3 \times 290} \times 100 = 91.38.$

(iii) **(e)** Total production by unit *B* in 2001 and 2002 together
= (75 + 60) = 135 Lakh tons
Total production by unit *C* in 2001 and 2002 together
= (100 + 110) = 210 Lakh tons
$\therefore$ Required ratio = (135:210) = 9:14.

(iv) **(a)** Total production by unit F in year 2001 and 2002 together
= (70 + 85) = 155 Lakh tons

$\therefore$ Required percentage $= \left(\frac{155}{195} \times 100\right)$
= 79.487 ≈ 79.49.

(v) **(b)** Required total production
=(100 + 110 + 95 + 100 + 85 + 105)
= 595 Lakh tons.

9. **(i)** **(a)** % growth of expense from 1994 to 1995

$= \frac{400 - 300}{300} \times 100 = 33\frac{1}{3}\%\ 0$

% growth of expense from 1995 to 1996 = 0
% growth of expense from 1996 to 1997

$= \frac{600 - 400}{400} \times 100 = 50\%$

% growth of expense from 1997 to 1998

$= \frac{700 - 600}{600} \times 100 = 16\frac{2}{3}\%$

$\therefore$ average $= \frac{100}{4} = 25\%$

(iii) **(d)** Average $= \frac{100 - 200 + 100 + 400}{4} =$ ₹100 crore

(iv) **(b)** Ratio of profit to capital

1998	1995	1996	1997
0.50	1	− 1	− 1

10. **(i)** **(b)** Required percentage drop

$= \frac{25 - 22.5}{25} \times 100 = 10\%$

(ii) **(e)** Required difference = (35 − 22.5) Lakhs = 1250000.

(iii) **(b)** Only by visual observation you can find the answer. You do not need to calculate the values. I (iv) (e) Production of *B* type cars is more than the production of *C* type cars only in 1993, 1994 and 1995. We see the largest difference exists in 1995. So, the answer is 1995.

(v) **(d)** Total production of *C* type tyres in 1992 and 1993 together
= (30 + 25) = 55 Lakhs and that of *B* in 1994 = 27.5 Lakhs.

$\therefore$ Required Percentage $= \frac{55}{27.5} \times 100 = 200.$

11. **(i)** **(d)** Difference of production of *C* in 1991 and *A* in 1996 = 500000 tonnes

(ii) **(a)** Percentage increase of *A* from 92 to 93

$= \frac{55 - 40}{40} \times 100 = 37.5\%$

(iii) **(b)** Percentage rise/fall in production for *B*

1992	1993	1994	1995	1996
9%	− 16.6%	10%	− 8%	10%

(iv) **(e)** Percentage production $= \frac{120}{90} \times 100 = 133.3\%$

(v) **(c)** Average production of *A* = 50
Average production of *B* = 54.17
Average production of *C* = 50 1996 10%
Difference of production = 54.17 − 50 = 4.17.

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12. **(i)** **(b)** $\frac{(7500-5300=)2200\times100}{705300}=41.5\%$

(iv) **(c)** Let, GTR be ₹x

$\therefore\ x - x \times 10\% = 5800$

$\therefore\ x=\frac{5800\times10}{9}$ =₹6444.4.

(v) **(d)** 8800 − 5100 = 3700.

13. **(ii)** **(c)** Our intelligent observation says that the required year cannot be 1993, 1994, 1995. Why? Because see the following conclusions:

$\%$ passed to appear $=\frac{\text{Passed}}{\text{Appeared}}\times100$

$\%$ of passed to appear is least when $\frac{\text{Passed}}{\text{Appeared}}$ is the least

or, $\frac{\text{Appeared}}{\text{Passed}}$ is the most. Now, we do the further calculations mentally. See the following conclusions:

For 1990: $\frac{7894}{2513}\Rightarrow$ Quotient = 3 and Remainder ≈ 300

For 1991: $\frac{8562}{2933}\Rightarrow Q=3$ and $R\approx400$

For 1992: $\frac{8139}{2468}\Rightarrow Q=3$ and $R\approx800$

Similarly, for 1993; 1994, 1995, Q is 2.

So, 1992 gives the highest value.

(iii) **(a)** $\frac{8562-8139}{8562}\times100=\frac{423}{8562}\times100\approx\frac{42}{84}\times10=5$

(iv) We do not need to calculate the values for each year. Follow as:

For Rural area: 35% of 5032 ≈ 35 × 50 = 1750 ≈ 1798

For Semi-urban area: 35% of 9500 ≈ 35 × 95 ≈ 3300

Which cannot be approximated to 3500.

For State capitals: 35 × 85 = 3000

For Metropolises: 35 × 110 = 3850

(v) **(c)** 1798 + 2513 = 4311.

14. **(i)** **(d)** Distance to be travelled by each type of vehicle

$=\frac{15}{3}=5$ Km

Since, to travel 5 Km by vehicle A, he will pay ₹9 for 4 Km and for the next 1 Km he will have to pay

₹$\frac{13.5-9.00}{(7-4)}\times1$.

Similarly, for other cases.

Fare by $A=$₹$9+\frac{13.50-9}{7-4}=9+1.50=$₹10.50

Fare by $B=14.50+\frac{24.25-14.50}{7-4}$

$=14.50+3.25=17.75$

Fare by $C=19+\frac{31-19}{3}=19+4=23$

Total fare = 10.50 + 17.75 + 23 = ₹ 51.25.

(ii) **(a)** Fare by $A=9+\frac{4.50}{3}\times2=$₹12

Fare by $B=24.25+\frac{33.25-24}{3}\times2=$₹30.25

Total fare = 30.25 + 12 = ₹42.25.

(iii) **(b)** Fare, for 8 Km by $A=13.50+\frac{17.25-13.50}{10-7}$

$=13.50+\frac{3.75}{3}=$₹14.75

Fare by $B=24.25+\frac{33.25-24.25}{3}=$₹27.25

Difference = 27.25 − 14.75 = ₹12.50.

(iv) **(e)** Fare by B for 5 Ian = 14.50 + 3.25 = ₹17.75

Fare by A for 8 Km $=13.50+\frac{17.25-13.50}{3}=$₹14.75

Fare by C for 5 Km $=19+\frac{31-19}{3}=$₹23

Total fare = 17.75 + 1475 + 23 = 55.50.

(v) **(b)** Fare for 14th Km by $C=\frac{56.50-41.50}{15-10}=$₹3

Fare for 9th Km by $B=\frac{33.25-24.25}{10-7}=$₹3.

15. **(i)** **(e)** Average runs of $A=\frac{994}{19}=52.31$

Average runs of $B=\frac{751}{18}=41.72$

Difference = 52.31 − 41.72 = 10.59.

(ii) **(a)** Average runs of $C=\frac{414-52}{17}=21.29$.

(iii) **(e)** Difference between two highest runs

= 994 − 772 = 222

Difference between two lowest runs

= 653 − 414 = 239

Difference = 239 − 222 = 17.

(iv) **(c)** Ratio of A and D = 141:94 = 3:2.

(v) **(e)** Without knowing the individual runs of 8 openers, we cannot find the average runs of remaining batsmen.

16. **(i)** **(a)** Avarage $=\frac{52+66+64+75+58}{5}=\frac{315}{5}=63$.

(ii) **(a)** The difference is 9.

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(iii) **(a)** Percentage increase $= \frac{55-46}{46} \times 100 \approx 20\%$

(iv) **(e)** Average highest marks $= \frac{85+80+75}{3} = \frac{240}{3} = 80.$

(vi) **(c)** Required percentage $= \frac{80}{64} \times 100 = 125\%$

(vii) **(b)** Marks obtained by students = 50 × 60 = 3000.

(viii) **(e)** The maximum difference is in the years 1992 and 1997, since the least value is in 1992 and the highest value is in 1997.

17. **(i)** **(a)** Total number of students studying in all schools in 1992 = (1025 + 230 + 190 + 950 + 350 + 225 + 1100 + 320 + 300
+ 1500 + 340 + 300 + 1450 + 250 + 280) − (120 + 110 + 150 + 115 + 130 + 150 + 150 + 160 + 125 + 130)
= 8810 − 1340 = 7470

$\therefore$ Average $= \frac{7470}{5} = 1494.$

(ii) **(c)** Number of students studying in school B in 1994 = 950 + (350 − 150) + (225 − 115) + (185 − 110) + (200 − 90) = 950 + 200 + 110 + 75 + 110 = 1445.

(iii) **(e)** Number of students leaving school C from 1990 to 1995
= 130 + 150 + 125 + 140 + 180 = 725
Number of students admitted during the period
= 1100 + 320 + 300 + 260 + 240 + 310 = 2530 =2530

$\therefore$ Required percentage $= \frac{725}{2530} \times 100 \approx 29\%$

(iv) **(d)** Required difference
= (340 + 300 + 295 + 320 + 360) − (350 + 225 + 185 + 200 + 240) = 1615 − 1200 = 415.

(v) **(b)** Increase in number of students in school A = (230 − 120) + (190 − 110) + (245 − 100) + (280 − 150) + (250 − 130) = 585

$\therefore$ % increase from 1990 (1025) to 1995

$= \frac{585}{1025} \times 100 = 57.07\%$

Similarly, we can calculate for other schools.

18. **(i)** **(a)** Number of females above poverty line in State A

$= 3000 \times (100-12)\% \times \frac{3}{7} \approx 1200.$

(ii) **(d)** Since we cannot find the population of States C and D separately, we cannot find the required value.

