



**Chapter - 14**

**Data Interpretation**

**CHASE**  

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**ACADEMY**

## Foundation

### Solutions

1. (b); Total rice production = 58.64  
W. B production = 8.09  
 $\therefore$  Required percentage =  $\frac{8.09}{58.64} \times 100$   
 $= 13.8 \approx 13.5\%$
2. (b); Required amount  
 $= (15.97) - (0.81 + 3.72 + 0.86 + 4.42)$   
 $= 15.97 - 9.81 = 6.16$  m tonnes
3. (b); Wheat production was produced by states other than those given in the table  
 $= (44.23) - (15.97 + 0.81 + 3.72 + 0.86 + 4.42)$   
 $= (44.23) - (25.78) = 18.45$   
 $\therefore$  Required % =  $\frac{18.45}{44.23} \times 100 = 41.71 \approx 42\%$
4. (d); Required percentage =  $\frac{7.18 + 15.97 + 2.76}{58.64 + 44.23 + 12.2} \times 100$   
 $= \frac{25.91}{115.07} \times 100 = 22.52\%$
5. (a); Clearly we can see that in all of the states U.P was the top producer of all the three crops
6. (b); Required percentage =  $\frac{375}{(375 + 300 + 175)} \times 100$   
 $= \frac{375}{850} \times 100 \approx 45\%$
7. (d); Passengers travelled by railroad  
 $= 300 + 300 + 300 + 275 + 260 + 265 = 1700$
8. (d); Required ratio =  $\frac{200 \times 50}{400 \times 0.5} = \frac{10000}{200} = \frac{50}{1}$
9. (c); Average =  $\frac{175}{25}$  million = 7million
10. (a); Required units =  $(300 - 265) = 35$
11. (c); From both pie-charts we can say that in semi-durables hard-workers spend more than average workers.
12. (c); There are two such items - durables, Entertainment  
 $= (8 + 7) \% \text{ of } 3500 = 15\% \text{ of } 3500 = 525$
13. (d); We can't conclude it. Because clearly it is not mentioned anywhere in the question.
14. (d); New salary = 120% of 3500 = 4200  
New saving amount =  $700 + 10\% \text{ of } 3500 = 1050$   
 $\therefore$  Saving percentage =  $\frac{1050}{4200} \times 100 = 25\%$
15. (d); In the question, Information is not given.
16. (b); 1000 Rs. is  $\left(\frac{1000}{6000} \times 100 = 16.66\%\right)$  of 6000.  
 $\therefore$  Required No of items  
 $= \text{House rent (1) + saving (1)} = 2$
17. (b); 1800 is  $\left(\frac{1800}{6000} \times 100 = 30\%\right)$  of 6000  
Which is equal to expense on house rent
18. (d); Annual saving =  $12 \times \frac{23}{100} \times 6000$   
 $= 12 \times 23 \times 60 = 720 \times 23 = 16560$
19. (c); Petrol expense = 500  
Let the monthly, salary be x Rs.  
 $\frac{10}{100} \times x = 500 \Rightarrow x = 5000$
20. (b); Total percentage of money spent on clothes and saving =  $7 + 23 = 30\%$   
Which is equal to house-rent
21. (c); % increase =  $\frac{151 - 105}{105} \times 100 = \frac{46}{105} \times 100 \approx 43\%$
22. (d); Total commulative shortfall  
 $= 15 + 14 + 13 + 15 + 19 = 76$
23. (b); Required number =  $\frac{170}{97} = 1.75$
24. (d); % growth in power requirement  
From 1979 - 80 to 1984 - 85 =  $\frac{170 - 118}{118} \times 100$   
 $= \frac{52}{118} \times 100 = 44\%$   
% growth in power requirement from  
1974 - 75 to 1979 - 80 =  $\frac{118 - 78}{78} \times 100$   
 $= \frac{40}{78} \times 100 = 51.2\%$   
 $\therefore$  % growth =  $(51.2 - 44) = 7\%$  (Approx.)
25. (c); In 1979 - 80 demand was 118 which completed in 1982 - 83 means 3 years.
26. (c); Average selling in 2010 =  $\frac{159}{6} \times 1000 = 26500$   
Average selling in 2006 =  $\frac{126}{6} \times 1000 = 21000$   
Difference =  $26500 - 21000 = 5.5$  thousands



