# Data Interpretation-II

**Direction (1-5): Study the following information and answer the related questions.**

P, Q, R, S, T, A, B, C, D and E are employees of a company. A table shows the average age of any two employees of the company. The average age of A and B is 27.5.

| Employees | P | Q | R | S | T |
|---|---|---|---|---|---|
| A | 39.5 | | | | 27 |
| B | 42 | | 25.5 | | |
| C | | 42 | | | |
| D | | | 36.5 | 42.5 | |
| E | | 44.5 | | | 36 |

i.e. average age of A & P is given as (A+P)/2=39.5

**1) What is the age of T?**

A. 27
B. 29
C. 33
D. 39
E. None of these

**Ans. B.**

A + B=2 × 27.5 = 55

A + P =2 × 39.5 = 79

B + P = 2 × 42 = 84
A + B + 2P = 79 + 84 2P = 163 – 55
P = 54
Now, A = 79 – 54 = 25

A + T = 2 × 27 = 54
So, T = 54 – 25 = 29

**2) What is the average age of D, R and S?**

A. 25
B. 31
C. 32
D. 35.6
E. None of these

**Ans. E.**

B = 55 – 25 = 30

B + R = 2 × 25.5 = 51
So, R = 51 – 30 = 21

D + R = 2 × 36.5 = 73
D = 73 – 21 = 52

And, S + D = 2 × 42.5 = 85

S = 85 – 52 = 33
Therefore, average of D, R and S = 52+21+33/3 = 35.33

**3) What is the ratio of ages of Q and E?**

A. 46:43
B. 43:46
C.23: 25
D. 25:23
E. None of these

**Ans. A.**

T + E = 2 × 36 = 72
E = 72 – 29 = 43
Q + E = 2 × 44.5 = 89
Q = 89 – 43 = 46
Ratio = 46: 43

**4) What will be the average of sum of ages of A, B, C, D and E together after five years?**

A. 39.8
B. 40
C. 42.6
D. 45.5
E. None of these

**Ans. C.**

C + Q = 2 × 42 = 84
C = 84 – 46 = 38
Sum of ages of A, B, C, D and E together after five years
= (25 + 30 + 38 + 52 + 43) + 25 = 213
Average = 213/5 = 42.6

**5) If age of P and Q is decreased by 50% and age of A and B is increased by 20%, what will be the ratio of ages of P, Q, R, S and T together to the ages of A, B, C, D and E together?**

A. 51:50
B. 50:51
C. 199:133
D. 133:199
E. None of these

**Ans. D.**

Age of P and Q is decreased by 50%. So, New age of P = 50/100 × 54 = 27
New age of Q= 50/100 × 46 = 23
And, age of A and B is increased by 20%. So, New age of A= 120/100 × 25 = 30
New age of B = 120/100 × 30 = 36

Ratio= = 27+23+21+33+29/30+36+38+52+43 = 133/199

## Direction(6-10): Study the following information to answer the questions.

| Days | HOTEL→ A | | HOTEL→ B | |
|---|---|---|---|---|
| | Number of Customers (male+female) | % male Customers | Number of Customers (male+female) | % male Customers |
| Monday | 190 | 30% | 480 | 40% |
| Tuesday | 280 | 40% | 188 | 50% |
| Wednesday | 350 | 60% | 200 | 60% |
| Thursday | 400 | 35% | 120 | 75% |

**6) On Wednesday, in hotel A, 30% of male customers and 70% of female customers were from Town X. what was the number of customers in hotel A from town X on Wednesday?**

A. 161 B. 183
C. 181 D. 153
E. 157

**Ans. A.**

The number of customers in hotel A from town X on Wednesday=
= 60% of 30% of 350 + 40% of 70% of 350
= 63 + 98 = 161 ans.

**7) The number of customers (male+female) in hotel A and B are increased by 50% and 15% respectively from Thursday to Saturday. If the total number of female customers in hotel A and B together was equal on Thursday and Saturday, what was the total number of male customers in hotel A and B together on Saturday?**

A. 458 B. 438
C. 442 D. 448
E. 452

**Ans. D.**

Total number of customers in hotel A on Saturday = 400*150/100=600 Total number of customers in hotel B on Saturday = 120*115/100= 138 Total number of female customers in hotel A and B together on Thursday= (400*65/100 + 120 *25/100) = 290
Total number of female customers in hotel A and B together on Saturday= 600 + 138 - 290 = 448 ans.

