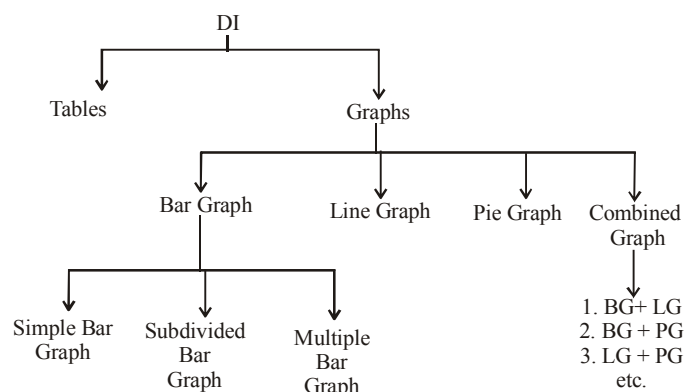


Data Interpretation

INTRODUCTION

Data Interpretation questions are based on the information given in the tables and graphs.

Classification of Data Interpretation



TABLES

A table is one of the easiest way for summarising data. A statistical table is the logical listing of related quantitative data in vertical columns and horizontal rows of numbers with sufficient explanatory and qualifying words, phrases and statements in the form of titles, heading and notes to make clear the meaning of data.



REMEMBER

$$\text{Average} = \frac{\text{Sum of all items}}{\text{Total number of items}}$$

λ = The bars are drawn proportional in length to the total and then divided in the ratios of their components.

% change (increase or decrease)

$$= \frac{\text{Final value} - \text{Initial value}}{\text{Initial value}} \times 100$$

GRAPHS

Graphs are a convenient way to represent information. The graphs should be labelled properly to show what part of the graphs shows what a value.

1. Bar Graph

Bar diagram consists of a number of equidistant rectangles. One for each category of the data in which the magnitudes are represented by the length or height of rectangle, whereas

width of rectangles are immaterial. Thus, a bar is just one dimensional as only the length of the bar is to be considered and not the width. All the bars drawn in a diagram are generally of uniform width which depends on the number of bars to be constructed and the availability of the space.

Types of Bar Graphs are–

(i) Simple Bar Graph

It is used to represent only one dependent variable.

(ii) Sub-divided Bar Graphs

These are used to represent the break down of a total into its component bars. A bar is divided into different segments, each segment represents a given component. Different shades, colours, designs etc. are used to distinguish the various components. An index is given to represent the various components. To compare, the order of various components in the different bars is same.

(iii) Multiple Bar Graph (MBG)

When a combination of inter-related variables are to be represented graphically, multiple bar diagrams are used. These are extended form of simple bar diagrams. In M.B.G. many aspects of the data are presented simultaneously with separated bars or various shades of colours. An index is given to explain the shades or colours used.

2. Line Graph (LG)

LG are used to show how a quantity changes, very often the quantity is measured as time changes. If the line goes up, the quantity is increasing and the line goes down, the quantity is decreasing. If the line is horizontal, the quantity is not changing.

3. Pie Graph (PG)

It is a pictorial representation of numerical data by non-intersecting adjacent sectors of a circle sector's area of each sector is proportional to the magnitude of the data represented by the sector.

$$1\% \text{ of total value} = \frac{360}{100} = 3.6^\circ$$

The % of components parts can be converted to degrees by multiplying 3.6° .

Degree of any component part

$$= \frac{\text{component value}}{\text{total value}} \times 360$$

EXERCISE

Directions (Qs.1-5): Study the following table to answer the given questions:

Percentage of marks obtained by seven students in six subjects

Subject (Max, Marks ↓ Students)	Eng	His	Com	Math	Science	Econ
	(100)	(100)	(100)	(100)	(100)	(100)
Meera	100	80	50	90	90	60
Subodh	80	70	80	100	80	40
Kunal	90	70	60	90	70	70
Soni	60	60	65	80	80	80
Richu	50	90	62	80	85	95
Irene	40	60	64	70	65	85
Vgay	80	80	35	65	50	75

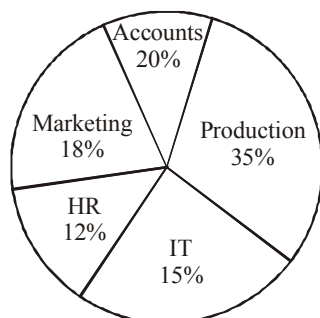
- What is the total marks obtained by Meera in all the subject?
(a) 448 (b) 580
(c) 470 (d) 74.67
(e) None of these
- What is the average marks obtained by these seven students in History? (rounded off to two digits)
(a) 72.86 (b) 27.32
(c) 24.86 (d) 29.14
(e) None of these
- How many students have got 60% or more marks in all the subjects?
(a) One (b) Two
(c) Three (d) Four
(e) None of these
- What is the overall percentage of Kunal ?
(a) 64 (b) 65
(c) 75 (d) 64.24
(e) None of these
- In which subject is the overall percentage the best ?
(a) Maths (b) Economics
(c) History (d) Science
(e) None of these

Directions (Qs. 6- 10): Study the given pie-charts carefully to answer the questions that follow :

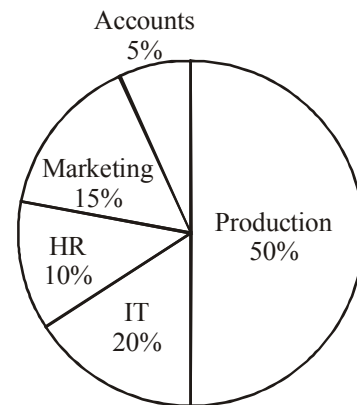
Breakup of Number of Employees working in Different Departments of an Organisation, the Number of Males and the Number of Employees Who Recently Got Promoted. In Each Department Break-UP of Employees Working In Different Departments:

Total Number of Employees = 3,600

Employees Working in Different Departments

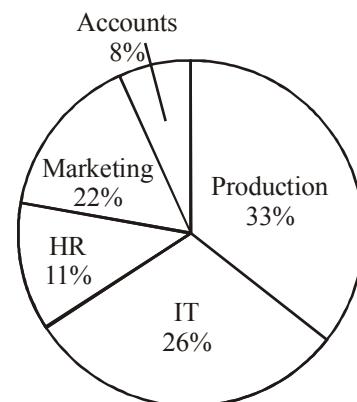


Break-UP of Number of Males In Each Department Total Number Of Males In the Organisation = 2,040 Break-UP of Number of Males Working In Each Department



Break-UP of Number of Employees who recently got promoted In Each Department

Total Number of Employees who got promoted = 1,200 Number of Employees Who Recently Got Promoted From Each Department



- If half of the number of employees who got promoted from the IT department were males, what was the **approximate** percentage of males who got promoted from the IT department?
(a) 61 (b) 29
(c) 54 (d) 42
(e) 38
- What is the total number of females working in the Production and Marketing departments together ?
(a) 468 (b) 812
(c) 582 (d) 972
(e) None of these
- How many females work in the Accounts department ?
(a) 618 (b) 592
(c) 566 (d) 624
(e) None of these

9. The total number of employees who got promoted from all the departments together was what percent of the total number of employees working in all the departments together ? (Rounded off to the nearest integer)
- (a) 56 (b) 21
(c) 45 (d) 33
(e) 51
10. The number of employees who got promoted from the HR department was what percent of the total number of employees working in that department ? (rounded off to two digits after decimal)
- (a) 36.18 (b) 30.56
(c) 47.22 (d) 28.16
(e) None of these

Directions (Qs. 11 - 15): Study the information carefully to answer the questions that follow:

A school consisting of a total of 1560 students has boys and girls in the ratio of 7 : 5 respectively. All the students are enrolled in different types of hobby classes, viz: Singing, Dancing and Painting. One-fifth of the boys are enrolled in only Dancing classes. Twenty percent of the girls are enrolled in only Painting classes. Ten percent of the boys are enrolled in only Singing classes. Twenty four percent of the girls are enrolled in both Singing and Dancing classes together. The number of girls enrolled in only Singing classes is two hundred percent of the boys enrolled in the same. One-thirteenth of the boys are enrolled in all the three classes together. The respective ratio of boys enrolled in Dancing and Painting classes together to the girls enrolled in the same is 2 : 1 respectively. Ten percent of the girls are enrolled in only Dancing classes whereas eight percent of the girls are enrolled in both Dancing and Painting classes together. The remaining girls are enrolled in all the three classes together. The number of boys enrolled in Singing and Dancing classes together is fifty percent of the number of girls enrolled in the same. The remaining boys are enrolled in only Painting classes.

11. What is the total number of boys who are enrolled in Dancing ?
- (a) 318 (b) 364
(c) 292 (d) 434
(e) None of these
12. Total number of girls enrolled in Singing is **approximately** what percent of the total number of students in the school?
- (a) 37 (b) 19
(c) 32 (d) 14
(e) 26
13. What is the total number of students enrolled in all the three classes together ?
- (a) 135 (b) 164
(c) 187 (d) 142
(e) None of these
14. Number of girls enrolled in only Dancing classes is what percent of the boys enrolled in the same ? (rounded off to two digits after decimal)
- (a) 38.67 (b) 35.71
(c) 41.83 (d) 28.62
(e) None of these
15. What is the respective ratio of the number of girls enrolled in only Painting classes to the number of boys enrolled in the same?
- (a) 77 : 26 (b) 21 : 73
(c) 26 : 77 (d) 73 : 21
(e) None of these

Directions (Qs. 16-20) : Study the following tables carefully and answer the questions given below:

Number & Percentage of Candidates Qualified in a Competitive Examination:

Number of Candidates appeared in a Competitive Examination From Five Centres Over The Years

Centre → Year ↓	Mumbai	Delhi	Kolkata	Hyderabad	Chennai
2001	35145	65139	45192	51124	37346
2002	17264	58248	52314	50248	48932
2003	24800	63309	56469	52368	51406
2004	28316	70316	71253	54196	52315
2005	36503	69294	69632	58360	55492
2006	29129	59216	64178	48230	57365
2007	32438	61345	56304	49178	58492

Approximate Percentages of Candidates Qualified To Appeared In the Competitive Examination From Five Centres Over the year

Centre → Year ↓	Mumbai	Delhi	Kolkata	Hyderabad	Chennai
2001	12	24	18	17	9
2002	10	28	12	21	12
2003	15	21	23	25	10
2004	11	27	19	24	8
2005	13	23	16	23	13
2006	14	20	21	19	11
2007	16	19	24	20	14

16. In which of the following years was the difference in number of candidates appeared from Mumbai over the previous year the minimum ?
- (a) 2004 (b) 2006
(c) 2007 (d) 2002
(e) None of these
17. In which of the following years was the number of candidates qualified from Chennai, the maximum among the given years ?
- (a) 2007 (b) 2006
(c) 2005 (d) 2003
(e) None of these
18. **Approximately** what was the total number of candidates qualified from Delhi in 2002 and 2006 together ?
- (a) 27250 (b) 25230
(c) 30150 (d) 28150
(e) 26250
19. **Approximately** how many candidates appearing from Kolkata in 2004 qualified in the competitive examination ?
- (a) 13230 (b) 13540
(c) 15130 (d) 15400
(e) 19240
20. **Approximately** what was the difference between the number of candidates qualified from Hyderabad in 2001 and 2002 ?
- (a) 1680 (b) 2440
(c) 1450 (d) 2060
(e) 1860

Directions (Qs. 21–25): Study the following information carefully and answer the questions that follow :

An Organisation consists of 2400 employees working in different departments, viz; HR, Marketing, IT, production and Accounts. The ratio of male to female employees in the Organisation is 5 : 3 respectively. Twelve per cent of the males work in the HR department. Twenty four per cent of the females work in the Accounts department. The ratio of males to females working in the HR department is 6 : 11 respectively. One-ninth of the females work in the IT department. Forty two percent of the males work in the production department. Number of females working in the production department is ten percent of the males working in the same. The remaining females work in the Marketing department. The total number of employees working in the IT department is 285. Twenty two percent of the males work in the Marketing department and the remaining work in the Accounts department.

21. The number of males working in the IT department forms **approximately** What percent of the total : number of males in the Organisation ?
 (a) 5 (b) 12
 (c) 21 (d) 8
 (e) 18
22. How many males work in the Accounts department ?
 (a) 170 (b) 165
 (c) 185 (d) 160
 (e) None of these
23. The total number of employees working in the Accounts department forms what percent of the total number of employees in the organisation ? (rounded off to two digits after decimal)
 (a) 19.34 (b) 16.29
 (c) 11.47 (d) 23.15
 (e) None of these
24. The number of females working in the production department forms what percent of the total number of females in the Organisation ?
 (a) 7 (b) 12
 (c) 4 (d) 15
 (e) None of these
25. What is the total number of females working in the HR and Marketing department together ?
 (a) 363 (b) 433
 (c) 545 (d) 521
 (e) None of these

Directions (Qs.26-31): Study the following table to answer the given questions:

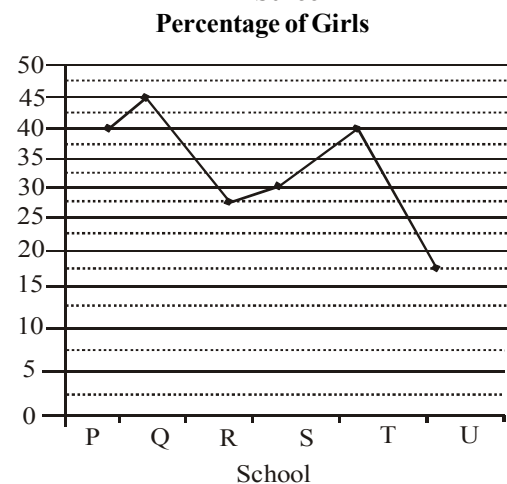
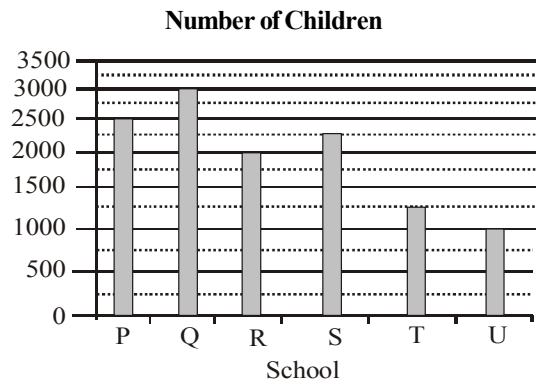
Production (in crore units) of six companies over the year

Company	Years						Total
	1997	1998	1999	2000	2001	2002	
TP	103	150	105	107	110	132	707
ZIR	75	80	83	86	90	91	505
AVC	300	300	300	360	370	340	1970
CTU	275	280	281	280	285	287	1688
PEN	25	30	35	40	42	45	217
SIO	85	87	89	91	92	96	540
Total	863	927	893	964	989	991	5627

26. The production of Company AVC in 2000 is **approximately** what per cent of its average production over the given years?
 (a) 300 (b) 110
 (c) 136 (d) 18.25
 (e) 95
27. For SIO, which year was the per cent increase or decrease in production from the previous year, the highest?
 (a) 2001 (b) 1998
 (c) 2002 (d) 2000
 (e) None of these
28. Which company has less average production in the last three years compared to that of first three years?
 (a) No company (b) CTU
 (c) ZIR (d) SIO
 (e) None of these
29. The total production of the six companies in the first two given years is what per cent of that of last two given years? (round off up to two decimal places)
 (a) 87.08 (b) 104.55
 (c) 90.40 (d) 10.62
 (e) None of these
30. For ZIR, which of the following is the difference between production in 2002 and that in 2001?
 (a) 10,00,00,000 (b) 1,00,00,000
 (c) 10,00,000 (d) 40,00,000
 (e) None of these
31. For how many companies did the production increase every year from that of the previous year?
 (a) One (b) Two
 (c) Three (d) Four
 (e) None of these

Directions (Qs. 32–36) : 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



32. 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
33. What is the total number of boys in School T ?
 (a) 500 (b) 600
 (c) 750 (d) 850
 (e) None of these
34. The total number of students in school R, is **approximately** what percent of the total number of students in school S ?
 (a) 89 (b) 75
 (c) 78 (d) 82
 (e) 94
35. 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
36. What is the respective 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

Directions (Qs. 37–41) : Study the tables carefully and answer the questions that follow :

Number of candidates (in lakhs) appearing in an entrance examination from six different cities and the ratio of candidates passing and failing in the same

City	Number of Candidates
A	1.25
B	3.14
C	1.08
D	2.27
E	1.85
F	2.73

Ratio of candidates passing and failing within the city

City	Passing	:	Failing
A	7	:	3
B	5	:	3
C	4	:	5
D	1	:	3
E	3	:	2
F	7	:	5

37. What is the respective ratio of the number of candidates failing in the Exam from City D to those failing in the exam from City A ?
 (a) 289 : 42 (b) 42 : 289
 (c) 227 : 50 (d) 50 : 227
 (e) None of these
38. The number of candidates appearing for the exam from City C is what percent of the total number of candidates appearing for the exam from City B ? (rounded off to the nearest integer)
 (a) 27 (b) 34
 (c) 42 (d) 21
 (e) 38

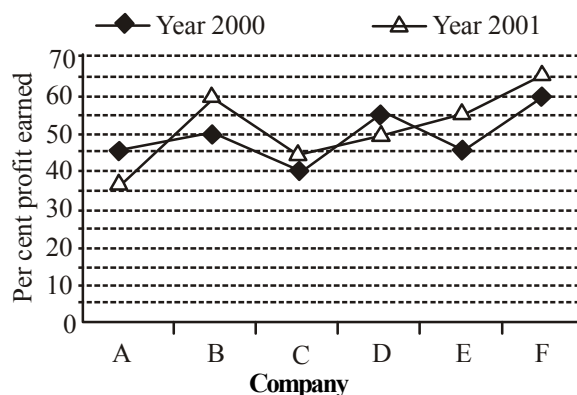
39. Number of candidates passing in the exam from City F is what percent of the total number of candidates appearing from all the Cities together ? (rounded off to two digits after the decimal)
 (a) 12.93 (b) 14.46
 (c) 10.84 (d) 11.37
 (e) None of these
40. Which city has the highest number of students failing in the entrance exam ?
 (a) F (b) C
 (c) B (d) D
 (e) None of these
41. What is the number of candidates passing in the exam from city E ?
 (a) 13,000 (b) 11,10,000
 (c) 1,13,000 (d) 11,000
 (e) None of these

Directions (Qs. 42–46) : These questions are based on the graph given below:

Per cent profit earned by six companies during 2000 and 2001

Profit = Income – Expenditure

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



42. If the income of company C in the year 2000 was ₹ 35 lakhs, what was its expenditure in that year?
 (a) ₹ 24 lakhs (b) ₹ 21 lakhs
 (c) ₹ 25 lakhs (d) Can't be determined
 (e) None of these
43. If, in the year 2001, total expenditure of companies B and C was ₹ 48 lakhs, then what was their total income in the same year?
 (a) ₹ 32 lakhs (b) ₹ 28.6 lakhs
 (c) ₹ 34.2 lakhs (d) Can't be determined
 (e) None of these
44. If, in the year 2000, expenditure of Company C was ₹ 32 lakhs, what was the income of the company in the same year?
 (a) ₹ 44.2 lakhs (b) ₹ 48.4 lakhs
 (c) ₹ 46.4 lakhs (d) ₹ 38 lakhs
 (e) None of these
45. If the expenditures of Company E in the years 2000 and 2001 were the same, what was the ratio of the incomes of the company in the same years respectively?
 (a) 19 : 21 (b) 11 : 12
 (c) 29 : 31 (d) 9 : 11
 (e) None of these