27. (b); Required % =  $\frac{27}{15} \times 100 = 180\%$
28. (b); Required percentage =  $\frac{2.4}{16} \times 100 = 15\%$
29. (d); 2006 → 126  
2007 → 120  
2008 → 132  
2009 → 147.1  
2010 → 159.0  
2011 → 159.2  
Clearly in year 2011, the sale of mobiles is maximum
30. (a); Required percentage =  $\frac{21-12}{12} \times 100 = \frac{9}{12} \times 100$   
 $= \frac{3}{4} \times 100 = 75\%$
31. (d); Required Ratio = 550 : 250 : 400  
 $= 55 : 25 : 40 = 11 : 5 : 8$
32. (b); Average no of male employees working in all the Banks together in 1994 =  $\left( \frac{400 + 450 + 600 + 450}{4} \right)$   
 $= \frac{1900}{4} = 475$
33. (a); Total no. of handicaped candidates  
 $= 20\% \text{ of } 250 + 30\% \text{ of } 450 = 50 + 135 = 185$
34. (d); Total no. of required persons = 650 + 400 + 450  
 $= 1500$
35. (c); Required percentage  
 $= \frac{350 + 550 + 350 + 650 + 400}{(400 + 650 + 150 + 500 + 500 + 650 + 600 + 700)} \times 100$   
 $= \frac{2300}{4150} \times 100 = 55\%$
36. (d); Male in grade U =  $\frac{26}{100} \times 3200 = 832$   
Total employee in grade, U = 1600  
 $\therefore$  Female = 1600 - 832 = 768  
 $\therefore$  Ratio =  $\frac{768}{832} = \frac{96}{104} = \frac{24}{26} = \frac{12}{13}$
37. (a); Employee in grade R =  $\frac{16}{100} \times 8000 = 1280$   
Male in grade R =  $\frac{11}{100} \times 3200 = 352$   
 $\therefore$  Female = 1280 - 352 = 928
- $\therefore$  Required half of difference =  $\frac{1}{2}(928 - 352)$   
 $= \frac{1}{2} \times 576 = 288$
38. (d); Male employee of grade, P =  $\frac{20}{100} \times 3200 = 640$   
Total employee of grade P =  $\frac{18}{100} \times 8000 = 1440$   
 $\therefore$  Female employee in grade P = 1440 - 640  
 $= 800$   
 $\therefore$  Required % =  $\frac{800}{640} \times 100 = 125\%$
39. (d); Total employee P =  $\frac{18}{100} \times 8000 = 1440$   
Q =  $\frac{12}{100} \times 8000 = 960$ , R =  $\frac{16}{100} \times 8000 = 1280$   
S =  $\frac{15}{100} \times 8000 = 1200$ , T =  $\frac{19}{100} \times 8000 = 1520$   
U =  $\frac{20}{100} \times 8000 = 1600$   
Male employee in grade (P) =  $\frac{20}{100} \times 3200 = 640$   
Q =  $\frac{17}{100} \times 3200 = 544$ , R =  $\frac{11}{100} \times 3200 = 352$   
S =  $\frac{12}{100} \times 3200 = 384$ , T =  $\frac{14}{100} \times 3200 = 448$   
U =  $\frac{26}{100} \times 3200 = 832$   
 $\therefore$  Female employee in grade  
P = 1440 - 640 = 800  
Q = 960 - 544 = 416, R = 1280 - 352 = 928  
S = 1200 - 384 = 816, T = 1520 - 448 = 1072  
U = 1600 - 832 = 768  
Clearly in grade T there are maximum females
40. (d); Required % =  $\frac{816 - 384}{384} \times 100 = \frac{432}{384} \times 100$   
 $= 112.5\%$
41. (d); Total No. of males in all department together  
 $= \frac{2}{5} \times 125 + \frac{7}{15} \times 225 + \frac{11}{15} \times 150$   
 $+ \frac{12}{25} \times 375 + \frac{17}{25} \times 175 + \frac{5}{14} \times 350$   
 $= 50 + 105 + 110 + 180 + 119 + 125 = 689$