**8) In hotel B, the ratio of female customers on Tuesday and Friday was 2:3. If on Friday, female customers constituted 50% of the number of customers(male+female),thenwhatwasthenumberofcustomers(male+ female) in hotel B on Friday?**

A. 288 B. 296
C. 294 D. 282
E. 276

**Ans. D.**

Number of female customers on Friday = 50% of 188 × (3/2) = 141
Number of customers (male + female) in hotel B on Friday= 141/50% = 141/(1/2) = 141 × 2 = 282.

**9) In hotel A, what is the difference between the total number of male customers on Monday and Tuesday together and that on Wednesday and Thursday together?**

A. 183 B. 177

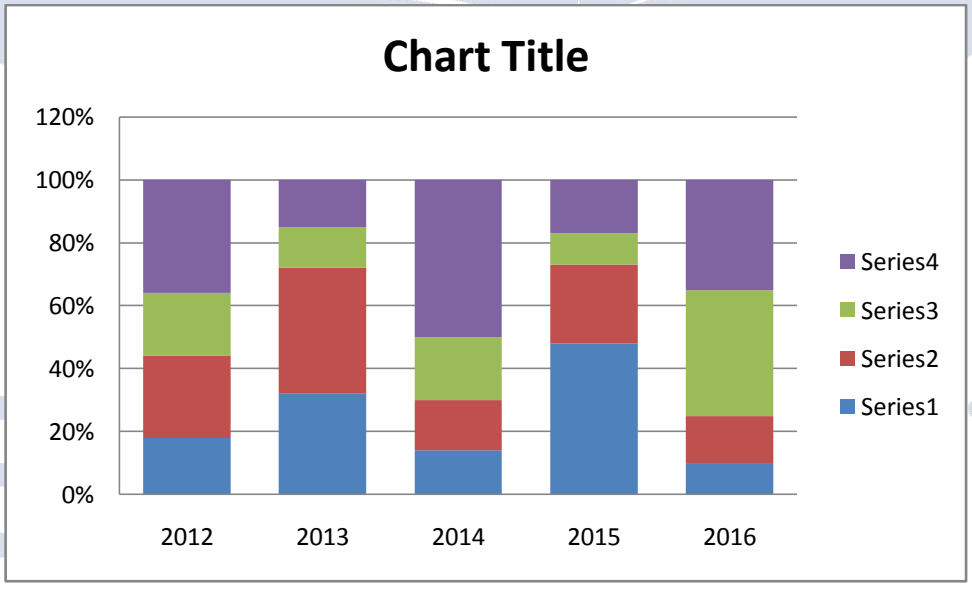
C. 185 D. 187
E. 181

**Ans. E.**
Required difference = (60% of 350 +35% 0f 400) – (30% of 190 + 40% of 280)
= 350 – 169 = 181 Ans.

**10). What is the average number of male customers in hotel B on Monday, Wednesday and Thursday?**
A.134
B.188
C.185
D.175
E.184

**Ans. A.**
Required average =
= (40% of 480 + 60% of 200 + 75% of 120) / 3
= (192 + 120 + 90)/3
= 402/3
= 134 ans.

**Directions (11-15):** The following bar graph shows the percentage break- up of a Sunil's salary from year 2012 to 2016. With the given information, find the following questions.




**11). If the ratio on saving in the year 2013 and 2016 are in the ratio 3 : 5. Then what is the ratio of EMI expenses in the year 2013 and2016.**
A. 56:5 B. 8:15
C. 56:15 D. Can't be determined
E. none of these

**Ans. C.**
Let total salary in 2013 be INR x Total salary in 2016 be INR y According to the given information:
The ratio on saving in the year 2013 and 2016 are in the ratio 3 : 5.

15% of x / 35% of y = 3/5

x/y = 3/5 × 35/15 = 7/5 ..... (1)

∴ Ratio of EMI expenses = 40% of x / 15% of y

⇒ Ratio of EMI expenses = 0.4x / 0.15y

Now taking the values of x/y from (1)

⇒Ratio of EMI expenses = 7/5 × 40/15 = 56: 15

Hence, the required ratio is 56: 15

**12). If the saving in 2012 is 4/5$^{th}$ of the saving in 2014. Then what is the total expenditure spent on food in 2012. (Given that total expense in 2014 is INR1,85,000)**

A. INR 40,400
B. INR 44,400
C. INR 21,100
D. INR 45,100
E. none of these

**Ans. B.**

Total expense in 2014 = INR 1, 85,000

⇒Saving in 2014 = 50% of 1, 85,000

⇒Saving in 2014 = INR 92,500 According to the given information:

The saving in 2012 is 4/5$^{th}$ of the saving in 2014

∴Saving in 2012 = 4/5 × 92,500 = INR 74,000

Let the total expense in 2012 be INR x

∴35% of x = 74,000

⇒ x = 74,000 × 100 / 35

Now, expenditure on food in 2012 is 21% of x

⇒Expenditure on food in 2012 = 74,000 × 100 / 35 = 21/100

⇒Expenditure on food in 2012 = INR 44,400

**13). Everyyearthereisanincreaseof100%inmonthlysalaryascompared to previous year's monthly salary then what is the ratio of monthly salary in 2016 to the expenses on travelling in2013.**

A. 8:1
B. 1:25
C. 80:3
D. 25:1
E. none of these

**Ans. D.**

Let the monthly salary in 2013 be INR 100 According to the given information:

Every year there is an increase of 100% in monthly salary as compared to previous year's monthly salary

Then salary in 2014 = INR 200

⇒Salary in 2015 = INR 400

⇒Salary in 2016 = INR 800

Now, expenses on travelling in 2013 = 32% of salary

⇒Expenses on travelling in 2013 = INR 32

∴Required ratio = 800/32 = 25: 1

**14). If the total expenses in year 2011 is INR 3, 00,000 and there is an increase of 18% in 2012. Then how much Sunil has spent on travelling and EMI combine in2012?**

A. INR 1,53,740
B. INR 1,40,330
C. INR 1,50,740
D. INR 92,400
E. INR 1,55,760

**Ans. E.**

Total expenses in year 2011 = INR 3, 00,000 There is an increase of 18%

∴Total expense in 2012 = 3, 00,000 + 18% of 3,00,000

⇒Total expense in 2012 = INR 3, 54,000

Now, Expense on travelling in 2012 = 18% of 3, 54,000

⇒Expense on travelling in 2012 = INR 63,720 EMI expense in 2012 = 26% of 3, 54,000

⇒EMI expense in 2012 = INR 92,040

Combine expense = 63,720 + 92,040 = INR 1, 55,760

**15). What approx. percentage of average money spend by Sunil on food to that of average money saved by him during all these years if his salary per annum was INR 5,00,000.**

A. 65%
B. 70%
C. 68%
D. 69%
E. 66%

**Ans. C.**

Money spend by Sunil on food = 21% + 13% + 20% + 10% + 40% Average money spend by Sunil on food = 104%/ 5 = 20.8% of 5, 00,000

⇒Average money spend by Sunil on food = INR 1, 04,000

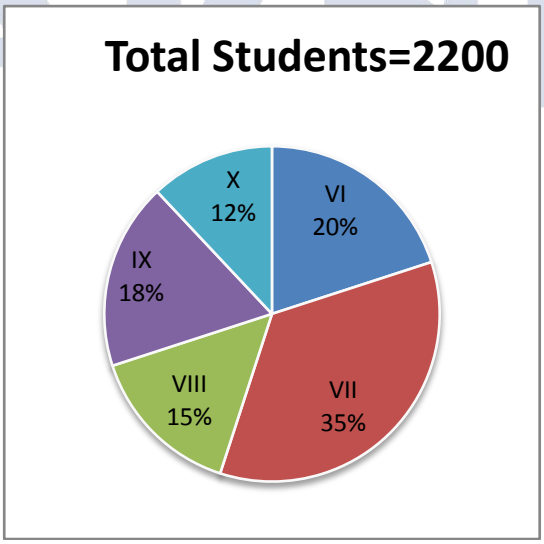
Now, Money saved by Sunil = 35% + 15% + 50% + 17% + 35%

Average money saved by Sunil = 152%/ 5 = 30.4% of 5, 00,000

⇒Average money saved by Sunil = INR 1, 52,000

∴Required ratio = $1,04,000 / 1,52,000 \times 100 = 68.42 \approx 68\%$

**Direction (16-20): Study the pie chart carefully and answer the given questions. Thepiechartshowsthepercentagebreakupofstudentsindifferentclasses from VI to X in the year2017**



**16). The total number of students study in class VI and class IX together is approximately what percentage more than that of the total number of students study in class X?**

A. 125%
B. 280%
C. 217%
D. 189%
E. 77%

**Ans. C.**

The total percentage of students in class VI and class IX together=20+18=38%

The percentage of students in class X=12% So, required percentage= 38-12/12 × 100

= 26/12 × 100

= 217% **(Approx)**

**17). If in class VI, the ratio of boys to girls is 6:5 and the total number of girls in class VI is 50 less than that of the total number of girls in class VII. Find the ratio of the total number of boys in class VI to class VII.**

