**3.6 PIE CHARTS**

**Solution Exercise – Easy**

1. (c)

The skin & muscular protein totally constitutes 33% of the total proteins. The total proteins itself is

15% of the total body weight. Hence the percentage of skin & muscular protein as a fraction of the

total body weight = 33% of 15% = 5 %. = .

2. (a)

Required Ratio = 25 : 8 = 3 : 1 (approx.).

3. (d)

We can determine only the percentage of skin protein in Ghosh Babu’s total body weight. But there is no data given about the percentage of skin in Ghosh Babu’s body. Hence the answer is (d).

4. (a)

Proportion of material other than water & protein in Ghosh Babu’s body is .

**Solutions (5** − **7):**

5. (b)

Cost in rupees of oil moved by rail and road is 18% of

30 million = 5.4 million.

Volume of oil transported by rail and road

= 31% of 12 million tonnes = 3.72 million tonnes.

Cost in rupees per tonnes = 

6. (a)

From the chart, we can make out the least among road, rail, pipeline, ship by looking at the ratio of cost to volume.

Road = 

Rail = 

Air freight = 

Pipeline = 

Ship = 

Obviously road is the lowest and hence the cheapest.

7. (c)

Ship, Air and Road.

Like the previous answer again look at ratio of



So, 

Hence, P > Q > R

**Solutions (8** − **9):**

8. (b)

It can be easily observed from the two charts that Switzerland’s ratio of chart 1 to chart 2 is  has the highest price per unit kilogram for its supply. Finding the ratio of the value and quantity is enough to reach the solution.

9. (b)

Total value of distribution to Turkey is 16% of 5760 million Euro.

Total quantity of distribution to Turkey is 15% of 1.055 million tonnes.

So the average price in Euro per kilogram for Turkey is

= 

**Solutions (10** − **13):**

10. (c)

Average monthly sales of Sharp =

So, it is 

11. (c)

Average cost = 

12. (d)

We do not know the total sales of 2013.

13. (b)

Total sales in 2014 = 1.15 × 1.15 × 72 = 95.22 lakh units

Monthly sales of Sharp

=

**Solutions (14** − **16):**

14. (c)

Maize = 

Bajra = 

Barley = 

Small millets = 

15. (d)

We cannot find the answer as per kg price of Rice and Wheat are not given.

16. (a)

Maize + Barley (2013) = 

= 23.87 million tonnes

Maize + Barley (2014) = 

= 24.37 million tonnes

Difference = 0.5 million tonnes

17. (c)

Total production in 2015 = 

= 265.56 million tonnes

Combined production of Ragi, Barley and Small millets

=  = 7.62 million tonnes

**Solutions for 18** − **20:**

Imports and exports between different countries as given below:

|  |  |  |
| --- | --- | --- |
|  | **Imports** | **Exports** |
| Europe | 86400 | 36000 |
| West Asia | 50400 | 25500 |
| SAARC | 38400 | 39000 |
| Middle East | 32400 | 45000 |
| Latin America | 57600 | 31500 |
| North America | 64800 | 39000 |
| Oceania | 72000 | 57000 |
| OPEC | 48000 | 27000 |

18. (c)

Required % = 

19. (d)

New percentage = 

20. (d)

The least difference is for SAARC countries.

**Solution Exercise – Medium**

**1. (a)**

**Percentage increase =** 

**2. (b)**

**Interest in 1990-91 = 30% of 130 = Rs. 39 lakh**

**Interest in 1991-92 = 40% of 160 = Rs. 64 lakh**

**Hence, difference = (64 – 39) = Rs. 25 lakh**

**3. (d)**

**Total interest = (30% of 130) + (40% of 160) = (39 + 64)**

**= Rs. 103 lakh.**

**If this total interest is charged on borrowed funds, then**

**(20% of borrowed funds) = 103. Hence, borrowed funds**

**= (5 ×** 103) = Rs. 515 lakh.

4. (d)

Retained profit in 1990-91 = (25% of 130) = Rs. 32.5 lakh

Retained profit in 1991-92 = (20% of 160) = Rs. 32 lakh

Hence, percentage change in retained profit

= 

5. (c)

Total dividend earned by shareholders in 1991-92

= (8% of 160) = Rs. 12.8 lakh.

**Solutions (6** − **10):**

6. (b)

Required ratio = 

7. (d)

Sales of any other manufacture is not given hence we cannot find the answer.

8. (d)

Data about export of other brands is not given.

