DATA INTERPRETATION

1. TABLE

Directions (1-4):

1. (C) Average = $\frac{476}{6} = 79.3 \sim \boxed{80}$

2. (d) (P+Q)   (R+S)

    1980 – 24   24

    1990- 30   23

    1991 – 30   26

    1994 – 20   39

    1993- $\boxed{33}$ $\boxed{33}$

    So, None of above (i.e. 1993 has equal production)

3. (d) Clearly, it is visible , S type was in continous increase

4. (a) 25 % of 80 = 20

Directions(5-8):

5. (d) Number of children (1998)

    = 146947 – (65104+ 60387)

    ⇒ $\boxed{21456}$

6. (b) Total population in 1989= 146947 + 11630

    = $\boxed{158577}$

7. (a) No. of children in 1989

    = 158577 – 70391 – 62516

    ⇒ 25670

8. (a) Population in (1991- 1992)

    ⇒ 161056 – 14585

    = + $\boxed{12471}$

Direction (9-13):

9. (b) Average loan = $\frac{87+104+113+120}{4} = \frac{424}{4}$

    ⇒ Rs 106 crore

    Required year is 1996 where loan disbursed is Rs. 104 crore

10. (b) Percentage increase = $\frac{120-113}{113} \times 100$

    = $\frac{700}{113} = \boxed{6\frac{22}{113}\%}$

11. (d)   (A+B)   (C+D)

    1995 – 45   42

    1996 – 56   48

    1997 – 63   50

    1998 – 71   49

    None of above

12. (d) Clearly, bank D has continued increase in loan disbursement

13. (b) Year 1998 → 30% of 120

    ⇒ Rs. 36 crore

    B has Rs. 41 crore disbursement of loans.

Direction (14-18):

14. (a) out of given option, age group (16-25) has maximum population.

15. (a) below 26 years =(30+17.765)% =47.75%

    $\frac{47.75 \times 4200}{100} = 2005.5 = 2006$

16. (b) Percent of people(Below 36 years) =65%

    $\frac{200 \times 512\%}{465\%}$

    = 15.75 millions

17. (b) Percent of people (above 56 years) =6.25%

    6.25% → 10 millions

    Different between (16-25) of (46-55) =3.5%

    6.25% → 10 millions

    3.5% → $\frac{10}{6.25} \times 3.5 = 5.6$ millions.

18. (b) Percent difference (46-55) and (26-35) age group is =3%

    Now 3% → 11.75 millions

    Total population (100%) → $\frac{11.75}{3} \times 100$

    =391.67 millions.

19. Sol.(3) Right Answer Explanation:

    Total expenditure = 52.1+267.5+196.4+209.5 = 725.5 lakhs.

    If it has to be kept within 700 lakhs, the expenditures has to reduce by 25.5 laks.

    So the expenditure reduced each year will be (25.5/4) = 6.375 lakhs.

    Hence, percentage reduce for 1989 would be = (6.375/15) × 100 = 42.5%.

20. (B) Costs of material and labor

    1988 = 2.1

    1989 = 95+70+15+25+25 = 230

    1990 = 80+45+12+18+20 = 175

    1991 = 75+60+16+21+18 = 190

    Therefore proportion of these expenditures till 1990

    = (2.1 + 230 + 175) / (2.1 + 230 + 175 + 190)

    = 0.6817.

    This will also be the fraction of the total length of the line.

21. Sol(2)Total material cost =

    (95+80+75+70+45+60+15+12+16+25+18+21)

    = 532

    Total labour cost = (2.1+25+20+18) = 65.1

    Therefore the ratio = 532 : 65.1 = 8 : 1 (approximately)

22. Sol(2). The costs that can be taken under the head "Materials" are : Cement, steel, Bricks and Other building materials.

    The estimated cost in 1990 = 80 + 45 + 12 + 18 = 155

    The estimated cost in 1991 = 75 + 60 + 16 + 21 = 172

    Cost of material rises by 5%,

    Cost would rise by 0.05X (155 + 172) = Rs. 16.35 lakhs.