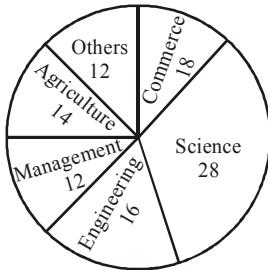
46. The income of Company D in the year 2000 was ₹ 31 lakhs. What was the earned profit?
- (a) ₹ 11 lakhs (b) ₹ 20 lakhs
(c) ₹ 17 lakhs (d) ₹ 12 lakhs
(e) None of these

Directions (Qs. 47–51) : Study the following pie-charts carefully and answer the questions given below :

Disciplinewise Break up of Number of candidates appeared in Interview and Disciplinewise Break up of Number of Candidates selected by an organisation

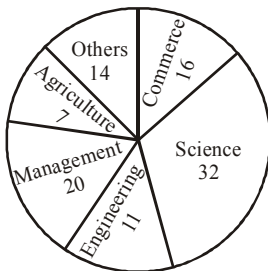
Disciplinewise Break up of Number of candidates appeared in Interview by the organisation

Total Number of candidates Appeared In the Interview = 25780 percentage



Disciplinewise Break up of Number of candidates selected after Interview by the organisation

Total Number of candidates selected After Interview = 7390 percentage

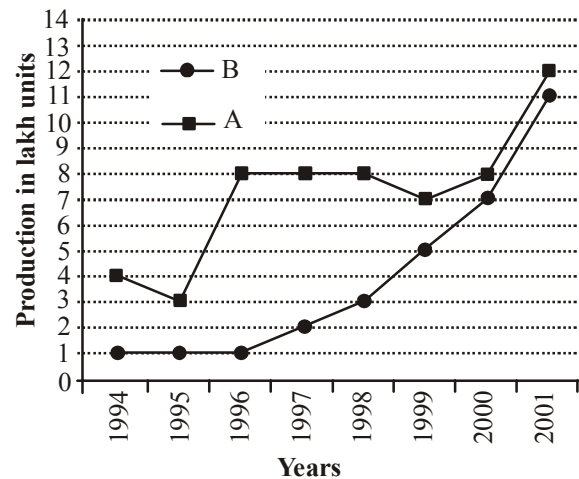


47. What was the ratio between the number of candidates appeared in interview from other disciplines and number of candidates selected from Engineering discipline respectively (round off to the nearest integer) ?
- (a) 3609 : 813 (b) 3094 : 813
(c) 3094 : 1035 (d) 4 125 : 1035
(e) 3981 : 767
48. The total number of candidates appeared in interview from Management and other disciplines was what percent of number of candidates appeared from Engineering discipline?
- (a) 50 (b) 150
(c) 200 (d) Cannot be determined
(e) None of these
49. **Approximately** what was the difference between the number of candidates selected from Agriculture discipline and number of candidates selected from Engineering discipline?
- (a) 517 (b) 665
(c) 346 (d) 813
(e) 296

50. For which discipline was the difference in number of candidates selected to number of candidates appeared in interview the maximum ?
- (a) Management (b) Engineering
(c) Science (d) Agriculture
(e) None of these
51. **Approximately** what was the total number of candidates selected from Commerce and Agriculture discipline together?
- (a) 1700 (b) 1800
(c) 2217 (d) 1996
(e) 1550

Directions (Qs. 52–56) : Study the following graph to answer the given questions.

**Production of two companies A & B over the years
(Production in lakh units)**



52. For Company A, what is the per cent decrease in production from 1994 to 1995?
- (a) 75 (b) 50
(c) 25 (d) 10
(e) None of these
53. In 2001, the production of Company B is **approximately** what per cent of that in 2000?
- (a) 60 (b) 157
(c) 192 (d) 50
(e) 92
54. For Company A, in which year is the percentage increase/decrease in the production from the previous year the highest?
- (a) 2001 (b) 1995
(c) 1999 (d) 1996
(e) None of these
55. What is the difference in the total production of the two companies for the given years?
- (a) 2700000 (b) 3100000
(c) 270000 (d) 310000
(e) None of these
56. Which of the following is the closest average production (in lakh units) of Company B for the given years?
- (a) 4.1 (b) 3.5
(c) 4.3 (d) 3.75
(e) 3.9

Directions (Qs. 57-61): Study the following table to answer the given questions.

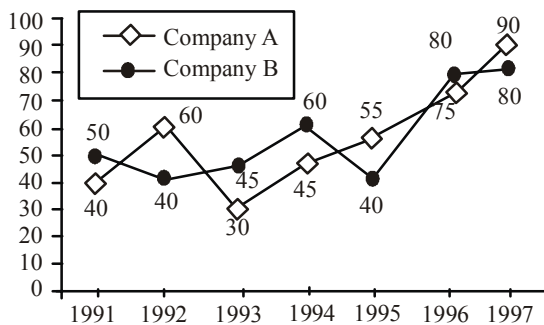
Centrewise and Postwise number of candidates

Post Specialist Centre	Officer	Clerk	Field Officer	Supervisor	Specialist officer
Bangalore	2000	5000	50	2050	750
Delhi	15000	17000	160	11000	750
Mumbai	17000	19500	70	7000	900
Hyderabad	3500	20000	300	9000	1150
Kolkata	14900	17650	70	1300	1200
Lucknow	11360	15300	30	1500	650
Chennai	9000	11000	95	1650	500

57. In Kolkata, number of Specialist Officers is **approximately** what per cent of Officers?
 (a) 8.7 (b) 9
 (c) 6.5 (d) 8
 (e) 6.9
58. What is the difference between total number of Officers and Clerks?
 (a) 29680 (b) 34180
 (c) 32690 (d) 28680
 (e) None of these
59. In Chennai, the number of Clerks is **approximately** how much per cent more than that of Officers?
 (a) 18 (b) 22
 (c) 20 (d) 2
 (e) 13
60. Which centre has 300% more number of Clerks as compared to those in Bangalore?
 (a) Lucknow (b) Mumbai
 (c) Hyderabad (d) Chennai
 (e) None of these
61. Which centre has the highest number of candidates?
 (a) Delhi (b) Kolkata
 (c) Hyderabad (d) Mumbai
 (e) None of these

Directions (Qs. 62-66): 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



62. 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

63. 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
64. Income of company 'A' in 1995 was ₹ 21.7 lakhs. What was the investment ?
 (a) ₹ 14.5 lakhs (b) ₹ 15.4 lakhs
 (c) ₹ 15.8 lakhs (d) ₹ 14.6 lakhs
 (e) None of these
65. 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
66. Investment of company 'B' in 1993 was ₹ 1540000. What was its income in that year?
 (a) ₹ 23.33 lakhs (b) ₹ 22.33 lakhs
 (c) ₹ 22.23 lakhs (d) ₹ 23.23 lakhs
 (e) None of these

Directions (Qs. 67-71): Study the following table carefully and answer the questions given below it.

A factory was opened in 1994 with certain initial strengths in different units as shown in the table. At the beginning of the subsequent years some of the workers left and some new workers were deployed. No worker left or joined in between. Details are given in the table given below. Study it carefully and answer the questions that follow.

UNIT										
Year	A		B		C		D		E	
1994	156		132		98		76		125	
(Initial Strength)	L	J	L	J	L	J	L	J	L	J
1995	12	15	23	32	12	36	6	26	11	13
1996	17	18	16	14	8	19	17	28	11	15
1997	9	20	12	12	17	14	9	16	19	16
1998	32	40	14	17	23	35	12	23	23	14
1999	22	35	11	15	18	25	14	24	32	38
2000	26	32	17	21	13	18	11	19	21	36

Note : L = Left, J = Joined

67. What was the strength of Unit 'B' in 1998?
 (a) 142 (b) 125
 (c) 159 (d) 207
 (e) None of these
68. In 1999 the strength of workers was maximum in which unit?
 (a) E (b) D
 (c) C (d) B
 (e) A
69. The strength of workers in unit C in 1996 is **approximately** what per cent of the strength in unit E in 1997?
 (a) 97 (b) 110
 (c) 104 (d) 98
 (e) 112
70. What was the total strength of workers in all the five units in 1996?
 (a) 647 (b) 570
 (c) 690 (d) 697
 (e) None of these

71. What was the **approximate** increase/decrease in the strength of the workers in unit *D* in 1998 with respect to its initial strength?
- (a) 47.37% increase (b) 64.47% decrease
(c) 64.47% increase (d) 47.37% decrease
(e) 59.38% increase

Directions (Qs. 72-75): Study the following table carefully and answer the questions given below: Per cent marks obtained by 6 students in different subject

Student	Subject					
	Physics (out of 150)	Chemistry (out of 75)	Maths (out of 200)	History (out of 100)	Geography (out of 50)	English (out of 75)
A	77	63	89	55	64	72
B	69	72	71	78	69	66
C	82	78	69	65	75	57
D	73	81	76	67	58	63
E	58	69	54	74	66	75
F	66	57	61	62	71	59

72. What is the total marks obtained by *B* in all the subjects?
- (a) 542 (b) 560.5
(c) 425 (d) 459.5
(e) None of these
73. What is the average marks obtained by 6 students in Chemistry out of 75 marks?
- (a) 52.5 (b) 70
(c) 55.5 (d) 62.5
(e) None of these
74. What is the difference in the total marks obtained by *C* in Physics and Chemistry and that obtained by *E* in the same subjects?
- (a) 38.75 (b) 33
(c) 42.75 (d) 43
(e) None of these
75. What is the per cent marks obtained by *A* in both Maths and History? Find up to two decimal places.
- (a) 72 (b) 77.67
(c) 48 (d) 73.33
(e) None of these

Directions (Qs. 76-78): These questions are based on the following information. Study the information carefully and answer the questions.

The students of a school have an option to study only Hindi, only Sanskrit or a composite subject Hindi and Sanskrit. Out of, the 175 students in the school, boys and girls are in the ratio of 3 : 4 respectively. 40% of boys have opted for only Hindi. 44% of the students have opted for only Sanskrit. Out of the total number of girls 32% have opted for the composite subject. The number of boys who opted for only Sanskrit and that for composite subject are in the ratio of 2 : 1 respectively.

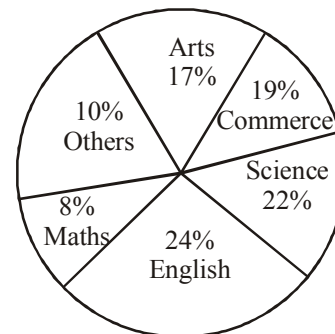
76. What is the ratio between the number of boys who have opted for only Hindi and the number of girls who have opted for the composite subject respectively?
- (a) 15 : 16 (b) 10 : 7
(c) 10 : 9 (d) 11 : 12
(e) None of these

77. How many boys have opted for the composite subject?
- (a) 30 (b) 15
(c) 21 (d) 32
(e) None of these
78. How many girls have opted for only Sanskrit?
- (a) 72 (b) 47
(c) 51 (d) 77
(e) None of these

Directions (79-83): In the following pie-charts, the percentage wise distribution of candidates who have applied for different subjects in a college and that of selected candidates has been given. Read the following pie-charts to answer the questions.

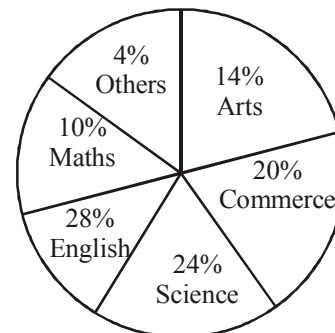
Percentage of Candidates

Applied Number of candidates = 88000



Percentage of Candidates Qualified

Number of candidates = 14400



79. What is the difference between the total number of candidates who got selected in Science and the number of candidates who applied for the same ?
- (a) 15904 (b) 14904
(c) 15940 (d) 16940
(e) None of these
80. What is the sum of the total number of candidates who applied for Arts and the number of candidates who got selected in Maths and English both ?
- (a) 19432 (b) 20432
(c) 20342 (d) 19432
(e) None of these
81. What is the ratio between the number of candidates who qualified in Arts and commerce together and the number of candidates who qualified in English and Science ?
- (a) 17 : 25 (b) 17 : 29
(c) 17 : 26 (d) 29 : 17
(e) None of these
82. What percent of candidates qualified in English of the total candidates applied for the same ?

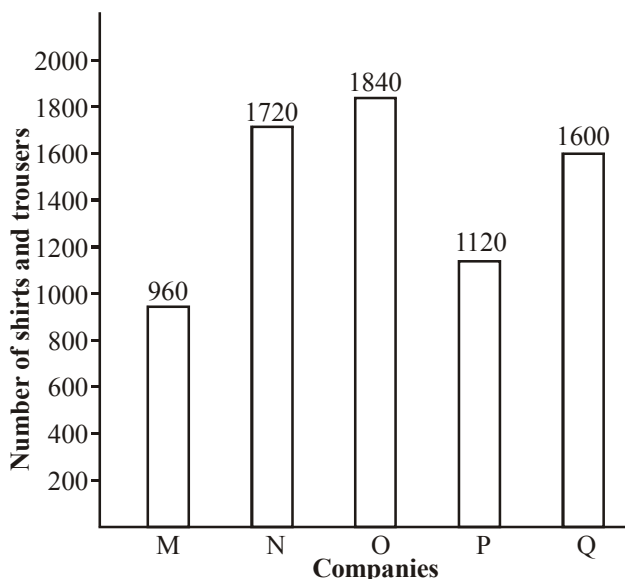
- (a) 15 (b) 16
(c) 17 (d) 19
(e) 22

83. Find the average number of candidates who got selected for English, Science and Arts.

- (a) 3618 (b) 3682
(c) 3628 (d) 3268
(e) 3168

Directions (Qs. 84-88) : In the following bar diagram number of shirts and trousers manufactured by five different companies M, N, O, P and Q has been given. The ratio of shirts and trousers has been given in the adjoining table. Read both the data and answer the questions.

Number of Shirts and Trousers manufactured by five companies M, N, O, P and Q



Ratio of Shirts & Trousers

Companies	Shirts	Trousers
M	5	3
N	24	19
O	7	9
P	3	5
Q	8	17

84. What is the average of the number of shirts manufactured by the companies M, O and Q ?
(a) 639 (b) 539
(c) 693 (d) 369
(e) None of these
85. The number of shirts manufactured by company P is
(a) 320 (b) 420
(c) 480 (d) 460
(e) None of these
86. What is the total number of trousers manufactured by companies N and P ?
(a) 1360 (b) 1260
(c) 1460 (d) 1406
(e) None of these
87. The number of shirts manufactured by company Q is what per cent of its total production ?
(a) 25% (b) 28%
(c) 30% (d) 32%
(e) None of these
88. The ratio between the number of shirts manufactured by company M and that of trousers manufactured by company P is
(a) 9 : 7 (b) 8 : 7
(c) 7 : 8 (d) 5 : 7
(e) 6 : 7

Directions (Qs. 89-93) : In the following table, the number of vehicles passing over a bridge during different time intervals on different days of a week is given. Read the table carefully to answer the following questions. Number of Vehicles (In thousands)

Time Intervals	8-11 am	11 am - 1 pm	1 pm - 4 pm	4 pm - 7 pm	7 pm - 10 pm
Days					
Monday	12	10	8	11	6
Tuesday	15	12	10	12	5
Wednesday	10	8	6	8	6
Thursday	11	7	7	7	7
Friday	13	10	8	10	6
Saturday	8	6	7	8	5

89. What is the difference between the total number of vehicles, crossing during 7pm-10 pm and the number of vehicles crossing during 11am-1pm on Tuesday, Thursday and Saturday?
(a) 8000 (b) 8500
(c) 7500 (d) 7800
(e) None of these
90. Find the difference between the number of vehicles crossing on Tuesday and Saturday during 1pm-4pm and the number of vehicles crossing on Thursday during 1pm-4pm.
(a) 7000 (b) 10000
(c) 24000 (d) 14000
(e) None of these
91. What is the percentage decrease in the number of vehicles crossing from time interval 8-11am to 7pm-10pm on Wednesday?
(a) 45% (b) 38%
(c) 40% (d) 50%
(e) 46%
92. Find the average number of vehicles crossing the bridge during 8-11 am.
(a) 11056 (b) 12500
(c) 11050 (d) 11500
(e) None of these
93. Find the total number of vehicles crossing the bridge during 11 am -1 pm on Thursday and Friday.
(a) 11000 (b) 19500
(c) 17500 (d) 19000
(e) 17000

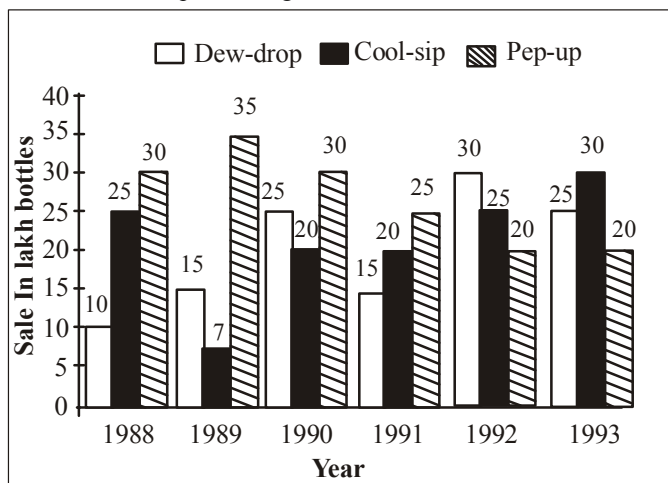
Directions (Qs. 94-98): Study the following table carefully and answer the questions given below:

Number of bales of wool processed by 5 woollen mills

Name of the Company					
Month	Polar	Shepherd	Kiwi	Warmwear	Comfy
Jan	900	850	350	1000	850
Feb	800	700	1050	1100	850
March	1050	800	1000	1100	950
April	800	850	850	1100	850
May	950	900	1050	1150	850
Total	4500	4100	4900	5450	4350

94. In the case of which mill is the processing of wool in March the highest percentage of the total processing by that mill during the five month period?
 (a) Polar (b) Shepherd
 (c) Kiwi (d) Warmwear
 (e) Comfy
95. The wool-processing by Warmwear in April is what percent of its wool-processing in January?
 (a) 91 (b) 110
 (c) 115 (d) 10
 (e) 11
96. Which of the five mills has the highest ratio of wool processing done in April to that done in February?
 (a) Polar (b) Shepherd
 (c) Kiwi (d) Warmwear
 (e) Comfy
97. In the case of which mill is the wool-processing in February and March together the lowest among the five mills processing during the same period?
 (a) Comfy (b) Warmwear
 (c) Kiwi (d) Shepherd
 (e) Polar
98. The total of wool-processing done by Kiwi during the given period is approximately what per cent of that done by Shepherd?
 (a) 80 (b) 87
 (c) 8 (d) 108
 (e) 120

Directions (Qs. 99-103): Study the following graph carefully and answer the questions given below:



99. In which year was the sale of 'Pep-up' the maximum?
 (a) 1990 (b) 1991
 (c) 1992 (d) 1993
 (e) None of these

100. 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) Cool-sip and Dew-drop
 (e) Pep-up and Dew-drop
101. 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
102. In the year 1990, what was the difference between the number of 'Pep-up' and 'Cool-sip' bottles sold?
 (a) 50,00,000 (b) 5,00,000
 (c) 50,000 (d) 5,000
 (e) 10,00,000
103. 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) None of these

Directions (Qs. 104-108): 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 founded in 1990 are given below

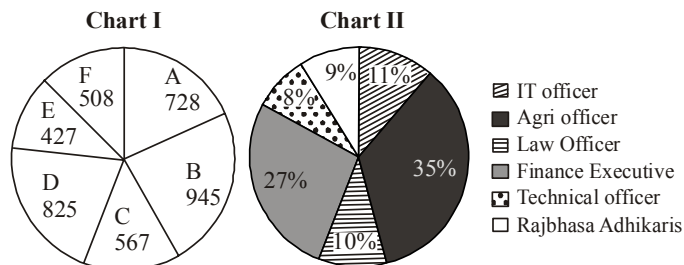
School	A		B		C		D		E	
	Ad	L	Ad	L	Ad	L	Ad	L	Ad	L
1990	1025	—	950	—	1100	—	1500	—	1450	—
1991	230	120	350	150	320	130	340	150	250	125
1992	190	110	225	115	300	150	300	160	280	130
1993	245	100	185	110	260	125	295	120	310	120
1994	280	150	200	90	240	140	320	125	340	110
1995	250	130	240	120	310	180	360	140	325	115

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

104. 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
105. What was the number of students studying in school B in 1994?
 (a) 2030 (b) 1060
 (c) 1445 (d) 1150
 (e) None of these
106. Number of students leaving school C from the year 1990 to 1995 is **approximately** what 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%
107. 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
108. 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

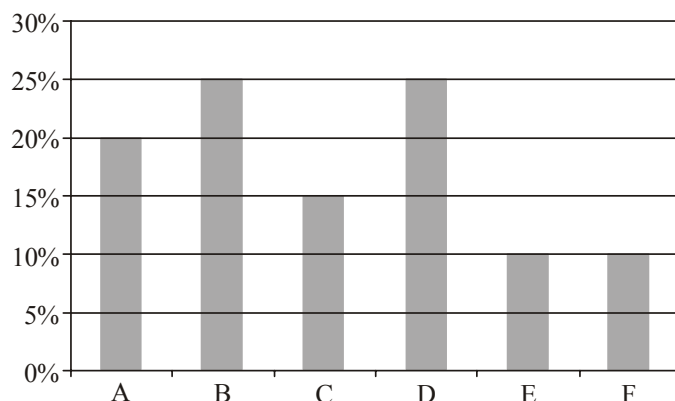
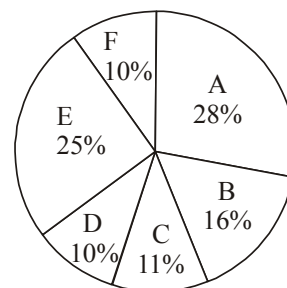
Directions (Qs. 109-113) : Study the graph to answer the following Questions

4000 posts of different cadres have to be filled up by six different banks(A, B, C, D, E, F). Chart - I shows the breakup of vacant posts in these banks. Chart - II shows the percentage breakup of the requirement of personnel in the different cadres in a bank. Assume that these percentages are the same for all the banks.



