PRACTICE SET-5

DIRECTIONS (Qs. 1-5) : *Study the following information carefully to answer the questions given below it.*
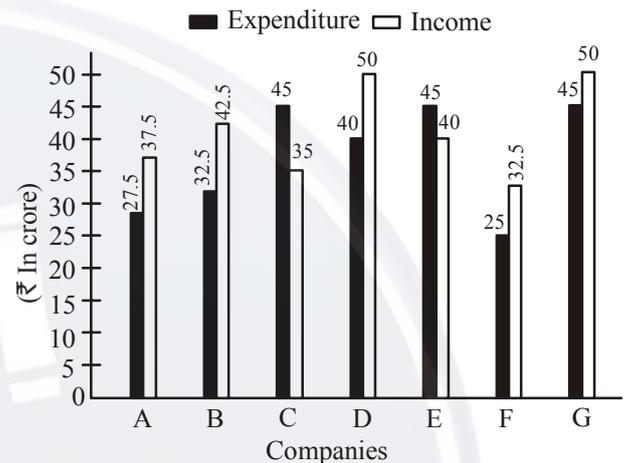
In a school of 2500 students, all the students have enrolled for different games viz. hockey, table-tennis, badminton, football, cricket, chess and carrom. The respective ratio of girls to boys in the school is 3 : 2. 20% of the boys play only cricket. 25% of the girls play table tennis, badminton and carrom only. 26.8% of the boys play only football. The number of girls playing only cricket is 175% of the boys playing the same. The respective ratio of girls and boys playing only chess is 12 : 11. 25.7% of the boys play hockey, table-tennis and carrom only. One-fourth of the girls play only badminton. The remaining girls play football and hockey only. The remaining boys play only chess.

1. How many students play more than one game ?
   (a) 850   (b) 862
   (c) 732   (d) 671
   (e) None of these

2. The Total number of students playing hockey is what per cent of the total number of students in the school ?
   (a) 25.7%   (b) 10.8%
   (c) 14.28%   (d) 21.14%
   (e) None of these

3. What is the respective ratio of total number of boys playing chess to the total number of girls playing badminton ?
   (a) 11 : 30   (b) 13 : 32
   (c) 9 : 29   (d) 13 : 29
   (e) None of these

4. What is the total number of students playing football, cricket and table tennis ?
   (a) 1300   (b) 1550
   (c) 1450   (d) 1650
   (e) None of these

5. How many students play carrom ?
   (a) 475   (b) 600
   (c) 538   (d) 482
   (e) None of these

DIRECTIONS (Qs. 6-10) : *Study the following graph carefully and answer the questions given below it :*

Account of income and expenditure (in crores) of seven companies in the year 2014

$$\text{Percentage profit/loss} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$
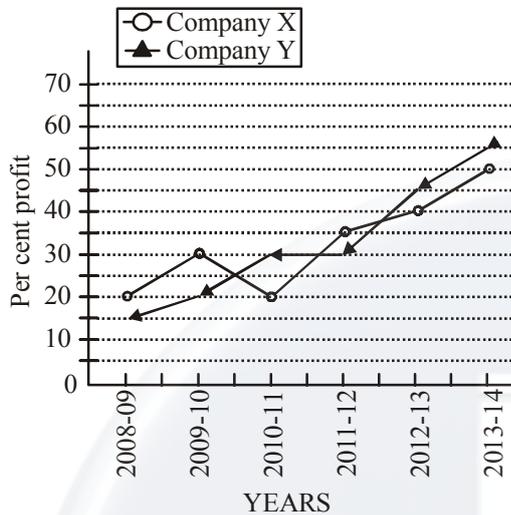

6. Approximately what is the percentage of profit/loss that Companies C and D had together ?
   (a) 10% profit   (b) 12% profit
   (c) 10% loss   (d) 12% loss
   (e) There was no loss or profit

