**3.7 MIXED GRAPHS**

**Solution Exercise – Easy**

**Solutions (Q. Nos. 1 − 3):**

The median growth rate =  and

the median market size = 

Thus, the Dogs will be *p*, *u* and *w*, *i.e*. three products and the Stars will be only product *t*. All the other products, *i.e*. 7 of them will be Questions.

1. (c)

2. (a)

3. (c)

**Solutions (4** − **7):**

4. (b)

We observe that it is the same 250 hours in Body shop on Indigo.

5. (c)

Hours Body shop = 400+ 180 + 250 = 830

Hours Paint shop = 200 + 70 + 180 = 450

Percentage spent in body shop

= 

= 

6. (c)

Paint shop hours = 450

Prescribed & Actual hours spent on Indigo

= 220 + 250 = 470

7. (b)

Total hours currently = 1280.

If we have 300 hours and are looking at 150 hours, we are looking at 50% of the time, which comes out to be around 640 hours.

We find that Nano with 600 hours come closest.

8. (b)

Only 2007 is the year when the given condition in the question is fulfilled.

9. (b)

By visual inspection, it can be seen that the highest ratio of, it is for year 2005.

10. (a)

Only once in year 2004.

11. (d)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Inventory** | **Supply** | **Demand** | **Leftover** |
| 2003 | 20000 | 42000 | 45000 | 17000 |
| 2004 | 17000 | 45000 | 51000 | 11000 |
| 2005 | 11000 | 40000 | 56000 | − 5000 |
| 2006 |  | 48000 | 49000 | − 1000 |
| 2007 |  | 53000 | 45000 | 8000 |
| 2008 | 8000 | 51000 | 57000 | 2000 |

Highest deficit is in 2005, *i.e*. 5000 bars.

12. (c)

2 times between 2006 to 2007 and 2007 to 2008.

**Solutions (Q. Nos. 13 − 17):**

This is the table pertaining to the data given above:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ***A1*** | ***A2*** | ***A3*** | ***A4*** | ***A5*** |
| **Selling Price** | 4000 | 5000 | 4500 | 3500 | 5000 |
| **Profit** | 500 | 2000 | 1000 | 1000 | 500 |
| **Cost Price** | 3500 | 3000 | 3500 | 2500 | 4500 |
| **Profit %age** | 33% | 400% | 80% | 133% | 25% |

13. (d)

A5

14. (a)

A2

15. (b)

A2, S.P. = 5000

C.P. = 1000

New S.P. = 

C.P. = 

New profit = 4500

%age increase in profit = 

= 

16. (c)

C.P. as % of S.P.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***A1*** | ***A2*** | ***A3*** | ***A4*** | ***A5*** |
|  |  |  |  |  |

By visual examination A5 is maximum.

17. (d)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Profit %** | ***A1*** | ***A2*** | ***A3*** | ***A4*** | ***A5*** |
|  | 33% | 400% | 80% | 133% | 25% |

18. (b)

Just draw a diagonal line from bottom left point to top right point. All companies lying above this line have profit in excess of 10% of turnover. From the graph there are 7 companies, has the profit 10% of turnover.

19. (b)

From the graph there are 1 steel companies with a turnover of more than 2000 and profit more than 300.

20. (b)

From the graph there are 5 companies

**Solutions (Q. Nos. 21 − 24):**

Ahuja family → (■)

Bose family → (□)

Coomar family → (●)

Dubey family → (○)

21. (d)

Average income of Ahuja

= 

Average income of Bose

= 

Average income of Coomar

= 

Average income of Dubey

= 

22. (c)

Average expenditure of Ahuja

= 

Average expenditure of Bose

= 

Average expenditure of Coomar

= 

Average expenditure of Dubey

= 

23. (c)

From figure, one member of Coomar family is on the line indicating

Income = Expenditure

Second mamber is just above the line

24. (a)

Look at the leftmost member of Ahuja family.

25. (d)

**For Sodhi :**

Highest score = 32%

= 480

Let total value on bar be *x*.

32% of *x* = 480

⇒ *x* = 

Lowest score = 10% of 1500

= 150

26. (a)

**For Kumar :**

Highest score = 40%

= 600

Let total value on bar be *x*.