109. Banks A and C recruited IT officers as per given requirement. After few days some of the newly employed IT officers left A and Joined C. The number of new requirements of IT officers in A and C have now become equal. The approximate percentage of new recruits who left A is
- (a) 11% (b) 15%
(c) 22% (d) 20%
(e) None of these
110. By what % is the number of recruitments of law officers more/less in C, E and F taken together than in A, B and D taken together?
- (a) More by 40% (b) More by 20%
(c) less by 40% (d) less by 20%
(e) None of these
111. What is the ratio of requirement of Finance Executives in C and E taken together with D and F taken together?
- (a) 1333:994 (b) 633:991
(c) 799:998 (d) 994:1333
(e) None of these
112. Banks D and F hired 15% of Rajbhasha Adhikaris than their own requirement(%). After 1 year the total strength of the staff was brought down to the original strength through retrenchments of some employees. What is the difference between the initial strength and the current strength of employees?
- (a) 80 (b) 60
(c) 50 (d) 30
(e) None of these
113. In Bank E, about how many more technical officers should be employed than the required number so that the ratio of technical officers to that of finance executives becomes 2:3?
- (a) 63 (b) 33
(c) 43 (d) 53
(e) None of these

Directions (Qs. 114-118) : The following Pie chart shows the percentage number of the candidates passed in examination from States A, B, C, D, E, F of a country in 2006. The Bar graph shows the percentage of fresh candidates who passed their graduation in 2006.



114. If in 2006, the total passed candidates from states A, B, C, D, E and F was 650, then percentage of non-fresher candidates from State A who passed the examination in 2006 is
- (a) 95% (b) 86%
(c) 80% (d) 70%
(e) None of these
115. If in 2006, the total number of freshers from state D was 160, then how many non-fresher candidates passed the exam from State E?
- (a) 1430 (b) 1240
(c) 1420 (d) 1440
(e) None of these
116. If total passed candidates from state B in 2006 was 112, what is the ratio between the number of freshers from state A and that of non-freshers from state C?
- (a) 39:65 (b) 38:65
(c) 43:65 (d) 41:65
(e) None of these
117. If there is an increase of 10% and 20% candidates from state A and state B in the year 2007 respectively and the number of total passed candidates from state C in 2006 was 77, what would be the approximate total no of passed candidates from state A and State B in 2007?
- (a) 400 (b) 350
(c) 450 (d) 380
(e) None of these
118. If the non-fresher candidates from state B in 2006 were 60, how many candidates passed the exam from all the states?
- (a) 600 (b) 400
(c) 500 (d) 350
(e) None of these

Directions (Qs. 119-123): Study the following table carefully to answer these questions.

Number of students studying different disciplines at graduate level from State 'A' over the years

Discipline / year	Arts	Commerce	Science	Agriculture	Medicine	Engineering
1997	2400	3200	4200	840	2350	3180
1998	2250	3500	4820	760	2120	3340
1999	3050	2850	4550	1120	2640	3650
2000	2800	3640	4680	930	1890	3490
2001	2980	3080	5220	780	2260	3280
2002	2770	3800	3950	810	2450	3500

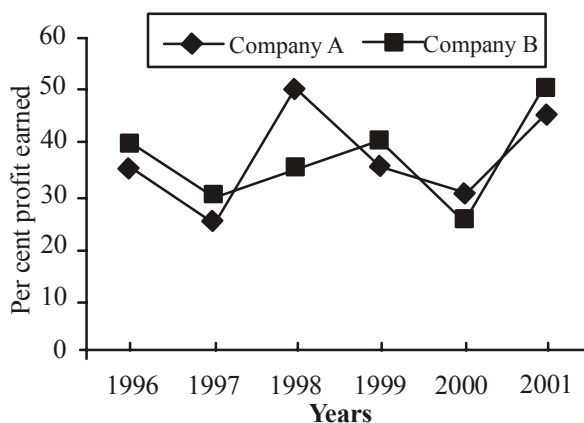
119. Total number of students studying Medicine for all the years together is **approximately** what per cent of those studying Engineering for all the years together?
- (a) 60 (b) 67
(c) 72 (d) 75
(e) 73
120. What is the average number of students studying Arts? (Rounded off to an integer)
- (a) 2905 (b) 2480
(c) 2308 (d) 2708
(e) None of these
121. For which of the following years, percentage increase/decrease in the number of students studying Commerce with respect to the previous year is the maximum?
- (a) 1998 (b) 1999
(c) 2000 (d) 2001
(e) 2002
122. The number of students studying Agriculture in the year 1999 is what per cent of the total number of students studying rest of the disciplines together during that year? (Rounded off to two digits after decimal)
- (a) 6.69 (b) 6.27
(c) 6.82 (d) 6.39
(e) None of these
123. The number of students studying Commerce in 2001 is **approximately** what per cent of the total number of students studying Commerce for all the given years together?
- (a) 19 (b) 11
(c) 12 (d) 18
(e) 15

Directions (Qs. 124-128): Study the following graph to answer these questions.

Per cent profit earned by two Companies A & B over the years

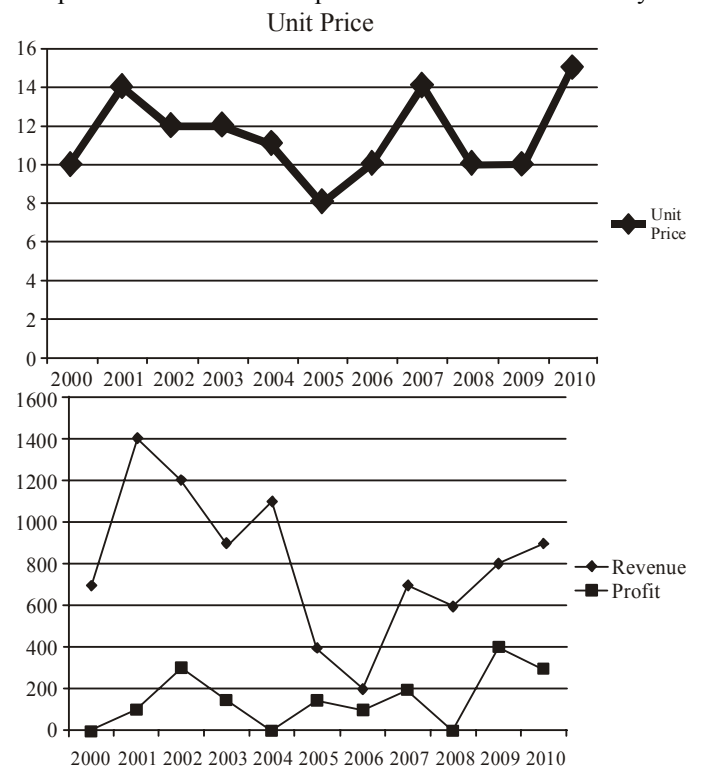
Profit = Income – Expenditure

$$\% \text{Profit} = \frac{\text{Profit}}{\text{Expenditure}} \times 100$$



124. If the income of Company 'A' in 1998 was ₹ 1,42,500 what was its expenditure in that year?
- (a) ₹ 1,05,000 (b) ₹ 95,500
(c) ₹ 99,500 (d) ₹ 1,05,555
(e) None of these
125. Expenditure of Company 'B' in 1999 was 90% of its expenditure in 1998. Income of Company 'B' in 1999 was what per cent of its income in 1998?
- (a) 130.5 (b) $96\frac{2}{3}$
(c) 121.5 (d) $93\frac{1}{3}$
(e) None of these
126. If the expenditure of Company 'A' in 1997 was ₹ 70 lakhs and income of Company A in 1997 was equal to its expenditure in 1998, what was the total income (in ₹ lakh) of the Company A in 1997 & 1998 together?
- (a) 175 (b) 131.25
(c) 218.75 (d) Cannot be determined
(e) None of these
127. Expenditure of Company 'B' in years 1996 and 1997 were in the ratio of 5 : 7 respectively. What was the respective ratio of their incomes?
- (a) 10 : 13 (b) 8 : 13
(c) 13 : 14 (d) 11 : 14
(e) None of these
128. Total expenditure of Companies A & B together in 2001 was ₹ 13.5 lakhs. What was the total income of the two companies (in ₹ lakh) in that year?
- (a) 19.575 (b) 20.25
(c) 19.75 (d) Cannot be determined
(e) None of these

Directions (Qs. 129-133) : Answer the following questions, based on the following two graphs, assuming that there is no fixed component and all the units produced are sold in the same year.



129. In which year per unit cost is lowest?
 (a) 2002 (b) 2003
 (c) 2006 (d) 2007
 (e) None of these
130. In which year per unit cost is highest?
 (a) 2001 (b) 2005
 (c) 2006 (d) 2007
 (e) None of these
131. What is the approximate average quantity sold during the period 2000-2010?
 (a) 50% (b) 60%
 (c) 81% (d) 70%
 (e) None of these
132. What is the average number of total units sold in the years of 2002, 2003, 2004, 2005 and 2008 together?
 (a) 88 (b) 66
 (c) 77 (d) 44
 (e) None of these
133. If the price per unit decrease by 10% during 2000-2004 and cost per unit increase by 10% during 2005-2010, then the cumulative profit for the entire period 2000-2010 decrease by?
 (a) 700 (b) 500
 (c) 565 (d) 775
 (e) None of these

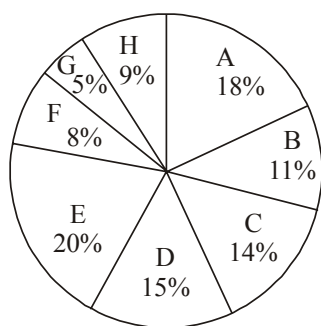
Directions (Qs. 134-138) : Refer to Pie Charts and answer the following questions:

Given Data:

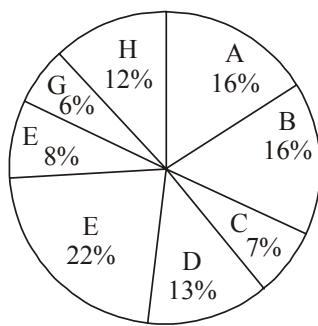
Total number of cars (both MUV & SUV) distributed by 8 dealers in 2004 = 56000

Total number of SUV cars distributed by 8 dealers in 2004 = 32000

Distribution of Cars (MUV & SUV)



Distribution of Cars SUV



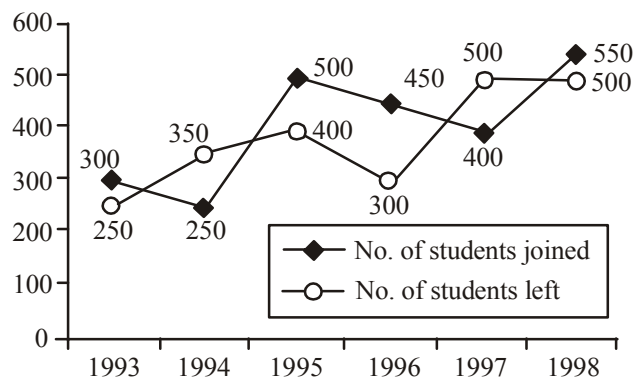
134. Total number of MUV cars sold by dealers C and H together is by what % less than total number of cars (both SUV and MUV) sold by stores F and H together?
 (a) 27.58% (b) 25.58%
 (c) 26.58% (d) 28.57%
 (e) None of these
135. The number of cars (MUV and SUV) sold by store D is by what % more than total number of SUV cars distributed by dealers C, F and G together?
 (a) 50% (b) 25%
 (c) 75% (d) 605
 (e) None of these
136. What is the average number of MUV cars delivered by dealers A, D, E, F and H together?
 (a) 2892 (b) 3354
 (c) 3634 (d) 3296
 (e) None of these

137. What is the respective ratio between total no of SUV cars distributed by dealers A and B together and total number of cars (MUV and SUV) delivered by stores C and F together?
 (a) 64:77 (b) 64:79
 (c) 54:77 (d) 64:73
 (e) None of these
138. If the number of cars distributed by stores A, D and E increased by 10%, 35% and 15% respectively from 2004-2005, what was the total number of MUV cars distributed by these three dealers in 2005?
 (a) 14964 (b) 15964
 (c) 13964 (d) 12964
 (e) None of these

Directions (Qs. 139-143): Answer these questions on the basis of the information given below:

- (i) In a class of 80 students the girls and the boys are in the ratio of 3:5. The students can speak only Hindi or only English or both Hindi and English.
- (ii) The number of boys and the number of girls who can speak only Hindi is equal and each of them is 40% of the total number of girls.
- (iii) 10% of the girls can speak both the languages and 58% of the boys can speak only English.
139. How many girls can speak only English?
 (a) 12 (b) 29
 (c) 18 (d) 15
 (e) None of these
140. In all how many boys can speak Hindi?
 (a) 12 (b) 9
 (c) 24 (d) Data inadequate
 (e) None of these
141. What percentage of all the students (boys and girls together) can speak only Hindi?
 (a) 24 (b) 40
 (c) 50 (d) 30
 (e) None of these
142. In all how many students (boys and girls together) can speak both the languages?
 (a) 15 (b) 12
 (c) 9 (d) 29
 (e) None of these
143. How many boys can speak either only Hindi or only English?
 (a) 25 (b) 38
 (c) 41 (d) 29
 (e) None of these

Directions (Qs. 144-148): Study the following graph carefully and answer the questions given below it. The number of students who joined and left the school in the beginning of year for six years, from 1993 to 1998. Initial strength of the school in 1992 = 1500



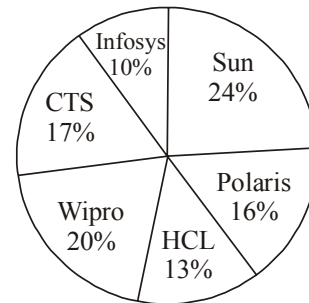
144. What was the increase/decrease in strength of the school from 1994 to 1995?
 (a) Increase by 100 (b) Decrease by 100
 (c) Increase by 200 (d) Decrease by 200
 (e) None of these
145. For which of the following years, the percentage rise/fall in number of students left from the previous year is the **highest**?
 (a) 1994 (b) 1995
 (c) 1996 (d) 1997
 (e) 1998
146. How many students were there in the school during the year, 1996?
 (a) 1495 (b) 1600
 (c) 1550 (d) 1700
 (e) None of these
147. During which of the following pairs of years, the strengths of the school is equal?
 (a) 1994 and 1995 (b) 1995 and 1997
 (c) 1996 and 1998 (d) 1995 and 1998
 (e) 1993 and 1995
148. The number of students in 1996 is **approximately** what per cent of the number of students in 1994?
 (a) 85 (b) 117
 (c) 95 (d) 103
 (e) 108

Directions (Qs. 149-153): Study the following information to answer the questions given below:

- (i) The ratio of the populations of males, females and children 10 years old and above is 11 : 10 : 9 in State 'A'. Out of which 40% males or 8800 are literate, 20% children (10 year old and above) are illiterate while 30% females are literate.
- (ii) The number of children below 10 years of age is 10% of the number of females. 5% of the total population of the State are below poverty line and 80% of them are illiterate.
149. What is the number of illiterate persons below the poverty line?
 (a) 2480 (b) 3100
 (c) 620 (d) Cannot be determined
 (e) None of these
150. What is the total population of the State?
 (a) 60,000 (b) 62,000
 (c) 42,000 (d) 40,000
 (e) None of these
151. What is the number of literate children of age 10 years and above?
 (a) 14400 (b) 14800
 (c) 16200 (d) 12600
 (e) None of these
152. Total number of women is what percentage of the total population of the State? (rounded off to two places of decimal)
 (a) 28.86 (b) 30.25
 (c) 32.86 (d) 32.26
 (e) None of these

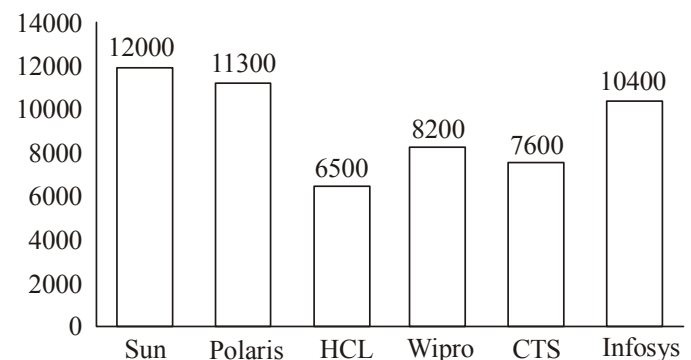
153. How many women are illiterate?
 (a) 20000 (b) 6000
 (c) 14400 (d) 16800
 (e) None of these

Directions (Qs. 154-158) : Study the given pie-Chart and Bar Graph carefully and answer the Questions given below
 Percentagewise distribution of employees in 5 different Organizations in a state



Total No of Employees = 1,32,500

Number of Female employees out of the total employees



154. What is the total number of female employees in Wipro and male employees in Sun and Infosys ?
 (a) 28900 (b) 30850
 (c) 32600 (d) 26980
 (e) None of these
155. What is the difference between the total number of employees in Polaris to the number of male employees in HCL ?
 (a) 10500 (b) 10000
 (c) 10725 (d) 10475
 (e) None of these
156. Which of the following Organizations has more number of female employees than male employees ?
 (a) Wipro (b) Sun
 (c) Infosys (d) CTS
 (e) None of these
157. The number of male employees in CTS is approximately what % of the total number of employees in Sun ?
 (a) 47% (b) 32%
 (c) 51% (d) 28%
 (e) None of these

158. What is the average number of male employees in Wipro, Polaris and CTS ?

- (a) 12560 (b) 15220
(c) 13725 (d) 14375
(e) None of these

Directions (Qs. 159-163): Study the following table carefully and answer the questions that follow:

The percentage marks obtained by seven students in six different subjects

Subject →	A	B	C	D	E	F
Student ↓	(Out of 75)	(Out of 150)	(Out of 100)	(Out of 50)	(Out of 150)	(Out of 75)
P	85	68	76	92	89	82
Q	78	72	84	80	64	70
R	66	75	79	88	72	66
S	74	62	91	74	70	74
T	90	75	67	68	69	78
V	86	80	69	78	82	80
W	82	68	81	85	76	72

159. What total percentage marks 'R' did secure in all the six subjects together?

- (a) 75.73 (b) 74.33
(c) 73.75 (d) 74.75
(e) None of these

160. What is the difference between the marks obtained by 'P' in the subjects 'B', 'D' and 'E' together and by 'T' in the same subjects?