7. If the income of Company A had increased by 10% in year 2014 from year 2013 and profit earned in 2013 was 20% what was its expenditure in 2013 ? (The value upto two decimal places in crores)
   (a) 36.36   (b) 32.32
   (c) 30.30   (d) Can't be determined
   (e) None of these

8. If the expenditure of Company G in 2014 was 20% more than its expenditure in the year 2013 and the Company has earned a profit of 10% in 2013. What was the company income in 2013 in crores ₹ ?
   (a) 37.5   (b) 41.25
   (c) 34.09   (d) Cannot be determined
   (e) None of these

9. Which of the following Companies had the highest percentage of profit/loss in 2014 ?
   (a) B   (b) C
   (c) F   (d) A
   (e) None of these

10. What is the approximate percentage of profit earned by all the Companies together in 2014 ?
    (a) 11   (b) 11.5
    (c) 10.5   (d) 12
    (e) 12.5

DIRECTIONS (Qs. 11-16) : *Study the following graph to answer the given questions.*

Per cent profit earned by two companies over the given years

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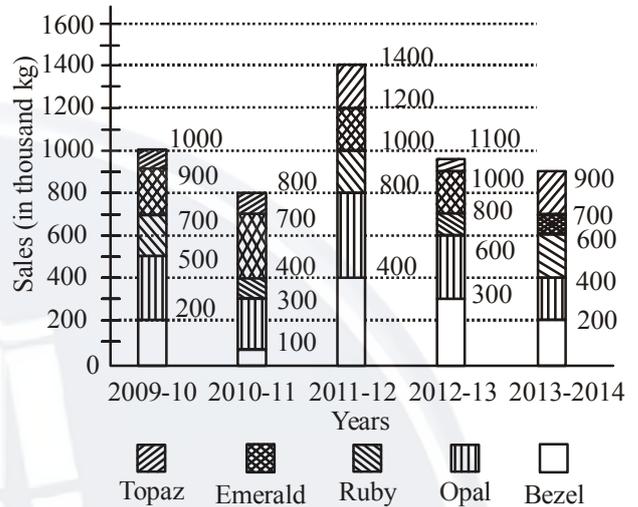

11. If the income of Company X in 2009-10 was equal to the expenditure of Company Y in 2012-2013, What was the ratio of their respective profits ?
    (a) 13 : 15   (b) 15 : 26
    (c) 13 : 26   (d) Cannot be determined
    (e) None of these

12. For Company X, its income in 2012-2013 was equal to its expenditure in 2013-2014. What was the ratio of its respective incomes in these two years ?
    (a) 4 : 5   (b) 3 : 4
    (c) 2 : 3   (d) Cannot be determined
    (e) None of these

13. For Company Y, which year is the percent of increase in per cent profit over that of previous year the highest ?
    (a) 2013-2014   (b) 2010-2011
    (c) 2012-2013   (d) Cannot be determined
    (e) None of these

14. In 2008-09, the expenditure of Company its income in that year ?
    (a) ₹ 50 crores   (b) ₹ 48 crores
    (c) ₹ 46 crores   (d) Cannot be determined
    (e) None of these

15. What was the difference in expenditure of the two companies in 2010-2011 ?
    (a) 10   (b) 100
    (c) 1000   (d) Cannot be determined
    (e) None of these

16. In 2013-2014, the income of Company 4 was ₹ 128 crores. What was its expenditure in that year ?

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

DIRECTIONS (Qs. 17-20) : *The following questions are based on the stacked bar graph given below :*

Sales of various precious stones in India for the period of 2009-10 to 2013-2014

17. What is the total sales of ruby as a per cent of the total sales of precious stones for the given period ?
    (a) 17.3%
    (b) 19.23%
    (c) 23.1%
    (d) Cannot be determined
    (e) None of these

18. By what per cent is the average annual sales of opal for the given period more than the sales of Emerald in 2012-13 ?
    (a) 120%   (b) 50%
    (c) 25%   (d) 40%
    (e) None of these