42. (d); Male in Hr department and finance department  
= 105 + 110 = 215

Female in calling and Production department

$$\frac{13}{25} \times 375 + \frac{9}{14} \times 350 = 195 + 225 = 420$$

required difference = 420 - 215 = 205

43. (c); Female in different departments-

$$IT \rightarrow \frac{3}{5} \times 125 = 75, \quad HR \rightarrow \frac{8}{15} \times 225 = 120$$

$$Finance \rightarrow \frac{4}{15} \times 150 = 40$$

$$Calling \rightarrow \frac{13}{25} \times 375 = 195$$

$$Marketing \rightarrow \frac{8}{25} \times 175 = 56$$

$$Production \rightarrow \frac{9}{14} \times 350 = 225$$

∴ Less in Finance

44. (a); Required Ratio =  $\frac{\frac{12}{25} \times 375}{\frac{8}{15} \times 225} = \frac{180}{120} = 3 : 2$

45. (d); Total no. of employees  
= 125 + 225 + 150 + 375 + 175 + 350 = 1400

Let us simplify the chart

|   |      |      |      |      |      |      |      |
|---|------|------|------|------|------|------|------|
| R | 500  | 400  | 600  | 800  | 900  | 700  | 700  |
| Q | 400  | 550  | 500  | 700  | 600  | 500  | 750  |
| P | 350  | 500  | 400  | 600  | 550  | 400  | 500  |
|   | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |

46. (d); %rise in

$$2002 = \frac{150}{400} \times 100 = 37.5\%$$

$$2003 = \frac{-50}{550} \times 100 = -9.09\%$$

$$2004 = \frac{200}{500} \times 100 = 40\%$$

2005 = % down

2006 = % down

$$2007 = \frac{250 \times 100}{500} \% = 50\%$$

47. (a); Average purchases of onions by dealer

$$= \frac{400 + 550 + 500 + 700 + 600 + 500 + 750}{7}$$

$$= \frac{4000}{7} = 571.42$$

48. (d); Total onion purchased by dealer P = 350 + 500 + 400 + 600 + 550 + 400 + 500 = 3300

$$\therefore \text{Required \%} = \frac{3300}{4000} \times 100 = 82.5\%$$

49. (d); Required % =  $\frac{700 - 600}{600} \times 100 = \frac{1}{6} \times 100 = 16.66\%$

50. (d); Required Ratio =  $\frac{400 + 550 + 500}{800 + 700 + 600}$   
=  $\frac{1450}{2100} = \frac{145}{210} = 29 : 42$

**Moderate**

1. (b); From the table, if we see the imports in each year then we will find that each year it is increasing.

2. (a); Ratio of imports to exports in:

$$1980-81 = \frac{12549}{6711} = 1.87, \quad 1981-82 = \frac{13608}{7806} = 1.74$$

$$1982-83 = \frac{14293}{8803} = 1.62, \quad 1983-84 = \frac{15831}{9771} = 1.62$$

$$1984-85 = \frac{17173}{11855} = 1.44, \quad 1985-86 = \frac{18371}{10420} = 1.76$$