- (a) 32.5 (b) 31.5
(c) 37 (d) 34
(e) None of these

161. What is the average of marks obtained by all the students in subject 'B'? (up to two decimal places)

- (a) 107.14 (b) 71.4
(c) 114.07 (d) 73.14
(e) None of these

162. What is the average percentage of marks obtained by all the students in the subjects 'C' and 'D' together?

- (a) 78 (b) 80.71
(c) 79.43 (d) 77.53
(e) None of these

163. What is the total marks obtained by all the students in subject 'F'?

- (a) 422 (b) 398.5
(c) 522 (d) 391.5
(e) None of these

Directions (Qs. 164-168): Study the following table carefully and answer the questions that follow:

Investment (in ₹ crores) by six units of XYZ Company from 1996 to 2001

Year → Unit ↓	'96	'97	'98	'99	'00	'01	Total
A	85	132	125	116	142	138	738
B	105	140	145	148	142	144	824
C	114	137	138	136	150	152	827
D	98	125	132	145	158	152	810
E	82	128	141	152	149	165	817
F	108	150	145	156	154	162	875
Total	592	812	826	853	895	913	4891

164. In which of the following years the investment of unit 'C' was **minimum** per cent of the investment of all the companies taken together in the same year?

- (a) 1997 (b) 1998
(c) 1999 (d) 2001
(e) None of these

165. In the year 1997 the investment of which of the following units is the maximum per cent of the investment during the given years?

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

166. What is the increase per cent in the investment of unit 'D' from 1996 to 1999?

- (a) 26.75 (b) 21.55
(c) 21.60 (d) 27.55
(e) None of these

167. How much more/less is the investment by units A, B and C in the year 1998 than the investment by the same three units in the year 1999?

- (a) ₹ 10 crores less (b) ₹ 8 crores more
(c) ₹ 8 crores less (d) ₹ 10 crores more
(e) None of these

168. What is the ratio between the total investment of unit A, B and C in the year 1998 and the total investment of units D, E and F in the year 1999?

- (a) 36 : 51 (b) 51 : 36
(c) 26 : 43 (d) 43 : 26
(e) None of these

Directions (Qs. 169-173) : Study the following table carefully and answer the questions given below.

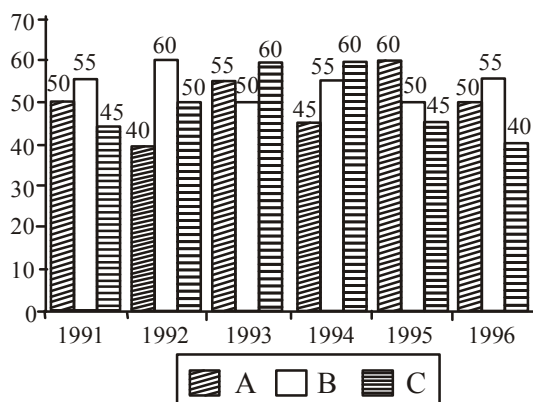
Percentage of malnourished children in Chile over the years

Year	Tested Number (in thousands)	Percentage of the malnourished		
		Low	Moderate	High
1984	998	12.5	2.9	0.7
1985	1015	12.1	2.7	0.7
1986	1048	12.1	3.0	0.8
1987	1071	11.9	2.5	0.5
1989	1048	10.8	1.8	0.3
1990	1023	10.4	1.6	0.2
1991	1048	10.0	1.4	0.1
1992	1063	8.70	1.1	0.1
1993	1161	7.80	0.9	0.1

169. What is the difference between the total numbers of the malnourished children in the years 1991 and 1986?
 (a) 0 (b) 46112
 (c) 22008 (d) 41920
 (e) None of these
170. In which year was the percentage of the malnourished children the highest?
 (a) 1986 (b) 1984
 (c) 1985 (d) 1987
 (e) None of these
171. Which is true of the following?
 (a) Over the years, there was uniform fall in the percentage of high malnourished cases in comparison to the previous year.
 (b) Over the years, there was uniform fall in the percentage of moderate malnourished cases in comparison to the previous year.
 (c) Over the years, there was uniform fall in the percentage of low malnourished cases in comparison to the previous year.
 (d) Over the years, there was no rise in the percentage of high malnourished cases in comparison to the previous year.
 (e) Over the years, there was no rise in the percentage of low malnourished cases in comparison to the previous year.
172. The malnutrition level of how many children was high in the year 1987?
 (a) 600 (b) 12745
 (c) 535 (d) 5355
 (e) None of these
173. How many children were malnourished in 1993?
 (a) 10,02,168 (b) 1,02,168
 (c) 10,216 (d) 1,00,02,168
 (e) None of these

Direction (Qs. 174-178) : Study the following graph carefully to answer the question given below it.

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



174. What is the difference between the production of company C in 1991 and the production of Company A in 1996?
 (a) 50,000 tonnes (b) 5,00,00,000 tonnes
 (c) 50,00,000 tonnes (d) 5,00,000 tonnes
 (e) None of these

175. 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
176. 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
177. 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
178. 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

Directions (Qs. 179-183) : Study the following table carefully and answer the questions given below it.

Fare in rupees for three different types of vehicles

Vehicle	Fare for distance upto					
	2 km	4 km	7 km	10 km	15 km	20 km
Type A	₹ 5.00	₹ 9.00	₹ 13.50	₹ 17.25	₹ 22.25	₹ 26.00
Type B	₹ 7.50	₹ 14.50	₹ 24.25	₹ 33.25	₹ 45.75	₹ 55.75
Type C	₹ 10.00	₹ 19.00	₹ 31.00	₹ 41.50	₹ 56.50	₹ 69.00

Note : Fare per km for intermittent distance is the same.

179. Shiv Kumar has to travel a distance of 15 kms 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
180. Ajit Singh wants to travel a distance of 15 kms. He starts his journey by Type A vehicle. After travelling 6 kms, 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
181. Mr X wants to travel a distance of 8 kms 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
182. Rita hired a Type B vehicle for travelling a distance of 18 kms. After travelling 5 kms, she changed the vehicle to Type A. Again after travelling 8 kms by Type A vehicle, she changed the vehicle to Type C and completed her journey. How much money did she spend in all?

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

183. 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

Directions (Qs. 184-188) : Answer these questions on the basis of the information given in the following table.

Production (in lakh tonnes) of six companies over the given years

	1995	1996	1997	1998	1999	2000
A	465	396	524	630	408	650
B	372	482	536	480	512	580
C	694	528	492	575	550	495
D	576	602	387	426	632	518
E	498	551	412	518	647	610
F	507	635	605	600	485	525

184. What is the difference between total productions of Companies A and C for all the given years together?

- (a) 2, 61,00,000 tonnes (b) 2, 61,900 tonnes
(c) 3,31,00,00 tonnes (d) 3,39,000 tonnes
(e) None of these

185. **Approximately**, what is the percentage rise/fall in total production of all the Companies together from 1996 to 1997?

- (a) 4.5% rise (b) 6% rise
(c) 3.5% fall (d) 7% fall
(e) 7.5% fall

186. During which year is the percentage rise/fall from the previous year in production of company 'F' the highest?

- (a) 1999 (b) 2000
(c) 1997 (d) 1996
(e) None of these

187. Production of companies A and B together in 1997 is **approximately** what percentage of the production of companies E and F together in 1998?

- (a) 90 (b) 95
(c) 97 (d) 86
(e) 92

188. What is the difference between average production for the given years of companies B and E (in lakh tonnes rounded off to two digits after decimal)?

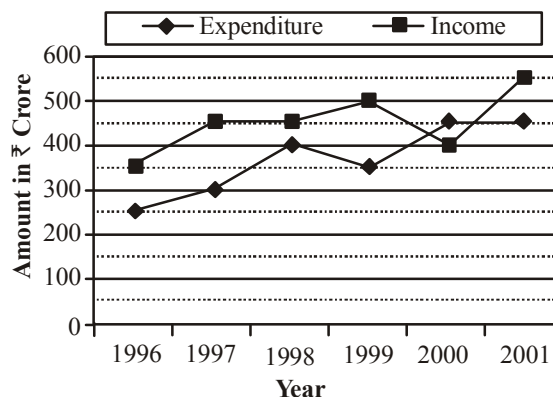
- (a) 56.50 (b) 45.50
(c) 45.67 (d) 55.78
(e) None of these

Directions (Qs. 189-193) : Study the following graphs carefully and answer the questions that follow:

Income and Expenditure of Company 'X' during the period 1996 to 2001

Profit / Loss = Income – Expenditure

$$\% \text{ Profit / Loss} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$



189. What is the average profit earned (in crore ₹) in the given years?

- (a) $83\frac{1}{3}$ (b) 600

- (c) $113\frac{2}{3}$ (d) 200

- (e) None of these

190. What **approximately** is the per cent profit earned during the year 1999?

- (a) 48 (b) 43
(c) 52 (d) 49

- (e) None of these

191. Which of the following years has the maximum per cent increase/decrease in income from the previous year?

- (a) 2000 (b) 1999
(c) 1997 (d) 2001
(e) 1997 & 1999

192. What is the percentage increase in expenditure from 1997 to 1998?

- (a) 25 (b) $33\frac{1}{3}$

- (c) $33\frac{2}{3}$ (d) 30

- (e) None of these

193. What is the average income (in crore ₹) for the given years?

- (a) $336\frac{2}{3}$ (b) 280

- (c) 450 (d) $366\frac{2}{3}$

- (e) None of these

Directions (Qs. 194-198): Study the following table carefully to answer these questions.

Distribution of marks obtained by 160 students in each of the three subjects—Hindi, English and Maths— out					
Sub/Marks	0-19	20-39	40-59	60-79	80-100
Hindi	12	31	79	30	8
English	21	30	65	42	2
Maths	31	22	34	45	28
Average of three subjects	24	28	68	35	5

194. If the criteria for passing is minimum 40% marks only in Maths, how many students will pass?
 (a) 53 (b) 107
 (c) 34 (d) 129
 (e) None of these
195. If for passing, the student has to obtain minimum 60% marks on average of three subjects, how many students will pass?
 (a) 40 (b) 108
 (c) 68 (d) 73
 (e) None of these
196. If for passing, a student has to obtain 40% marks in any one of the three subjects, what is the minimum number of students who will definitely pass?
 (a) 107 (b) 109
 (c) 117 (d) 108
 (e) None of these
197. How many students will pass in English if minimum passing marks is 40%?
 (a) 117 (b) 111
 (c) 119 (d) 108
 (e) None of these
198. How many students have obtained 20 or more marks in at least one of the three subjects?
 (a) 148 (b) 139
 (c) 129 (d) Data inadequate
 (e) None of these

Directions (Qs. 199 – 203) : 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					Metro H				
	Colour					Colour				
	Black	Red	Blue	White	Silver	Black	Red	Blue	White	Silver
A	40	25	55	75	15	45	32	40	60	20
B	20	35	60	80	20	30	37	39	81	35
C	35	30	50	90	35	40	42	41	6	37
D	45	40	45	85	40	35	39	37	90	42
E	50	35	35	60	30	50	44	43	77	22
F	55	42	40	65	52	47	34	45	87	17

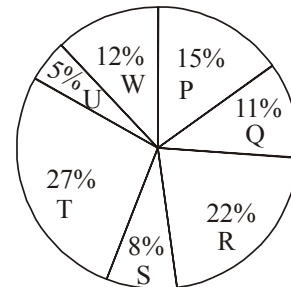
199. The difference between the white-coloured cars sold in the two metros of which of the following models is the **minimum**?
 (a) A (b) C
 (c) D (d) F
 (e) None of these
200. The total number of blue-coloured cars of Model E and D sold in Metro H is exactly equal to the number of white-coloured cars of which model in Metro M?
 (a) B (b) F
 (c) C (d) A
 (e) None of these
201. 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

202. 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
203. 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

Directions (Qs. 204-208) : Study the following graph and answer the following: -

Cost of total production (both items together) by seven companies = rupees 25 crore

Percentage of total production by seven companies



Ratio of production between item A and B and the percent profit earned for the two items

Company	Ratio of production		Percent profit earned	
	ITEM A	ITEM B	ITEM A	ITEM B
P	2	3	25%	20%
Q	3	2	32%	35%
R	4	1	20%	22%
S	3	5	15%	25%
T	5	3	28%	30%
U	1	4	35%	25%
W	1	2	30%	24%

204. What is the total cost of production of item A by company P and R together?
 (a) 3.9 (b) 4.9
 (c) 5.9 (d) 6.9
 (e) None of these
205. Cost of production of item A by company U is what percent of the cost of production of item B by company S?
 (a) 10% (b) 15%
 (c) 16.67% (d) 33.33%
 (e) None of these
206. What is the total profit earned by company W for items A and B together?
 (a) 78 lakh (b) 1.62 cr
 (c) 7.8 lakh (d) 68 lakh
 (e) None of these
207. What is the ratio of the cost of production of item A by company P to the cost of production of item A by company S?
 (a) 1:2 (b) 1:3
 (c) 3:1 (d) 2:1
 (e) None of these

208. What is the amount of profit earned by company S on item B? (approx.)

- (a) 21 lakh (b) 28 lakh
(c) 31 lakh (d) 35 lakh
(e) None of these

Directions (Qs. 209 - 213) : Study the following table carefully and answer the questions given below it. Number of candidates from different locations appeared and passed in a competitive examination over the years

Year	Rural		Semi-urban		State capitals		Metropolises	
	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	1658	9784	4015	9015	4311	12518	6328
1995	5628	2392	9969	4263	1725	4526	13624	6419

209. For the candidates from which of the following locations was there continuous increase both in appeared and passed?

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

210. 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

211. 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

212. 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

213. 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

Directions (Qs. 214–218) : Study the following table carefully and answer the questions given below:

Marks (out of 50) obtained by five students P, Q, R, S and T in five subjects in five periodical examination of each subject

	Students														
Sub	P					Q					R				
						Periodicals									
	I	II	III	IV	V	I	II	III	IV	V	I	II	III	IV	V
Math	40	30	45	20	35	30	20	35	45	40	30	35	40	45	40
Sc.	30	40	25	30	20	25	45	30	37	28	48	46	31	40	80
His	35	25	15	30	40	33	27	40	34	26	35	45	40	30	35
Geo	45	47	32	39	37	42	43	30	40	25	25	35	48	37	25
Eng	24	28	36	39	43	30	28	37	34	31	26	28	31	30	40

	Students									
Sub	S					T				
						Periodicals				
	I	II	III	IV	V	I	II	III	IV	V
Math	25	35	40	45	30	29	31	39	41	40
Sc.	31	34	38	27	30	44	36	40	30	40
His	34	40	36	42	48	37	43	35	45	40
Geo	39	37	44	40	30	38	39	33	40	40
Eng	31	34	35	45	40	30	30	35	45	40

214. What was the average marks of the five subjects of student Q in the 1st periodical?

- (a) 32 (b) 34
(c) 40 (d) 30
(e) None of these

215. What was the total of marks of student T in Science in all the periodicals together?

- (a) 160 (b) 180
(c) 190 (d) 140
(e) None of these

216. The average percentage of marks obtained by student P in Maths in the five periodicals was exactly equal to the average percentage of marks obtained by student R in the five periodicals in which of the following subjects?

- (a) English (b) Geography
(c) Science and Geography (d) Maths
(e) None of these

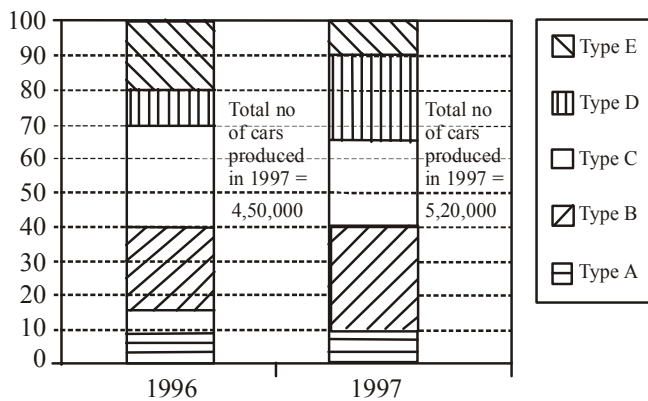
217. In which of the following subjects was the average percentage of marks obtained by student S the highest?

- (a) Maths (b) Science
(c) History (d) Geography
(e) English

218. In which of the periodicals the student P obtained, highest percentage of marks in Geography?

- (a) I (b) II
(c) III (d) IV
(e) V

Directions (Qs. 219-223) : Study the following graph carefully and then answer the questions based on it. The percentage of five different types of cars produced by the company during two years is given below.