∴ *x* = 1500

∴ Average of last 10 innings = 20% of 1500

= 300

27. (d)

**For Narang :**

Lowest score = 48

∴ Total value on bar

*x* = 

∴ Highest score = 28% of 300

= 84

28. (b)

**For Jung :**

Highest score = 498

∴ Total value of bar

*x* = 

∴ Career Average = 26% of 1660

= 432

**Solution Exercise – Medium**

1. (b)

It can be seen from the graph that the southern region showed the highest growth in number of households in all the income categories for the period.

2. (d)

We only know the total number of households for all four regions combined. Nowhere have they given the region-wise break-up of this value. In the light of this, the given question cannot be answered.

3. (b)

It is very clear from the graph that the percentage increase in total number of households for the northern region for upper middle income category is 200%.

4. (a)

As seen from the table, the average income of high income group in 1987-88 is Rs. 75,000.

5. (b)

The total income of high income category in 1987-88 is Rs. (5000 × 75000).

The total income of upper-middle class category in 1987-88 is Rs. (10000 × 50000).

Hence, the current ratio of their total incomes

= 3 : 4 = 0.75

Since the number of households in each category were equally distributed in all regions, we can have the following table for high income category.

|  |  |  |  |
| --- | --- | --- | --- |
| **Region** | **Households in 1987-88** | **Percentage increase** | **Households in 1994-95** |
| **North** | 1250 | 240% | 4250 |
| **South** | 1250 | 425% | 6562.5 |
| **East** | 1250 | 175% | 3437.5 |
| **West** | 1250 | 150% | 3125 |
| **Total** | 5000 |  | 17375 |

The average household income for high-income category increased by 90%. Hence, average household income for this category in 1994-95 = (75000 × 1.9) = Rs. 1,42,500

Hence, the total income for high-income category in 1994-95 = (17375 × 142500) = Rs. 2,476 million

The same table can be drawn for upper-middle class

category as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **Region** | **Households in 1987-88** | **Percentage increase** | **Households in 1994-95** |
| **North** | 2500 | 200% | 7500 |
| **South** | 2500 | 340% | 11000 |
| **East** | 2500 | 125% | 5625 |
| **West** | 2500 | 140% | 6000 |
| **Total** | 10000 |  | 30125 |

The average household income for upper-middle class category increased by 60%. Hence, the average household income for this category in 1994-95

= (50000 × 1.6) = Rs. 80,000

Hence, the total income for high-income category in

1994-95 = (30125 × 80000) = Rs. 2,410 million

Hence, the ratio of total income for these two

categories in 1994-95 = 

Hence, percentage increase in ratio = 

6. (b)

For northern region, we can draw the following table for 1987-88.

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Households in 1987-88** | **Average household income** | **Total income (Rs. in millions)** |
| **Middle income** | 10000 | Rs. 30,000 | 300 |
| **Upper-middle** | 2500 | Rs. 50,000 | 125 |
| **High income** | 1250 | Rs. 75,000 | 93.75 |
| **Total** | 13750 |  | 518.75 |

Hence, the average income for northern region

= 

7. (d)

According to statement (I), *A* which has the third highest profitability has the lowest operating income in 2002-03.

According to statement (II), company *D* has the highest combined operating income and has the lowest operating profit.

According to statement (III), only company *B* has higher

operating income in 2001-02 than 2002-03, and has higher profitability in 2002-03 than 2001-02.

According to statement (IV), the companies having profitability between 10-20% are *A*, *C*, *E* but *C* has operating income more than 200 crore.

8. (c)

Operating profit of companies is:

*A* = 15

*B* = 7.75

*C* = 30

*D* = 3

*E* = 35

*F* = 20

So, the answer is *E*.

9. (a)

The companies excluded are *B* and *D*. As both of them have –ve profitability, the answer is –ve.

10. (d)

Companies exceeding profitability of 10% are *C* and E. So, the average is = 

**Solutions (Q. Nos. 11 − 14):**

|  |  |  |  |
| --- | --- | --- | --- |
| **Company** | **No. of Applicants Selected** | **Wait Listed** | **Rejected** |
| *PIMA* | 224 | 80 | 900 − (224 + 80) = 596 |
| *PIMB* | 330 | 264 | 1750 − (330 + 264) = 1156 |
| *PIMC* | 240 | 284 | 1350 − (240 − 284) = 826 |
| *PIMK* | 104 | 124 | 675 − (104 − 124) = 447 |
| *PIML* | 324 | 392 | 1950 − (324 − 392) = 1234 |

11. (d)