(iii) **(e)** Population of State A below poverty line

$= 3000 \times \frac{5}{3} = 5000$

$\therefore$ Total population of State $A = \frac{5000}{12} \times 100$

and the population of State E below poverty line

$= 6000 \times \frac{11}{6} = 11000$

$\therefore$ Total population of State $E = \frac{11000}{10} \times 100$

$\therefore$ Required ratio $= \frac{5}{12} \times \frac{10}{11} = \frac{25}{66}.$

(iv) **(c)** Total population of State B

$= 500\left(\frac{12}{5}\right)\left(\frac{100}{15}\right) = 8000.$

(v) **(b)** Population of State E

$= 19800\left(\frac{5}{2}\right)\left(\frac{100}{100-10}\right) = 55000$

$\therefore$ Population of males below poverty line.

$= \frac{6}{11} \times 55000 = 30000.$

19. **(i)** **(e)** Required per cent $= \frac{152.2}{86.4} \times 100 \approx 175\%$

(iii) **(c)** Average production of pulse

$= \frac{20.5+22.4+24.6+23.5+27.8+28.2}{2}$

$= \frac{147.0}{6}$

24.5 million tonne.

(iv) **(a)** Required percentage $= \frac{32.4}{450} \times 100 = 7.2\%$

(v) **(b)** Total production of oilseeds in the given years = 42.4 + 46.8 + 52.4 = 141.6
which is equal to the production of wheat in 1994 − 95.

20. **(i)** **(e)** The difference between the white-coloured cars sold is the minimum in B type model.

(ii) **(a)** Blue (E + D) = 37 + 43 = 80 = White (B).

(iii) **(e)** Required difference = (50 − 34) × 1000 = 16000.

(iv) **(c)** Required percentage $= \frac{173}{192} \times 100 \approx 90\%$

(v) **(a)** While-C Colour-model combination of car in Metro M

21. **(i)** **(d)** Total number of students who play cricket
= 38 + 40 + 12 + 17 + 25 + 18 + 20 = 170

Required% $= \frac{25}{170} \times 100 \approx 15\%$

(ii) **(d)** Required ratio = 27:18 = 3:2.

(iv) **(e)** Total Class X students who play different games = 115

Required % $= \frac{21}{115} \times 100 \approx 18\%$

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(v) **(e)** Basketball and Badminton are the two games which satisfy the conditions.

22. **(i)** **(a)** Maximum population shows the age group up to 15 years, but among the options it is not there. Hence, among the given options age group 16 – 25 is responsible for maximum population.

(ii) **(a)** Required number = 47.75% of 4200 ≈ 2006.

(iii) **(b)** Number of people in the age group 56 – 65

$= \frac{200}{65} \times 5.12 \approx 15.75.$

(iv) **(a)** Required. difference in the population

$= \frac{10}{5.12} \times 3.50 \approx 6.8$ million.

(v) **(b)** Total population

$= \frac{11.75}{3} \times 100 \approx 391.67$ million.

23. **(i)** **(a)** Total Sales – Gross Profit in

1990 = 351.6 – 155.5 = 196.1;

1991 = 407.9 – 134.3 = 273.6

1992 = 380.1 – 149.9 = 230.2;

1993 = 439.7 – 160.5 = 279.2

1994 = 485.9 – 203.3 = 282.6

(ii) **(d)** Let, 439.7 = K% of 351.6 $\Rightarrow$ K = 125.

(iv) **(d)** Let, 42.6 = K% of 439.7 $\Rightarrow K = \frac{4260}{439.7} = 9.7.$

(v) **(d)** Per cent increase in the gross profit:

From 1991 to 1992: $\frac{15.6}{134.3} \times 100 = 11.6\%$

From 1992 to 1993: $\frac{10.6}{149.9} \times 100 = 7.07\%$

From 1993 to 1994: $\frac{42.8}{160.5} \times 100\ 26.67\%$

24. **(ii)** **(c)** Total production of rice

= 45 + 48 + 59 + 41 + 37 + 68 + 57 + 38

= 393 Lakh tons

Total production of wheat

= 103 + 86 +32 + 37 + 22 + 15 + 8 + 28

= 331 Lakh tons

∴ Required proportion = 393:331 ≈ 12:1.

(iv) **(d)** Total wheat production in the country = 331 Lakh tons and state P alone produces 103 Lakh tons of wheat

Required percentage $= \frac{103}{331} \times 100 \approx 30\%$

(v) **(c)** Total rice production in the country = 393 Lakh tons

Yield per hectare = 30 tons

∴ Area under rice cultivation $= \frac{393}{30} \approx 13$ Lakh hectares.

25. **(i)** **(d)** 146947 – (65104 + 60387) = 21456.

(ii) **(b)** 146947 + 11630 = 158577.

(iii) **(a)** 158577 – (70391 + 62516) = 25.670.

(iv) **(a)** 153922 – (5337 + 21560 + 69395) = 57630.

(v) **(b)** 160998 – (153922 – 5337) = 12413.

26. **(i)** **(c)** Average of the total prod. during the period

$= \frac{476}{6} \approx 80.$

(ii) **(d)** Answer will be 1993.

(iv) **(d)** 25% of 80 = 20 = production of S's car in 1993.

(v) **(b)** Required percent increase $= \frac{90 - 75}{75} \times 100 = 20\%$

27. **(i)** **(a)** Required ratio $= \frac{8 + 9}{15 + 18} = 17:33.$

(ii) **(e)** Here, do not find the ratio of the number of qualified candidates that of the appeared. Simply check the ratio of % qualified candidates with respect to the appeared is the least for which state. Ans. = G.

(iii) **(d)** Required difference = (21 – 13)% of 9000 = 720.

(iv) **(b)** Required $\% = \frac{(16 + 7)\% \text{ of } 9000}{(11 + 8)\% \text{ of } 45000} \times 100 = 24.21\%$

(v) **(c)** Required ratio $= \frac{(16 + 21)\% \text{ of } 9000}{8\% \text{ of } 45000}.$

28. **(i)** **(d)** Required ratio $= \frac{14\% \text{ of } 3800}{14\% \text{ of } 4200} = 19:21.$

(ii) **(e)** Required number = 27% of 3800 = 1026.

(iii) **(b)** Required number = 31 % of 4200 = 1302.

(iv) **(c)** Required number = 8% of 3800 + 17% of 4200

= 304 + 714 = 1018.

(v) **(e)** Required ratio $= \frac{14\% \text{ of } 3800}{17\% \text{ of } 4200} = 19:17.$

30. **(i)** **(a)** 40% of 15000000 = 6000000.

(ii) **(d)** 12.5% of 12000000 = 1500000.

(iii) **(b)** 15:15 = 1:1.

(v) **(b)** 12.5% in each

32. **(i)** **(b)** Total cost $= \frac{2}{5} \times \frac{15}{100} \times 25 + \frac{4}{5} \times \frac{22}{100} \times 25$

= 1.5 + 4.4 =5.9 Crore

(ii) **(d)** Amount of profit earned by company D on item II

$= \frac{5}{8} \times \frac{8}{100} \times 25 \times \frac{25}{100} = 31.25$ Lakhs

(iii) **(e)** Cost of production of item I by company F

$= \frac{1}{5} \times \frac{5}{100} \times 25 = 0.25$ crores

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Cost of production of item II by company D

$= \frac{5}{8} \times \frac{8}{100} \times 25 = 1.25$ crore

$\therefore$ Required % $= \frac{0.25}{1.25} \times 100 = 20\%$

(iv) **(a)** Total profit earned by company G

$= \frac{1}{3} \times \frac{12}{100} \times 25 \times \frac{30}{100} + \frac{2}{3} \times \frac{12}{100} \times 25 \times \frac{24}{100}$

= 0.3 + 0.48 = ₹78 Lakhs.

(v) **(c)** Required ratio $= \frac{\frac{2}{5} \times \frac{12}{100} \times 25}{\frac{3}{8} \times \frac{8}{100} \times 28} = 2:1.$

(vi) **(b)** Required profit

$= \frac{3}{5} \times \frac{11}{100} \times 25 \times \frac{32}{100} + \frac{3}{5} \times \frac{15}{100} \times 25 \times \frac{20}{100}$

= 0.528 + 0.450 = ₹97.8 Lakhs.

33. **(i)** **(a)** Total number of students for course D = 35% of 1200 = 420

Number of girl students for course D = 30% of 800 = 240

Number of boy students for course D = 420 – 240 = 180

Required ratio = 180:240 = 3:4.

(ii) **(c)** Number of boys for difference courses are

A = 0; B = 100; C = 44; D = 180; E = 32; F = 44.

(iii) **(a)** Number of girls for course E = 14% of 800 = 112

Number of boys for course E = 32

Required more % $= \frac{112 - 32}{32} \times 100 = 250\%$

(iv) **(d)** Using the information given in Q. Number (2)

(v) **(b)** Number of girls in course C = 2 % of 800 = 16.

34. **(i)** **(b)** 23% of 46000 = ₹10580.

(ii) **(a)** 25% of 46000= ₹11500.

(iii) **(d)** Required ratio = 15:12 = 5:4.

(iv) **(a)** 23%

(v) **(c)** 15% of 46000 = ₹6900.