9. (c)

Market share gained by Maruti = 

New market share of Maruti = 11 + 44.5% = 55.5%

10. (b)

|  |  |  |
| --- | --- | --- |
|  | **2015** | **2016** |
| Maruti | 1200 | 1320 |
| Tata | 1450 | 1595 |
| Hyundai | 400 | 440 |
| Mahindra | 900 | 1035 |
| Others | 1050 | 997.5 |

Total market in 2016 = 5387.5

**Solutions (11** − **15):**

11. (a)

Basic phones sold = 

12. (a)

Total Samsung sales = 20% of total

Tablets of Samsung = 

∴ Requuired fraction = 

13. (d)

Micromax's total sales = 

Basic Micromax phones = 18.82 mn

% share in basic phone = 

14. (c)

Tablets by Oppo = 

Tablets by Lava = 

Tablets by Apple = 12.55 − (6.275 + 5.02) = 1.255 mn

∴ Required ratio =  = 5 : 1

15. (c)

Oppo phablets = 

∴ Reduction in overall sales = 

**Solutions (16** − **20):**

16. (c)

Kids = 1.3 × 0.18 × 450 = 105.3

Young = 283.5

Middle aged = 174.375

Old = 34.425

Total = 597.6 crores

17. (c)

Aerated drinks = 

Fruit Juice = 

Others = 

Total = 4072.32 crores

18. (d)

We cannot find the answer as we do not have information of solidfied milk products.

19. (b)

Total market after 4 years

= 11200 × 1.15 × 1.15 × 1.2 × 1.25 = 22,218 crores

20. (d)

Total Sales value because of kids

= [(0.2 × 0.43) + (0.35 × 0.27) + (0.5 × 0.1)] × 11200

= (.086 + 0.945 + 0.5) × 11200

= Rs. 2581.6 crores

Number of kids = 0.18 × 450 = 81 crores

Average spending = 

**Solution Exercise – Difficult**

1. (c)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Exports** | | **Imports** | |
|  |  | **2016** | **2017** | **2016** | **2017** |
| Natural | Foodgrains | 2761.64 | 3175.88 | 283.27 | 311.59 |
| Crude Oil | 1676.71 | 1928.21 | 217.9 | 239.69 |
| Artificial | Services | 2367.12 | 2722.18 | 697.28 | 836.73 |
| IT  pheripherials | 1084.93 | 1247.66 | 435.8 | 522.96 |
| Industrial  goods | 887.67 | 1020.82 | 457.59 | 549.10 |
|  | Others | 1084.93 | 1247.66 | 87.16 | 104.59 |

Trade surplus of Natural in 2017 = 4552.81

Trade surplus of Artificial in 2017 = 4224.94

Required % = 7.76%

2. (d)

Exports after 5 years (for foodgrains)  
= (1.1)5 × 0.28 × 9863

= 4447.64 million

Imports after 5 year (for foodgrains)

= .13 × 2179 × (0.9)5

= 167.26 million

Export surplus = 4447.64 − 167.26

= 4280.38 million

3. (b)

Trade suplus from Crude Oil in next year = 1.3 × (1676.71 − 217.9)

= 1896.45 million

Trade surplus from Services in next year

= 1.1 × (2367.12 − 697.28)

= 1836.82 million

Difference = 59.62 million

4. (b)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Exports** | **Imports** | **Surplus** | **Ratio** |
| Foodgrains | 2761.64 | 283.27 | 2478.37 | 0.89 |
| Crude Oil | 1676.71 | 217.9 | 1458.81 | 0.87 |
| Services | 2367.12 | 697.28 | 1669.84 | 0.70 |
| IT  Peripherial | 1084.93 | 435.8 | 649.13 | 0.59 |
| Industrial goods | 887.67 | 457.59 | 430.80 | 0.48 |
| Others | 1084.93 | 87.16 | 977.77 | 0.91 |

5. (c)

Technique improved a lot = 

Technique improved a lot for males

= 

Technique improved a lot for females = 1328 − 840 = 488

6. (d)

Total athletes who cannot say anything = 

Males athletes who can't say anything = 

Female athletes who can't say anything = 913 − 854 = 73

Required ratio = 

7. (c)

Improved a lot among who have heard earlier

= 

Improved a lot among who have not heard earlier

= 

Difference = 736

8. (d)

We cannot find the answer as the segregation among males is not given.