Ratio of rejected applicants to total number of applicants received

|  |  |
| --- | --- |
| *PIMA* |  |
| *PIMB* |  |
| *PIMC* |  |
| *PIMK* |  |
| *PIML* |  |

12. (b)

*PIML*, Applications received = 1950

Applicantion selected = 324

Wait listed = 392

Now 29% of selected are rejected

*i.e*. applicants retained = 0.71 × 324 = 230

36% of waitlisted selected

= 36% od 392

= 141

∴ Total selected = 230 + 141 = 371

∴ Percentage increase = 

13. (c)

|  |  |  |  |
| --- | --- | --- | --- |
| **After Interchanging** | | | |
|  | **Selected** | **Rejected** | **Ratio** |
| *PIMA* | 80 | 596 |  |
| *PIMB* | 264 | 1156 |  |
| *PIMC* | 284 | 826 |  |
| *PIMK* | 124 | 447 |  |
| *PIML* | 392 | 1234 |  |

14. (c)

For *PIMA*

Waitlisted Applicants = 80

12.5% of 80 selected

waitlisted left = 80 − 10 = 70

25% of rejected candidates = 25% of 596 = 149

New waitlisted number = 70 + 149 = 219

Percentage of total applications received on waiting list

= 

**Solutions (Q. Nos. 15 − 19):**

Workforce = 6000

Average working = 0.7 × 6000 = 4200

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Contribution to Revenue (in million)** | **Number of**  **People**  **working (N)** | **Productivity (Revenue/in millions)** |
| TV | = 0.4 × 300 = 120 |  | 0.057 |
| Mobiles | = 0.25 × 300 = 75 |  | 0.107 |
| Fridge | = 0.35 × 300 = 105 |  | 0.075 |

Working employees productivity = 

Total workforce productivity = 

15. (d)

Non-working employees contribute nothing to the revenue.

16. (b)

Mobiles & TV's workforce diffference = 2100 − 700 = 1400

17. (c)

Required percentage = 

18. (d)

Every product has more productivity.

∴ 3.

19. (d)

Since we do not know anything about the non-working employees, we cannot determine the answer.

20. (c)

|  |  |
| --- | --- |
| **Year** | **Debt (Asset Employed-Net worth** |
| 2008 | 25 |
| 2009 | 20 |
| 2010 | 15 |
| 2011 | 5 |
| 2012 | 10 |
| 2013 | 25 |

21. (a)

We can make out that all statements are true except (a). The highest increase in assets employed was between the years 2008 and 2009.

22. (d)

Percentage Utilisation 

|  |  |
| --- | --- |
| **Year** | **Percent Utilization** |
| 2008 | = |
| 2009 | = |
| 2010 | = |
| 2011 | = |
| 2012 | = |
| 2013 | = |

23. (d)

The highest difference in $/100 km was in 2013

= (35 − 24.5) = 10.5

24. (c)

Average percentage higher

= 

25. (d)

No data is given for prices - hence data insufficient.

26. (a)

The difference in costs in 2011 = 4.0

In 2012 = 9 and in 2013 = 10.5

Hence highest percentage growth over previous year is in 2012 = 

27. (d)

Each year (during the given period) saw an increase of approx. $ 1/100 km over the previous year. Since for 2011, the base price is the highest, the least growth was in this year.

**Solutions (Q. Nos. 28 − 32):**

|  |  |  |
| --- | --- | --- |
|  | **Imports from Pakistan** | **Trucks** |
| Others | 15.2 | 60 |
| Clothes | 9.6 | 70 |
| Salt | 10.2 | 10 |
| Coffee | 6.8 | 80 |
| Tea | 6.8 | 50 |
| Spices | 14.2 | 150 |
| Tender Leaf | 16.8 | 60 |
| Rice | 32 | 250 |
| Wheat | 49.7 | 180 |
|  | 161.3 | 1510 |

(Bear in mind that the above table is meant only to illustrate solution. It is not to be reconstructed during exam and since the options are wide we can approximate considerably.)

28. (d)

Number of trucks under 'Others' = 660

All other trucks = 850

∴ Difference = 190

29. (a)

The total number of trucks made by the tycoon is (21% × 150) + (29% × 50) + (37% × 60) = (31.5 + 14.5 + 22) = 68.