23. Sol.(2) Amount spent till 1990 = Rs. 725.5 lakhs

    Estimated Expenditure for 1991 = 209.5 lakhs.

Hence the increase in expenditure will be 209.5 on 725.5 = 28.87%.

Question 24-26

24.

(2) Total marks of Charu = 72% of 100 + 60% of 100 + 68% of 150 + 74% of 60 + 68% of 150 + 75% of 40

i. = 72 + 60 + 102 + 44.4 + 102 + 30 = 410.4

percentage of marks = $\frac{410.4}{600} \times 600$

= 69 approx.

25.

(2) Required percentage = $\frac{55\% \text{ of } 40}{66\% \text{ of } 100} \times 100$

= 33.33%

26.

(2) Required percentage = $\frac{80\% \text{ of } 60 + 62\% \text{ of } 40}{60 + 40}$

× 100 = 72.8

27. (1) Percentage decrease = $\frac{(6.4 - 5.3)}{6.4}$

× 100

= 17.18

28. (3) Girls in school B in 2009 = 590

Boys and girls in school E in 2006 = 550 + 360 = 910

Percentage = $\frac{590}{910} \times 100$ = 64.83%

(approx)

29. (3) Average number of girls is school A over

the years = $\frac{360 + 420 + 690 + 960 + 1290 + 1440}{6} = \frac{5160}{6}$

= 860

30. (3) Required ratio = $\frac{\text{Boys in school C in 2009}}{\text{Girls in school A in 2009}}$

$\frac{870}{1290}$ = 29 : 43

31. (4)

Year	Total number of students
2005	1310
2006	910
2007	510
2008	1110
2009	1330
2010	3350

Question 32-36:

32. B

For city B = 131857 × $\frac{\cdot}{11}$ = 83909

For city C = 116536 × $\frac{5}{8}$ = 72835 ;

diff. = 11074

33. A

Total adult in city A = 105623 × $\frac{5}{7}$ +

100249 × $\frac{11}{17}$ = 140312

34. D

35. D

36. C

minor female in city A = 100249 × $\frac{6}{17}$ =

35382; minor female in city B = 115110

× $\frac{4}{15}$ = 30696, ; reqd. % = $\frac{4686}{30696} \times 100$

= 15% approx.

(37-40) :

37. 2; Average number of candidates appeared for

State B = $\frac{6400 + 7800 + 7000 + 8800 + 9500}{5}$

$= \frac{39500}{5} = 7900$

38. 1; Total number of candidates selected for all the states together in the year 1996

= 80 + 70 + 48 + 85 + 78 = 361

Total number of candidates qualified for all the states together in the year 1996

= 950 + 650 + 400 + 620 + 720 = 3340

∴ Required percentage

$= \frac{361}{3340} \times 100$

= 10.8% ≈ 11%

39. 4; Percentage of candidates selected for State C can be seen in the following table:

Percentage of candidates selected over the number of candidates qualified for different states in different years can be tabulated as shown below:

Years	Percentage of candidates selected to the qualified in State C.
1994	$\left(\frac{55}{350} \times 100\right) = 15.7$
1995	$\left(\frac{65}{525} \times 100\right) = 12.3$
1996	$\left(\frac{48}{400} \times 100\right) = 12$
1997	$\left(\frac{70}{560} \times 100\right) = 12.5$
1998	$\left(\frac{82}{640} \times 100\right) = 12.8$

Clearly, the required percentage is the highest for the year 1994.

Quicker Approach:

We have to find the year for which $\frac{\text{Selected}}{\text{Qualified}}$ is the highest;

i.e., $\frac{\text{Qualified}}{\text{Selected}}$ is the least.

Clearly, only for the year 1994 it is below 7. In others cases it is more than 7. Hence our answer is options (4).