19. For how many years is the sales of Topaz as a percentage of the total sales of precious stones less than the of Bezel ?
    (a) One   (b) Two
    (c) Three   (d) Four
    (e) None of these

20. If the sales of Bezel increased from 2008-09 to 2009-10 by 25% and increased from 2013-2014 to 2014-15 by 50%, then what is the difference between the sales of Bezel in 2008-09 and that in 2014-15 (in kg)?
    (a) 50000   (b) 100000
    (c) 140000   (d) 160000
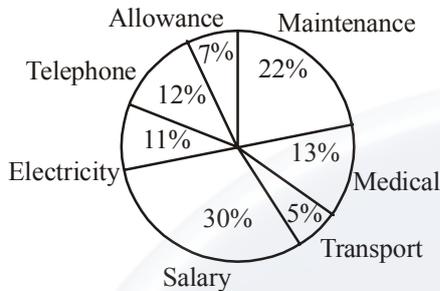   (e) None of these

DIRECTIONS (Qs. 21-25) : *Study the following graph carefully to answer these questions.*
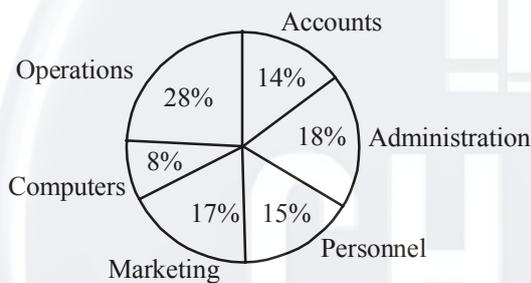
Details about the distribution of employees and expenditure of an organization (distributed proportionately across the departments)
Annual Expenditure on different items
Total Expenditure = ₹12 crores

Departmentwise distribution of employees
Total number of employees = 1200

21. What was the total expenditure on Accounts Department?
    (a) ₹ 16.8 lakhs   (b) ₹ 1,680 lakhs
    (c) ₹ 18.6 millions   (d) ₹ 16.8 millions
    (e) None of these
22. What was per employee expenditure on Medical ?
    (a) ₹ 12,000   (b) ₹ 13,000
    (c) ₹ 12,500   (d) ₹ 13,500
    (e) None of these
23. What was the total expenditure on salary of employees in Marketing Department ?
    (a) ₹ 6.12 lakhs   (b) ₹ 61.2 lakhs
    (c) ₹ 6.12 millions   (d) ₹ 176 lakhs
    (e) None of these
24. What was amount spent on electricity ?
    (a) ₹ 13.2 millions   (b) ₹ 13.2 lakhs
    (c) ₹ 26 millions   (d) ₹ 12.6 lakhs
    (e) None of these
25. What was the expenditure on telephone for employees in Computer Department ?
    (a) ₹ 11.52 lakhs   (b) ₹ 11.52 millions
    (c) ₹ 10.72 lakhs   (d) ₹ 10.72 millions
    (e) None of these

DIRECTIONS (Qs. 26-30) : *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

| | Metro M | | | | | Metro H | | | | |
| | Type 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	86	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	75	52	47	34	45	87	17

26. The total number of silver coloured cars sold in Metro H is approximately what percentage to that of Metro M?
    (a) 130   (b) 140
    (c) 90   (d) 100
    (e) 110
27. What is the difference between the numbers of blue colour cars model C sold in Metro M and number of red colour cars model F sold in Metro H ?
    (a) 8,000   (b) 10,000
    (c) 12,000   (d) 15,000
    (e) None of these
28. In Metro M the number of cars sold was maximum for which of the colour-model combination?
    (a) White-C   (b) Blue-B
    (c) Silver-B   (d) White-D
    (e) None of these
29. 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
30. The difference between the white coloured cars sold between the two metros of which of the following models in the minimum ?
    (a) A   (b) C
    (c) D   (d) F
    (e) None of these