30. (c)

'Others' trucks = 43% of 660 = 284

All other categories = 39% of 850 = 331

∴ % of all other categories = 

31. (a)

The tycoon had invested

Spices ; 21% × 14.2 *i.e*. 2.982 million

Tea ; 29% × 6.8 *i.e*. 1.972 million

Tender Leaf ; 37% × 16.8 *i.e*. 6.216 million

32. (b)

Actual import was = $ 161.3 million

Expected import was = 1510 × 450,000

= 679,500,000

So, actual import fill short by around 76%.

Actual import was $ 13.25 billion. Expected import was (755 × 45 million) = 33975 million = $ 33.975 billion. So, actual investement fell short of expectations by around 60%.

**Solutions (Q. Nos. 33 − 36):**

*T*he easiest way to solve the question is by observing that Mandeep has scored double the number of runs in 4's, when compared to those in 6's. The minimum possible value is 12 runs in 4's and 6 runs in 6's. Therefore a total of at least 18 runs were scored by Mandeep and RCB's score is at least 18 × 10 = 180.

But if RCB's score is 180, others scored 18 runs with 6 runs in 4's, and 6 runs in 6's, which is not possible. so we have to check for the next possibility for Mandeep, *i.e.*, 24 runs in 4's, and 12 runs in 6's. Therefore the total score of RCB would be 360 and all values would be satisfied as total ≤ 400.

33. (d)

RCB's score = 360.

34. (c)

Runs scored by Kohli = 

Runs in 4's = 

⇒ Nine 4's.

35. (d)

Total number of 6's is = (Others → 2) + (Kohli → 3) + (Mandeep → 2) + (Gayle → 2) + (ABD → 6) = 2 + 3 + 2 + 2 + 6 = 15.

36. (c)

Since runs scored by others is 36, and the least of the top four batsmen made 36 runs, the maximum any other player can make is 35 and another player 1.

∴ At most (11 − 6) = 5 players did not score any runs.

37. (a)

C12 percentage is 69% (from Bar graph), and for 69% average package is Rs. 1,40,000.

38. (c)

Average package of students of C7 = Rs. 1,40,000

Average package of students of C4 = Rs. 1,40,000

Therefore, average package for both the colleges combined will be Rs. 1,40,000.

39. (c)

average package of students of C6 = Rs. 1,80,000

average package of students of C9 = Rs. 3,50,000

**Solution Exercise – Difficult**

**Solutions (Q. Nos. 1 − 4):**

Go through the following table.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Pakistan** | **South Africa** | **Australia** |
| ***K*** | 28 | 51 | < 48 |
| ***R*** | < 22 | 49 | 55 |
| ***S*** | < 22 | 75 | 50 |
| ***V*** | 130 | < 49 | < 48 |
| ***Y*** | 40 | < 49 | 87 |
| **Top 3 batsman** | 198 | 175 | 192 |
| **India Total** | 220 | 250 | 240 |

1. (c)

2. (a)

3. (b)

4. (b)

**Solutions (Q. Nos. 5 − 8):**

This is the table pertaining to the data given.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **2009** | **2010** | **2011** | **2012** | **2013** |
| Cultivable land (in million hectares) | 340 | 270 | 390 | 420 | 400 |
| Uncultivable land (as a % of total land) | 16% | 24% | 8% | 32% | 8% |
| Cultivable land (as a % of total land) | 84% | 76% | 92% | 68% | 92% |
| Total land (million hectares) | 404.76 | 486.84 | 423.91 | 617.64 | 489.13 |
| Uncultivable land (million hectares) | 64.76 | 116.84 | 33.91 | 197.64 | 39.13 |

Cultivable land % = 100 − Uncultivable land %

Total land = 

Now all the questions can be answered.

5. (c)

The maximum uncultivable land is in 2012.

6. (c)

Total land in 2011 = 423.91 million hectares

7. (d)

Total land is maximum in year 2012.

8. (a)

We see none of the statements are correct on basis of the table above.

9. (a)

Total fine collected in 2013 is Rs. 1590,000 instead of calculating individual fines and then the difference.

We can straight away find the difference from their difference in %ages.

*i.e*. (24 − 4)% of 1590,000

= Rs. 318,000

10. (d)

Because we don't have the percentage distribution of 2011.