$$1986-87 = \frac{20063}{12550} = 1.6$$

Maximum ratio = 1980-81

3. (c); Percentage increase in exports-

$$\text{in year 1981-82} = \frac{7806 - 6711}{6711} \times 100 = 16.31\%$$

$$\text{in year 1982-83} = \frac{8803 - 7806}{7806} \times 100 = 12.77\%$$

$$\text{in year 1983-84} = \frac{9771 - 8803}{8803} \times 100 = 11\%$$

$$\text{in year 1984-85} = \frac{11855 - 9771}{9771} \times 100 = 21.32\%$$

in year 1985-86 = Percentage decrease

$$\text{in year 1986-87} = \frac{12550 - 10420}{10420} \times 100 = 20.44\%$$

Required year = 1984-85



4. (b); Total trade deficit for the last five years  
 $= 5490 + 6060 + 5318 + 7951 + 7513 = 32332$
5. (a); The difference between imports and exports in year  
 1980-81 = 12549 - 6711 = 5838  
 1981-82 = 13608 - 7806 = 5802  
 1982-83 = 14293 - 8803 = 5490  
 1983-84 = 15831 - 9771 = 6060  
 1984-85 = 17173 - 11855 = 5318  
 1985-86 = 18371 - 10420 = 7951  
 1986-87 = 20063 - 12550 = 7513  
 Required year = 1985-86
6. (c); Public debt rose by  $= \frac{23380 - 20825}{20825} \times 100$   
 $= \frac{2555}{20825} \times 100 = \frac{2555}{20825} \times 100 = 12.26\% \approx 12\%$
7. (d); Public debt rose by from 1983 to 1984  
 $= (26880 - 25530) = 1350$
8. (c); In each year, public debt increased in percentage  
 1981 =  $\frac{21570 - 20825}{20825} \times 100 = 3.57\%$   
 1982 =  $\frac{23380 - 21570}{21570} \times 100 = 8.39\%$   
 1983 =  $\frac{25530 - 23380}{23380} \times 100 = 9.19\%$   
 1984 =  $\frac{26880 - 25530}{25530} \times 100 = 5.28\%$   
 1985 =  $\frac{28200 - 26880}{26880} \times 100 = 4.91\%$   
 1986 =  $\frac{30500 - 28200}{28200} \times 100 = 8.15\%$   
 Required Year = 1983 - 84
9. (a); Required period = 1980-81
10. (b); Required period = 1982-83
11. (d); Clearly, highest sale and net profit recorded in the year 80.
12. (a); From year 1973 to 1974, sales is double it self.  
 $\therefore$  Required year = 1974
13. (c); Net Profit / Loss of first five years  
 $= 2.1 + 3.5 - 3.2 - 4.2 + 0 = -1.8$  lacs
14. (c); From the figure it is clearly shows that the required year = 1978
15. (a); Combined gross profit  $= \frac{100}{45} \times 14.3 + \frac{100}{45} (15.6)$   
 $= \frac{100}{45} (29.9) = 66.44$  lakhs
16. (a); From fig, it is clearly that Japan
17. (d); Required percentage  $= \frac{250}{23810} \times 100 = 1.05\%$
18. (d); 12.5% of the population  
 $= (26 + 56 + 62 + 58 + 123 + 58 + 250)$   
 12.5% of  $x = 633$   
 $\therefore x = \frac{633 \times 100}{12.5} \Rightarrow x = 5064$   
 57.5% of  $x = 2911.8$  millions  
 $\therefore$  Required total GNP =  $2911.8 \times 1140 = \$ 3319452$
19. (a); From the table we can see that statement I is false
20. (a); Average GNP of G-7 nations  
 $= \frac{19030 + 17820 + 20440 + 15120 + 23810 + 14610 + 20910}{7}$   
 $= 18820$
21. (d); Average  
 $= \frac{1230 + 1085 + 1040 + 1315 + 1160 + 1365}{6}$   
 $= \frac{7195}{6} \approx 1200$
22. (b); Average  
 $= \frac{1450 + 1350 + 1400 + 1500 + 1500 + 1500}{6}$   
 $= \frac{8700}{6} = 1450$
23. (a); Ratio  $= \frac{1100 - 125}{1200 - 140} = \frac{975}{1060} = \frac{195}{212}$
24. (d); Required difference  
 $= (130 + 125 + 125 + 135 + 115 + 170)$   
 $- (125 + 120 + 145 + 115 + 135 + 140)$   
 $= 800 - 780 = 20$
25. (d); Required percentage  $= \frac{1500 - 130}{8850} \times 100$   
 $= \frac{1370}{8850} \times 100 = 15.48\%$
- Solutions: (26 - 30)  
 First we have to convert degree into percentage  
 for converting it we have to multiply by  $\frac{5}{18}$  degree  
 because  
 $360^\circ = 100\%$ ,  $1^\circ = \frac{100}{360} = \frac{5}{18}$   
 Production =  $136.8^\circ \times \frac{5}{18} = 38\%$