219. What was the difference in the production of C type cars between 1996 and 1997?
(a) 5,000 (b) 7,500
(c) 10,000 (d) 2,500
(e) None of these
220. 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) 1,42,800 (b) 21,825
(c) 29,100 (d) 25,200
(e) None of these
221. 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
222. In the case of which of the following types of cars was the percentage increase from 1996 to 1997 the maximum?
(a) A (b) E
(c) D (d) B
(e) C
223. 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) 1,12,500 (b) 1,20,000
(c) 1,30,000 (d) Data inadequate
(e) None of these

Directions (Qs. 224-228) : Read the following table carefully and answer the questions given below it:

Average marks obtained by 20 boys and 20 girls in five subjects from five different schools

Subject	Max Marks	P		Q		R		S		T	
		B	G	B	G	B	G	B	G	B	G
Eng	200	85	90	80	75	100	110	65	60	105	110
Hist	100	40	55	45	50	50	55	40	45	65	60
Geo	100	50	40	40	45	60	55	50	55	60	65
Math	200	120	110	95	85	135	130	75	80	130	135
Scien	200	105	125	110	120	125	115	85	90	140	135

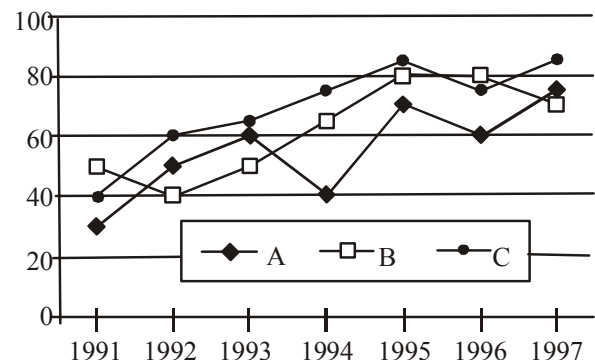
In above table, B = Boys and G = Girls

224. What was the total marks obtained by boys in History from school Q?
(a) 900 (b) 1000

- (c) 800 (d) 1300
(e) None of these
225. In which of the following subjects did the girls have highest average percentage of marks from all the schools?
(a) Science (b) Geography
(c) English (d) History
(e) Mathematics
226. The pooled average marks of both boys and girls in all the subjects was minimum from which of the following schools?
(a) Q (b) P
(c) T (d) S
(e) R
227. In the case of which of the following schools was total marks obtained by girls in mathematics 100% more than the total marks obtained by boys in History?
(a) R (b) S
(c) P (d) Q
(e) T
228. What was the difference between the total marks obtained in Mathematics by boys from school R and the girls from school S?
(a) Nil (b) 1100
(c) 100 (d) 1200
(e) None of these

Directions (Qs. 229-233) : Study the following graph carefully and answer the questions given below it:

Imports of 3 companies over the years
₹ in crores

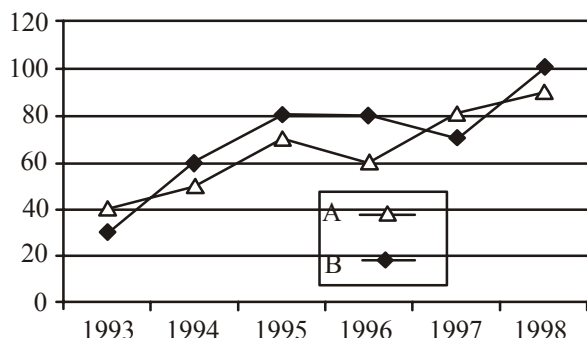


229. In which of the following years, the imports made by Company A was exactly equal to average imports made by it over the given years?
(a) 1992 (b) 1993
(c) 1994 (d) 1995
(e) None of these
230. In which of the following years was the difference between the imports made by Company B and C the maximum?
(a) 1995 (b) 1994
(c) 1991 (d) 1992
(e) None of these
231. 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?
(a) 1992 only (b) 1993 only
(c) 1992 and 1993 (d) 1995 only
(e) None of these

232. 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
233. 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

Directions (Qs. 234-238): Study the graph carefully and answer the questions given below it.

Per cent profit earned by the two companies A & B over the year



234. If income for Company A in the year 1994 was 35 lakhs what was the expenditure for Company B in the same year?
- (a) 123.5 lakhs (b) 128 lakhs
(c) 132 lakhs (d) Data inadequate
(e) None of these

235. The income of Company A in 1996 and the income of Company B in 1997 are equal. What will be the ratio of expenditure of Company A in 1996 to the expenditure of Company B in 1997?
- (a) 26 : 7 (b) 37 : 6
(c) 15 : 170 (d) 116 : 17
(e) None of these
236. During which of the following years the ratio of percent profit earned by Company A to that of Company B was the maximum?
- (a) 1993 & 1996 both
(b) 1995 & 1997 both
(c) 1993 only
(d) 1998 only
(e) None of these
237. If the expenditure of Company B increased by 20% from 1995 to 1996, the income in 1996 will be how many times the income in 1995?
- (a) 2.16 times (b) 1.5 times
(c) 1.8 times (d) equal
(e) None of these
238. If the income of Company A in 1996 was ₹ 36 lakhs, what was the expenditure of Company A in 1996?
- (a) 22.5 lakhs (b) 28.8 lakhs
(c) 20 lakhs (d) 21.6 lakhs
(e) None of these

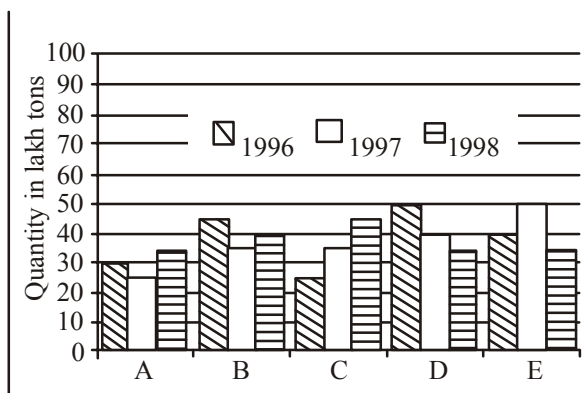
Directions (Qs. 239-243): Study the following table carefully and answer the questions given below it:

Statewise and Disciplinewise Number of Candidates Appeared (App.) and Qualified (Qual.) at a competitive Examination

State	A.P.		U.P.		Kerala		Orissa		M.P.		W.B.		Total	
Discipline	App.	Qual.	App.	Qual.	App.	Qual.	App.	Qual.	App.	Qual.	App.	Qual.	App.	Qual.
Arts	5420	1840	4980	1690	2450	845	3450	1200	7500	2000	4800	1500	28600	9075
Commerce	8795	2985	6565	2545	3500	2040	4800	2200	8400	2400	7600	2700	39660	14870
Science	6925	2760	8750	3540	4250	2500	4500	1950	6850	3000	8500	3200	39775	16950
Engineering	1080	490	2500	1050	1200	450	1850	850	2500	750	3400	1400	12530	4990
Agriculture	2040	850	1085	455	700	200	450	150	1500	475	1200	500	5775	2130
Total	23060	8425	23880	9280	12100	6035	15050	6350	26750	8625	25500	9300	126340	48015

239. For which of the following disciplines the proportion of qualifying candidates to the appeared candidates from U.P. State is the lowest?
- (a) Arts (b) Commerce
(c) Science (d) Engineering
(e) Agriculture
240. For which of the pair of States, the qualifying percentage from Agriculture discipline is exactly the same?
- (a) A.P. & U.P.
(b) A.P. & West Bengal
(c) U.P. & West Bengal
(d) Kerala & Orissa
(e) None of these
241. For which of the following states the percentage of candidates qualified to appeared is the minimum for commerce discipline?
- (a) AP (b) UP
(c) Kerala (d) Orissa
(e) MP
242. **Approximately** what is the ratio between total qualifying percentage of UP and that of MP?
- (a) 15 : 16 (b) 13 : 14
(c) 14 : 13 (d) 19 : 16
(e) 17 : 16
243. The qualifying percentage for which of the following states is the lowest for Science discipline?
- (a) AP (b) UP
(c) Kerala (d) West Bengal
(e) None of these
- Directions (Qs. 244-248):** Study the following graph carefully to answer these questions.

The production of fertilizer in lakh tons by different companies for three years 1996, 1997 & 1998



244. The total production by five companies in 1998 is what per cent of the total production by companies B & D in 1996?
- (a) 100% (b) 150%
(c) 95% (d) 200%
(e) None of these
245. What is the ratio between average production by Company B in three years to the average production by company C in three years?
- (a) 6 : 7 (b) 8 : 7
(c) 7 : 8 (d) 7 : 6
(e) None of these
246. For which of the following companies the rise or fall in production of fertiliser from 1996 to 1997 was the maximum?
- (a) A (b) B
(c) C (d) D
(e) E
247. What is the per cent drop in production by Company D from 1996 to 1998?
- (a) 30 (b) 43
(d) 50 (e) None of these
248. The average production for three years was maximum for which of the following companies?
- (a) B only (b) D only
(c) E only (d) B & D both
(e) D & E both

Directions (Qs. 249-253): 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
Basket ball	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

249. **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
250. 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
251. Which game is the most popular?
- (a) Badminton (b) Football
(c) Carrom (d) Table Tennis
(e) Cricket
252. **Approximately** what per cent of Class X students play the Table Tennis out of the total Class X students playing the different given games?
- (a) 20 (b) 21
(c) 27 (d) 26
(e) 18
253. Which game has ascending number of students from class IX to XII?
- (a) Only Basketball (b) Only Badminton
(c) Chess and Badminton (d) No game
(e) None of these

Directions (Qs. 254-263) : Study the following charts and answer the following questions:

The students of a school have an option to study either only English, only maths or both. Out of 175 students in the school, boys and girls are in the ratio of 3:4 respectively. 40% percent of the boys opted only for English. 44% of the students opted only for maths. Out of the number of girls 32% opted for both the subjects. The number of boys who opted for only maths and both subjects are in the ratio of 2:1 respectively.

Explanation

Boys = 75 (only English = 30, only maths = 30, both subjects = 15)
Girls = 100 (only English = 21, only maths = 47, both subjects = 32)

254. What is the ratio of the number of boys who have opted for only English and the number of girls who have opted both subjects?
- (a) 14:17 (b) 15:16
(c) 12:13 (d) 16:19
(e) None of these
255. How many boys have opted for both subjects?
- (a) 21 (b) 32
(c) 30 (d) 15
(e) None of these
256. How many girls are opted for only maths?
- (a) 32 (b) 20
(c) 47 (d) 15
(e) None of these
257. The number of boys who opted for only maths is what percent less than number of girls who opted for maths?
- (a) 32% (b) 33%
(c) 36% (d) 38%
(e) None of these

Directions (Qs 258-263) : Study the following charts and answer the following questions:

In a school there are total of 240 staff members and 1600 students. 65 percent of the numbers of staff members are teachers and the remaining staff members are administrative officials. Out of the total number of the students 45 percent are girls. Twenty percent of the number of girls can speak only English. The remaining girls can speak both Hindi and English. Three-fourths of the number of boys can speak only English. The remaining boys can speak both Hindi and English. Two-thirds of the numbers of teachers are males. Five-fourteens of the number of the administrative officials are females.

258. What is the difference between the number of boys (students) who can speak both Hindi and English and the number of girls (students) who can speak both Hindi and English?
- (a) 346 (b) 356
(c) 376 (d) 400
(e) None of these
259. The total number of girls students is what percent of the total number of staff members in the school?
- (a) 100% (b) 200%
(c) 300% (d) 400%
(e) None of these
260. What is the difference between the number of total number of female administrative officials, female teachers and the number of male administrative officials?
- (a) 14 (b) 22
(c) 28 (d) 30
(e) None of these
261. What is the ratio of the total number of teachers to the number of boys (students) who can speak English only?
- (a) 13:53 (b) 13:55
(c) 13:56 (d) 13:57
(e) None of these
262. What is the total number of male administrative officials, female teachers and girls (students) who can speak English only?
- (a) 125 (b) 225
(c) 250 (d) 300
(e) None of these
263. What is the ratio of the number of male administrative staff to the number of girls students who speak only English?
- (a) 5:8 (b) 3:11
(c) 3:7 (d) 3:8
(e) None of these

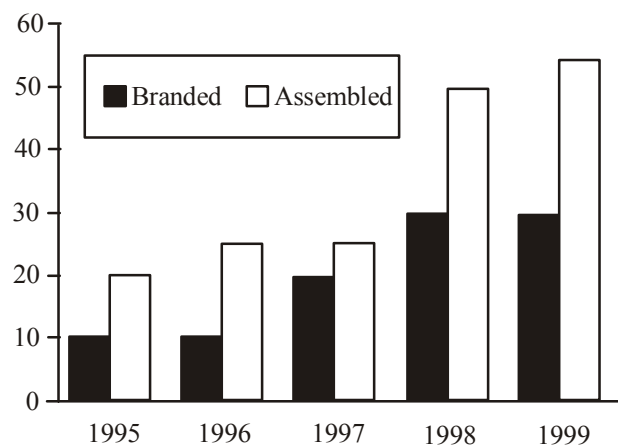
Directions (Qs. 264-268) : Study the following table carefully and answer the questions given below :

Production of main crops in India (in million 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
Sugarcane	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

264. Production of sugarcane in 1993 - 94 was **approximately** what percentage of the production of rice in 1992 - 93?
- (a) 50 (b) 75
(c) 150 (d) 125
(e) 175
265. 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
266. What was the average production of pulse in the given years?
- (a) 26.8 million tonnes (b) 20.5 million tonnes
(c) 24.5 million tonnes (d) 22.5 million tonnes
(e) None of these
267. Production of oilseeds was what percentage of the total crops produced in the year 1991 - 92?
- (a) 7.2 (b) 8.4
(c) 2.7 (d) 6.4
(e) None of these
268. In which of the following years the total production of oilseeds 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

Directions (Qs. 269-273): Study the following graph carefully and answer the questions given below:

The following graph shows the percentage growth of Branded and Assembled PCs



269. What is the average percentage growth of sales of Assembled PCs for the given years?
- (a) 30 (b) 20
(c) 40 (d) 35
(e) None of these
270. If the Branded PCs sold in 1996 were 100000, how many Branded PCs were sold in 1999?
- (a) 202800 (b) 156000
(c) 234000 (d) Cannot be determined.
(e) None of these
271. What is the difference between total Branded and total Assembled PCs sold for the given years?

- (a) 75000 (b) 750000
(c) 175000 (d) Cannot be determined
(e) None of these
272. In which year is the difference in the growth between Branded and Assembled PCs lowest?
(a) 1995 (b) 1998
(c) 1999 (d) 1996
(e) None of these
273. For Assembled PCs sale, which year is the per cent growth the highest compared to previous year?
(a) 1999 (b) 1996
(c) 1998 (d) Cannot be determined
(e) None of these

Directions (Qs. 274-278): Study the following table to answer the given questions.

Average production of six machines for the given years in thousands						
Year	Machine I	Machine II	Machine III	Machine IV	Machine V	Machine VI
1999	620	400	1020	2050	680	980
1998	680	400	1040	2070	670	1000
1997	640	403	1043	2130	680	1020
1996	700	399	1060	1908	690	1060
1995	706	397	1080	1603	685	1200

274. For which machine has there been continuous increase in production from its previous years?
(a) No machine (b) III
(c) IV (d) II
(e) None of these
275. For which year and the machine has the production been highest for the given data?
(a) 1999, IV (b) 1998, IV
(c) 1997, III (d) 1996, IV
(e) None of these
276. Which of the following can be concluded?
(a) As the machine becomes older, the production goes down.
(b) The production goes down in the initial two or three years then it starts improving.
(c) All the fluctuations from one year to the other are in the range of 100.
(d) Each even-numbered machine produces more than the odd-numbered.
(e) None of these
277. Which machine has shown the least fluctuation in production?
(a) I (b) II
(c) V (d) VI
(e) None of these
278. How many machines have production lower than 700 for all the given years?
(a) Nil (b) One
(c) Two (d) Three
(e) None of these

Directions (Q. 279-286): 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 subject 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

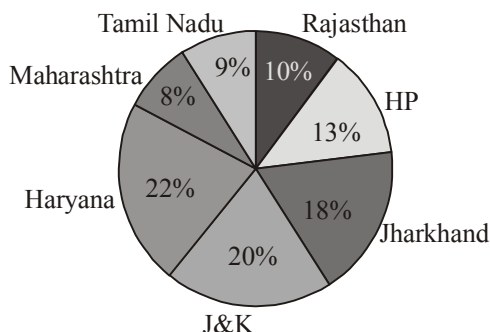
279. What was the grand average marks of the five subjects in 1996?
(a) 63 (b) 64
(c) 65 (d) 68
(e) None of these
280. The difference in the average marks in History between 1994 and 1995 was exactly equal to the difference in the highest marks in Hindi between which of the following pairs of years?
(a) 1992 and 1995 (b) 1993 and 1995
(c) 1992 and 1996 (d) 1993 and 1997
(e) None of these
281. What was the **approximate** percentage increase in average marks in History from 1992 to 1993?
(a) 20 (b) 25
(c) 24 (d) 16
(e) 18
282. 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
283. 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
284. The highest marks in Hindi in 1993 was what per cent of the average marks in Mathematics in 1996?
(a) 135 (b) 130
(c) 125 (d) 140
(e) None of these
285. 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 these

286. The difference between the highest marks in science was maximum between which of the following pairs of years among the given years?

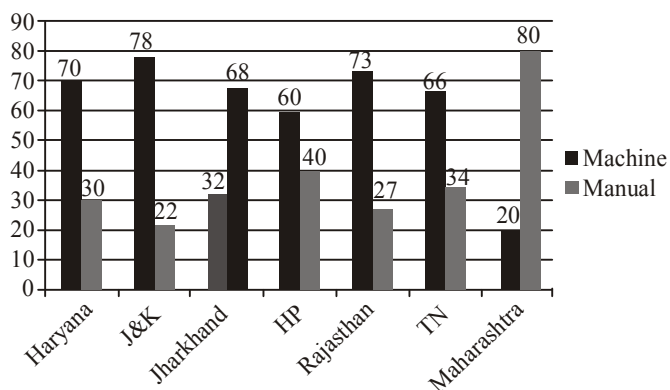
- (a) 1992 and 1993 (b) 1992 and 1996
(c) 1996 and 1997 (d) 1992 and 1995
(e) None of these

Directions (Qs. 287-291) : Study the following pie charts and answer the following questions:-

Production of rice in different states.
Total production = 50lac tones



Production: Machine v/s manual



287. What is the difference between the production by machine and manual method in Rajasthan?

- (a) 2.5 lakh (b) 2.3 lakh
(c) 2.8 lakh (d) 2.7 lakh
(e) None of these

288. What is the ratio of production by manual method in TN to that of machine method in J&K?

- (a) 9:40 (b) 99:260
(c) 51:260 (d) 33:130
(e) None of these

289. What is the average production of wheat by machine method for all states?

- (a) 4.24 (b) 4.28
(c) 4.32 (d) 4.46
(e) None of these

290. The production by machine method in Haryana is approximately what percent greater than the production by manual method in Maharashtra?

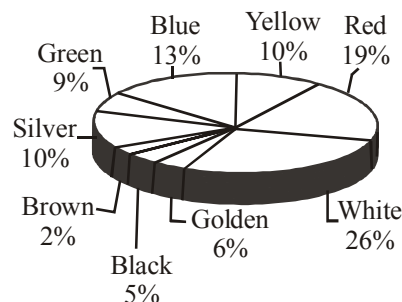
- (a) 130% (b) 135%
(c) 140% (d) 145%
(e) None of these

291. The production of tea in HP by manual method is approximately how many times the production in Jharkhand by machine method?

- (a) 1.2 (b) 1.5
(c) 0.9 (d) 1
(e) 1.3

Directions (Qs.292-296): Study the chart and give the answer of following questions.