**Solutions for 9 − 13:**

We can find the total number of stories in each book

Nine stories = 

Goodman is hard to find = 

Dubliners = 

The Martian Chronicles = 

Interpreter of Maladies = 

The Illustrated man = 

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Total | Jhumpa | Chetan | Amartya | Amish | Arvind | Ravinder |
| Nine Stories | 90 | 24 | 24 | 15 | 1 − 25 | 1 − 25 | 1 − 25 |
| Goodman is hard to find | 180 | 1 − 25 | 1 − 25 | 1 − 25 | 65 | 35 | 53 |
| Dubliners | 360 | 1 − 79 | 88 | 63 | 128 | 1 − 79 | 1 − 79 |
| The Martian Chronicles | 135 | 50 | 1 − 25 | 13 | 1 − 25 | 1 − 25 | 45 |
| Interpreter of Maladies | 130 | 43 | 35 | 1 − 11 | 1 − 11 | 39 | 1 − 11 |
| The  Illustrated Man | 210 | 1 − 82 | 1 − 82 | 1 − 82 | 24 | 66 | 36 |

9. (b)

Amartya has developed

Minimum = 94 ; Maximum = 209

Finding the minimum range for others

|  |  |
| --- | --- |
|  | Minimum |
| Jhumpa | 120 |
| Chetan | 150 |
| Amish | 220 |
| Arvind | 143 |
| Ravinder | 137 |

So, Amish must have written atleast 220 stories which in every case is more than Amartya.

10. (c)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Minimum | Maximum | Writers Curse |
| Jhumpa | 120 | 303 | 183 |
| Chetan | 150 | 279 | 129 |
| Amartya | 94 | 209 | 115 |
| Amish | 220 | 278 | 58 |
| Arvind | 143 | 269 | 126 |
| Ravinder | 137 | 249 | 112 |

11. (c)

Amish will always have more number of stories than Amartya hence the minimum number of stories must be of Jhumpa, Chetan , Amartya, Arvind or Ravinder.

12. (a)

There is no such writer.

13. (d)

All the books are not star performance books.

**Solutions for 14 − 18:**

|  |  |
| --- | --- |
| **Runs score by Gayle vs. Various opponents** | |
| DD | 180 |
| RR | 144 |
| MI | 96 |
| SRH | 300 |
| KXIP | 240 |
| CSK | 240 |

Let the total number of balls played by Gayle against fast bowlers = *a* and against spinners = *b.*

So, *a + b* = 800

and .18*a* + .22*b* = 160

**⇒ .18(***a + b*) + 0.04*b* = 160

**⇒** 144 + .04*b* = 160

**⇒** *b* = 400

**⇒** *a* = 400

|  |  |  |
| --- | --- | --- |
|  | **Ball Faced** | |
| Against fast bowlers | Against spinners |
| DD | 72 | 88 |
| RR | 24 | 16 |
| MI | 88 | 80 |
| SRH | 80 | 100 |
| KXIP | 64 | 20 |
| CSK | 72 | 96 |

14. (b)

|  |  |  |
| --- | --- | --- |
| DD | → | 45 |
| RR | → | 36 |
| MI | → | 24 |
| SRH | → | 75 |
| KXIP | → | 60 |
| CSK | → | 60 |
|  |  | 300 |

15. (c)

Maximum runs that can be scored by Gayle

= (400 × 4) + (400 × 6)

= 4000 runs

16. (a)

To minimize the number of balls hit he should have hit more sixes.

|  |  |
| --- | --- |
| 16 × 6 = | 96 runs |
| 12 × 4 = | 48 runs |
|  | 144 runs |

So, minimum number of balls hit is 28.

17. (d)

For option (a),

Minimum number of 6's against DD = 0

Maximum number of 6's against DD = 30

Similarly,

Minimum Vs. RR = 8

Maximum Vs. RR = 16

So, nothing can be said definitely.

For option (b),

6's minimum Vs. CSK = 0

maximum Vs. CSK = 40

So, nothing can be said definitely.

For option (c),

6's minimum Vs. KXIP = 0

maximum Vs. KXIP = 20

So, nothing can be said definitely.

18. (c)

To maximize the number of balls, the runs per ball should be minimum.

So, maximum = 75 × 4 = 300 runs.

**Solutions (19** − **20):**

19. (b)

Total dishes (Purani Delhi) = 

Starter (Purani Delhi) =

Main Course (Purani Delhi) = 204

**Alternative Solutions:**

Total dishes = 3600 ;

Starters = 2400

Main Course = 1200

Let *x* = 12

∴ Total dishes = 300*x* ; Starters = 200*x*

Main Course = 100*x*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total | Starters | Main Course |
| Purani Delhi | 45*x* | 28*x* | 17*x* |
| Konkan | 108*x* | 56*x* | 52*x* |
| Maharashtrian | 24*x* | 12*x* | 12*x* |
| Gujrati | 36*x* | 20*x* | 16*x* |
| South Indian | 54*x* | 54*x* | 0 |
| Hyderabadi | 33*x* | 30*x* | 3*x* |

20. (d)

Using the table, South Indian has lowest number of main course items.

21. (b)

Using the table, ratio = 

22. (d)

By using the table =