DIRECTIONS (Qs. 31-35) : *Study the following table carefully and answer the questions given below.*
Quantity of Rice Produced by Various States Over the Years (Quantity in Tonnes)

| State | Year | | | | | |
	2009	2010	2011	2012	2013	2014
A	1500	1480	1620	1700	1540	1650
B	1250	1190	1400	1450	1320	1380
C	1160	1190	1310	1300	1340	1360
D	1522	1500	1480	1590	1630	1580
E	1440	1350	1430	1280	1380	1400
F	1600	1620	1510	1610	1580	1590

31. In which state, has the production of rice increased continuously over the years ?
    (a) A   (b) B
    (c) C   (d) D
    (e) None of these

32. In which year, was the production of rice the highest in all the states together ?
    (a) 2014   (b) 2009
    (c) 2012   (d) 2013
    (e) None of these

33. Which state produced the lowest quantity of rice over the years ?
    (a) E   (b) D
    (c) C   (d) A
    (e) None of these

34. What is the respective ratio of the average quantity of rice produced by State D to the average quantity of rice prduced by State F over the years ?
    (a) 66 : 791   (b) 310 : 317
    (c) 138 : 155 (d) 276 : 317
    (e) None of these

35. Rice produced by State C in the year 2012 in approximately what per cent of the rice produced by state A in the same year ?
    (a) 82   (b) 72
    (c) 88   (d) 76
    (e) 69

DIRECTIONS (Qs. 36-41) : *Study the following table to answer the given questions :*

Producton (in crore units) of six companies over the years

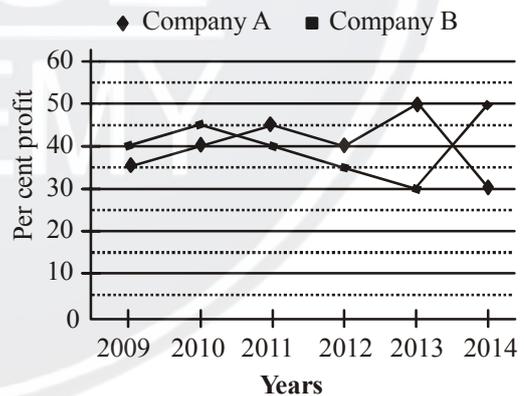| Company	Years						Total
	2009	2010	2011	2012	2013	2014	
TP	103	150	105	107	110	132	707
ZIR	75	80	83	86	90	91	505
AVC	300	300	300	360	370	340	1970
CTU	275	280	281	280	285	287	1688
PEN	25	30	35	40	42	45	217
SIO	85	87	89	91	92	96	540
Total	863	927	893	964	989	991	5627

36. The Production of Company AVC in 2012 is approximately what per cent of its average production over the given year?
    (a) 300   (b) 110
    (c) 135   (d) 18.25
    (e) 95

37. For SIO, which year was the per cent increase or decrease in production from the previous year the highest ?
    (a) 2013   (b) 2010
    (c) 2014   (d) 2012
    (e) None of these

38. Which Company has less average production in the three years compared to that of first three years ?
    (a) No company   (b) CTU
    (c) ZIR   (d) SID
    (e) No of these

39. The total prodution of the six companies in the first two given years is what per cent of that of last two given years ? (round off upto two decimal places)
    (a) 87.08   (b) 104.55
    (c) 90.40   (d) 10.62
    (e) None of these

40. For ZIR, Which of the following is the difference in production in 2014 and 2013 ?
    (a) 10,00,00,000   (b) 1,00,00,000
    (c) 10,00,000   (d) 40,00,000
    (e) None of these

41. For how many comapanies 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. 42-45) : *Study the graph carefully to answer the questions that follow.*

$$\text{Per cent profit} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$

Percent profit made by two companies over the years

◆ Company A   ■ Company B

42. If the amounts of profit earned by company A in the year 2012 was ₹ 1.5 lakh, what was its expenditure in that year?
    (a) ₹ 1.96 lakh   (b) ₹ 2.64 lakh
    (c) ₹ 1.27 lakh   (d) ₹ 3.75 lakh
    (e) None of these