11. (d)

Fine from late return of books in 2012

= 

∴ Fine from other sources in 2012

= 1520 − 135 = 1365 thousand

∴ Percentage increase in fine from other sources

= 

12. (c)

1590 = 

*r* = 13.75%

13. (d)

Percentage of fine collected by teachers in total fine = 38%

Percentage entry fine collected by teachers in total fine = 22%

Therefore, percentage of late entry time collected by teachers

= 

14. (a)

We just need to calculate for the four options and not for all years.

|  |  |
| --- | --- |
| **Year** | **Percentage** |
| 2011 |  |
| 2006 |  |
| 2007 |  |
| 2013 |  |

15. (b)

Visually, we can see the values of imports and exports remain constant in 2011 and 2012.

16. (b)

It is seen that the growth rate is always positive. Thus, imports and exports will continusouly increase. Thus, the least imports and exports are in 2000. (Growth rate is decreasing means imports and exports are growing at lesser rate and not imports and exports are decreasing.)

17. (d)

|  |  |
| --- | --- |
| **Year** | **Ratio of imports to exports** |
| 2008 |  |
| 2009 |  |
| 2010 |  |
| 2013 |  |

18. (d)

Obviously, the answer cannot be determined as only the growth rate is known and not the actual imports and exports.

**Solutions (Q Nos. 19 − 21):**

We have:

Profit % = 

∴ Total profit = 

Also, Revenue = Expenditure + Profit

∴ Revenue = Expenditure + 

∴ Revenue = Expenditure + 

∴ Expenditure = 

Hence, Profit = Revenue - Expenditure

The following table can be made:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **(All figures in rupee crores)** | | | | | |
| **2010** | | | **2011** | | |
|  | **Revenue** | **Profit %** | **Profit** | **Revenue** | **Profit %** | **Profit** |
| VGS | 11500 | 6 | 650 | 16800 | 8 | 1244 |
| PLC | 9750 | 30 | 2250 | 12500 | 25 | 2500 |
| Yama | 6750 | 35 | 1750 | 9600 | 28 | 2100 |
| KPMC | 16500 | 25 | 3300 | 12500 | 25 | 2500 |
| NNGT | 19250 | 25 | 3850 | 22000 | 10 | 2000 |

By the given information:   
 VGS is Dixons

KPMC is Eletropaulo

19. (a)

Here Yama, is Coleco. So, now we have found three pairs. The highest profit in 2011 is Rs. 2500 crore. So, both Alta Vista and Bultaco is the answer.

20. (a)

The second highest profit earned by any Company in 2010 is Rs. 3300 crore.

So, KPMC is Alta Vista and hence Bultaco is the answer.

21. (d)

% increase in profit over 2010 of VGS: 

% increase in profit over 2010 of PLC: 

% increase in profit over 2010 of Yama: 

% increase in profit over 2010 of KPMC:   
= 

% increase in profit over 2010 of NNGT:

= 

Here Yama has the second highest increase in profit and its is Coleco.

**Solutions (Q. Nos. 22 − 25):**

Let the number of toys sold on Monday, Tuesday, Wednesday and Thursday be *a*, *b*, *c* and *d* respectively.

First, we will see what all information is given by the two graphs.

**Graph 1:**

Total revenue from toy sales on Monday = 300*a*

Total revenue from toy sales on Tuesday = 400(*a + b*) − 300*a* = 400*b* + 100*a*

Total revenue from toy sales on Wednesday = 400 (a+b+c) - 400(a+b) = 400c

Total revenue from toy sales on Thursday = 300(*a + b + c + d*) − 400(*a + b + c*) = 300*d* − 100(*a + b + c*)

**Graph 2:***a + b* = 60

*b + c* = 40

c *+ d* = 30

d *+ a* = 50

These are four equations in four variables, but any one of these equations is redundant. Thus, the system will have multiple solutions. Since it is known that the number of toys sold on any day has to be a non-negative integer, the possibilities are:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***a*** | 20 | 30 | 40 | 50 |
| ***b*** | 40 | 30 | 20 | 10 |
| ***c*** | 0 | 10 | 20 | 30 |
| ***d*** | 30 | 20 | 10 | 0 |

Out of these possibilities, only the first case:

|  |  |
| --- | --- |
| ***a*** | 20 |
| ***b*** | 40 |
| ***c*** | 0 |
| ***d*** | 30 |

would be considered because in the other cases, the revenue on Thursday turns negative. Hence, when the two graphs are combined,

Total revenue from toy sales on Monday = 300*a* = Rs. 6000

Total revenue from toy sales on Tuesday = 400*b* + 100*a* = Rs. 18000

Total revenue from toy sales on Wednesday = 400*c* = Rs. 0

Total revenue from toy sales on Thursday = 300*d* − 100(*a + b + c*) = Rs. 3000

22. (a)

Average price per toy on Wednesday will be Rs. 400, which is clear from graph I alone. Average was 400 by Tuesday which remained 400 till Wednesday.