35. **(i)** **(e)** % Profit $= \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$

or, $45 = \frac{140 - E}{E} \times 100$

or, $\frac{140}{E} = \frac{45}{100} + 1 = \frac{9}{20} + 1 = \frac{29}{20}$

$\therefore E = 140\left(\frac{20}{29}\right) = 96.6$ crores

(ii) **(d)** $I_{93} = E_{94}\left(\frac{100 + 50}{100}\right) = \frac{3}{2}E_{93}$

$I_{94} = E_{94}\left(\frac{100 + 50}{100}\right) = \frac{3}{2}E_{93}$

$I_{94} = E_{94}\left[\frac{100 + 40}{100}\right] = \frac{7}{5}E_{94}$

$E_{93} + E_{94} = 279$

But we cannot find $\frac{3}{2}E_{93} + \frac{7}{5}E_{94}$.

Hence, we cannot solve it.

(iii) **(e)** $E = I\left(\frac{100}{100 + P}\right)$

or, $\frac{E}{I} = \frac{100}{100 + P}$ ...(1)

We require $\frac{E}{I} \leq 50\%$ or, $\leq \frac{E}{I} \quad \frac{1}{2}$

Now, from (1), $\frac{100}{100 + P} \leq \frac{1}{2}$

So, the value of P should be more than 100, which is not correct for any of the given years.

(iv) **(b)** $I = E\left[\frac{100 + \%\text{Profit}}{100}\right]$

$= 200\left(\frac{100 + 40}{100}\right)$ crores = 280 crores

(v) **(e)** $I > 2E$

$\Rightarrow$ Profit % is more than 100, which is not correct for any of the given years.

36. **(ii)** **(c)** Average percentage increase of the commodities

January	February	March	April	June
16.25%	23.75%	28.75%	35%	41.25%

(iv) **(e)** Sale of commodity C in July $= 100 \times \frac{95}{100} = 95.$

37. **(i)** **(b)** Let, the investment of company B in 1996 be ₹x Lakhs.

$\therefore$ Investment of company B in 1997 $= ₹\frac{7}{5}x$

Income of company B in 1997 $= \frac{9}{5} \times \frac{7}{5}x = \frac{63}{25}x$

(ii) **(d)** Required % $= \frac{63}{25} \times 100 = 252\%$

(iii) **(e)** Investment of company A in 1995

$= 21.7 \times \frac{100}{155} = 14$ Lakhs

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(iv) (c) Let, ${}^{i}95_{(A)} = {}^{e}96_{(B)} = ₹x$ Lakh

$$\therefore \text{ Required ratio} = \frac{x \times \frac{100}{155}}{x} = 20:31.$$

(v) (b) Income of company B in 1993

$$= 1540000 \times \frac{145}{100} = ₹22.33 \text{ Lakhs.}$$

38. (i) (a) Income of Company B in 2000

$$= 200 \times \frac{120}{100} = ₹240 \text{ Crores}$$

(ii) (c) Expenditure of Company A in 2002

$$= 600 \times \frac{100}{160} = ₹375 \text{ Crores}$$

(iii) (d) We can find out the amount of profit in 1998, we do not know the income and expenditure of A and B, therefore option (d) is the correct choice.

(iv) (b) Ratio of their expenditures

$$= \frac{100}{135} \times \frac{130}{100} = 26:27.$$

(v) (a) Required % Increase $= \frac{35-20}{20} \times 100 = 75\%$

39. (i) (e) Suppose in the year 1998–99 expenditure of company $X = ₹a$

Then profit earned by company X in this year

= ₹ (30% of a)

Hence, income of company X = ₹(130% of a)

Again, expenditure of company Y in 2001–02

$$= ₹\frac{a+130}{100}$$

Hence, profit earned by company Y in 2001–02

$$= ₹\frac{a \times 130}{100} \times \frac{50}{100}$$

Thus, required ratio

$$= \frac{\frac{30}{100} \times a}{\frac{a \times 130}{100} \times \frac{50}{100}} = \frac{30}{100} \times \frac{100 \times 100}{130 \times 50} = \frac{30}{65} = 6:13.$$

(ii) (c) $I_{x2002-02} = E_{x2002-03} = \frac{I_{x2002-03}}{1.5}$

$$I_{x2002-02} = 1_{x2002-03} = \frac{2}{3} = 2:3.$$

(iii) (c) Per cent of increase in percent profit over that of the previous year for the given years is as follows:

Year

$$1998-99: \frac{(20-15)}{15} \times 100 = 33.33\%$$

$$1999-00: \frac{(30-20)}{20} \times 100 = 50\%$$

$$2000 - 01 : = 0\%$$

$$2001-02: \frac{(50-30)}{30} \times 100 = 66\frac{2}{3}\%$$

$$2002-03: \frac{(60-50)}{50} \times 100 = 20\%$$

You do not need to do any rough work. See the graph and search for steep rise in the line joining the two Δ's.

(iv) (b) Required income

= 120% of ₹40 Crore = ₹48 Crore

(v) (d) The given graph depicts only the per cent profit earned by the two companies over the given years. Hence, these information are insufficient to answer the question.

(vi) (e) In 2002–03 profit earned by company Y was 60%

There fore, 160% of expenditure ₹128 crore

Thus, required expenditure $= \frac{128}{160} \times 100 = ₹80$ Crores

40. (i) (e) Average imports made by company A

$$= \frac{30+50+60+40+70+60+75}{7} = \frac{385}{7} = 55$$

In none of the given years the imports is exactly equal to 55 (Crore). Hence, the answer is (e).

(ii) (d) By visual inspection it is clear that 1992 is the desired year (as the distance between two points is the maximum in 1992).

(iii) (a) By mental observation $\left(\text{as } 50 = \frac{40+60}{2}\right)$, 1992 only is the desired year. You do not need any calculation.

See the year where the point A lies exactly in the middle of points of B and C.

(iv) (b) Required percentage increase $= \frac{50-40}{40} \times 25\%$

(v) (c) The total imports (in Crore) made by all the three companies together: From the heights of the points we observe that the total heights of three points is the maximum either in 1995 or 1997. If you observe carefully, our clear answer is 1995, but to be sure we find actual values for the two years.

In 1995 = 70 + 80 + 85 = 235.

In 1997 = 75 + 70 + 85 = 230.

Clearly, 1995 is the desired year.

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EXERCISE-2
(BASED ON MEMORY)

1. **(a)** Required average

$= \left(\frac{5+4+4+3+4}{5}\right)$ million tonnes

$= 40$ Lakhs tonnes

2. **(a)** $\because \quad 360° \equiv 9000$ tonnes

$\therefore \quad 110° \equiv \frac{9000 \times 110}{360} = 2750$ tonnes

3. **(c)** Percentage decrease

$= \frac{32-27}{32} \times 100$

$= \frac{5 \times 100}{32} = \frac{125}{8} = 15\frac{5}{8}\%$

4. **(c)** Required average

$= \frac{100+220+300+200+250}{5} = \frac{1070}{5} = 214$

5. **(b)** Required percentage $= \frac{70+80}{205} \times 100 = 73.17\%$

6. **(d)** Required ratio = (75 + 65):(85 + 95)

= 140:180 = 7:9

7. **(d)** Average sales of branches B_1, B_2 and B_3 in 2001

$= \frac{105+65+110}{3} = \frac{280}{3}$

Average sales of branches B_1, B_3 and B_6 in 2000

$= \frac{80+95+70}{100} = \frac{245}{3}$

$\therefore$ Required percentage $= \frac{280}{245} \times 100 = 114.28$

8. **(b)** Required average

$= \frac{80+75+95+85+75+70}{6} = \frac{480}{6} = 80$

9. **(c)** The total number of students who come to school by car

$= \frac{70°}{360°} \times 2160 = 420$

10. **(b)** Required ratio $= 70°:90° = 7:9 = 21:27$

11. **(c)** Required answer $= \frac{80°+90°}{360°} \times 2160 = 1020$

12. **(d)** Required answer $= \frac{360°-120°}{360°} \times 2160 = 1440$

13. **(b)** Required per cent $= \frac{90°-80°}{80°} \times 100 = 12.5\%$

14. **(b)** Required difference = (200 + 195 + 245 + 200 + 225) − (150 + 200 + 250 + 230 + 200) = 1065 − 1030 = 35

15. **(b)** Total number of students playing football = 250 + 125 + 175 + 100 + 250 = 900

Now, from the question,

$\therefore \quad \frac{x \times 900}{100} = 175 \qquad \therefore \quad x = \frac{175}{9} = 19\frac{4}{9}$

16. **(d)** Total number of players in

School A = 820

School B = 830

School C = 880

School D = 700

School E = 905

17. **(b)** $\frac{130 \times x}{100} = 65 \quad \Rightarrow \quad x = \frac{65 \times 100}{130} = 50$

18. **(c)** Required number of students passed in third division = 165 − 95 = 70

19. **(c)** Percentage of students failed in 1984

$= \frac{35}{200} \times 100 = 17\frac{1}{2}\%$

20. **(c)** Total passed students = 140 + 150 + 165 = 455

Total students = 170 + 195 + 200 = 565

$\therefore$ Required percentage $= \frac{455}{565} \times 100$

$= \frac{9100}{113} = 80\frac{60}{113}\%$

21. **(d)** Required percentage $= \frac{20}{170} \times 100$

$= \frac{200}{17} = 11\frac{13}{17}\%$

22. **(d)** Required percentage $= \frac{140}{170} \times 100$

$= \frac{1400}{17} = 82\frac{6}{17}\%$

23. **(c)** Required answer $= \frac{35 \times 30}{100} + \frac{35 \times 15}{100} + \frac{35 \times 15}{100}$