A. 5:7
B. 7:11
C. 9:13
D. 6:13
E. 4:5

**Ans. D.**

The total number of students in class VI= 2200/100 × 20=440

The ratio of boys to girls is 6:5 in class VI **(Given)**

The total number of girls in class VI= 440/11 × 5=200

The total number of boys in class VI=440-200=**240**

The total number of girls in class VII=200+50=250

The total number of students in class VII= 2200/100 × 35=770

The total number of boys in class VII=770-250=**520**

So, required ratio= 240/520 = 6 : 13

**18). If in 2018, the total number of students in class VI and class VII is increased by 10% each and the total number of students in class VIII is decreased by 20% then what is the difference between the total number of students in class VI and VII together in 2018 to that of the total number of students in class VIII in 2018?**

A. 976
B. 1067
C. 1156
D. 1078
E. 878

**Ans. B.**

The total number of students in class VI in 2017= 2200/100 × 20=440

The total number of students in class VI in 2018= 440/100 × 110=484

The total number of students in class VII in 2017= 2200/100 × 35=770

The total number of students in class VII in 2018= 770/100 × 100 = 847

The total number of students in class VI and class VI together in 2018=484+847=**1331**

The total number of students in class VIII in 2017= 2200/100 × 15=330

The total number of students in class VIII in 2018= 330/100 × 80=**264**

So, required difference=1331-264=1067

**19). If the total number of boys in class VIII is "x" and the total number of boys in class IX is "x+40". The total number of girls in class VIII and class IX together is 306. Then find the value of "x".**

A. 190
B. 210
C. 174
D. 184
E. 196

**Ans. A.**

The total number of students in class VIII = 2200/100 × 15=330

The total number of students in class IX = 2200/100 × 18=396

The total number of students in class VIII and class IX together=330+396=**726**

The total number of girls in class VIII and class IX together=306 (Given)
The total number of boys in class VIII and class IX together=726- 306=420
If the total number of boys in class VIII is "x" and the total number of boys in class IX is "x+40" (Given),
So, x + x + 40=420 2x=380
x=190
So, the total number of boys in class VIII is 190.

**20). What is the difference between the total number of students in class VII and class VIII together to that of the total number of students in class IX and class X together?**

A.480
B.520
C.440
D.400
E.560

**Ans. C.**

So, required percentage= (35% + 15%) – (18% + 12%) / 100 × 2200

= 20/100 × 2200

= 440

**Direction (21-25): The table given below represents number of bikes of five different brands sold from 2001-2005, with the help of data given in the table, answer the following questions.**

| Brand/Year | 2001 | 2002 | 2003 | 2004 | 2004 |
|---|---|---|---|---|---|
| Honda | 5000 | 5800 | 5600 | 5920 | 6000 |
| Suzuki | 8500 | 8800 | 8700 | 8640 | 8800 |
| Yamaha | 6300 | 6400 | 6700 | 6900 | 7000 |
| TVS | 8810 | 8820 | 8540 | 8490 | 8500 |
| Bajaj | 5500 | 5700 | 5910 | 5630 | 6000 |

**21). In how many years the increase of selling is greater than 10% for any brand?**

A. 2
B. 3
C. 1
D. 4
E. None of these

**Ans. C.**

Firstly, we will consider it for every brand one by one
Honda, from 2001 to 2005 sales increased more than 10% in the year 2002 as: (800/5000)*100 = 16%
Suzuki, from 2001 to 2005 sales never increased more than 10% Yamaha, from 2001 to 2005 sales never increased more than 10% TVS, from 2001 to 2005 sales never increased more than 10% Bajaj, from 2001 to 2005 sales never increased more than 10% Hence, sales increased more than 10% for Honda in the year 2002.

**22). The sales of Yamaha increased from 2001 to 2005 by what percentage?**

A. 11.11%
B. 12%
C. 13.33%
D. 10.6%6
E. None of these

**Ans. A.**

The sales of Yamaha in year 2001 = 6300
The sales of Yamaha in year 2005 = 7000
Now, percentage increase in sales = sales in 2005 – sales in 2001 / sales in 2001 100
= 7000-6300/6300 × 100 = 11.11%

**23). The average sale of Bajaj from 2001 to 2005 is what percentage of total sales of Suzuki from2001-2005?**

A. 12.22%
B. 15.23%
C. 14%
D. 13.23%
E. None of these

**Ans. D.**

From the given table,
The sales of Bajaj, in 2001 = 5500 In 2002 = 5700
In 2003 = 5910
In 2004 = 5630
In 2005 = 6000
Average sale of Bajaj through these five years
= 5500 + 5700 + 5910 + 5630 + 6000 / 5 = 5748

Total sales of Suzuki in five years
= 8500+8800+8700+8640+8800 = 43440

Now, Percentage = 5748 / 43440 × 100 = 13.23%

**24). What is the ratio of average sales of TVS in year 2002 and 2005 to the average sales of Honda in year 2001 and2004?**