23. (c)

Total numebr of toys on Tuesday and Thursday cannot be determined from graph (2) alone. Only when you combine the two graphs and find the only possibility of *a*, *b*, *c* and *d*; you would come to know that *b + d* = 70.

24. (a)

If no toy were sold on any one-day, the average price per toy would not change the next day. This day can be seen to be Wednesday from graph (1) alone.

25. (c)

Again, to get the average on Thursday, information from both the graphs is required.

26. (d)

Comparing the two for above 36 years:



For 0-9 years:



27. (b)



28. (b)

Total deaths = 190400

The additional angle made by heart attacks as compared to AIDS = 

29. (a)



30. (d)

Only statement D is true. Deaths in the 26-36 age group:

Diabetes = 6896

AIDS = 5376

Accidents = 0

Heart Attacks = 2464

Dengue = 616

Cancer = 5080

31. (b)

The water at point V is: 1200 = (d + 1600 + 200) - (200 + *e*)

∴ *e* - *d* = 400

32. (c)

Given, 2000 + 1600 + *h* = 5400

∴ *h* = 1800

Also, *b* = 400

∴ *a* + *f* = 5400 - (*b* + 800 + 1200 + *g*)

= 5400 - 3400 = 2000

33. (a)

At terminal T,

*e* + 600 = *f* + *c* and here *c* = 200

∴ *f* - *e* = 400

34. (a)

*b* = 800 + 200 - 600 = 400

*c* = 200

∴ *b* - *c* = 200

35. (d)

The total water leaving all the 6 terminals = 2000 + 1600 + *h*

Minimum values of *h* = 200 + 600 = 800

∴ Minimum value of total water = 4400

36. (c)

Since it is given that 1000 phones of Apple were disposed off in 2011, we can say the number of Apple phones purchased in 2009 is 5000. Since there are 12000 in total, the number purchased in 2010 is 7000.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| Purchased | 5000 | 7000 | 6000 | 9000 | 12000 | 10000 |
| Disposed | 0 | 0 | 1000 | 1000 + 1400 | 1000 + 1400 + 1200 | 1000 + 1400 + 1200 + 1800 |

37. (c)

For Apple = 1000 + 1400 + 1200 + 1800 + 2400 = 7800

For Mango = 600 + 1000 + 1400 = 3000

Total = 7800 + 3000 = 10800

38. (d)

{(20 + 20 + 20)% of that purchased in 2009} + {(20 + 20)% of that purchased in 2010} + {20% of that purchased in 2011} = 3000 + 2800 + 1200 = 7000

39. (d)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 2011 | 2012 | 2013 | 2014 |
| Purchased | 3000 | 5000 | 7000 | 6000 |
| Disposed | 0 | 0 | 600 | 600 + 1000 |

**Solutions (Q. Nos. 40 − 43):**

From the cumulative bar diagram, we can compile the weights of various parameters in the following table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Batting | Bowling | Fielding | Others |
| Man of the series | 0.4 | 0.2 | 0.35 | 0.05 |
| Most valuable player | 0.5 | 0.25 | 0.2 | 0.05 |
| Emering player of the series | 0.6 | 0.15 | 0.15 | 0.1 |

Calculating the total scores of all the students, according to the individual selection criteria of different PIMs, we get the following data:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameters | BT | BO | FD | FP | MS | MVP | EP | Shortlisted for |
| Maximum Possible Score | 300 | 150 | 150 | 150 | 210 | 225 | 240 |  |
| Warner | 297 | 66 | 93 | 126 | 170.85 | 189.9 | 214.65 | MVP, EP |
| ABD | 291 | 69 | 105 | 102 | 172.05 | 188.85 | 210.9 | MS, MVP, EP |
| Kohli | 294 | 72 | 90 | 90 | 168 | 187.5 | 209.7 | EP |
| Rahane | 285 | 81 | 99 | 108 | 170.25 | 187.95 | 208.8 |  |
| Iyer | 282 | 87 | 99 | 123 | 171 | 188.7 | 209.4 | MS, MVP |

**BT = Batting ; BO = Bowling ; FD = Fielding ; FP = Fair Play ; MS = Man of the Series ; MVP = Most Valuable Player ; EP = Emerging Player of the Series**

40. (b)

It is evident that Rahane will not get shortlisted for any award.