43. What is the respective ratio of the amount of profit earned by companies A and B in the year 2014?
    (a) 2 : 3   (b) 4 : 7
    (c) 11 : 15   (d) Cannot be determined
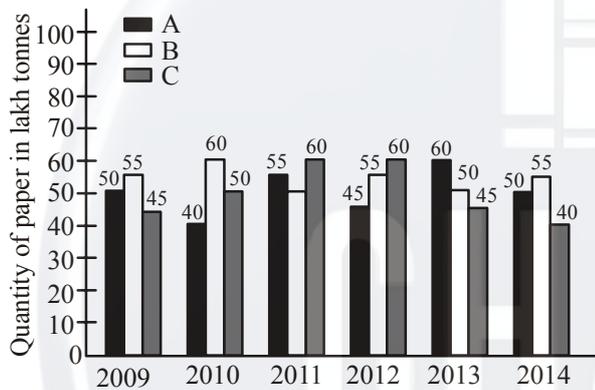   (e) None of these

44. If in the year 2009 the expenditure incurred by companies A and B was the same, what was respective ratio of the income of companies A and B in that year ?
    - (a) 27 : 28
    - (b) 14 : 23
    - (c) 13 : 19
    - (d) Cannot be determined
    - (e) None of these

45. What is the average per cent profit earned by company B over all the years together ?
    - (a) $19\dfrac{1}{3}$
    - (b) $24\dfrac{1}{6}$
    - (c) $24\dfrac{1}{3}$
    - (d) $37\dfrac{1}{6}$
    - (e) None of these

DIRECTIONS (Qs. 46-50) : *Study the following graph carefully to answer the question given below it.*

Production of paper by 3 different companies A, B, & C over the years

46. What is the difference between the production of company C in 2009 and the prodution of company A in 2014 ?
    - (a) 50,000 tonnes
    - (b) 5,00,00000 tonnes
    - (c) 50,00,000 tonnes
    - (d) 5,00,000 tonnes
    - (e) None of these

47. What is the percentage increase in production of company 'A' from 2010 to 2011 ?
    - (a) 37.5
    - (b) 38.25
    - (c) 35
    - (d) 36
    - (e) None of these

48. For which of the following years the percentage of rise/fall in production from the previous year is the maximum for company B ?
    - (a) 2010
    - (b) 2011
    - (c) 2012
    - (d) 2013
    - (e) 2014

49. The total production of comapany C in 2011 and 2012 is what percentage of the total production of company A in 2009 and 2010 ?
    - (a) 95
    - (b) 90
    - (c) 110
    - (d) 115
    - (e) 133.33

50. What is the difference between the average production per year of the company with the highest average production and the company with the lowest average production in lakh tonnes ?
    - (a) 3.17
    - (b) 4.33
    - (c) 4.17
    - (d) 3.33
    - (e) None of these

SOLUTIONS

Sol. (1-5)

Number of girls $= \frac{3}{5} \times 2500 = 1500$

Number of boys $= \frac{2}{5} \times 2500 = 1000$

Number of boys playing cricket only $= \frac{20}{100} \times 1000 = 200$

Number of girls playing table-tennis, badminton and carrom only $= \frac{25}{100} \times 1500 = 375$

Number of boys playing football only

$= \frac{26.8}{100} \times 1000 = 268$

Number of girls playing cricket only $= \frac{175}{100} \times 200 = 350$

Number of boys playing hockey, table-tennis and carrom only $= \frac{25.7}{100} \times 1000 = 257$