$= \frac{35}{100}(30+15+15) = \frac{35 \times 60}{100} = 21$ Lakhs

24. **(d)** Percentage variation

Model A $\Rightarrow \frac{40-30}{30} \times 100 = 33\frac{1}{3}$

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$$\text{Model B} \Rightarrow \frac{20-15}{15}\times 100 = 33\frac{1}{3}$$

$$\text{Model C} \Rightarrow \frac{15-20}{20}\times 100 = -25$$

25. **(a)** Required difference

$$= \frac{44\times 20}{100} - \frac{35\times 15}{100}$$

$$= \frac{880-525}{100} = \frac{355}{100} \text{ Lakhs} = 355000$$

26. **(b)** Required production

$$= \frac{44\times 30}{100} \text{ Lakhs}$$

$$= 1320000$$

27. **(c)** Required answer

$$= \left(35\times\frac{10}{100}\times\frac{15}{100} + 44\times\frac{10}{100}\times\frac{15}{100}\right) \text{ Lakhs}$$

$$= \left(\frac{150}{10000}\times 79\right) = 1.1850 \text{ Lakhs}$$

$$= 118500$$

28. **(c)** Percentage decrease $= \frac{6-5}{6}\times 100$

$$= \frac{50}{3} = 16\frac{2}{3}$$

29. **(b)** Required radio = 2:6 = 1:3

30. **(a)** Required average sale

$$= ₹\left(\frac{3+4+10+6+6}{5}\right) \text{crores}$$

$$= \left(\frac{29}{5}\right) = ₹5.8 \text{ crores}$$

31. **(d)** Required percentage increase $= \frac{10-4}{4}\times 100 = 150\%$

32. **(b)** Required total sales = ₹ (10 + 6 + 6 + 5) crore = ₹27 crores

33. **(c)** Average number of students in activity III

$$= \frac{65+130+420+75+540+220+153}{7}$$

$$= \frac{1603}{7} = 229$$

Range of number of students in activity IV = 438 − 105 = 333

$\therefore$ required difference = 333 − 229 = 104

34. **(d)** Total number of students in activity II

= 100 + 200 + 200 + 100 + 100 + 100 + 100 = 900

Total number of students in activity IV

= 317 + 155 + 438 + 105 + 385 + 280 + 120 = 1800

$\therefore$ Required percentage $= \frac{900}{1800}\times 100 = 50$

35. **(c)** Arranging the observations of activity III in ascending order:

65, 75, 130, 153, 220, 420, 540

Number of observations = 7(odd)

$\therefore$ Median $= \left(\frac{7+1}{2}\right)$th observation

= fourth observation = 153

36. **(a)** It is obvious from table.

37. **(b)** Required ratio = 900:2000 = 9:20

38. **(a)** Corresponding angle for rice and barley

$= 72° + 36° = 108°$

$\because$ $18° = 300$ acres

$\therefore$ $1° = \frac{300}{18}$

$\therefore$ $108° = \frac{300}{18}\times 108 = 1800$ acres

39. **(a)** $\therefore$ $100\% = 360°$

$\therefore$ $50\% = 180°$

$\therefore$ Wheat + rice + maize $= 72° + 72° + 45° = 189° > 180°$

40. **(c)** Required ratio = 72°:36° = 2:1

41. **(b)** 10% of 72° = 7.2°

$\therefore$ Increase in the corresponding angle of wheat $= \frac{2}{3}\times 7.2 = 4.8°$

$\therefore$ New corresponding angle for wheat = 72° + 4.8° = 76.8°

42. **(a)** Let, the production of bajra be x tonnes.

$\therefore$ Production of jowar = $2x$ tonnes

$\Rightarrow$ Production of rice = $10x$ tonnes

$\therefore$ required ratio $= \frac{10x}{72} : \frac{x}{18} = 5:2$

43. **(c)** It is obvious from the table.

44. **(d)** Total production of rice = (8 + 10 + 4 + 4 + 2) = 28 Lakhs tonnes

Total production of wheat = (16 + 2 + 4 + 2 + 6) = 30 Lakh tonnes

$\therefore$ Required ratio = 28:30 = 14:15

45. **(d)** Difference between the production of rice and wheat in

State A $\Rightarrow$ (16 − 8) = 8 Lakhs tonnes

State B $\Rightarrow$ (10 − 2) = 8 Lakhs tonnes

46. **(b)** State B $\Rightarrow$ 10 Lakhs tonnes

47. **(b)** Average production of rice

$$= \left(\frac{8+10+4+4+2}{5}\right) = \frac{28}{5} \text{ Lakhs tonnes}$$

$= 5.6$ Lakhs tonnes

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48. **(a)** Expenditure on housing = 15%
Expenditure on transport = 5%
Difference = 150000 × (15% − 5%)

$$= 150000 \times \frac{10}{100} = ₹15000$$

49. **(c)** Maximum expenditure of the family other than on food was on others (20%).

50. **(b)** The savings of the family for the year wereequal to the expenditure on housing.

51. **(d)** Total Expenditure = 10% + 12% + 5% = 27%

52. **(d)** Expenditure on food $= 150000 \times \frac{23}{100} = ₹34500$

53. **(b)** Required percentage $= \frac{300}{1200} \times 100\% = 25\%$

54. **(d)** Minimum number of persons were killed = 1000 (In 2009)

55. **(a)** Maximum number of persons were killed inindustrial accidents = 1200 (in 2006)

56. **(b)** Minimum number of persons were killed incoalmines = 150 (in 2007)

57. **(c)** Total number of persons were killed
= 1500 + 1050 + 1300 + 1000 = 4850

$\therefore$ Required average $= \frac{4850}{4} = 1212.5$

58. **(d)** Perimeter= $2\pi r$ or, $2\pi r = 220$

$\therefore \quad r = \frac{220 \times 7}{22 \times 2} = 35$

Angle of the shaded arc $= 360° - 140° = 220°$

Now, area of the sector $= \frac{\theta}{360°} \times \pi \times 35 \times 35$

$$= \frac{220}{360} \times \frac{22}{7} \times 35 \times 35 = \frac{121 \times 175}{9} = \frac{21175}{9}$$

$$= 2352\frac{7}{9} \text{ cm}^2$$

59. **(d)** The number of people who watch Arrow in R, Q and T together

$$\left(\frac{50000 \times 10}{100} + \frac{50000 \times 22}{100} + \frac{20000 \times 20}{100}\right.$$

$$\left. + \frac{20000 \times 16}{100} + \frac{50000 \times 12}{100} + \frac{5000 \times 14}{100}\right)$$

= 5000 + 11000 + 4000 + 3200 + 6000 + 7000 = 36200.
The number of people who do not watch Arrow = 34000 + 12800 + 37000 = 83800

$\therefore$ Difference = 83800 − 36200 = 47600

Quicker Method:

Required difference $= 50000 \times \frac{(68-32)}{100} + 20000 \times \frac{(64-36)}{100} + 50000 \times \frac{(74-26)}{100}$

= 18000 + 5600 + 24000 = 47600

60. **(a)** Total number of males who watch Big Bang Theory

$$= 40000 \times \frac{12}{100} + 20000 \times \frac{10}{100} + 50000 \times \frac{18}{100} + 30000 \times \frac{16}{100} + 50000 \times \frac{22}{100})$$

= 4800 + 2000 + 9000 + 4800 + 11000 = 31600

$\therefore$ Average $= \frac{31600}{5} = 6320$

61. **(d)** Total number of female population who watches Breaking Bad $= \frac{40000 \times 20}{100} = 8000$

Total number of female population

$$= 40000 \times \frac{3}{8} = 15000$$

Required % $= \frac{8000}{15000} \times 100 = \frac{160}{3} = 53\frac{1}{3}\%$

62. **(c)** Total number of people in City R watching Mentalist

$$= \frac{50000 \times 16}{100} + \frac{50000 \times 22}{100} = 8000 + 11000 = 19000$$

Total number of people in City T watching Mentalist

$$= \frac{50000 \times 15}{100} + \frac{50000 \times 20}{100} = 7500 + 10000 = 17500$$

$\therefore$ Required% $= \frac{19000 - 17500}{17500} \times 100$

$$= \frac{1500 \times 100}{17500} = \frac{60}{7} = 8\frac{4}{7}\% \text{ more}$$

63. **(b)** Total number of females who watch Breaking Bad in City Q and S together

$$= \frac{20000 \times 10}{100} + \frac{30000 \times 30}{100} = 2000 + 9000 = 11000$$

Total number of female who watch Mentalist in City Q and S together $= \frac{20000 \times 30}{100} + \frac{30000 \times 12}{100}$

= 6000 + 3600 = 9600

$\therefore$ Required ratio = 11000:9600 = 110:96 = 55:48

64. **(e)** Average number of male teachers

$$= \frac{40 + 30 + 40 + 70}{4} = \frac{180}{4} = 45$$

Average number of female teachers

$$= \frac{90 + 50 + 70 + 30}{4} = \frac{240}{4} = 60$$

$\therefore$ Difference = 60 − 45 = 15

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65. **(d)** GH=14 cm

$JG = \sqrt{(GH)^2 - (HJ)^2}$, $\sqrt{196-49} = \sqrt{147} = 7\sqrt{3}$ cm

Area of the triangle $GHJ = \frac{1}{2} \times 7\sqrt{3} \times 7 = \frac{49\sqrt{3}}{2}$ cm^2