Selling of the car in UK according to the colours



292. 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

293. Cars of which colour are 20% less popular than white coloured cars?

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

294. Cars of which colour are 13% less popular than white cars?

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

295. Cars of which colour when increased by two per cent and then, combined with that of red cars will make 30 per cent of the total

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

296. 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

ANSWER KEY

1	(c)	26	(b)	51	(a)	76	(a)	101	(c)	126	(c)	151	(a)	176	(b)	201	(e)	226	(d)	251	(e)	276	(e)
2	(a)	27	(c)	52	(c)	77	(b)	102	(e)	127	(a)	152	(d)	177	(e)	202	(c)	227	(b)	252	(e)	277	(b)
3	(b)	28	(e)	53	(b)	78	(b)	103	(c)	128	(d)	153	(e)	178	(c)	203	(a)	228	(b)	253	(e)	278	(c)
4	(c)	29	(c)	54	(d)	79	(a)	104	(a)	129	(c)	154	(b)	179	(d)	204	(c)	229	(e)	254	(b)	279	(a)
5	(a)	30	(b)	55	(a)	80	(b)	105	(c)	130	(a)	155	(d)	180	(a)	205	(e)	230	(d)	255	(d)	280	(a)
6	(e)	31	(c)	56	(e)	81	(c)	106	(e)	131	(d)	156	(c)	181	(b)	206	(a)	231	(a)	256	(c)	281	(a)
7	(c)	32	(d)	57	(d)	82	(d)	107	(d)	132	(c)	157	(a)	182	(e)	207	(d)	232	(b)	257	(c)	282	(e)
8	(a)	33	(c)	58	(c)	83	(e)	108	(b)	133	(d)	158	(d)	183	(b)	208	(c)	233	(c)	258	(b)	283	(c)
9	(d)	34	(a)	59	(b)	84	(a)	109	(a)	134	(d)	159	(c)	184	(a)	209	(e)	234	(d)	259	(c)	284	(c)
10	(b)	35	(b)	60	(c)	85	(b)	110	(c)	135	(b)	160	(b)	185	(e)	210	(d)	235	(e)	260	(c)	285	(b)
11	(d)	36	(c)	61	(d)	86	(c)	111	(d)	136	(d)	161	(a)	186	(d)	211	(a)	236	(c)	261	(b)	286	(e)
12	(e)	37	(c)	62	(b)	87	(d)	112	(a)	137	(a)	162	(c)	187	(b)	212	(a)	237	(e)	262	(c)	287	(b)
13	(a)	38	(b)	63	(d)	88	(e)	113	(c)	138	(b)	163	(d)	188	(c)	213	(c)	238	(a)	263	(d)	288	(c)
14	(b)	39	(a)	64	(e)	89	(a)	114	(c)	139	(d)	164	(c)	189	(a)	214	(a)	239	(a)	264	(e)	289	(a)
15	(c)	40	(d)	65	(c)	90	(b)	115	(d)	140	(a)	165	(a)	190	(b)	215	(c)	240	(b)	265	(d)	290	(c)
16	(c)	41	(e)	66	(b)	91	(c)	116	(a)	141	(d)	166	(e)	191	(d)	216	(b)	241	(e)	266	(c)	291	(c)
17	(a)	42	(c)	67	(a)	92	(d)	117	(b)	142	(b)	167	(b)	192	(b)	217	(c)	242	(d)	267	(a)	292	(c)
18	(d)	43	(d)	68	(e)	93	(e)	118	(c)	143	(c)	168	(e)	193	(c)	218	(b)	243	(d)	268	(b)	293	(b)
19	(b)	44	(e)	69	(c)	94	(a)	119	(b)	144	(a)	169	(b)	194	(b)	219	(a)	244	(d)	269	(d)	294	(a)
20	(e)	45	(c)	70	(e)	95	(b)	120	(d)	145	(d)	170	(b)	195	(a)	220	(e)	245	(b)	270	(e)	295	(e)
21	(b)	46	(a)	71	(c)	96	(b)	121	(c)	146	(d)	171	(e)	196	(a)	221	(b)	246	(c)	271	(d)	296	(d)
22	(e)	47	(b)	72	(e)	97	(d)	122	(a)	147	(e)	172	(d)	197	(e)	222	(c)	247	(a)	272	(e)		
23	(b)	48	(b)	73	(a)	98	(e)	123	(c)	148	(b)	173	(b)	198	(d)	223	(c)	248	(e)	273	(c)		
24	(a)	49	(e)	74	(c)	99	(e)	124	(e)	149	(a)	174	(d)	199	(e)	224	(a)	249	(d)	274	(a)		
25	(d)	50	(c)	75	(b)	100	(a)	125	(d)	150	(b)	175	(a)	200	(a)	225	(a)	250	(d)	275	(e)		

Hints & Explanations

- (c) Total marks obtained by Meera
 $= 100 + 80 + 50 + 90 + 90 + 60 = 470$
- (a) Average marks obtained by seven students in History

$$= \frac{80 + 70 + 70 + 60 + 90 + 60 + 80}{7} = 72.86$$
- (b) Only Kunal and Soni got 60% or more marks in all the subjects.
- (c) Average percentage of Kunal

$$= \frac{90 + 70 + 60 + 90 + 70 + 70}{6} = 75\%$$

6-10:

Department	No. of employees	No. of males	No. of employees got promoted
Production	1260	1020	396
IT	540	408	312
HR	432	204	132
Marketing	648	306	264
Accounts	720	102	96

- (e) Number of males Promoted from the IT department

$$= \frac{1}{2} \times 312 = 156$$

$$\text{Required \%} = \frac{156}{408} \times 100 \approx 38\%$$

7. (c) Total number of females working in production and marketing departments together
 $= (1260 - 1020) + (648 - 306)$
 $= 240 + 342 = 582$
8. (a) Females working in Accounts department $= (720 - 102) = 618$

9. (d) Required % $= \frac{1200}{3600} \times 100 \approx 33\%$

10. (b) Required % $= \frac{132}{432} \times 100 \approx 30.56\%$

(11-15) :

Total number of boys $= \frac{1560 \times 7}{12} = 910$

Total number of girls $= 1560 - 910 = 650$

Hobby	Boys	Girls
Painting	385	130
Singing	91	182
Dancing	182	65
Dancing and Singing	78	156
Dancing and Painting	104	52
Dancing, Painting and Singing	70	65

11. (d) Total number of boys enrolled in dancing class.
 $= 182 + 70 + 104 + 78 = 434$
12. (e) Number of girls enrolled in singing class
 $= 156 + 182 + 65 = 403$
 $\therefore$ Required percentage
 $= \frac{403}{1560} \times 100 = 26$
13. (a) Required number of students
 $= 70 + 65 = 135$
14. (b) Required percentage
 $= \frac{65}{182} \times 100 = 35.71$
15. (c) Required ratio
 $= 130 : 385 = 26 : 77$
16. (c) The difference was minimum in the year 2007.
 In the year 2007
 Difference $= 32438 - 29129$
 $= 3309$
17. (a) Number of candidates passed from Chennai
 Year 2005 $\Rightarrow \frac{55492 \times 13}{100} = 7214$
 Year 2007 $\Rightarrow \frac{58492 \times 14}{100} = 8189$
18. (d) Number of candidates passed from Delhi in 2002 and 2006
 $= \frac{58248 \times 28}{100} + \frac{59216 \times 20}{100} = 16309 + 11843$
 $= 28152 \approx 28150$

19. (b) Required number of passed candidates.

$$= \frac{71253 \times 19}{100} = 13540$$

20. (e) Required difference

$$= \frac{50248 \times 21}{100} - \frac{51124 \times 17}{100}$$

$$10551 - 8691 = 1860$$

(21 - 25) :

Department	Males	Females
HR	180	330
Marketing	330	191
IT	185	100
Production	630	63
Accounts	175	216

21. (b) Required percentage $= \frac{185}{1500} \times 100 = 12$
22. (e) Number of males in Accounts department $= 175$
23. (b) Required percentage
 $= \frac{(175 + 216)}{2400} \times 100 = 16.29$
24. (a) Required percentage $= \frac{63}{900} \times 100 = 7$
25. (d) Number of females is HR and Marketing department
 $= 330 + 191 = 521$
26. (b) Production of company AVC in 2000 $= 360$ crore units
 Average production of AVC over the given years
 $= \frac{300 + 300 + 300 + 360 + 370 + 340}{6}$
 $= \frac{1970}{6}$
 Hence, required per cent $= \frac{360 \times 6}{1970} \times 100$
 $= 109.64\% \approx 110\%$
27. (c) Approximate per cent increase or decrease in production from the previous year for SIO are as follows:
 $1998 = \frac{2}{85} \times 100 = 2.35\%$
 $1999 = \frac{2 \times 100}{87} = 2.29\%$
 $2000 = \frac{2 \times 100}{89} = 2.24\%$
 $2001 = \frac{1 \times 100}{91} = 1.09\%$
 $2002 = \frac{4 \times 100}{92} = 4.35\%$

You can solve it with simple rough work. See the difference of produced units between two consecutive years. The difference is maximum for 2001 to 2002, and production during all these years is almost same. Hence, in the year 2002 SIO registered maximum increase in production over the previous year.

28. (e) Sum of the productions of the companies in first three years and the last three years in ₹ crore is as follows:

Company	First three years	Last three years
TP	358	349
ZIR	238	267
AVC	900	1070
CTU	836	852
PEN	90	127
SIO	261	279

29. (c) Total production of the six companies in first two given years = $863 + 927 = 1790$

Again, total production of the six companies in last two given years = $989 + 991 = 1980$

Therefore, required per cent

$$= \frac{1790 \times 100}{1980} = 90.40\%$$

30. (b) The required difference
= $(91 - 90)$ crore units
= 1×10000000

= 10000000 units

31. (c) Those companies are:
ZIR PEN and SIO

32. (d)

School	Number of Girls	Number of Boys
P	1000	1500
Q	1350	1650
R	550	1450
S	675	1575
T	500	750
U	175	825

Number of boys in schools R and U together
= $(1450 + 825) = 2275$

$$\therefore \text{Required percentage} = \frac{2275}{3000} \times 100 = 75.83$$

33. (c) Number of boys in school T = 750

34. (a) Required percentage = $\frac{2000}{2250} \times 100 = 89$

35. (b) Required average = $\frac{1}{2} (1500 + 1650) = 1575$

36. (c) Required ratio = $20 : 27$

(37 - 41):

37. (c) Required ratio

City	Number of Candidates passed	Number of candidates failed
A	87500	37500
B	196250	117750
C	48000	60000
D	56750	170250
E	111000	74000
F	159250	113750

$$170250 : 37500 = 227 : 50$$

38. (b) Required percentage = $\frac{1.08}{3.14} \times 100 = 34$
39. (a) Total number of candidates appearing from all the cities together = $(1.25 + 3.14 + 1.08 + 2.27 + 1.85 + 2.73)$ lakh = 12.32 lakh
 $\therefore$ Required percentage
 $= \frac{159250}{1232000} \times 100 = 12.93$
41. (e) Number of passed students from city E = 111000
42. (c) Expenditure of Company C in 2000
 $= 35 \times \frac{100}{140} = ₹ 25$ lakhs
43. (d) Here, the percentage profits of Companies B and C in 2001 were not the same. Therefore, can't be determined is the correct choice.
44. (e) Income of Company C in 2000
 $= 32 \times \frac{140}{100} = ₹ 44.80$ lakhs
45. (c) Reqd ratio = $145 : 155 = 29 : 31$
46. (a) Expenditure of Company D in 2000
 $= 31 \times \frac{100}{155} = ₹ 20$ lakhs
 Profit = Income - Expenditure
 $= 31 - 20 = ₹ 11$ lakhs
47. (b) Required ratio
 $= \frac{25780 \times 12}{100} : \frac{7390 \times 11}{100} = 3094 : 813$
48. (b) Required percentage = $\frac{24}{16} \times 100 = 150$
49. (e) Required difference
 $= (11 - 7)\% \text{ of } 7390 = \frac{4 \times 7390}{100} = 296$
50. (c) It is obvious from the Pie chart.
 Science $\Rightarrow \frac{25780 \times 28}{100} - \frac{7390 \times 32}{100}$
 $\approx 7218 - 2365 \approx 4853$
 Engineering $\Rightarrow \frac{25780 \times 16}{100} - \frac{7390 \times 11}{100}$

- $\approx 4124 - 813 \approx 3311$
- Commerce $\Rightarrow \frac{25780 \times 18}{100} - \frac{7390 \times 16}{100}$
 $\approx 4640 - 1182 \approx 3458$
51. (a) Required number of candidates
 $= 23\% \text{ of } 7390 = \frac{23 \times 7390}{100} \approx 1700$
52. (c) Req'd % decrease $= \frac{4-3}{4} \times 100 = 25\%$
53. (b) Req'd % $= \frac{11}{7} \times 100 \approx 157\%$
54. (d) From the graph's slope, it is obvious that the maximum % increase is in the year 1996, i.e., 166.67%.
55. (a) Req'd difference $= 58 - 31 = 2700000$
56. (e) Average production for Company B $= \frac{31}{8} = 3.9$
57. (d) Req'd. % $= \frac{1200}{14900} \times 100 \approx 8\%$
58. (c) Total no. of Officers $= 2000 + 15000 + 17000 + 3500 + 14900 + 11360 + 9000 = 72760$
 Total no. of Clerks $= 5000 + 17000 + 19500 + 20000 + 17650 + 15300 + 11000 = 105450$
 Req'd difference $= 105450 - 72760 = 32690$
59. (b) Req'd more %
 $= \frac{11000 - 9000}{9000} \times 100 \approx 22\%$
60. (c) 300% more means four times the number of Clerks in Bangalore, which is in Hyderabad.
61. (d) No. of candidates in different centres: Bangalore $= 9850$; Mumbai $= 44470$; Delhi $= 43910$; Hyderabad $= 33950$, Kolkata $= 35120$; Lucknow $= 28840$; Chennai $= 22245$
62. (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 $= \frac{9}{5} \times \frac{7}{5} x = \frac{63}{25} x$
 $\therefore$ Req'd. % $= \frac{63}{25} \times 100 = 252\%$
63. (d) Investment for each year is not given.
64. (e) Investment of company A in 1995 $= 21.7 \times \frac{100}{155}$
 $= ₹ 14 \text{ lakhs}$
65. (c) Let ${}^{195}_{(A)} = {}^{196}_{(B)} = ₹ x \text{ lakhs}$
 $\therefore$ Req'd. ratio $= \frac{x \times \frac{100}{155}}{x} = 20 : 31$

66. (b) Income of company B in 1993
 $= 1540000 \times \frac{145}{100} = ₹ 22.33 \text{ lakhs}$
67. (a) Strength of B in 1998 $= 132 + 9 - 2 + 0 + 3 = 142$
68. (e) Strength of workers in 1999
- | A | B | C | D | E |
|-----|-----|-----|-----|-----|
| 192 | 146 | 149 | 135 | 125 |
69. (c) Strength of C in 1996 $= 98 + 24 + 11 = 133$
 Strength of E in 1997 $= 125 + 2 + 4 - 3 = 128$
 $\therefore$ Req'd. % $= \frac{133}{128} \times 100 \approx 104\%$
70. (e) Total strength of workers in all the five units in 1996
 $= 160 + 139 + 133 + 107 + 131 = 670$.
71. (c) Increase in the strength of workers in D in 1998
 $= 20 + 11 + 7 + 11 = 49$
 $\therefore$ % increase $= 49/76 \times 100 \approx 64.47\%$
72. (e) Marks obtained by B $= 69\% \text{ of } 150 + 72\% \text{ of } 75 + 71\% \text{ of } 200 + 78\% \text{ of } 100 + 69\% \text{ of } 50 + 66\% \text{ of } 75$
 $= 103.50 + 54 + 142 + 78 + 34.5 + 49.50 = 461.5$
73. (a) Average marks $= \frac{420}{6} \times \frac{75}{100} = 52.5$
74. (c) Difference $= 181.50 - 138.75 = 42.75$
75. (b) % marks obtains by A $= \frac{233 \times 100}{300} = 77.67\%$
- (76-78): No. of boys $= \frac{3}{7} \times 175 = 75$
 No. of girls $= 175 - 75 = 100$
 No. of boys who opt only Hindi
 $= 40\% \text{ of } 75 = 30$
 Remaining boys $= 75 - 30 = 45$
 No. of boys who opt only Sanskrit
 $= \frac{2}{3} \times 45 = 30$
 No. of boys who opt composite subjects
 $= 45 - 30 = 15$
 Total no. of students who opt only Sanskrit
 $= 44\% \text{ of } 175 = 77$
 No. of girls who opt only Sanskrit
 $= 77 - 30 = 47$
 No. of girls who opt composite subjects $= 32$
 No. of girls who opt Hindi only
 $= 100 - (32 + 47) = 21$
76. (a) Req'd ratio $= 30 : 32 = 15 : 16$
79. (a) Number of candidates who applied for Science
 $= 88000 \times \frac{22}{100} = 19360$
 Number of candidates selected for Science

- $= 14400 \times \frac{24}{100} = 3456$
 Required difference = $19360 - 3456 = 15904$
80. (b) Number of candidates who applied for Arts
- $= 88000 \times \frac{17}{100} = 14960$
 Number of selected candidates in Maths and English
 $= 14400 \times \frac{38}{100} = 5472$
 Required sum = $14960 + 5472 = 20432$
81. (c) Required ratio = $(14 + 20) : (28 + 24) = 34 : 52 = 17 : 26$
82. (d) Number of applicants for English = $88000 \times \frac{24}{100} = 21120$
- Number of selected candidates = $\frac{14400 \times 28}{100} = 4032$
- Required percentage = $\frac{4032}{21120} \times 100 \approx 19$
83. (e) Required average = $\frac{1}{3} \times \frac{14400 \times 63}{100} = 3024$
84. (a) Required average = $\frac{1}{3} \left(960 \times \frac{5}{8} + 1840 \times \frac{7}{16} + 1600 \times \frac{8}{25} \right)$
- $= \frac{1}{3} (600 + 805 + 512) = \frac{1}{3} \times 1917 = 639$
85. (b) Required number of shirts = $1120 \times \frac{3}{8} = 420$
86. (c) Required number of trousers = $1720 \times \frac{19}{43} + 1120 \times \frac{5}{8}$
- $= 760 + 700 = 1460$
87. (d) Number of shirts manufactured by Company Q
- $= 1600 \times \frac{8}{25} = 512$
 Required percentage = $\frac{512}{1600} \times 100 = 32\%$
 Alternatively
 Required percentage = $\frac{8}{8+17} \times 100 = \frac{8}{25} \times 100 = 32\%$
88. (e) Required ratio = $960 \times \frac{5}{8} : \frac{1120 \times 5}{8}$
- $= 96 : 112 = 6 : 7$
89. (a) Required difference
- $= [(12 + 7 + 6) - (5 + 7 + 5)] \text{ thousand}$
 $= (25 - 17) \text{ thousand} = 8 \text{ thousand}$
90. (b) Required difference = $10 + 7 - 7 = 10 \text{ thousand}$
91. (c) Percentage decrease = $\frac{10-6}{10} \times 100 = 40\%$
92. (d) Required average
- $= \left(\frac{12+15+10+11+13+8}{6} \right) \text{ thousand}$
 $= \frac{69}{6} \times 1000 = 11500$
93. (e) Required answer = 17000
94. (a) Percentage processing of wool in the month of March by different companies.
 Polar = 23.33%, Shepherd = 19.51%,
 Kiwi = 20.41%, Warmwear = 20.18%,
 Comfy = 21.84%
95. (b) Reqd % = $\frac{1100}{1000} \times 100 = 110\%$
96. (b) If we see the table, we find that only Shepherd shows less value in February in comparison to the month of April So, it gives the maximum ratio.
97. (d) Shepherd shows the lowest processing in the month of February and March.
98. (e) Reqd % = $\frac{4900}{4100} \times 100 \approx 120\%$
99. (e) Sale of Pep-up was the maximum in the year 1989.
100. (a) Avg annual sale of Dew-drop
- $= \frac{10+15+25+15+30+25}{6} = 20 \text{ lakhs}$
 Avg. annual sale of Cool-sip
 $= \frac{25+7+20+20+25+30}{6} = 21.16 \text{ lakhs}$
 Avg. annual sale of Pep-up
 $= \frac{30+35+30+25+20+20}{6} = 26.66 \text{ lakhs}$
101. (c) Reqd % = $\frac{25-20}{20} \times 100 = 25\%$
102. (e) Reqd no. = $(30 - 20) \text{ lakhs} = 1000000$
103. (c) Reqd % drop = $\frac{35-30}{35} \times 100 \approx 14\%$
104. (a) Total no. of students studying in all schools in 1992
- $= (1025 + 230 + 190 + 950 + 350 + 225 + 1100 + 320 + 300 + 1500 + 340 + 300 + 1450 + 250 + 280) - (120 + 110 + 150 + 115 + 130 + 150 + 150 + 160 + 125 + 130)$
 $= 8810 - 1340 = 7470$
 $\therefore \text{Average} = \frac{7470}{5} = 1494$
105. (c) Number of students studying in school B in 1994
- $= 950 + (350 - 150) + (225 - 115) + (185 - 110) + (200 - 90)$
 $= 950 + 200 + 110 + 75 + 110 = 1445$
106. (e) Number of students leaving school 'C' from 1990 to 1995 = $130 + 150 + 125 + 140 + 180 = 725$

Number of students admitted during the period
 $= 1100 + 320 + 300 + 260 + 240 + 310 = 2530$

$$\therefore \text{Required percentage} = \frac{725}{2530} \times 100 \approx 29\%$$

107. (d) Required difference $= (340 + 300 + 295 + 320 + 360) - (350 + 225 + 185 + 200 + 240) = 1615 - 1200 = 415$

108. (b) Increase in no. of students in school A
 $= (230 - 120) + (190 - 110) + (245 - 100) + (280 - 150) + (250 - 130) = 585$
 $\therefore \% \text{ increase from } 1990 (1025) \text{ to } 1995$
 $= \frac{585}{1025} \times 100 = 57.07\%$

Similarly, we can calculate for other schools.