40. 2; Average number of candidates selected over the years in different states can be tabulated as shown below:

States	Average number of candidates

	selected over the years
A	$\dfrac{75+60+80+75+70}{5}=72$
B	$\dfrac{60+84+70+86+90}{5}=78$
C	$\dfrac{55+65+48+70+82}{5}=64$
D	$\dfrac{75+70+85+65+48}{5}=68.6$
E	$\dfrac{75+85+78+82+94}{5}=82.8$

Clearly, the required state is E.

2. BAR GRAPH

Directions 1-5: The following bar chart shows the sales of a company XYZ (in Rs. Crore). Study the chart and answer the following questions.

1. (b) Total sales in 2nd and 3rd year

   Rs. 1773+1115 = Rs. 2888 crore

2. (a) 10th, It is clear from the graph

3. (b) rd, it is clear from the graph

4. (b) Mean = $\dfrac{8730+924}{2}=\dfrac{9654}{2}=$ Rs.4827

5. (b) Required difference =(5345-1841) =3504 crores

6. (d) Total accidents = $\dfrac{230}{1000}\times100=23\%$

   Percentage of accidents with two wheelers

And other subjects = $\dfrac{770\times100}{1000}=77\%$

Required difference =7-23=54%

7. (c) Two wheelers + cars + Bases + stationary vehiclers

230+150+120+100=600

$\dfrac{600}{1000}\times100=60\%$ Ans.

8. (d) 360º =1000

1º=1000/360º

$36º=\dfrac{1000}{360°}\times36°$

9. (a) required percentage = $\dfrac{40+200}{1000}\times100=\dfrac{24000}{1000}=24\%$

10. (b) required difference = $\dfrac{160-120}{1000}\times100=4\%$

Directions 11-12 : The following bar diagram depicts figures for some agricultural imports from January May, 2008, Answer (as closely as possible) the questions using the date provided here.

11. (a) required average price

$=\dfrac{33\times120+33\times120}{2}$

$=\dfrac{120\times66}{2}=3960$

12. (b) required csot of wheat = $36\times156=5616$

13. (D) Required time = $\dfrac{5040}{3360}=1.5$

14. (*) Foreign exchange reserves in 2007 -08 = 5040 million US $

Foreign exchange reserves in 2004 – 05 = 3360 million US $

∴ Increase = (5040 – 3360)

= 1680 million US $

∴ Percentage increase = $\left(\dfrac{1680}{3360}\times100\right)\%$

=50%

15. (A) There is an increase in foreign exchange reserves during the years 2002- 03, 2004-05 and 2006-07 as compared to previous year (as shown by bar-graph)

The percentage increase in reserves during these years compared to previous year are:

(i) For 2002-03 = $\left[\dfrac{(3720-2640)}{2640}\times100\right]\%$

=40.90%

(ii) For 2004- 05 = $\left[\dfrac{(3360-2520)}{2520}\times100\right]\%$

=33.33%

(iii) For 2006 – 07 = $\left[\dfrac{(4320-3120)}{3120}\times100\right]\%$

= 38.46%

Clearly, the percentage increase over previous year is highest for 2002-03.

16. (D) Average foreign exchange reserves over the given period .

=

$\left[\dfrac{1}{8}\times(2640+3720+2520+3360+3120+4320+5040+3120)\right]$

= 124. 13% ≈125%

17. (C) Average foreign exchange reserves over the given period = 3480 million US$.

The country had reserves above 3480 million US $ during the years 2002-03, 2006-07 and 2007-08 i.e. for 3 years and below 3480 million US $ during the years 2001-02, 2003-04, 2004-05, 2005-06 and 2008-09 i.e., for 5 years.