Number of girls playing badminton only $= \frac{1}{4} \times 1500 = 375$

Number of girls playing chess only $= \frac{12}{11} \times 275 = 300$

Number of girls playing football and hockey only
= 1500 – (375 + 350 + 375 + 300)
= 1500 – 1400 = 100
Boys play chess only = 1000 – (200 + 268 + 257)
     = 1000 – 725 = 275

1. (c) Number of students playing more than one game
     = 375 + 257 + 100 = 732
2. (c) Number of students playing hockey
     = 257 + 100 = 357

     Hence, required percentage $= \left(\frac{357}{2500} \times 100 \right) = 14.28\%$

3. (a) Required ratio = 275 : 375 × 2 = 11 : 30
4. (b) Required number of students
     = 200 + 375 + 268 + 350 + 257 + 100 =1550
5. (e) Number of students playing carrom
          = 375 + 257 = 632
6. (e) Total expenditure of Companies C and D
     = 45 + 40 = ₹ 85 crores
     Total incomes of Companies
     C and D = (35 + 50) crores
     = ₹ 85 crores
     Clearly, there is no profit or loss.
7. (e) Income of Company A is 2013

     $= ₹ \frac{100}{110} \times 37.5$ crores = ₹ 34.09 crores

Let expenditure in 2013 be ₹ x crores

$\therefore 20 = \frac{34.09 - x}{x} \times 100$

$\Rightarrow 0.2x = 34.09 - x$

$\Rightarrow x = \frac{34.09}{1.2} = 28.40$ crores

8. (b) Expenditure of Company G in 2013 $= \frac{100}{120} \times 45$
     = ₹ 37.5 crores
     Let its income in 2013 be I crores

     $\therefore 10 = \frac{I - 37.5}{37.5} \times 100$

     $\Rightarrow 3.75 = I - 37.5$
     $\Rightarrow I = 37.5 + 3.75 = ₹ 41.25$ crores
9. (d) For Company B
     Profit %

     $= \frac{42.5 - 32.5}{32.5} \times 100 = \frac{1000}{32.5} = ₹ 30.77$ crores

     For Company C

     Loss % $= \frac{35 - 45}{45} \times 100 = ₹ 22.2$ crores

     For Company F

     Profit % $= \frac{32.5 - 25}{25} \times 100 = ₹ 30$ crores

     For Company A

     Profit % $= \frac{37.5 - 27.5}{27.5} \times 100 = ₹36.36$ crore

10. (c) Total expenditure
     = 27.5 + 32.5 + 45 + 40 + 45 + 25 + 45
     = ₹ 260 crores
     Total income
     = 37.5 + 42.5 + 35 + 50 + 40 + 32.5 + 50
     = ₹ 287.5 crores
     $\therefore$ Required Profit %

     $= \frac{287.5 - 260}{260} \times 100 = 10.57$

11. (d) Cannot be determined because expenditure of company X income of company Y data not given.
12. (c) For company X, % profit in 2012 - 2013 = 40
     Let the expenditure be ₹100 crores.
     $\therefore$ Income = ₹ 140 crores
     $\therefore$ Expenditure in 2013-2014
     = Income of company X. In 2012-2013 = ₹ 140 crores.
     % Profit = 50

     $\therefore$ Income = 140 × $\frac{150}{100}$ = ₹ 210 crores.

     $\therefore$ The required ratio = 140 : 210 = 2 : 3

13. (c) % Increase during

2009-10 $= \dfrac{5 \times 100}{15} = 33\dfrac{1}{2}\%$

2010-11 $= \dfrac{10 \times 100}{20} = 50\%$

2012-2013 $= \dfrac{20 \times 100}{30} = \boxed{66\dfrac{2}{3}\%}$

2013-2014 $= \dfrac{10 \times 100}{50} = 20\%$

14. (b) Let the income be ₹ x crores

∴ $20 = \dfrac{x - 40}{40} \times 100$

Or, $x - 40 = \dfrac{20 \times 40}{100} = 8$

Or, $x = 40 + 8 = 48$

∴ The required income
    = ₹ 48 crores

15. (d)

16. (e) Let the expenditure be ₹ x crores.