Percentage increases in all schools are given in the following

A	B	C	D	E
57.07%	64.73%	64.09%	61.33%	62.41%

109. (a) Total no of IT officers recruitment in Bank A = 11% of 728 = 80 (approx)
 Total no of IT officers recruitment in Bank C = 11% of 567 = 62 (approx)
 Difference between A & C = 18

Some of the newly employed IT officers left A and Joined C. The number of new requirements of IT officers in A and C have now become equal.

i.e 9 IT officers left from Bank A and joined Bank C

The approximate percentage of new recruits who left A
 $= (9/80) \times 100 = 11\% \text{ (approx)}$

110. (c) Total law officers in C, E, F = 10% of $(567 + 427 + 508) = 150$ (approx)
 Total law officers in A, B, D = 10% of $(728 + 945 + 825) = 250$ (approx)
 Law officers in C, E, F are less than A, B, D = $[250 - 150 / 250] \times 100 = 40\%$

111. (d) Ratio = $[27\% \text{ of } (567 + 427) / 27\% \text{ of } (825 + 508)] = 994:1333$

112. (a) Initial
 Requirement of Rajbhasha Adhikaris in D = 15% of 825 = 124 (approx)
 Requirement of Rajbhasha Adhikaris in F = 15% of 508 = 76 (approx)
 Total strength = 200
 After 1 year (current strength)
 Requirement of Rajbhasha Adhikaris in D = 9% of 825 = 74 (approx)
 Requirement of Rajbhasha Adhikaris in F = 9% of 508 = 46 (approx)
 Total strength = 120
 Difference = 80

113. (c) Total technical officers = 8% of 427 = 34 (approx)
 Total Financial executives = 27% of 427 = 115 (approx)
 Additional technical officers - x
 $34 + x / 115 = 2/3 \Rightarrow x = 43 \text{ (approx)}$

114. (c) Percentage of non-fresher candidates from State A who passed the examination in 2006 = $100\% - \text{Non fresher} = 100 - 20 = 80\%$

115. (d) X-Total students appeared from D
 Total no of freshers from D = 25% of $x = 160 \Rightarrow x = 640$
 y - Total students appeared from all states
 10% of $y = 640 \Rightarrow y = 6400$
 Non-fresher candidates (%) passed the exam from State E = $100 - 10 = 90$
 Total no of non-fresher candidates = $90 \times 1600 / 100 = 1440$

116. (a) Total no of candidates = 16% of $x = 112 \Rightarrow x = 700$
 Students passed from state A = 28% of 700 = 196
 Freshers from state A = 20% of 196 = 39
 Students passed from C state = 11% of 700 = 77
 Non-freshers from state C = 85% of 77 = 65 $\Rightarrow 39:65$

117. (b) Total no of candidates in 2006 = 700
 No of candidates from state A in 2006 = 28% of 700 = 196
 No of candidates from state B in 2006 = 16% of 700 = 112
 No of candidates from state A in 2007 = 110% of 196 = 216
 No of candidates from state B in 2007 = 120% of 112 = 134
 Total no of passed candidates from state A and State B in 2007 = 350

118. (c) Total no of candidates passed from state B in 2006 = 75% of $x = 60 \Rightarrow x = 80$
 Total no of candidates passed from all states = 16% of $y = 80 \Rightarrow y = 500$

119. (b) Total no. of Medicine students = 13710
 Total no. of Engineering students = 20440
 Required percentage

$$= \left(\frac{13710}{20440} \times 100 \right) \approx \frac{13700}{20400} \times 100 = 67\%$$

120. (d) Total no. of Arts students over the year = 16250
 Total no. of years = 6

$\therefore$ average no. of students studying Arts

$$= \left(\frac{16250}{6} \right) \approx 2708$$

121. (c) In this type of questions we do not need to calculate the values for all the years.

By simple comparison we can find out the solution; e.g., For the first three years (1997, 1998, 1999), year 1999 has maximum percentage decrease from the previous year. Now, consider one more year, i.e., year 2000. The difference between the no. of Commerce students for 1998 & 1999 is less than the difference between that for the years 1999 & 2000. Hence, till now year 2000 has maximum percentage increase. Similarly, we can proceed year by year.

[Note: For the same difference, or nearly same differences between two pairs of year, the percentage increment/decrement will be more for lesser base value.]

122. (a) Required per cent

$$\frac{1120}{(3050+2850+4550+2640+3650=)16740} \times 100$$

$$= 6.69\%$$

123. (e) Required per cent

$$\frac{3080 \times 100}{(3200+3500+2850+3640+3080+3800=)20070}$$

$$15.34 \approx 15$$

(124-128): As the formula is given in the question, we should follow it to find the solution.

124. (e) The percentage profit of company 'A' in 1998 = 50%
Income, = 142500 (given)

$$\text{Expenditure} = 142500 \left(\frac{100}{100+50} \right) = 95000$$

$$125. (d) E_{B99} = \frac{90}{100} E_{B98} \text{ (given)}$$

$$I_{B99} = \frac{90}{100} \times \frac{140}{100} \times \frac{100}{135} (I_{B98})$$

$$I_{B99} = \frac{280}{300} I_{B98}$$

$$= \frac{280}{3} \% \text{ of } I_{B98} = 93\frac{1}{3} \% \text{ of } I_{B98}$$

$$126. (c) E_{A97} = ₹ 70 \text{ lakh}$$

$$\Rightarrow I_{A97} = 70 \left(\frac{125}{100} \right) = ₹ 87.5 \text{ lakh}$$

$$I_{A97} = E_{A98} = ₹ 87.5 \text{ lakh}$$

$$\therefore I_{A98} = 87.5 \left(\frac{150}{100} \right) = ₹ 131.25 \text{ lakh}$$

$$\therefore \text{reqd value} = I_{A97} + I_{A98}$$

$$= 87.5 + 131.25 = ₹ 218.75 \text{ lakh}$$

$$127. (a) \text{ We have to find } I_{B96} : I_{B97}$$

$$\text{Given } E_{B96} = 5x \text{ and } E_{B97} = 7x$$

$$I_{B96} = 5x \left(\frac{140}{100} \right) \text{ and } I_{B97} = 7x \left(\frac{130}{100} \right)$$

$$\therefore I_{B96} : I_{B97} = \frac{5x}{7x} \left(\frac{140}{130} \right) = 10 : 13$$

129. (c) In the years 2002, 2003, 2006, 2007

Unit(x) = Total Revenue/Price	Profit	Cost Price = Revenue - Profit	Cost Per Unit = Cost Price/ Unit
$x = 1200/12 \Rightarrow x = 100$	300	$1200 - 300 = 900$	$900/100 = 9$
$x = 900/12 \Rightarrow x = 75$	150	$900 - 150 = 750$	$750/75 = 10$
$x = 200/10 \Rightarrow x = 20$	100	$200 - 100 = 100$	$100/20 = 5$
$x = 700/14 \Rightarrow x = 50$	200	$700 - 200 = 500$	$500/50 = 10$

130. (a) In the years 2001, 2005, 2006, 2007

Unit(x) = Total Revenue/Price	Profit	Cost Price = Revenue - Profit	Cost Per Unit = Cost Price/ Unit
$x = 1400/14 \Rightarrow x = 100$	100	$1400 - 100 = 1300$	$1300/100 = 13$
$x = 900/12 \Rightarrow x = 75$	150	$900 - 150 = 750$	$750/75 = 10$
$x = 200/10 \Rightarrow x = 20$	100	$200 - 100 = 100$	$100/20 = 5$
$x = 700/14 \Rightarrow x = 50$	200	$700 - 200 = 500$	$500/50 = 10$

131. (d)

Years	Unit Price	Revenue	Total Units = Revenue/ Unit Price
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2000	10	700	70
2001	14	1400	100
2002	12	1200	100
2003	12	900	75
2004	11	1100	100
2005	8	400	50
2006	10	200	20
2007	14	700	50
2008	10	600	60
2009	10	800	80
2010	15	900	60

Total = 765 $\rightarrow$ Avg = $765/11 = 70$ (approx)132. (c) Average of total units sold in the years of 2002, 2003, 2004, 2005 and 2008 = $100 + 75 + 100 + 50 + 60/5 = 77$ 133. (d) Total decrease in revenue = 10% of $(700 + 1400 + 1200 + 900 + 1100) = 530$ Total decrease in cost = 10% of $(250 + 100 + 500 + 600 + 400 + 600) = 245$ The cumulative profit for the entire period 2000-2010 decrease by = Total decrease in revenue + Total increase in cost = $530 + 245 = 775$ 134. (d) Total no of MUV cars (C & H) = Total no of cars in MUV & SUV (C & H) - Total no of cars in SUV (C & H) = $(14\% + 9\%) \text{ of } 56000 - (7\% + 12\%) \text{ of } 32000 = 6800$
Total number of cars (both SUV and MUV) sold by stores F and H together = $(8\% + 9\%) \text{ of } 56000 = 9520$
% = $[(9520 - 6800)/9520] \times 100 = 28.57\%$ 135. (b) Number of cars in MUV & SUV for D = 15% of 56000 = 8400
Total no of SUV cars (C, F, G) = 21% of 32000 = 6720
% = $[(8400 - 6720)/6720] \times 100 = 25\%$

136. (d) Total no of MUV cars (A, D, E, F, H) = Total no of cars in MUV & SUV (A, D, E, F, H) - Total no of cars in SUV (A, D, E, F, H)

Total no of MUV cars (A, D, E, F, H) = 70% of 56000 - 71% of 32000 = 16480 $\Rightarrow$ Average = $16480/5 = 3296$

137. (a) Total no of SUV cars (A & B) : Total no of cars (MUV & SUV) for C & F

32% of 32000 : 22% of 56000

10240 : 12320 = 64:77

- 138 (b) In 2005, number of cars (MUV & SUV) for A, D, E = [110% of 18% of 56000 + 135% of 15% of 56000 + 115% of 20% of 56000] = 35308

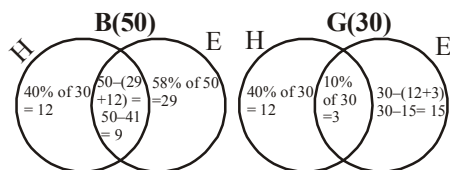
In 2005, number of cars SUV for A, D, E = [110% of 16% of 32000 + 135% of 13% of 32000 + 115% of 22% of 30000] = 19344

Total number of MUV cars distributed by these three dealers in 2005 = 35308 – 19344 = 15964

154 – 158

- (139-143): No of boys in the class = $\frac{5}{8} \times 80 = 50$

$\therefore$ No of girls in the class = 80 – 50 = 30



139. (d) 140. (a) 141. (d) 142. (b) 143. (c)
 145. (d) From the graph's inclination, it is clear that the percentage rise/fall is maximum in the year 1997 w.r.t previous year.
 146. (d) No. of students in 1996 = 1550 + (450 – 300) = 1700
 147. (e) Strengths of the school is equal in 1993 and 1995

1993	1994	1995	1996	1997	1998
1550	1450	1550	1700	1600	1650

148. (b) Reqd. % = $\frac{1700}{1450} \times 100 \approx 117\%$

(149-153):

40% of males = 8800

$\therefore$ No. of total males

$$= \frac{8800}{40} \times 100 = 22,000$$

Ratio of males, females and children 10 years old and above

= 11 : 10 : 9

Hence, no. of total females

$$= \frac{22,000}{11} \times 10 = 20,000$$

No. of total children (10 yrs old and above)

$$= \frac{22,000}{11} \times 9 = 18,000$$

No. of literate males = 8800

No. of illiterate males

= 22,000 – 8800 = 13,200

No. of literate females

$$= \frac{20,000 \times 30}{100} = 6,000$$

No. of illiterate females

= 20,000 – 6,000 = 14,000

The number of children below 10 years of age = 10% of the number of females

$$= \frac{20,000 \times 10}{100} = 2000$$

No. of total children

= 18000 + 2000 = 20,000

No. of illiterate children 10 years old and above

$$= \frac{18000 \times 20}{100} = 3600$$

No. of literate children 10 years old and above

= 18000 – 3600 = 14400

No. of persons below poverty line

= 5% of (22,000 + 20,000 + 20,000)

$$= \frac{5 \times 62000}{100} = 3100$$

Illiterate persons among these 3100 persons

$$= 80\% \text{ of } 3100 = \frac{80 \times 3100}{100} = 2480$$

149. (a) 150. (b) 151. (a)

152. (d) Required % = $\frac{20,000}{62,000} \times 100 = 32.26$

153. (e) 14000

154. (b) Wipro = $20 \times 132500 / 100 = 26500$

Sun = $24 \times 132500 / 100 = 31800$

Infosys = $10 \times 132500 / 100 = 13250$

Total = 8200 + (31800 – 12000) + (13250 – 10400)

= 8200 + 19800 + 2850 = 30850

155. (d) Polaris = $132500 \times 16 / 100 = 21200$

HCL = $132500 \times 13 / 100 = 17225$

HCL male = 17225 – 6500 = 10725

Difference = 21200 – 10725 = 10475

156. (c)
- | | | |
|---------|-------|-------|
| Org | F | M |
| Sun | 12000 | 19800 |
| Polaris | 11300 | 9900 |
| HCL | 6500 | 10725 |
| Wipro | 8200 | 18300 |
| CTS | 7600 | 14925 |
| Infosys | 10400 | 2850 |

157. (a) CTS M = 14925

Sun Total = 31800

% = $14925 \times 100 / 31800 = 46.9 = 47\%$

158. (d) Avg = $9900 + 18300 + 14925 / 3 = 14375$

159. (c) Marks obtained by R in different subjects

A	B	C	D	E	F
49.50	112.5	79	44	108	49.50

Total marks obtained by R out of 600 marks

= 49.50 + 112.50 + 79 + 44 + 108 + 49.50 = 442.5

$\therefore$ Required % marks

$$= \frac{442.5 \times 100}{600} = 73.75\%$$

160. (b) Marks of P and T in the subjects 'B', 'D' and 'E'

Sub → Students ↓	B	D	E	Total
P	102	46	133.5	281.5
T	112.5	34	103.5	250

Hence required difference
 $= 281.5 - 250 = 31.5$

161. (a) Total marks obtained by all the students in subject B

$$= \frac{150 \times (68 + 72 + 75 + 62 + 75 + 80 + 68)}{100}$$

$$\therefore \text{Required average} = \frac{750}{7} \\ = 107.14$$

162. (c) $\frac{\text{Total in C} + \text{Total in D}}{1400} \times 100$

$$= \frac{547 + 565}{14} = 79.43\%$$

163. (d) Required total marks

$$= \frac{75 \times (82 + 70 + 66 + 74 + 78 + 80 + 72)}{100}$$

$$= \frac{75 \times 522}{100} = 391.5$$

164. (c) Investment per cent of unit C as a fraction of the total investment of all the units in

1996	1997	1998	1999	2000	2001
19.26%	16.87%	16.71%	15.94%	16.76%	16.65%

165. (a) Investment percent in 1997 as a fraction of the total investment in all the given years together of each unit is as follows:

	A	B	C	D	E	F
Investment	132	140	137	125	128	150
Out of	738	824	827	810	817	875
In per cent	17.89%	16.99%	16.57%	15.43%	15.67%	17.14%

166. (e) Required % increase

$$= \frac{(145 - 98)}{98} \times 100 = 47.96\%$$

167. (b) Investment by units A, B and C in 1998

$$= 125 + 145 + 138 = 408 \text{ crores}$$

Investment by units A, B and C in 1999

$$= 116 + 148 + 136$$

$$= 400 \text{ crores}$$

Thus, required difference

$$= 408 - 400 = 8 \text{ crores (more)}$$

168. (e) Total investment of units A, B and C in the year 1998
 $= 125 + 145 + 138 = 408 \text{ crores}$
 Investment by the units D, E and F in the years 1999
 $= 145 + 152 + 156 = 453 \text{ crores}$

$$\text{Hence required ratio} = \frac{408}{453}$$

$$= 136:151$$

169. (b) Total number of the malnourished children in year

- (i) 1991 = $(10.0 + 1.4 + 0.1)\%$ of 1048000

$$= 11.5\% \text{ of } 1048000$$

- (ii) 1986 = $(12.1 + 3.0 + 0.8)\%$ of 1048000

$$= 15.9\% \text{ of } 1048000$$

Hence, the required difference

$$= (15.9 - 11.5)\% \text{ of } 1048000$$

$$= 46112$$

170. (b)

Year	Percentage of the malnourished
1984	16.1
1985	15.5
1986	15.9
1987	12.9
1989	12.9
1990	12.2
1991	11.5
1992	9.9
1993	8.8

171. (e) Reject (a) and (d) because we see that the percentage of high malnourished cases increases to 0.8 from 0.7 in the year 1986.

Reject (b) because we see that the percentage of moderate malnourished cases increased from 2.7 to 3.0 in the year 1986.

Reject (c) because no such fall is witnessed during the year 1985 to 1986.

Hence, select (e) by elimination.

172. (d) Number of required children

$$= 0.5\% \text{ of } 1071000$$

$$= \frac{5 \times 1071000}{1000} = 5355$$

173. (b) The required malnourished children in 1993

$$= (7.8 + 0.9 + 0.1)\% \text{ of } 1161000$$

$$= 8.8\% \text{ of } 1161000$$

$$= 102168$$

174. (d) Difference of production of C in 1991 and A in 1996 = 5,00,000 tonnes.

175. (a) Percentage increase of A from 1992 to 1993

$$\frac{55 - 40}{40} \times 100 = 37.5\%$$

176. (b) Percentage rise/fall in production for B

1992	1993	1994	1995	1996
9%	-16.6%	10%	-9%	10%

Here, the maximum difference is from 1992 to 1993, which is 10. And the second nearest to it is fall or rise of 5. So, undoubtedly the answer is 1993.