18. (c) Required average

$\dfrac{(5+10+25+15)\times1000}{6}$

$\dfrac{100000}{6}=16666\dfrac{2}{3}$

19. (d) Required percentage =

$\dfrac{(X+Y+Z)\,in\,2007}{(X+Y+Z)\,in\,2008}\times100$

$=\dfrac{55\times1000}{60\times1000}\times100=91.67\%$

20. (a) Required % =

$\dfrac{X\,in\,2006}{(X+Y+Z)\,in\,2006}\times100$

$=\dfrac{10\times1000}{55\times1000}\times100=18\%$ (approx)

21. (b) Respective Ratio

= (Z in 2005) : (Z in 2004)

= $(15\times1000):(10\times1000)=3:2$

22. (d) Required number = Y in 2008+ Y in 2009

= $(25\times1000)+(15\times1000)$

= $40\times1000=40000$

Q. 23-26:

23. (d) 60+80/2=70

24. (c) 70+10/2=40

25. (c) 80+50+10+20/4=40.

26. (c) 60+50+70+30=210

(27-31) :

27. 4; Average value of imports in the years 1994, 1995 and 1997 $= \frac{250+220+280}{3} =$ Rs. 250 cr

$\therefore$ Required percentage $= \frac{450}{250} \times 100 = 180\%$

28. 4; Required percentage $= \frac{375}{250} \times 100 = 150\%$

29. 1; Average import

$$= \frac{80+150+250+220+350+280}{6}$$

$$= \frac{1330}{6} \approx 222\,cr$$

Average export

$$= \frac{150+225+375+300+450+330}{6} = 350 \text{ cr}$$

$\therefore$ Required difference = 83 cr $\approx$ 85 cr

30. 2; It is obvious from the given graph.

31. 4; Required percentage increase

$$= \frac{450-300}{300} \times 100 = \frac{150}{300} \times 100 = 50\%$$

Q. 32-36

32.A

Required average

$$= \frac{3297+2523+2860+2660+2770+2665+2899}{7}$$

$$= \frac{19674}{7}$$

$$= \$ 2810.57 \text{ million}$$

$$= \$ 2810.6 \text{ million}$$

33.B

Required average value

$$= \frac{3034+3210+3106+3200+2984}{5}$$

$$= \frac{15534}{5}$$

$$= \$ 3106.8 \text{ million}$$

34.E

$$\text{Required } \% = \frac{(2860 - 2523)}{2523} \times 100\%$$

$$= \frac{337}{2523} \times 100\%$$

$$= 13.35\%$$

35.E

Required change in trade gap

$$= \frac{(2770 - 2665)}{2770} \times 100\%$$

$$= 3.79\% \text{ decrease}$$

36.A

Required difference

= (3464+3034+3210) – (3106 + 3200 + 2984)

= 9708– 9290 = 418

3. LINE GRAPH

Directions 1-5 :

1. (a) Both the lines in the graph intersect at 10:30 am

2. (b) average speed $= \frac{120}{5/2} = 48$ km/h

3. (c) time =11:30-9:00 = $2\frac{1}{2}$ hours

4. (d) 80, it clear from the graph

5. (b) difference between temperature

Sunday =39-23=16°

Saturday =42.5-24=18.5° (maximum)

Wednesday =32.5-15=17.5°

6. (a) $\frac{\text{Exports}}{\text{imports}} = 1.75 = \frac{175}{100} = \frac{7}{4}$

After 40% increase imports

imports $= 4 \times \frac{140}{100} = \frac{560}{100} = \frac{56}{10}$

$\frac{\text{Exports}}{\text{Imports}} = \frac{7 \times 10}{56} = \frac{70}{56} = \frac{5}{4} = 1.25$

7. (b) In the year 2005

Imports of company x=Rs. 180 crores

Exports =1.75×180=Rs. 315 crores

Exports of company y=Rs. 157.5 crores

Imports of company y =157.5/0.75=210 crores

8. 1; Number of students in 1994

$= 1500 + (300 - 250) + (250 - 350)$

$= 1500 + 50 - 100 = 1450$

Number of students in 1995

$= 1450 + (500 - 400) = 1550$

$\therefore$ Required increase = 1500 – 1400 = 100

9. 4; From the graph's inclination, it is clear that the percentage rise/fall is maximum in the year 1997 with respect to previous year.