Area of the shaded portion = Area of the triangle GHJ + Area GLK

($\because$ $GLK \approx GHJ$)

= 2 × Area of triangle GHJ

$= 49\sqrt{3}$ cm^2

66. **(d)** Total number of novels sold by Store E

$= \frac{10 \times 63000}{100} = 6300$

Total number of Horror novels sold by Store C

$= \frac{63000 \times 20}{100} - \frac{36000 \times 24}{100} = 12600 - 8640 = 3960$

And total number of Horror novels sold by Store F

$= \frac{63000 \times 8}{100} - \frac{36000 \times 12}{100} = 5040 - 4320 = 720$

$\therefore$ Required ratio = 6300:3960 + 720 = 6300:4680 = 630:468 = 35:26

67. **(b)** Total number of Horror novels sold by B, C, E and F together

$= \left(\frac{63000 \times 18}{100} - \frac{36000 \times 20}{100}\right) + \left(\frac{63000 \times 10}{100} - \frac{36000 \times 8}{100}\right) + \left(\frac{63000 \times 8}{100} - \frac{36000 \times 12}{100}\right)$

= (630 × 18 − 360 × 20) + (630 × 20 − 360 × 24) + (630 × 10 − 360 × 8) + (630 × 8 − 360 × 12)

= (11340 − 7200) + (12600 − 8640) + (6300 − 2880) + (5040 − 4320)

= 4140 + 3960 + 3420 + 720

= 12240

$\therefore$ Required average $= \frac{12240}{4} = 3060$

68. **(d)** Required central angle $= \frac{18}{100} \times 360 = 18 \times 3.6 = 64.8°$

69. **(b)** Number of novels sold by Store F $= \frac{63000 \times 8}{100} = 5040$

Number of Romantic novels sold by B and G together

$= \frac{36000 \times (20+10)}{100} = 360 \times 30 = 10800$

$\therefore$ Required% $= \frac{10800 - 5040}{10800} \times 100$

$= \frac{5760 \times 100}{10800} = 53\frac{1}{3}\%$

70. **(d)** Total number of Romantic novels sold by Store A, D and G together

$= \frac{18+8+10}{100} \times 36000 = 36 \times 360 = 12960$

Total number of Horror novels sold by Store A, D and G together

$= \left(\frac{15 \times 63000}{100} - \frac{18 \times 36000}{100}\right) + \left(\frac{16 \times 63000}{100} - \frac{8 \times 36000}{100}\right) + \left(\frac{13 \times 63000}{100} - \frac{10 \times 36000}{100}\right)$

= (15 × 630 − 18 × 360) + (16 × 630 − 8 × 360) + (13 × 630 − 10 × 360)

= (9450 − 6480) + (10080 − 2880) + (8190 − 3600)

=2970 + 7200 + 4590 = 14760

$\therefore$ Difference = 14760 − 12960 = 1800

71. **(a)** Total number of girls studying IT Engineering from College B, C and D together = 350 + 260 + 325 = 935

Total number of girls studying Electronics Engineering from B, C and D together = 285 + 225 + 255 = 765

$\therefore$ Required% $= \frac{935 - 765}{765} \times 100 = \frac{170}{765} \times 100 = 22\frac{2}{9}$

72. **(a)** The number of girls in College C studying Electronics Engineering = 225

Total number of girls in College C = 225 + 260 = 485

$\therefore$ Required % $= \frac{225}{485} \times 100 = 46.39 \approx 46\%$

73. **(b)** Total number of flats booked in Aurangabad in 2005

$= \frac{460 \times 110}{100} + \frac{520 \times 120}{100} + \frac{340 \times 115}{100}$

= 506 + 624 + 391 = 1521

74. **(b)** Total number of LIG flats booked in Chandigarh = 40

No. of flats booked by the Financial Institution

$= \frac{400 \times 35}{100} = 140$

$\therefore$ Remaining flats = 400 − 140 = 260

Now, number of LIG flats booked by officers from thesoftware company $= \frac{260 \times 6}{13} = 120$

75. **(a)** Total number of MIG flats in Mangalore, Baroda and Nagpur = 460 + 240 + 420 = 1120

Total number of LIG flats booked in Mangalore, Baroda and Nagpur=200 + 320 + 300 = 820

$\therefore$ Required% $= \frac{1120 - 820}{820} \times 100 = \frac{300}{820} \times 100$

$= 36.58 \approx 37\%$

76. **(b)** Total number of MIG flats booked in Allahabad,Mangalore, Nagpur and Aurangabad

= 440 + 460 + 420 + 460

= 1780

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Total number of LIG flats booked in Allahabad, Mangalore, Nagpur and Aurangabad

= 280 + 200 + 300 + 520

= 1300

∴ Difference = 1780 − 1300 = 480

77. (a) Ratio $= \frac{440+360+280}{240+420+320} = \frac{1080}{980} = \frac{108}{98} = 54:49$

78. (a) Average number of selected employees by Company A

$= \frac{150+300+300+500+650+800}{6} = \frac{2700}{6} = 450$

79. (b) Required ratio = 500:400:550 = 10:8:11

80. (c) The number of selected employees for Finance Manager by Company C = 250

And the number of selected employees for Finance Manager by Company B = 200

∴ Required% $= \frac{250-200}{200} \times 100 = \frac{50}{200} \times 100 = 25\%$

81. (d) Required average $= \frac{800+700+660}{3} = \frac{2160}{3} = 720$

82. (a) Required ratio = 300:200:350 = 30:20:35 = 6:4:7

83. (a) Total number of students studying Arts in Institutes A and G together

$= 3800 \times \frac{(15+12)}{100} = 3800 \times \frac{27}{100} = 1026$

84. (c) Number of students studying Arts in Institute

$B = 3800 \times \frac{8}{100} = 304$

Number of students studying Commerce in Institute

$B = 4200 \times \frac{17}{100} = 714$

∴ Total number of students = 304 + 714 = 1018

85. (b) Number of students studying Arts in Institute

$E = 3800 \times \frac{14}{100} = 532$

Number of students studying Commerce in Institute

$E = 4200 \times \frac{18}{100} = 756$

∴ Required ratio = 532:756 = 19:27

86. (c) Number of students studying Arts in Institute E = 532

Number of students studying Commerce in Institute

$D = 4200 \times \frac{14}{100} = 588$

∴ Required ratio $= \frac{532}{588} = 19:21$

87. (b) Total number of students studying Commerce in Institutes B and D together

$= 4200 \times \left(\frac{17+14}{100}\right) = 42 \times 31 = 1302$

88. (a) Total marks obtained by Umesh in all subjects together

$= 50 \times \frac{82}{100} + 50 \times \frac{67}{100} + 150 \times \frac{92}{100} + 100$

$\times \frac{87}{100} + 75 \times \frac{69}{100} + 75 \times \frac{76}{100}$

$= 41 + 33.5 + 138 + 87 + 51.75 + 57$

= 408.25

∴ Required% $= \frac{408.25}{500} \times 100 = 81.65\% \approx 80\%$

89. (b) Average percentage marks obtained by all the students in Hindi

$= \frac{88+92+76+83+65+72}{6} = \frac{476}{6} = 79.33\%$

90. (c) Average marks obtained by all the students in Mathematics

$= \frac{150 \times (69+85+92+78+64+88)}{100 \times 6} = \frac{150 \times 476}{600}$

$= \frac{476}{4} = 119$

91. (d) Average marks obtained by all the students in Geography

$= \frac{50 \times (85+80+67+72+76+87)}{100 \times 6}$

$= \frac{470 \times 50}{600} = \frac{235}{6} = 39.16$

92. (e) Total marks obtained by Ritesh in all the subjects together

$= 50 \times \frac{79}{100} + \frac{50 \times 87}{100} + \frac{88 \times 150}{100} +$

$\frac{93 \times 100}{100} + \frac{75 \times 82}{100} + \frac{72 \times 75}{100}$

$= 34.5 + 43.5 + 132 + 93 + 61.5 + 54$

= 423.5.

93. (a) Male employees

in Company A $\rightarrow 760 \times \frac{13}{19} = 520$

in Company B $\rightarrow 840 \times \frac{4}{7} = 480$

in Company C $\rightarrow 720 \times \frac{7}{15} = 336$

in Company D $\rightarrow 640 \times \frac{9}{20} = 288$

in Company E $\rightarrow 700 \times \frac{23}{35} = 460$

∴ Total number of male employees

= 520 + 480 + 336 + 288 + 460 = 2084

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94. **(b)** Female employees

in Company A $\rightarrow 760 \times \frac{6}{19} = 240$

in Company B $\rightarrow 840 \times \frac{3}{7} = 360$

in Company C $\rightarrow 720 \times \frac{8}{15} = 384$

in Company D $\rightarrow 640 \times \frac{11}{20} = 352$

in Company E $\rightarrow 700 \times \frac{12}{35} = 240$

$\therefore$ Average $= \frac{240 + 360 + 384 + 352 + 240}{5}$

$= \frac{1576}{5} = 315.2 \approx 315$

95. **(c)** Male employees in Companies A and C = 520 + 336 = 856.