∴ $60 = \dfrac{128 - x}{x} \times 100$

or, $\dfrac{128 - x}{x} = \dfrac{60}{100} = \dfrac{3}{5}$

or, $128 \times 5 - 5x = 3x$

or, $8x = 128 \times 5$

or, $x = \dfrac{128 \times 5}{8} = 80$

∴ The required expenditure = ₹ 80 crores

17. (a) Total sales of all the stones
= 1000 + 800 + 1400 + 1100 + 900 = 5200
Total sales of ruby
    = 200 + 100 + 200 + 200 + 200 = 900

Now, required percentage $= \dfrac{900}{5200} \times 100 = 17.3\%$

18. (d) Total sales of opal
= 300 + 200 + 400 + 300 + 200 = 1400

Average annual sales of opal $= \dfrac{1400}{5} = 280$

and, sales of Emerald in 2012-13 = 200

∴ Required percentage $= \dfrac{280 - 200}{200} \times 100 = 40\%$

19. (c) It is clear from the chart.

20. (c) Sales to Bezel in 2008-09

$= \dfrac{200000}{1.25} = 160000$ kg

Sales of Bezel in 2014-2015 = 200000 × 1.5 = 300000 kg
Now, required increase = 300000 − 160000 = 140000 kg

21. (d) Total expenditure on Accounts department

= 14% of ₹ 12 crores $= ₹ \dfrac{14 \times 12}{100}$ crores

= ₹ 1.68 crores = ₹ 16.8 millions

22. (b) Total expenditure on medical = 13% of ₹ 12 crores

$= ₹ \dfrac{13 \times 12}{100}$ crores = ₹ 1.56 crores = ₹ 15600000

∴ Expenditure per employee

$= \dfrac{15600000}{1200} = ₹ 13000$

23. (c) Total expenditure on salary of employees in marketing department
= 17% of 30 of ₹ 12 crores

$= \dfrac{17}{100} \times \dfrac{30}{100} \times 120000000 = ₹ 6120000$

= ₹ 6.12 millions

24. (e) Amount spent on electricity
= 11% of ₹ 12 crores

$= ₹ \dfrac{11 \times 120}{100}$ millions = ₹ 13.2 millions

25. (a) Expenditure on telephone in computer department
= 12% of 8% of ₹ 12 crores

$= ₹ \dfrac{12}{100} \times \dfrac{8}{100} \times 120$ millions

= ₹ 1.152 millions = ₹ 11.52 lakhs

26. (c) No. of silver coloured cars sold,
In Metro H = 20 + 35 + 37 + 42 + 22 + 17 = 173
In Metro M = 15 + 20 + 35 + 40 + 30 + 52 = 192

$\dfrac{173}{192} \times 100 \approx 90\%$

27. (e) Blue colour cars model C sold in Metro M = 50,000
Red colour cars model F sold in Metro H = 34,000
Difference = 50000 − 34000 = 16000

28. (a) 90,000 is the largest no. of cars sold in Metro M and it is for white colour Model C.

29. (a) Total no. of blue coloured car of Model E and D sold in Metro H = 43 + 37 = 80
In Metro M, 80 white coloured Model B was sold.

30. (e) Difference between the white coloured cars sold between the two Metros :
A : 75 − 60 = 15
B : 81 − 80 = 1
C : 90 − 85 = 5
D : 90 − 86 = 4
E : 77 − 60 = 17
F : 87 − 75 = 12
The minimum difference is 1 and it is for Model B.

31. (e)

32. (a)

Year	Production of rice in the states together (in tonnes)
2009	1500+1250+1160+1522+1440+1600 = 8472
2010	1480+1190+1190+1500+1350+1620 = 8330
2011	1620+1400+1310+1480+1430+1510 = 8750
2012	1700+1450+1300+1590+1280+1610 = 8930
2013	1540+1320+1340+1630+1380+1580 = 8790
2014	1650+1380+1360+1580+1400+1590 = 8960

33. (c)

State	Production rice over the years
A	9490 tonnes
B	7990 tonnes
C	7660 tonnes
D	9300 tonnes
E	8280 tonnes
F	9510 tonnes

Hence, the State C produced lowest quantity of rice.