$$HR = 36 \times \frac{5}{18} = 10\%, \quad IT = 57.6 \times \frac{5}{18} = 16\%$$

$$\text{Marketing} = 79.2 \times \frac{5}{18} = 22\%$$

$$\text{Account} = 50.4 \times \frac{5}{18} = 14\%$$

26. (d); Women in marketing department

$$= \frac{22}{100} \times \frac{3}{5} \times 3250 = 429$$

$$27. (c); \text{Ratio} = \frac{3250 \times \frac{10}{100} \times \frac{13}{25}}{3250 \times \frac{16}{100} \times \frac{7}{10}} = \frac{10 \times 13 \times 10}{16 \times 7 \times 25} = 13 : 28$$

28. (d); Required percentage =  $\frac{4}{5} \times 100 = 80\%$

(we can easily calculate the required percentage by given ratio).

$$29. (b); \text{Required \%} = \frac{3250 \times \frac{3}{10} \times \frac{16}{100}}{3250} \times 100 = \frac{48}{10} = 4.8\%$$

30. (b); Women working in organization

$$\text{Production} = \frac{38}{100} \times \frac{4}{5} \times 3250 = 988$$

$$HR = \frac{12}{25} \times \frac{10}{100} \times 3250 = 156$$

$$IT = \frac{7}{10} \times \frac{16}{100} \times 3250 = 364$$

$$\text{Marketing} = \frac{3}{5} \times \frac{22}{100} \times 3250 = 429$$

$$\text{Account} = \frac{6}{13} \times \frac{14}{100} \times 3250 = 210$$

$$\text{Total} = 988 + 156 + 364 + 429 + 210 = 2147$$

31. (a); Required marks

$$= 98 + \frac{88}{2} + 84 \times \frac{3}{2} + 88 \times \frac{5}{4} + 64 \times \frac{3}{2} + \frac{68}{2}$$

$$= 98 + 44 + 126 + 110 + 96 + 34 = 508$$

$$32. (d); \text{Average marks} = \frac{1}{2} \left[ \frac{68 + 80 + 90 + 56 + 72 + 66}{6} \right]$$

$$= \frac{1}{2} \left( \frac{432}{6} \right) = \frac{216}{6} = 36$$

33. (b); From the table, we can see that only Ram scored the highest marks in more than one subject.

34. (c); Sanjay's overall percentage

$$= \frac{81 + 40 + 126 + 100 + 117 + 45}{625} \times 100$$

$$= \frac{509}{625} \times 100 = 81.44\%$$

35. (b); Ram has greatest marks then Aditya in all subjects except hindi. Rest are not in picture.

$$36. (b); \text{Required ratio} = \frac{250 + 250 + 500}{700 + 600} = \frac{1000}{1300} = 10:13$$

37. (d); History -  $500 + 250 + 700 + 250 + 650 = 2350$   
 Geography -  $600 + 150 + 350 + 350 + 450 = 1900$   
 Math -  $350 + 700 + 750 + 500 + 600 = 2900$   
 $\therefore$  Ratio will be-  $2350 : 1900 : 2900 = 47 : 38 : 58$