Female employees in Companies B and D = 360 + 352 = 712

$\therefore$ Difference = 856 − 712 = 144

96. **(d)** Required ratio $= \frac{352}{240} = 22:15$

97. **(a)** Required percentage

$= \frac{720 - 640}{640} \times 100 = \frac{80}{640} \times 100 = 12.5\%$

***Solutions* (*Q.* 177–181):**

Speed of vehicle A on first day $= \frac{832}{16} = 52$ Km/h

Speed of vehicle A on second day $= \frac{864}{16} = 54$ Km/h

Speed of vehicle B on first day $= \frac{516}{12} = 43$ Km/h

Speed of vehicle B on second day $= \frac{774}{18} = 43$ Km/h

Speed of vehicle C on first day $= \frac{693}{11} = 63$ Km/h

Speed of vehicle C on second day $= \frac{810}{18} = 45$ Km/h

Speed of vehicle D on first day $= \frac{552}{12} = 46$ Km/h

Speed of vehicle D on second day $= \frac{765}{15} = 51$ Km/h

Speed of vehicle E on first day $= \frac{935}{17} = 55$ Km/h

Speed of vehicle E on second day $= \frac{546}{14} = 39$ Km/h

Speed of vehicle F on first day $= \frac{703}{19} = 37$ Km/h

Speed of vehicle F on second day $= \frac{636}{12} = 53$ Km/h

98. **(d)** The speed of vehicle B on both the days is 43 Km/h.

99. **(c)** Speed of A on first day = 52 Km/h

Speed of C on first day = 63 Km/h

$\therefore$ Difference = 65 − 52 = 11 Km/h

100. **(e)** Speed of vehicle C on second day = 45 Km/h

$= 45 \times \frac{5}{18} = 2.5 \times 5 = 12.5$ m/sec

101. **(e)** Required percentage $= \frac{636}{703} \times 100 = 90.46 \approx 90\%$

102. **(b)** Required Ratio $= \frac{\text{Speed of Vehicle D on day 2}}{\text{Speed of Vehicle E on day 2}}$

$= \frac{51}{39} = \frac{17}{13} = 17:13$

103.(c) Total number of mobiles sold in the month of July

$= 45000 \times \frac{17}{100} = 7650$

Mobile phones sold by Company B in the month of July

$= 7650 \times \frac{7}{15} = 3570$

Total numbers of mobile phones sold in the month of December $= 45000 \times \frac{16}{100} = 7200$

Mobile phones sold by Company B in the month of December $= 7200 \times \frac{9}{16} = 4050$

$\therefore$ Required ratio $= \frac{3570}{4050} = \frac{357}{405} = \frac{119}{135} = 119:135$

104. **(c)** Number of mobile phones sold in the month of November $= 45000 \times \frac{12}{100} = 5400$

Number of mobile phones sold by Company A in the month of November $= 5400 \times \frac{7}{15} = 2520$

$\therefore$ Number of mobile phones sold without discount in the month of November by Company A

$= 2520 \times \frac{65}{100} = 2520 \times 0.65 = 1638$

105. **(d)** Number of mobile phones sold in the month of October $= 45000 \times \frac{8}{100} = 3600$

$\therefore$ Number of mobile phones sold by Company B in the month of October $= 3600 \times \frac{5}{12} = 1500$

$\therefore$ Total profit earned by Company B in the month of October $= 1500 \times 433 = 649500$

106. **(e)** Number of mobile phones sold in the month of July

$= 45000 \times \frac{17}{100} = 7650$

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Number of mobile phones sold by Company A in the month of July $= 7650 \times \frac{8}{15} = 4080$

Number of mobile phones sold in the month of December $= 45000 \times \frac{16}{100} = 7200$

Number of mobile phones sold by Company A in the month of December $= 7200 \times \frac{7}{16} = 3150$

$\therefore$ Required% $= \frac{4080}{3150} \times 100 = 129.52 \approx 130$

107. (a) Number of mobile phones sold in the month of August $= \frac{22}{100} \times 45000 = 9900$

Number of mobile phones sold in the month of September $= \frac{25}{100} \times 45000 = \frac{1}{4} \times 45000 = 11250$

Number of mobile phones sold by Company B in the month of August $= 9900 \times \frac{5}{9} = 5500$

Number of mobile phones sold by Company B in September $= 11250 \times \frac{2}{5} = 4500$

Total number of mobile phones sold in August and September by Company B = 5500 + 4500 = 10000

Quicker Method:

Total number of mobile phones sold by Company B in August and September

$= \left(\frac{22}{100} \times 45000 \times \frac{5}{9} + \frac{25}{100} \times 4500 \times \frac{2}{5} \right) = 10000$

108. (d) Production of Company A in the year 2009 = 550

Production of Company A in year the 2010 = 700

Required% $= \frac{700 - 550}{550} \times 100 = \frac{150}{550} \times 100$

$= \frac{300}{11} = 27.27 \approx 27\%$

109. (b) Sales of Company A in the year 2009 = 400

Production of Company A in the year 2009 = 550

Required% $= \frac{400}{550} \times 100 = \frac{800}{11} = 72.72 \approx 73\%$

110. (c) Average production of Company B

$= \frac{600 + 700 + 800 + 600 + 650 + 700}{6}$

$= \frac{4050}{6} = 675$

111. (e) Required ratio $= \frac{\text{Total Production of Company A}}{\text{Total Sales of Company A}}$

$= \frac{4050}{2750} = \frac{81}{55} = 81:55$

112. (c) Production of Company B in the year 2006 = 150 × 4 = 600

Production of Company *B* in the year 2008 = 200 × 4 = 800

Ratio $= \frac{600}{800} = 3:4$

113. (e) Number of men visiting supermarket *D*

= 41% of 55500

$= \frac{41 \times 55500}{100} = 41 \times 555 = 22755$

Total number of people visiting all the supermarkets together

= 34560 + 65900 + 45640 + 55500 + 42350 + 59650

= 303600

$\therefore$ Required percentage $= \frac{22755}{303600} \times 100$

= 7.5% (Approx).

114. (d) Number of children visiting supermarket *C*

$= 20\%$ of $45640 = \frac{20 \times 45640}{100} = 9128$

Number of children visiting supermarket *F*

$= 14\%$ of $59650 = \frac{14 \times 59650}{100} = 8351$

$\therefore$ Required percentage $= \frac{9128}{8351} \times 100 = 109.30\%$

115. (c) Total number of children visiting supermarket *B* and *D* together

= 20% of 65900 + 33% of 55500

$= \frac{20 \times 65900}{100} + \frac{33 \times 55500}{100}$

= 13180 + 18315 = 31495

116. (a) Total number of women

= 55% of 34560 + 43% of 65900 + 45% of 45640 + 26% of 55500 + 70% of 42350 + 62% of 59650

= 19008 + 28337 + 20538 + 14430 + 29645 + 36983

= 148941

$\therefore$ Required average $= \frac{148941}{6} = 24823.5$

117. (e) Required ratio = 19008:20538 = 1056:1141

118. (c) Difference of corresponding angles

= (122.4 + 21.6)° − (79.2 + 14.4)° = 50.4°

$\therefore$ Required difference $= \frac{50.4}{360} \times 6800 = 952$

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119. **(a)** Required Ratio = 21.6:79.2 = 3:11

120. **(d)** Required percentage $= \left(\frac{64.8+21.6}{360}\right)\times 100 = 24\%$

121. **(b)** Required percentage $= \frac{14.4}{122.4}\times 100 = 11.76 \approx 12\%$

122. **(a)** Number of students who prefer beverages *B* and *E* together

$$= \left(\frac{57.6+64.8}{360}\right)\times 6800 = \frac{122.4\times 6800}{360} = 2312$$

123. **(b)** Total marks of Anuska

$$= \frac{150\times 66}{100} + 75 + \frac{150\times 88}{100} + \frac{56\times 125}{100} + \frac{56\times 75}{100} + 45$$

= 99 + 75 + 132 + 70 + 42 + 45 = 463

124. **(c)** Marks obtained by Garvita in Brand Management = 88% of 100 = 88

Marks obtained by Archita in Brand Management = 76% of 100 = 76

$\therefore$ Required percentage $= \frac{88}{76}\times 100 \approx 115.79\%$

125. **(a)** Average marks obtained by all the students together in Compensation Management

$$= \frac{\begin{pmatrix}\text{Total percentage of marks}\\ \text{obtained by all the students}\\ \text{in Compensation Management}\end{pmatrix}\times\begin{pmatrix}\text{Maximum marks in}\\ \text{Compensation}\\ \text{Management}\end{pmatrix}}{100\times \text{Total number of students}}$$

$$= \left(\frac{88+84+78+96+68+50}{6\times 100}\times 150\right)$$

$$= \frac{464}{600}\times 150 = 116$$

126. **(d)** Total marks obtained in all subjects together by

Arpan: 76% of 150 + 66% of 100 + 78% 0f 150 + 88% of 125 + 72% of 75 + 70% of 50

$$= \frac{76\times 150}{100} + \frac{66\times 100}{100} + \frac{78\times 150}{100} + \frac{88\times 125}{100} + \frac{72\times 75}{100} + \frac{70\times 50}{100}$$

= 114 + 66 + 117 + 110 + 54 + 35 =496

Archit: 82% of 150 + 76% of 100 + 84% of 150 + 96% of 125 + 92% of 75 + 88% of 50

$$= \frac{82\times 150}{100} + \frac{76\times 100}{100} + \frac{84\times 150}{100} + \frac{96\times 125}{100} + \frac{92\times 75}{100} + \frac{88\times 50}{100}$$