41. (b)

If Gayle joins the list of students, then scenario changes:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameters | BT | BO | FD | FP | MS | MVP | EP | Shortlisted for |
| Maximum Possible Score | 300 | 150 | 150 | 150 | 210 | 225 | 240 |  |
| Warner | 297 | 66 | 93 | 126 | 170.85 | 189.9 | 214.65 | MVP, EP |
| ABD | 291 | 69 | 105 | 102 | 172.05 | 188.85 | 210.9 | MS, MVP, EP |
| Kohli | 294 | 72 | 90 | 90 | 168 | 187.5 | 209.7 | EP |
| Rahane | 285 | 81 | 99 | 108 | 170.25 | 187.95 | 208.8 |  |
| Iyer | 282 | 87 | 99 | 123 | 171 | 188.7 | 209.4 | MVP |
| Gayle | 288 | 78 | 102 | 93 | 171.15 | 188.55 | 209.1 | MS |

Gayle will be shortlisted for Man of the series only

42. (d)

Currently ABD (with a total score of 172.05), ranks highest for Man of the series. If Warner scores 69 in Bowling, his total score for Man of the series, will be 171.45; If Warner scores 96 in Fielding, his total score, will be 171.9 and if he scores 132 in Fair Play, his total score, will be 171.15, thus beating Iyer (Total score of 171) in each case, in the run for the other Man of the series award.

43. (c)

From the table, average marks of students is the highest in Emering player of the series.

Here 

⇒ 81.1% < 84% < 86.25%

Hence, Emering player of the series is the answer.

44. (d)

We cannot find the specific number as information is given about only maximum and minimum salary.

45. (b)

for ZIM A all 7 will be above 45 lakhs as minimum is 47 lakhs.

For ZIM B as maximum is 69 lakhs and minimum is 41 lakhs. So, we can say only 1 can be above 45 lakhs ; as we have to only find least number.

For ZIM C, there is candidate with 65 lakhs.

For ZIM D, all 6 are above 45 lakhs.

For ZIM E, only 1 candidate it above 45.

For ZIM F, no such candidate is there.

So, required percentage is = 

46. (a)

The interns earning 45 to 55 lakhs are

|  |  |  |
| --- | --- | --- |
|  | **Marketing** | **Finance** |
| ZIM A | 3 | 6 |
| ZIM B | 6 | 3 |
| ZIM C | 0 | 0 |
| ZIM D | 0 | 0 |
| ZIM E | 0 | 1 |
| ZIM F | 0 | 0 |

Hence, the required percentage is   
= 

47. (c)

Average salary (least)

=

= 

**Solutions (Q. Nos. 48 − 50):**

Revenue generated

|  |  |  |
| --- | --- | --- |
|  | Food Sales | Beverage Sales |
| Pepsico | 1000 | 400 |
| Frito Lay | 1750 | 300 |
| Parle | 1500 | 400 |
| HUL | 250 | 600 |
| Coca Cola | 500 | 300 |

Total revenue of HUL = 250 + 600 = 850

Total revenue by Retail = 

Now total revenue through Channel Sales

= (5000 + 2000) − 5000

= 2000 crores

Also,

|  |  |  |
| --- | --- | --- |
|  | **Food** | **Beverages** |
| Channel Sales | 2000 | − |
| Retail Sales | 3000 | 2000 |

In food,

Total retail sales except HUL = 3000 − 250

= 2750 crores

48. (b)

Required ratio = 2000 : 3000

= 2 : 3

49. (b)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Food** | **Beverage** | **Total** |
| HUL | 250 | 600 | 850 |
| Frito Lay | 1500 | 300 | 1800 |
| Pepsico | *x* | 400 | 400 + *x* |
| Parle | *y* | 400 | 400 + *y* |
| Coca Cola | *z* | 300 | 300 + *z* |

As total food by retail sales = 3000 crores

Hence, *x + y + z* = 1250 crores

Even if any *x, y* or *z* becomes 1250 crores none of the firms can have more aggregate than Frito Lay.

50. (b)

For maximum assume all beverage business is online.

Hence, maximum online sales = (20 + 15)% of 2000

= 700 crores