10. 4; Number of students in 1996

$= 1550 + (450 - 300) = 1700$

11. 4; Strength of the school in different years

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

12. 2; Required % $= \frac{1700}{1450} \times 100 \approx 117\%$

(13-17) :

13. 4; There is no relationship between the revenue expenditure in 1997-98 and 1996-97. So the total revenue expenditure in 1996-97 can't be determined.

14. 4; Without knowing the total expenditure for the two financial years, we can't find out the answer.

15. 1; Required revenue different between others and defence = (20 – 14)% of 302537 = 18152.22 crore

16. 3; Required percentage $= \frac{16}{36} \times 100 = 44.45\%$

17. 2; Total revenue expenditure on grants to state and Uts

$$= \frac{47781}{15} \times 18.6 \approx 59250 \text{ crore}$$

(18-22) :

18. 2; $\therefore$ Profit = Income – Expenditure

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

Clearly, profit of the company will depend on the value of the (% Profit × Expenditure). Greater the value of this greater the amount of profit. By

visual inspection of the graph we can see that the maximum amount of profit is in the year 2001.

19. 1; Income of the company in different years is as given below: 1996 = 80.50, 1997 = 108.90, 1998 = 175.50, 1999 = 150, 2000 = 210 and 2001 = 279

∴ Required average

$$= \frac{80.50 + 108.90 + 175.50 + 150 + 210 + 279}{6} \approx \text{Rs. 170 lakhs.}$$

20. 2; The maximum difference in the % profit the company for any two consecutive years is 15 and the minimum base is 21. Hence, our answer is 1998.

21. 4; Income of company in 2000 = $= 150\left(\frac{140}{100}\right) = 210$

22. 1' Income in 1998 = 140% of 130 = Rs. 182 lakhs.

Question 23-27:

23.B

Imports of the company A will be more than export when the value of the ratio of import to export is more than 1. Such years are 2001, 2003, 2004 and 2005. Therefore, number of years = 4

24.A

Exports of the company B will be more than import when the value of the ratio of export to import is less than 1. Such year is 1998.

25.C

In the year 1999,

$import_{99} : export99 = 0.8$

i.e. $import_{99} : export_{99} = 4 : 5$

If there is x between the ratio, then import = 4x and $export_{99} = 5x$

In the year 2000.

$import_{00} : export_{00} = 0.8$

i.e. $import_{00} : export_{00} = 4 : 5$

then $import_{00} = 4y$ and export = 5y

Since, total export = ₹ 72 crore

$export_{99} + export_{00} = 5x + 5y = 5(x+y)$

Now, $5(x + y) = 72$

$$(x+y) = \frac{72}{5}$$

Now, total import = $import_{99} + import_{00}$

$= 4x + 4y$

$= 4(x+y)$

$$= 4 \times \frac{72}{5}$$

$= ₹ 57.6$ crore

26.B

The exports of company B with relation to imports were maximum in the year 2004.

27.E

Ratio of export to import in the year 2003 is 1.3.

Therefore, $\frac{\text{Import}}{\text{Export}} = \frac{13}{10}$

4. PIE CHART

1. (b) Amount spend on the food

=23% of 46,000

$46000 \times \frac{23}{100} = 10,580$

2. (a) clothing and housing =10+15=25%

$\frac{25}{100} \times 46000 = 11,500$

3. (d) Housing 15% and Education 12%

= 5:4

4. (a) Maximum amount is spent on food i.e., 23%

5. (a) saving =15% of 46,000

$\frac{15}{10} \times 46000 = \text{Rs.6900}$

Directions:6-10 The pie-chart given here represent the domestic expenditure of a family in percent. Study the chart and answer the following questions if the total monthly income of the family is Rs 33, 650.