= 123 + 76 + 126 + 120 + 69 + 44 = 558

Garvita: 90% of 150 + 88% of 100 + 96% of 150 + 76% of 125 + 84% of 75 + 86% of 50

$$= \frac{90\times 150}{100} + \frac{88\times 100}{100} + \frac{96\times 150}{100} + \frac{76\times 125}{100} + \frac{84\times 75}{100} + \frac{86\times 50}{100}$$

= 135 + 88 + 144 + 95 + 63 + 43 = 568

Gunit: 64% of 150 + 70% of 100 + 68% of 150 + 72% of 125 + 68% of 75 + 74% of 50

$$= \frac{64\times 150}{100} + \frac{75\times 100}{100} + \frac{68\times 150}{100} + \frac{72\times 125}{100} + \frac{68\times 75}{100} + \frac{74\times 50}{100}$$

= 96 + 70 + 102 + 90 + 51 + 37 = 446

Pranita: 48% of 150 + 56% of 100 + 50% of 150 + 64% of 125 + 64% of 75 + 58% of 50

$$= \frac{48\times 150}{100} + \frac{56\times 100}{100} + \frac{50\times 150}{100} + \frac{64\times 125}{100} + \frac{64\times 75}{100} + \frac{58\times 50}{100}$$

= 72 + 56 + 75 + 80 + 48 + 29 = 360

Clearly, Garvita scored the highest total marks in all the subjects together.

Quicker approach: If you look at the table carefully and compare the percentage marks obtained in all the subjects by Arpan, Gunit and Pranita from the percentage marks obtained in the respective subjects by Archita and Garvita, we find that these students (Arpit, Gunit and Pranita) obtained less percentage marks than the percentage marks obtained by Archit and Garvita. Therefore, now we need to calculate total marks of Archit and Garvita only. In such a way we may save a few precious minutes.

127. **(b)** Archit (consumer behaviour and service marketing) and Garvita (strategic management, brand management and compensation management).

128. **(d)** Number of students who opted for all three subjects in 2009

= (20 + 20 + 5) thousand = 45000

Number of boys $= \frac{45000\times 62}{100} = 27900$

Since, we don't know the number of girls in Mathematics, Number of boys opted for Mathematics cannot be determined.

129. **(b)** Required percentage $= \frac{(15+10+15)\times 1000}{455030}\times 100$

$$= \frac{40000}{455030}\times 100 \approx 9$$

130. **(e)** Required number of students

= (5 + 35 + 15 + 15 + 20 + 5) × 1000

= 95 × 1000 = 95000

131. **(d)** Required percentage

$$= \left[\frac{(15+30)\times 1000}{\{(5+35+15)+(25+30+30)\}\times 1000}\right]\times 100$$

$$= \left(\frac{(15+30)}{(55+85)}\right)\times 100 = \frac{45}{100}\times 100 \approx 32$$

132. **(a)** Required ratio = (25 + 30):(5 + 20) = 55:25 = 11:5

133. **(b)** Profit earned by Company *B* in 2006 is 65% of investment or 812500.

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$\therefore$ Income $= \frac{812500}{65} \times 165 = 2062500$

134. (c) Let, the amount invested by Companies A and B in the year 2005 be ₹x each.

Income of A in 2005 = $1.70x$

Income of B in 2005 = $1.55x$

$$\text{Ratio} = \frac{A}{B} = \frac{1.70x}{1.55x} = \frac{34}{31}$$

135. (b) Amount invested by Company B in 2009

$$= \frac{1}{3} \times 27 \times 10^5 = 9 \text{ Lakhs}$$

Amount invested by Company A in 2009

$$= \frac{2}{3} \times 27 \times 10^5 = 18 \text{ Lakhs}$$

Profit earned by Company B

$$= \frac{80}{100} \times 9 \times 10^5 = 72 \times 10^4$$

Profit earned by company A

$$= \frac{75}{100} \times 18 = 13.5 \text{ Lakhs}$$

Total profit = 13.5 + 7.2 = 20.7 Lakhs

136. (a) Income of A in 2007 $= \frac{145}{100} \times 12 \times 10^5 = 174 \times 10^4$

Amount invested in 2008 $= \frac{174 \times 10^4}{160} \times 100 = 1087500$

137. (e) Let, total investment be ₹x.

Now, 55% of $x = 10.15 \times 10^5$

$$\Rightarrow \quad x = \frac{10.15 \times 10^5}{55} \times 100 = 1845454$$

138. (c) Income of Company B in 2004

$= 1.55 \times 12 \times 10^5 = 18.6$ Lakhs.

Investment in 2005 = 18.6 Lakhs

Profit earned in 2005 $= \frac{55}{100} \times 18.6 \times 10^5 = 10.23$ Lakhs

139. (a) Investment of Company A in $2008 = \frac{24 \times 10^5}{1.60}$

= 15 Lakhs

Profit in 2008 = 24 − 15 = 9 Lakhs

Profit in $2007 = \frac{45}{100} \times 15 \times 10^5 = 6.75$ Lakhs

Required answer = 9 − 6.75 = 2.25 Lakhs

140. (d) Required answer $= \frac{\frac{90}{100} \times 25 \times 10^5 + \frac{70}{100} \times 25 \times 10^5}{2}$

$$= \frac{25 \times 10^5}{100}\left[\frac{90+70}{2}\right]$$

$$= 25 \times 10^3 \times 80 = 20 \text{ Lakhs}$$

142. (e) Required average

$$= \frac{5200 + 8400 + 7600 + 2600 + 3800 + 4400 + 6000}{7}$$

$$= \frac{38000}{7} = 5428.5 \approx 5500$$

143. (d) Number of candidates eligible for post I

= 100(25 + 32 + 28 + 24 + 30 + 48 + 65)

= 25200

Number of candidates shortlisted for post I

= 65 + 220 + 280 + 85 + 120 + 325 + 550

= 1645

$\therefore$ Required answer $= \frac{1645}{25200} \times 100 = 6.52\%$

144. (a) Number of candidates shortlisted from state E for all the posts = 120 + 280 + 75 + 280 + 260 + 520 = 1535

Number of candidates shortlisted form state G for all posts = 550 + 140 + 325 + 220 + 410 + 200 = 1845

Required answer $= \frac{1535}{1845} = \frac{307}{369}$

145. (e) Total number of candidates eligible from all states for post I = 25200

Total number of candidates eligible from all states for post VI = 39400

Required answer $= \frac{25200}{39400} \times 100 = 63.9\%$

147. (c) Total candidates shortlisted for post V = 1650

Total candidates shortlisted for post VI = 2780

Required ratio $= \frac{1650}{2780} = \frac{165}{278}$

	English	Hindi	Both	Total
Boys	24	18	108	150
Girls	55	78	117	250
Total	79	96	225	400

148. (b) 18 + 108 = 126

150. (a) 79 + 225 = 304

151. (e) $\frac{78}{96} \times 100 = 81.25\%$

152. (c) Ratio $= \frac{108}{117} = \frac{12}{13}$

153. (c) Area of the circle = πr^2 = 616

$\Rightarrow \quad r^2 = 196$

$\Rightarrow \quad r = 14$ cm

Length of the rectangle = Diameter of the circle.

Breadth of the rectangle = Radius of the circle

Area of the rectangle = 28 × 14 = 392 cm^2

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154. (a) The total population of all cities = 85 million
Total males in all cities = 43.4 million
Total females = 85 – 43.4 = 41.6 million

Average female population $= \frac{41.6}{5} = 8.32$ million

155. (b) $\frac{(1300-1100)}{1100} \times 100 = 18.18\%$

156. (d) $\frac{72}{100} \times 550 = 396$

157. (d) Required percentage $= \frac{(9-8)\times 100}{8} = 12.5\%$

158. (a) Students enrolled in 2008 in all three districts = 8000 + 6000 + 7000 = 21000
Students enrolled in district *B* over all the years together = 5000 + 4000 + 7000 + 6000 + 4000 + 7000 = 33000
Difference = 33000 – 21000 = 12000

159. (b) Required average $= \frac{1000(3+5+6+8+7+5)}{6}$

$= \frac{1000\times 34}{6} = 5666$

160. (c) Total number of students:

Year	Number of students (in thousand)
2005	14
2006	17
2007	22
2008	21
2009	16
2010	18

161. (a) Required percentage $= \frac{(5+7)}{8} \times 100 = 150\%$

162. (b) Difference between the appeared candidates and qualified candidates in the zone *S*:

Year	Difference
2005	(4.2 – 2.4) × 100 = 180
2006	(7.4 – 3.3) × 100 = 410
2007	(8.3 – 5.6) × 100 = 270
2010	(14.2 – 11.4) × 100 = 280

163. (e) Required percentage $= \frac{7.4}{5.4} \times 100 = 137\%$

164. (d) Required average

$= \frac{100(6.2+6.2+6.4+7.8+9.9+11.8)}{6} = 805$

165. (a) Required ratio $= \frac{3.2}{5.6} = \frac{4}{7}$

166. (e) Number of candidates qualified in the years 2009 and 2010 together:
Zone *S*: (11.4 + 5.2) × 100 = 16.6 × 100 = 1660
Zone *T*:: (6.9 + 9.4) × 100 = 16.3 × 100 = 1630