177. (e) Percentage production = $\frac{120}{90} \times 100 = 133.3\%$

178. (c) Average production of A = 50
Average production of B = 54.17
Average production of C = 50
Difference of production = $54.17 - 50 = 4.17$

179. (d) Distance to be travelled by each type of vehicle

$$= \frac{15}{3} = 5 \text{ km}$$

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

$$\text{₹} = \frac{13.5 - 9.00}{(7 - 4)} \times 1.$$

Similarly, for other cases.

$$\text{Fare by A} = \text{₹ } 9 + \frac{13.50 - 9}{7 - 4} = 9 + 1.50 = \text{₹ } 10.50$$

$$\begin{aligned} \text{Fare by B} &= 14.50 + \frac{24.25 - 14.50}{7 - 4} \\ &= 14.50 + 3.25 = 17.75 \end{aligned}$$

$$\text{Fare by C} = 19 + \frac{31 - 19}{3} = 19 + 4 = 23$$

$$\text{Total fare} = 10.50 + 17.75 + 23 = \text{₹ } 51.25$$

180. (a) Fare by A = $9 + \frac{4.50}{3} \times 2 = \text{₹ } 12$

$$\text{Fare by B} = 24.25 + \frac{33.25 - 24.25}{3} \times 2 = \text{₹ } 30.25$$

$$\text{Total fare} = 30.25 + 12 = \text{₹ } 42.25$$

181. (b) Fare for 8 km by A = $13.50 + \frac{17.25 - 13.50}{10 - 7}$

$$= 13.50 + \frac{3.75}{3} = \text{₹ } 14.75$$

$$\text{Fare by B} = 24.25 + \frac{33.25 - 24.25}{3} = \text{₹ } 27.25$$

$$\text{Difference} = 27.25 - 14.75 = \text{₹ } 12.50$$

182. (e) Fare by B for 5 km = $14.50 + 3.25 = \text{₹ } 17.75$

$$\begin{aligned} \text{Fare by A for 8 km} &= 13.50 + \frac{17.25 - 13.50}{3} \\ &= \text{₹ } 14.75 \end{aligned}$$

$$\text{Fare by C for 5 km} = 19 + \frac{31 - 19}{3} = \text{₹ } 23$$

$$\text{Total fare} = 17.75 + 14.75 + 23 = 55.50$$

183. (b) Fare for 14th km by C = $\frac{56.50 - 41.50}{15 - 10} = \text{₹ } 3$

$$\text{Fare for 9th km by B} = \frac{33.25 - 24.25}{10 - 7} = \text{₹ } 3$$

184. (a) Total production of

$$A = 465 + 396 + 524 + 630 + 408 + 650 = 3073 \text{ lakh tonnes}$$

$$C = 694 + 528 + 492 + 575 + 550 + 495 = 3334 \text{ lakh tonnes}$$

$$\text{Hence, required difference} = 3334 - 3073 = 261 \text{ lakh tonnes}$$

185. (e) Total production of all companies in

$$1996 = 396 + 482 + 528 + 602 + 551 + 635 = 3194 \text{ lakh tonnes}$$

$$1997 = 524 + 536 + 492 + 387 + 412 + 605 = 2956 \text{ lakh tonnes}$$

Hence, required % decrease

$$= \frac{3194 - 2956}{3194} \times 100 = 7.451\% \approx 7.5\%$$

186. (d) Percentage rise/fall from the previous year in production of company F are as follows :

1996	1997	1998	1999	2000
25.24%	- 4.72%	- 0.82%	- 19.16%	8.24%

You can give the answer without doing any detailed work. A cursory look will help you detect that the required year is either 1996 or 1999. Again, a step further you get that the rise in production in the year 1996 is more than 20% while the production in 1999 is less than 20%.

187. (b) Production of companies A and B together in

$$1997 = 524 + 536$$

$$= 1060 \text{ lakh tonnes}$$

Production of companies E and F together in

$$1998 = 518 + 600 = 1118 \text{ lakh tonnes}$$

$$\text{Hence, required \%} = \frac{1060}{1118} \times 100 = 94.81\% \approx 95\%$$

188. (c) Average production of B in the given years (in lakh tonnes)

$$= \frac{372 + 482 + 536 + 480 + 512 + 580}{6} = \frac{2962}{6} = 493.66$$

Similarly, average production of E in the given years

$$= \frac{498 + 551 + 412 + 518 + 647 + 610}{6}$$

$$= \frac{3236}{6} = 539.33$$

$$\text{Hence, required difference} = 539.33 - 493.66 = 45.67 \text{ lakh tons}$$

189. (a) We have given profit/loss = Income – Expenditure
Therefore, profit in each of the given years is as follows:

Year	96	97	98	99	00	01
Income	350	450	450	500	400	550
Exp.	250	300	400	350	450	450
Profit	100	150	50	150	– 50	100
in crore ₹						

∴ Average profit

$$= \frac{100 + 150 + 50 + 150 - 50 + 100}{6}$$

= ₹83.33 crore.

190. (b) Profit earned during the year 1999 = ₹ 150 cr
Expenditure during the year 1999 = ₹ 350 cr
Hence, % profit earned in the year 1999

$$= \frac{150 \times 100}{350} = 42.85\% \approx 43\%$$

191. (d) Per cent increase/decrease in income from the previous year:

1997	1998	1999	2000	2001
28.57%	0%	11.11%	–20%	37.5%

Note : – ve sign indicates fall in income.

you can solve this question merely with the help of the graph.

192. (b) Required % increase

$$= \frac{(400 - 300)}{300} \times 100 = 33\frac{1}{3}\%$$

193. (c) Average income

$$= \frac{350 + 450 + 450 + 500 + 400 + 550}{6} = \frac{2700}{6}$$

= ₹450 crore

194. (b) No. of students who got 0-19 marks in maths = 31
No. of students who got 20-39 marks in Maths = 22;
therefore,
no. of students who got less than 40% marks in Maths = 31 + 22 = 53
Hence, no. of students who passed in Maths = 160 – 53 = 107.

195. (a)

Marks	60-79	80-100
Average of three subjects	35	5

Hence, required no. of students = 35 + 5 = 40

196. (a)

	Marks			
Subject ↓	40-59	60-79	80-100	40-100
Hindi	79	30	08	117
English	65	42	02	109
Maths	34	45	28	107

107 is the lowest among 117, 109 and 107. Hence, required no. of students = 107.

197. (e) 65 + 42 + 02 = 109

198. (d)

	Marks	
Subject ↓	0-19	No. of those students who obtained 20 or more marks (20-100)
Hindi	12	148
English	21	139
Maths	31	129

Mere this information is not sufficient to obtain the exact number of students who got 20 or more marks in at least one paper.

199. (e) The difference between the white-coloured cars sold is the minimum in B type model.

200. (a) Blue (E + D) = 37 + 43 = 80 = White (B)

201. (e) Req'd. difference = (50 – 34) × 1000 = 16,000

202. (c) Req'd. percentage = $\frac{173}{192} \times 100 \approx 90\%$

203. (a) Colour-model combinations of car in Metro M

Silver-F	White-C	Blue-B	Red-F	Black-F
52	90	60	42	55

204. (c) $25 \times 15 / 100 \times 2 / 5 = 1.5$ (for company P) and $25 \times 22 / 100 \times 4 / 5 = 4.4$ (for company R)

So total = 5.9 cr

205. (e) For company U = $25 \times 5 / 100 \times 1 / 5$ and for company S = $25 \times 8 / 100 \times 5 / 8$

% percent = $[25 \times 5 / 100 \times 1 / 5] / [25 \times 8 / 100 \times 5 / 8] = 1 / 5 \times 100 = 20\%$

206. (a) For item A cost of production = $25 \times 12 / 100 \times 1 / 3 = 1$ crore and for item B it is 2 crore.

Now profit earned on A = $1 \times 130 / 100 - 1 = 0.3$ crore and profit earned on B = $2 \times 124 / 100 - 2 = 0.48$ crore. Total profit = 0.3 + 0.48 = 0.78 crore or 78 lakh

207. (d) Ratio = $25 \times 15 / 100 \times 2 / 5 : 25 \times 8 / 100 \times 3 / 8 = 2:1$

208. (c) $(8/100) \times 25 \times (5/8) = 1.25$ crore
 $1.25 \times (125/100) = 1.56$ crore, profit = $1.56 - 1.25 = 31$ lakh

210. (d) Our intelligent observation says that the required year can't be 1993, 1994, 1995. Why? Because see the following conclusions:

$$\% \text{ passed to appear} = \frac{\text{Passed}}{\text{Appeared}} \times 100$$

$\%$ of passed to appear is least when $\frac{\text{Passed}}{\text{Appeared}}$ is the least

or, $\frac{\text{Passed}}{\text{Appeared}}$ is the most. Now, we do the further

calculations mentally. See the following conclusions:

For 1990: $\frac{7894}{2513} \Rightarrow \text{Quotient} = 3 \text{ \& Remainder} \approx 300$

For 1991: $\frac{8562}{2933} \Rightarrow Q = 3 \text{ \& } R \approx 400$

For 1992: $\frac{8139}{2468} \Rightarrow Q = 3 \text{ \& } R \approx 800$

Similarly, for 1993, 1994, 1995, Q is 2.

So, 1992 gives the highest value.

Note: When R is close for close or three years you should go for further calculations and find the exact possible values. But larger difference in R for almost equal divisors gives the option to stop our further calculations, as happened in this case.

211. (a) $\frac{8562 - 8139}{8562} \times 100 = \frac{423}{8562} \times 100 \approx \frac{42}{84} \times 10 = 5$

212. (a) We don't need to calculate the values for each year. Follow as:

For rural area: $35\% \text{ of } 5032 \approx 35 \times 50 \approx 1750 \approx 1798$

For Semi-urban area: $35\% \text{ of } 9500 \approx 35 \times 95 \approx 3300$

Which can't be approximated to 3500.

For State capitals: $35 \times 85 \approx 3000$

For Metropolises: $35 \times 110 \approx 3850$

213. (c) $1798 + 2513 = 4311$

214. (a) Average marks of Q in 1st periodical

$$= \frac{30 + 25 + 33 + 42 + 30}{5} = \frac{160}{5} = 32$$

215. (c) Total marks of T in Science
 $= 44 + 36 + 40 + 30 + 40 = 190$

216. (b) Average percentage of marks obtained by P in Marks

$$= \frac{80 + 60 + 90 + 40 + 70}{5} = 68\%$$

= percentage of marks obtained by student R in Geography.

217. (c) Our observation finds two options which are close to each other. These are History & Geography. When we

find the actual value, we find that our answer is History.

Note: You can decide the answer with totalling only. You don't need to calculate the percentage value.

219. (a) Production of C type cars in 1996
 $= (70 - 40)\% \text{ of } 4,50,000 = 30\% \text{ of } 4,50,000 = 1,35,000$
 Production of C type cars in 1997
 $= (65 - 40)\% \text{ of } 5,20,000$
 $= 25\% \text{ of } 5,20,000 = 1,30,000$
 $\therefore$ Required difference = 5,000

220. (e) Production of E type cars in 1996
 $= (100 - 80)\% \text{ of } 4,50,000$
 $= 20\% \text{ of } 4,50,000 = 90,000$
 And in 1997 = $10\% \text{ of } 5,20,000 = 52,000$
 $\therefore$ Total production = $90,000 + 52,000 = 1,42,000$
 $\therefore$ Required no. of cars = $15\% \text{ of } 1,42,000 = 21,300$

221. (b) Production of A type cars in 1997 = production of A type cars in 1996 (given) = $(100 - 85) = 15\% \text{ of } 4,50,000 = 67,500$

$$\therefore \text{Reqd percentage} = \frac{67,500}{5,20,000} \times 100 \approx 13$$

222. (c) Clearly, by visual inspection D is the desired option.

223. (c) Percentage production of B type cars in 1997 = that in 1996 (given)
 $= (40 - 15) = 25\% \text{ of } 5,20,000 = 1,30,000$

224. (a) Average marks obtained by 20 boys in History from school $Q = 45$
 $\therefore$ Total marks = $20 \times 45 = 900$

225. (a) From visual inspection it is clear that Science is the desired subject.

Note : Our visual observation says that it is either Math or Science in which maximum marks has been obtained. So, compare the total of Maths and Science only.

226. (d) Total marks obtained by boys and girls in all the subjects:

$$\text{For school } P = (85 + 40 + 50 + 120 + 105) + (90 + 55 + 40 + 110 + 125) = 820$$

Similarly, for $Q = 745$, for $R = 935$, for $S = 645$ and for $T = 1005$.

645 is the minimum, so S is the desired school.

Note: From careful observation we find that our answer is school S . The other school nearest to it is either P or Q . But if you compare the marks, P and Q also take lead of at least 100 marks. So, only visual observation gives the result.

227. (b) As the no. of boys and girls in the different schools are the same, so for the desired purpose we have to select a certain school in which the average marks of girls in Mathematics be exactly double the average marks of boys in History. By visual inspection (as $80 = 2 \times 40$), we get that S is the desired school.

228. (b) In Mathematics total marks obtained by boys from school $R = 135 \times 20$

By girls from school $S = 80 \times 20$

$\therefore$ Req'd difference = $(135 - 80) \times 55 \times 20 = 1100$.

229. (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 (crores). Hence, the answer is (e).

230. (d) By visual inspection it is clear that 1992 is the desired year (as the distance between two points is the maximum in 1992.)

231. (a) By mental observation $\left(\text{as } 50 = \frac{40 + 60}{2} \right)$, 1992 only

is the desired year. You don't need any calculation. See the year where the point of A lies exactly in the middle of points of B and C.

232. (b) Req'd percentage increase = $\frac{50 - 40}{40} \times 100 = 25\%$

233. (c) The total imports (in crores) 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.

234. (d) Incomes-Expenditures of Company A and B cannot be correlated.

235. (e) Expenditure of Company A in 1996

$$= E_{96(A)} = I_{96(A)} \left[\frac{100}{100 + 60} \right] = \frac{5}{8} I_{96(A)}$$

Expenditure of Company B in 1997

$$= E_{97(B)} = I_{97(B)} \left[\frac{100}{100 + 70} \right] = \frac{10}{17} I_{97(B)}$$

$$\text{Now, } \frac{E_{96(A)}}{E_{97(B)}} = \frac{5}{8} \div \frac{10}{17} \quad (\text{Since, } I_{96(A)} = I_{97(B)})$$

$$= \frac{5}{8} \times \frac{17}{10} = \frac{17}{16} = 17 : 16$$

236. (c) Ratio A : B is greater than 1 in only 1993 and 1997. It is 1.33 in 1993 and 1.1 in 1997.

237. (e) Suppose $E_{95(B)} = x$

Then $E_{96(B)} = 1.2x$ (Since, $x + 20\%$ of $x = 1.2x$)

$$\text{Now, } I_{95(B)} = E_{95(B)} \left[\frac{100 + 80}{100} \right] = 1.8x$$

$$I_{95(B)} = E_{95(B)} \left[\frac{100 + 80}{100} \right] = 1.2x(1.8)$$

$$\therefore \frac{I_{96(B)}}{I_{95(B)}} = \frac{1.2 \times 1.8x}{1.8x} = 1.2 \text{ times}$$

Alternative method : % profits are the same for two years. So if expenditure increases by 20% the income should also increase by 20%. Hence the required ratio

$$= \frac{100 + 20}{100} = 1.2$$

$$238. (a) E_{96(A)} = I_{96(A)} \left[\frac{100}{100 + 60} \right]$$

$$= \frac{36 \text{ lakh} \times 100}{160} = ₹ 22.5 \text{ lakh}$$

239. (a) UP (Qua/App)

Arts	Commerce	Science	Engg.	Agr.
0.34	0.39	0.4	0.42	0.42

Alternative Approach: $\frac{\text{Qual.}}{\text{App.}}$ should be the least.

$\Rightarrow \frac{\text{App.}}{\text{Qual.}}$ should be the maximum.

Now, for Arts, if we divide $(4980 \approx) 5000$ by $(1690 \approx) 1700$ we find the value of quotient near about 3. But in other cases the quotient is just more than 2. So, our answer is Arts.

241. (e) Percentage of students qualified in commerce

A.P.	U.P.	Kerala	Orissa	M.P.
33.9	38.7	58.2	45.8	28.5

242. (d) Qualifying percentage of UP = $\frac{9280}{23880} \times 100 = 38.86$

$$\text{Qualifying percentage of MP} = \frac{8625}{26750} \times 100 = 32.24$$

Ratio = $38 : 32 = 19 : 16$

243. (d) Qualifying percentage for Science

A.P.	U.P.	W.B.	Kerala	Orissa	M.P.
39.9	40.5	37.7	58.8	43.3	43.8

244. (d) Required percentage

$$= \frac{35 + 40 + 45 + 35 + 35}{45 + 50} \times 100 = \frac{190}{95} \times 100 = 200$$

245. (b) Average production by B = $\frac{45 + 35 + 40}{3} = 40$

$$\text{Average production by C} = \frac{25 + 35 + 45}{3} = 35$$

Ratio = $(40 : 35) 8 : 7$

246. (c) Maximum difference is 5 lakh tonnes for three companies C, D & E. So, our answer should be the company for which the production is least in 1996. Because to calculate the % increase or decrease our denominator is the production in 1996.

247. (a) Percentage drop = $\frac{50-35}{50} \times 100 = 30\%$

248. (e) You should not calculate the values to get answer. You can decide by mere visual observation.

249. (d) Total no. of students who play cricket
 $= 38 + 40 + 12 + 17 + 25 + 18 + 20 = 170$

Reqd % = $\frac{25}{170} \times 100 \approx 15\%$

250. (d) Reqd ratio = $27 : 18 = 3 : 2$

252. (e) Total Class X students who play different games = 115

Reqd % = $\frac{21}{115} \times 100 \approx 18\%$

253. (e) Basketball and Badminton are the two games which satisfy the conditions.

254. (b) $30:32 = 15:16$

255. (d)

256. (c)

257. (c) $[(47-30)/47] \times 100 = 36.17 = 36$

(258-263) :

Staff members = 240 [Teachers = 156 (male = 104, Females = 52) and Administrative staff = 84 (Male = 54, female = 30)] Students = 1600 [Boys = 880 (only English = 660, both Hindi and English = 220)], Girls = 720 (only English = 144, both Hindi and English = 576)]

258. (b) $576 - 220 = 356$

259. (c) $(720/240) \times 100 = 300\%$

260. (c) $30 + 52 - 54 = 28$

261. (b) $156:660 = 13:55$

262. (c) $54 + 52 + 144 = 250$

263. (d) $54:144 = 3:8$

264. (e) Required percent = $\frac{152.2}{86.4} \times 100 \approx 175\%$

266. (c) Average production of pulse

$$\frac{20.5 + 22.4 + 24.6 + 23.5 + 27.8 + 28.2}{6} = \frac{147.0}{6}$$

= 24.5 million tonnes

267. (a) Required percentage = $\frac{32.4}{450} \times 100 = 7.2\%$

268. (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.

269. (d) Average percentage growth of Assemble PCs

$$= \frac{20 + 25 + 25 + 50 + 55}{5} = \frac{175}{5} = 35\%$$

270. (e) Growth of branded PCs from 1996 to 1999 = 20%

Branded PC's sold in 1999 = $100000 \times \frac{120}{100} = 1,20,000$

272. (e) Difference between Assembled and Branded PCs

1995	1996	1997	1998	1999
10%	15%	5%	20%	25%

273. (c) Per cent growth of Assembled PCs is

1996	1997	1998	1999
5%	No change	25%	5%

275. (e) The answer is 1997, Machine IV

279. (a) Average = $\frac{52 + 66 + 64 + 75 + 58}{5} = \frac{315}{5} = 63$.

280. (a) The difference is 9.

281. (a) Percentage increase = $\frac{55-46}{46} \times 100 \approx 20\%$

282. (e) Average highest marks = $\frac{85 + 80 + 75}{3} = \frac{240}{3} = 80$.

284. (c) Required percentage = $\frac{80}{64} \times 100 = 125\%$

285. (b) Marks obtained by students = $50 \times 60 = 3000$

286. (e) The maximum difference is in the years 1992 & 1997. Since the least value is in 1992 and the highest value is in 1997.

287. (b) Rajasthan = $(10/100) \times 50 \times (73-27)/100 = 2.3$

288. (c) Ratio $\Rightarrow (9/100) \times 50 \times (34/100) : (20/100) \times 50 \times (78/100) = 51/260$

289. (a) Rajasthan = $(10/100) \times 50 \times (73/100) = 3.65$ similarly, HP = 3.9 Jharkhand = 2.88 J&K = 7.8 Haryana = 7.7 Maharashtra = 0.8 TN = 2.97

Total = 29.7, so average = $29.7/7 = 4.24$

290. (c) Production of Haryana by machine method = 7.7 and production of Maharashtra by manual method = 3.2, So % greater = $[(7.7 - 3.2)/3.2] \times 100 = 140\%$

291. (c) Production in HP by manual method = 2.6 and production in Jharkhand by machine method = 2.88
 $x = 2.6/2.88 = 0.9$