34. (b) Required ratio = $\dfrac{9300}{6} : \dfrac{9510}{6}$ = 1550 : 1585

= 310 : 317

35. (d) Required ratio $= \dfrac{1300}{1700} \times 100 \approx 76$

36. (b) Average production of company AVC

$= \dfrac{1970}{6} = \dfrac{985}{3}$ crore units

Production of company AVC in 2012 = 360 crore units

∴ The required percentage

$= \dfrac{360}{\dfrac{985}{3}} \times 100 = \dfrac{360 \times 300}{985} = 109.6 \approx 110$

37. (c) It is obvious from the table as the production increased from 92 to 96 crore units.

38. (e) For company TP, average production in the last three years

$= \dfrac{107 + 110 + 132}{3} = 116.3$ crore units.

Obviously, its average production in the last three years is less compared to the first three years.

39. (c) The total production of the six companies in the last two years = 989 + 991

= 1980 crore units

The total production of the six companies in the first two years

= 863 + 927 = 1790 crore units

∴ The required percentage

$= \dfrac{1790}{1980} \times 100 = 90.40$

40. (b) The required difference

= (91 – 90) crore units

= 1 crore units

41. (c) The production increased every year from that of the previous year for the companies ZIR, PEN, SIO.

42. (d) Suppose the expenditure of company A in year 2012 was ₹ x lakh.

∴ $40 = \dfrac{1.5}{x} \times 100$

$\Rightarrow 40x = 150 \Rightarrow x = \dfrac{150}{40} = 3.75$ lakh

43. (d) Data insufficient

44. (a) Suppose in 2009, expenditure by company A and B each was ₹ l lakh.

For company A, $35 = \dfrac{l_1 - l}{l} \times 100$

$\Rightarrow 135l = 100l_1$ ....(i)

For company B,

$40 = \dfrac{l_2 - l}{l} \times 100$

$\Rightarrow 140l = 100l_2$ ...(ii)

From Eqs. (i) and (ii), we get

$\dfrac{l_1}{l_2} = \dfrac{135}{140} = \dfrac{27}{28} = 27 : 28$

45. (e) Average percentage profit earned by company B over the years

$= \dfrac{40 + 45 + 40 + 35 + 30 + 45}{6} = \dfrac{235}{6} = 39\dfrac{1}{6}\%$

46. (d) Production of company C in 2009 = 45 lakh tonnes.

Production of company A in 2014 = 50 lakh tonnes

∴ Required difference = 50 – 45 = 5 lakh tonnes

47. (a) Required percentage

$= \dfrac{55 - 40}{40} \times 100 = \dfrac{75}{2} = 37.5\%$

48. (b)

49. (b) Total production of company C in 2011 and 2012 = 120 lakh tonnes

Total production of company A in 2009 and 2010 = 90 lakh tonnes

∴ Required percentage $= \dfrac{120}{90} \times 100 = 133\dfrac{1}{3}\%$

50. (c) Average production of company A

$= \dfrac{50 + 40 + 55 + 45 + 60 + 50}{6}$

$= \dfrac{300}{6} = 50$ lakh tonnes

Average production of company B

$= \dfrac{55 + 60 + 50 + 55 + 50 + 55}{6}$

$= \dfrac{325}{6} = 54.17$ lakh tonnes

Average production of company C

$= \dfrac{45 + 50 + 60 + 60 + 45 + 40}{6} = \dfrac{300}{6}$

= 50 lakh tonnes

∴ Required difference

= 54.17 – 50 = 4.17 lakh tonnes.

∎∎∎