167. (a) Average number of passengers travelling in trains *A*, *C* and *F*

$= \left(\frac{12+17+22}{3}\right)\%$ of 4800

$= 17\%$ of $4800 = \frac{17}{100} \times 4800 = 816$

168. (b) Total amount paid by passengers of train *B*

$= 124 \times \frac{9}{100} \times 4800 = ₹53568$

169. (a) Required percentage $= \frac{19}{9+21} \times 100 = 63.33\% \approx 63\%$

170. (e) Required difference = (17 – 12)% of 4800 = 5% of 4800

$= \frac{5}{100} \times 4800 = 240$

171. (c) Required number of passengers
= (21 + 19 + 22)% of 4800 = 62% of 4800

$= \frac{62}{100} \times 4800 = 2976$

172. (c) Required percentage increase $= \frac{(13.9-11.6)}{11.6} \times 100$

$= \frac{2.3}{11.6} \times 100 = 19.82\% \approx 20\%$

173. (b) Required average fee

$= \frac{1000(5.8+6.4+10.2+14.6+17.7+20.9)}{6}$

$= \frac{1000\times 75.6}{6} = 12600$

174. (d) Total fees of diploma over all the years
= 1000 (1.8 + 3.2 + 4.8 + 5.6 + 12.5 + 14.9)
=42800
Fees of BTech for 2009 = 35800
Difference = 42800 – 35800 = 7000

175. (e) Required percentage $= \frac{12.7}{17.7} \times 100 = 71.75\% \approx 72\%$

176. (b) Total fee charged in the year 2006
= 1000(14.5 + 6.4 + 11.6 + 5.8 + 3.2)
= 1000 × 41.5 = 41500

177. (d) Number of girls in

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School C: $\frac{6000\times 26}{100}-900=1560-900=660$

School E $\frac{6000\times 29}{100}-1200=1740-1200=540$

$\therefore$ Required answer = 660 + 540 + 600 = 1800

178. (c) Number of girls in school $B=\frac{6000\times 9}{100}-400$
= 540 − 400 = 140

Number of students in school $E=\frac{6000\times 29}{100}=1740$

$\therefore$ Required ratio = 900:140:1740 = 45:7:87

179. (e) Required difference $=1200-\frac{6000\times 6}{100}$
= 1200 − 360 = 840

180. (b) Number of students in school $B=\frac{6000\times 9}{100}=540$
= Number of girls in School E

181. (e) Number of girls in school A

$=\frac{6000\times 12}{100}-500=720-500=220$

$\therefore$ Required percentage $=\frac{220}{540}\times 100=41$

182. (e) Required percentage

$=\frac{34}{(15+19+24+21+34+27}\times 100$

$=\frac{34}{140}\times 100\approx 24$

183. (e) Required difference = (27 − 21) × 10^3 = 6000

184. (d) Required average

$=\left(\frac{35+21+19+32+26+20}{6}\right)\times 10^3$

$=\frac{153}{6}\times 10^3=25500$

185. (a) Required percentage $=\frac{34}{20}\times 100=170\%$

186. (a)

Mumbai	Delhi	Kolkata	Chennai	Hyderabad	Lucknow
114	101	113	133	127	123

187. (d) Number of boys in schools R and U together

$=\frac{(2000\times 72.5+1000\times 82.5)}{100}=1450+825=2275$

Required percentage $=\frac{2275}{3000}\times 100=75.83\%$

188. (c) Number of boys in school $T=\frac{1250\times 60}{100}=750$

189. (a) Required percentage

$=\frac{2000}{2250}\times 100\approx 89\%$

190. (b) Required average

$=\frac{1}{2}\left(\frac{2500\times 60}{100}+\frac{3000\times 55}{100}\right)=\frac{1}{2}(1500+1650)$

$=\frac{1}{2}\times 3150=1575$

191. (c) Required ratio

$=2500\times\frac{40}{100}:3000\times\frac{45}{100}$

= 25 × 40:30 × 45 = 20:27

192. (c) Average marks obtained by F

$=\frac{\left(74\times\frac{75}{100}+68\times\frac{80}{100}+42\times\frac{125}{100}\right)}{3}$

$=\frac{(129.5+54.4+52.5)}{3}=\frac{236.4}{3}=78.8$

193. (d) Average marks obtained by all students in Science

$=\frac{(91+87+81+70+49+42)}{6}\times\frac{125}{100}$

$=\frac{49\times\frac{5}{4}}{6}=\frac{525}{6}=87.5$

194. (b) Percentage

$=\frac{6.0-5.1}{5.1}\times 100=\frac{9}{51}\times 100=\frac{300}{17}=17.6\approx 18$

195. (a) Average production

$=\frac{(4.9+3.7+4.7+4.3+3.1+3.9)}{6}$

$=\frac{24.6}{6}=4.1$ tonnes

196. (d) Total sugar produced in 2006 = 17.5 tonnes
Total sugar produced in 2007 = 20 tonnes
Required ratio = 17.5:20 = 7:8

197. (d) Average production of R for all the years together

$=\frac{36.6}{6}=6.1$ tonnes

198. (c) Required difference
= (7.4 − 5.6) + (6.2 − 4.4) + (8.3 − 5.8)
= 1.8 + 1.8 + 2.5 = 6.1 tonnes

199. (e) Ratio of the expenditure made by the university on research work and that on purchase of books for library
= (8% of 60 Lakhs):(6% of 60 Lakhs)
= 8:6 = 4:3

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200. (b) Required expenditure
= (8 + 24 + 6)% of 60 Lakhs

$= 38 \times \frac{60}{100}$ Lakhs = 22.8 Lakhs

201. (b) Required difference = (15 – 10)% of 60 Lakhs

$= \frac{5 \times 60}{100}$ Lakhs = 3 Lakhs

202. (b) Expenditure before decrease = 24% of 60 Lakhs = ₹14.4 Lakhs

Decrease in expenditure = 7% of 14.4 Lakhs = ₹1.008 Lakhs

Present expenditure = ₹(14.4 – 1.008) Lakhs = ₹13,39,200

204. (c) Percentage rise in number of students from college A in 2004

$= \frac{40-20}{20} \times 100 = 100\%$

Similarly, percentage rise in number of students from college B in 2004

$= \frac{60-30}{30} \times 100 = 100\%$

205. (d) Number of students in college A in the years 2004, 2006 and 2007 = 160 × 10^3

Also, number of students in college B in the year 2003, 2004 and 2008 = 175 × 10^3

Required ratio = 160:175 = 32:35

208. (c) $\text{Required\%} = \frac{85}{390} \times 100 = 21.79\%$

209. (e) Number of products manufactured in 2009 = (52.5) × 10^3

Number of products manufactured in 2008 = (47.5) × 10^3

Required difference = (52.5 – 47.5) × 10^3 = 5000

210. (a) Required percentage $= \frac{25}{35} \times 100 = 71.43\%$

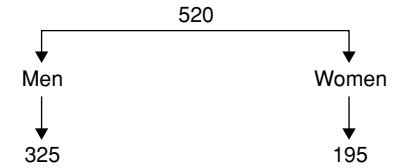
211. (b) Required percentage $= \left(\frac{40-30}{30}\right) \times 100 = 33.33\%$

212. (c) Required ratio = (45 – 42.5):(37.5 – 30) = 2.5:7.5 = 1:3

213. (d) Required average

$= \frac{(35 + 37.5 + 42.5 + 45 + 47.5 + 52.5)}{6}$

$= \frac{260}{6} \times 10^3 = 43330$



HR	IT	Production	Marketing
13	65	130	117
78	78	5	34

214. (a) Required percentage $= \frac{117}{520} \times 100 = 22.5\%$

215. (e) Required ratio = 13:78 = 1:6

217. (d) Required percentage $= \frac{135}{520} \times 100 = 25.96 \approx 26\%$

219. (e) Total executives recruited were 2953.

220. (d) Required ratio = 1044:998 = 522:499

221. (a) Required average number of executives

$= \frac{2965}{6} \approx 494$

222. (b) Required percentage increase

$= \frac{54}{418} \times 100 = 12.919 \approx 12.92\%$

223 (c) Required percentage $= \frac{510}{2854} \times 100 \approx 18\%$

224. (c) Required ratio = 475:425 = 19:17

225. (d) Total distance covered by all the trucks = 2375 Km
Average distance covered by all the trucks

$= \frac{2375}{5} = 475$

226. (b) Total distance covered by A = 475 Km

Time taken $= \frac{475}{47.5} = 10$ hours

227. (d) Total distance covered by E = 575 Km
Total distance covered by B and C together
= 350 + 550 = 900 Km

Required percentage $= \frac{575}{900} \times 100 \approx 64\% \approx 62\%$

228. (d) Required speed $= \frac{550}{8} = 68.75$ Km/h

229. (c) Analysing the table we find three villages L, O and Q for which the number of children can be the least.

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Village	*L*	*O*	*Q*
No. of children	248	252	199

230. (d) Required ratio

$$=\left(1240\times\frac{45}{100}+2060\times\frac{40}{100}\right):\left(1240\times\frac{45}{100}+2060\times\frac{40}{100}\right)$$

$= (558 + 824):(434 + 824)$

$= 1382:1258 = 691:629$

231. (e) Total number of children and women in village Q = 60% of 1990 = 1194.

232. (a) Required percentage $=\frac{1680}{10560}\times 100\approx 16\%$.

233. (b) Required number

$$=2140\times\frac{1}{4}+1450\times\frac{1}{5}=535+290=825$$

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