38. (c); Math =  $2900 - 700 = 2200$

$$\text{History} = 2350 - 250 = 2100$$

$$\text{Difference} = 2200 - 2100 = 100$$

$$39. (d); \text{Required percentage} = \frac{650}{1100} \times 100 = 59\%$$

40. (d); 2006  $\rightarrow$  1450

2007  $\rightarrow$  1100

2008  $\rightarrow$  1800

2009  $\rightarrow$  1100

2010  $\rightarrow$  1700

$\therefore$  Required year = 2007 and 2009

$$41. (d); \text{Required people} = \frac{(28 + 12)}{100} \times 2900$$

$$= \frac{40}{100} \times 2900 = 1160$$

42. (a); People having favourite game cricket

$$= \frac{20}{100} \times 2900 = 580$$

43. (d); Cricket as favourite game from village R

$$= \frac{40}{100} \times \frac{30}{100} \times 2900 = 12 \times 29 = 348$$

Tennis as favourite game from all village

$$= \frac{20}{100} \times \frac{30}{100} \times 2900 = 29 \times 2 \times 3 = 174$$

$\therefore$  Required people =  $870 - (174 + 348)$

$$= 870 - 522 = 348$$

44. (a); People who like hockey in village R

$$= 2900 \times \frac{30}{100} \times \frac{40}{100} = 29 \times 12 = 348$$

$$\text{Total people who like hockey} = \frac{28}{100} \times 2900$$

$$= 28 \times 29 = 812$$

People except village R like hockey

$$= 812 - 348 = 464$$

$$\text{Total No. of people in village P} = \frac{21}{100} \times 2900 = 609$$

$$\therefore \text{Required Ratio} = \frac{464}{609} = 16 : 21$$



$$45. \text{ (d); People like tennis in village R} = \frac{10}{100} \times \frac{30}{100} \times 2900$$

$$= 29 \times 3 = 87$$

$$\text{No. of the villagers who like} = \frac{11 \times 2900}{100} - 87 = 232$$

$$46. \text{ (d); Required percentage} = \frac{48}{40} \times 100 = 120\%$$

$$47. \text{ (d); Required ratio} = \frac{61+54}{54+48} = \frac{115}{102}$$

48. (b); Required average

$$= \frac{43 \times 16 + 44 \times 15 + 45 \times 14.5 + 48 \times 15.6 + 55 \times 18.2 + 55 \times 14.9}{43 + 44 + 45 + 48 + 55 + 55}$$

$$= \frac{688 + 660 + 652.5 + 748.8 + 1001 + 819.5}{290}$$

$$= \frac{4569.8}{290} = 15.757 \text{ thousand} \approx 15700$$

$$49. \text{ (a); A} \rightarrow 60 \times 75 = 4500, \text{ B} \rightarrow 44 \times 15 = 660$$

$$\text{Difference} = 4500 - 660 = 3840 \text{ thousands}$$

$$= 38.40 \text{ Lacs}$$

$$50. \text{ (d); All type of product sold by store D} = 310$$

$$\text{Total no. of O type product} = 326$$

$$\text{Difference} = 326 - 310 = 16$$



## Data Interpretation Formulas

→ Average = (Total of all values) ÷ (Number of values)

→ Percentage = (Part ÷ Whole) × 100

→ Profit/Loss:

→ Profit = Selling Price - Cost Price

→ Loss = Cost Price - Selling Price

→ Profit or Loss % = (Profit or Loss ÷ Cost Price) × 100

→ Simple Interest = (Principal × Rate × Time) ÷ 100

→ Compound Interest = Principal × [(1 + Rate/100) ^ Time] - Principal

→ Ratio and Proportion: If two values are in the ratio a:b, they can be written as a:b or a/b

→ Percentile = (Number of values below a certain value ÷ Total number of values) × 100