A. 111:142
B. 441:173
C. 273:433
D. 433:273
E. None of these

**Ans. D.**

from the given table,
Sales of TVS bike in year 2002 = 8820
Sales of TVS in year 2005 = 8500
Average sale of TVS in these two years = (8820+8500)/2 = 8660
Now, sales of Honda in year 2001 = 5000
Sales of Honda in year 2004 = 5920
Average sale in these two years = (5000+5920)/2 = 5460
Ratio = 8660: 5460 = 433: 273

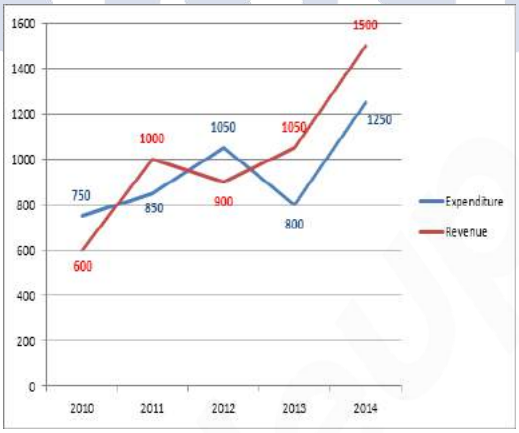
**25). If sales of Suzuki in the year 2006 is increased by 5% and sales of Yamaha decreased by 5%, then what is the difference of averages of sales of Suzuki in year 2001and 2006 and average sales of Yamaha in 2002 and 2006?**

A.2330
B.2345
C.1170
D.2000
E. None of these

**Ans. B.**

By the given table,
Sales of Suzuki in year 2005 = 8800
Sales in year 2006 due to 5% increase = 8800 + 440 = 9240
Average sales of Suzuki in year 2001 and 2006 = (8500+9240)/2 = 8870
Sales of Yamaha in year 2005 = 7000
In 2006, due to decrease of 5% sales= 7000 – 350 = 6650
Sales of Yamaha in year 2002 = 6400
Average of sales in 2002 and 2006 of Yamaha = (6400+6650)/2 = 6525
Now difference of average sales of Suzuki and Yamaha
= 8870 – 6525 = 2345

**Directions(26-30):Answer the questions based on the information given below:**
**The following line graph shows revenue and expenditure of a company A for 5 year (in Lakhs):**



**26). What is the average revenue of the company over the years?**

A. 1000lakhs
B. 1010lakhs
C. 1050lakhs
D. 2020lakhs
E. None of these

**Ans. B.**

Total revenue of the company =

600 + 1000 + 900 + 1050 + 1500 = 5050 lakhs
Therefore, average revenue of a company

= 5050/5 = 1010 lakhs

So option (b) is the correct answer.

**27). What is the difference between revenue and expenditure of company A over the year?**

A. 350lakhs
B. 250lakhs
C. 200lakhs
D. 300lakhs
E. None of these

**Ans. A.**

Total revenue of the company = Total

600 + 1000 + 900 + 1050 + 1500 = 5050 lakhs

Expenditure of the company = 750 + 850 + 1050 + 800 + 1250 = 4700 lakhs

Required difference = 5050-4700 = 350 lakhs

So option (a) is the correct answer.

**28). What is the average expenditure of the company A over the years?**

A. 940lakhs
B. 900lakhs
C. 1000lakhs
D. 1010lakhs
E. None of these

**Ans. A.**

Total expenditure of the company =

750 + 850 + 1050 + 800 + 1250 = 4700 lakhs
Therefore, average expenditure of a company

= 4700/5 = 940 lakhs
So option (a) is the correct answer.

**29). What is the ratio of sum of expenditure in the year 2012 and 2013 to that of revenue in year2014?**

A. 21:25
B. 25:21
C. 30: 37
D. 37: 30
E. None of these

**Ans. D.**

Sum of expenditure in 2012 and 2013 = 1050 + 800 = 1850 lakhs

Revenue in 2014 = 1500 lakhs
Therefore, required ratio = 1850: 1500 = 37: 30
So option (d) is the correct answer.

**30). In which year was the profit percentage highest? Given that: Profit=**

A. 2011
B. 2012
C. 2013
D. 2014
E. 2010

**Ans. C.**

Profit = $\left[\frac{Revenue - Expenditure}{Expenditure}\right] \times 100$

Profit in 2013 = $1050 - 800 / 800 \times 100 = 31.25\%$

Profit in 2014 = $1500 - 1250 / 1250 \times 100 = 20\%$

So option (c) is the correct answer.