6. (a) House rent = $\frac{18}{100} \times 33650 = \text{Rs.6057}$

7. (a) Monthly saving = $\frac{12}{100} \times 33650 = 4038$

Annual saving =4038×12= 48.456

8. (c) 100% -12% -18%

Remaining =70%

$= \frac{70}{100} \times 33,650 = \text{Rs.23555}$

9. (b) 25% +9% =11,441

10. (d) D+F (23%+12%) =35%

$\frac{35}{100} \times 33,650 = 11,777.50$

11. (c) 32% =800000

1% =800000/32

$3\% = \frac{800000}{32} \times 3 = \text{Rs.75000}$

12. (b) Required percentage = $\frac{3}{25} \times 100 = 12\%$

13. (a) required ratio =3:7 (from chart)

14. (b) Printing cost (35%) =17500

1% =17500/35

15% =$\frac{17500}{35}$×15=Rs. 7500

15. (a) 100% =360°

1% =360/100

$35\% = \frac{360}{100} \times 35 = 126°$

16. (c) required percentage = $\frac{4}{10} \times 100 = 40\%$

17. (d) central angle for binding charges

$= \frac{360}{100} \times 18 = 64.8°$

Central angle for advertisement charges

$\frac{360}{100} \times 18 = 64.8$

Difference =0°

18. (d) Expenditure on ducation in april

$= 24000 \times \frac{47}{100} = 11280$

Expenditure on eduation in may

$$25000 \times \frac{50}{100} = 12500$$

Percentage increase $= \frac{12500 - 11280}{11280} \times 100 = 10.82\%$

19. (a) required ratio $= \frac{24000 \times 18}{100} : \frac{25000 \times 2}{100}$

   $=24 \times 18 : 25 \times 2 = 216 : 25$

20. (c) Expenditure on grocery $= \frac{25000 \times 14}{100} = 3500$

   Expenditure on electricity $= \frac{25000 \times 9}{100} = 2250$

21 Income = Rs. 360000

   Savings $= \frac{60}{360} \times 36000 = Rs. 60000$

22. Education – housing = $70^{\circ} - 54^{\circ} = 16^{\circ}$ = Rs. 1600
1° = Rs. 100
Expenditure on food = $120^{\circ} = 120 \times 100$ = Rs. 12000

23. (a) Expenditure on food/savings $= 2/1$

(24-28) :

24. 4; Aid received by Middle East & North Africa

   $= \frac{6.4}{16} \times 21$ = Rs. 8.4 billion

Aid received by East Asia & Pacific $= \frac{6.4}{16} \times 15$

   = Rs. 6 billion

$\therefore$ More aid = 8.4 – 6 = Rs. 2.4 billion

25. 2;

26. 1; Aid received by Sub-Saharan Africa $= \frac{6}{10} \times 14$

   = Rs. 14.43 billion

Aid received by East Asia & Pacific $= \frac{6}{10} \times 24$

   = Rs. 8.4 billion

$\therefore$ Required % $= \frac{14.4 - 8.4}{8.4} \times 100 = 71.42\%$

27. 4; Aid received by South Asia in 2008

   $= 50 \times \frac{9}{100} =$ Rs. 4.5 billion

Aid received by South Asia in 2013

   $= 45 \times \frac{10}{100} =$ Rs. 4.5 billion

$\therefore$ Hence, the difference is zero.

28. 3; Aid received by all countries in 2008

   $= \frac{10.5 \times 100}{100} =$ Rs. 50 billion

Aid received by all the countries in 2013

   $= \frac{2.4 \times 100}{4} =$ Rs. 60 billion

$\therefore$ Required ratio = 5 : 6

(29-33) :

29. 3;

30. 1; Number of students appearing from Bihar in
    2012 = 20% of 2.40 = 48000

Number of students appearing from WB in 2011
    = 20% of 2.50 = 50000

Required % $= \frac{48000}{50000} \times 100 = 96\%$

31. 4;

32. 4; Required % $= \frac{30000}{240000} \times 100 = 12.50\%$

33. 2; Required percent $= \frac{18 \% \text{ of } 2.50}{23\% \text{ of } 2.40} \times 100 \approx 80\%$