

10 Important Data Interpretations PDF for IBPS PO Main 2021

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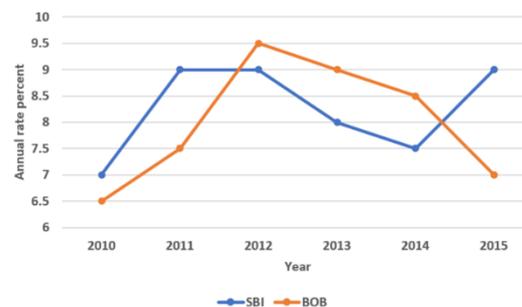


Direction (1-5): During a festival, the employees of a company were divided into N teams of $(N-6)$ members each. Two days before the event, the employees were asked to confirm their availability. 32 employees responded that they won't be present on the day of the event. As a result, the number of members per team was reduced by 2 but the number of teams increased by 1. On the day of the event, some people (who had not informed earlier) were absent. As a result, the eventual number of teams was $N+1$ and the number of members in each team was $N-9$

- What is the value of N ?
A. 22 B. 23
C. 24 D. 25
E. 26
- What is the value of N ?
A. 22 B. 23
C. 24 D. 25
E. 26
- If the team size has to be between 10 and 30, in how many ways can the employees of the company be divided into teams?
A. 6 B. 5
C. 4 D. 3
E. 2
- How many employees were absent on the day of the event without informing?
A. 25 B. 28
C. 32 D. 35
E. 36
- During the day of the event, the employees present were asked to make a square formation. What is the minimum number of employees that should be discarded so that a formation is made?
A. 27 B. 24
C. 19 D. 16
E. 14

Directions (6-10): Study the following information carefully and answer the questions given below: SBI and BOB declared annual rate of interest on the amounts deposited with them by account holders. The

rate of interest offered by these banks may differ from year to year depending on the variation in the economy of the country. The annual rate of interest offered by both the banks over the years is shown by the line graph provided below.

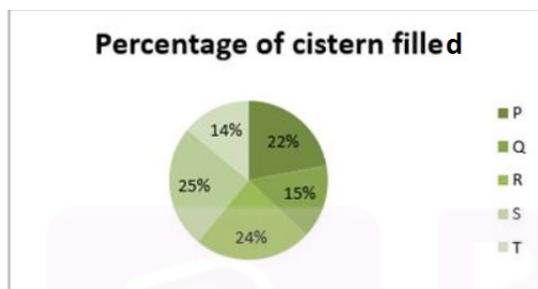


- A sum of Rs. 6,75,000 was invested in BOB in 2011 for one year. How much more interest would have been earned if the sum was invested in SBI?
A. INR 3,375 B. INR 10,125
C. INR 13,500 D. INR 16,875
E. None of these
- If two different amounts in the ratio 7:9 are invested in SBI and BOB respectively in 2015, then the interests received after one year from SBI and BOB are respectively in the ratio?
A. 2 : 3 B. 3 : 4
C. 6 : 7 D. 4 : 3
E. 1 : 1
- In 2012, a part of INR 19 lakhs was invested in SBI and the rest was invested in BOB for one year. The total interest received was INR 1,74,500. What was the amount invested in SBI?
A. INR 9 lakhs B. INR 11 lakhs
C. INR 12 lakhs D. INR 18 lakhs
E. None of these
- In 2015, an account holder invested equal amount in BOB for 1 year and in SBI for 2 years. The ratio of interest received from BOB in year 2016 and interest received from SBI in year 2017 is 140:289. If he invests 280000 rupees for 1 year in SBI in the year 2016, how much total interest will he get?



- A. Rs. 14000 B. Rs. 15600
C. Rs. 18000 D. Rs. 21000
E. None of these
10. An account holder invested INR 5 lakhs in SBI in 2013. After 1 year, the entire amount along with the interest was transferred as investment to BOB in 2014 for one year. What amount will be received from BOB, by the account holder?
A. INR 5,80,000 B. INR 5,85,900
C. INR 5,45,800 D. INR 5,82,500
E. None of these

Direction (11-15): Read the following information carefully to give the answers of the following questions.



11. A cistern has 3 pipes. Pipe P and Pipe Q to fill the cistern and third Pipe Z is making it empty. Pipe P is taking 11 minutes to fill the mentioned percentage of cistern and Pipe Q is taking 30 minutes to fill the mentioned percentage of cistern. The third pipe is taking 40 minutes to empty the 80% of the cistern. All the 3 pipes are opened in the beginning. After 20 minutes, third pipe is closed. In how much time, will the rest of the tank be full?
A. 40 minutes B. 36 minutes
C. 32 minutes D. 30 minutes
E. None of these
12. Two Pipes R and S are filling the tank while a third pipe Z can empty the full tank in 30 minutes. Pipe R is taking 48 minutes to fill the mentioned percentage of the cistern and pipe S is taking 12.5 minutes to fill the mentioned percentage of the cistern. Pipe R and Pipe S are kept open for 5 minutes in the beginning and then

third pipe Z is also opened. In what time is the cistern emptied?

- A. 20 minutes B. 10 minutes
C. 15 minutes D. 25 minutes
E. None of these
13. Two pipes P and T are filling the tank respectively. There is a third pipe Z in the bottom of cistern to empty it. Pipes P and T are taking 22 minutes and 7 minutes respectively to fill the mentioned percentage of cistern. If all the three pipes are simultaneously opened, then the cistern is full in $57\frac{1}{7}$ minutes. In how much time, the third pipe Z alone can empty the cistern?
A. 80 minutes B. 100 minutes
C. 60 minutes D. 90 minutes
E. None of these
14. Two pipes Q and S can fill a tank and a waste pipe Z can empty 1 gallon per minute. Pipe Q takes 7.5 minutes to fill the mentioned percentage of cistern and pipe S takes 25 minutes to fill the mentioned percentage of cistern. All the 3 pipes working together can fill the tank in 130 minutes. The capacity of the tank in gallons is?
A. 54.80 gallons B. 60 gallons
C. 50 gallons D. 44.83 gallons
E. None of these
15. A large tanker can be filled by two pipes Q and R. Pipe Q and R takes 3.75 minutes and 6 minutes respectively to fill the mentioned percentage of cistern. How many minutes will it take to fill the tanker from empty state if pipe Q is used for three fourth the time and R and Q fill it together for the other one fourth?
A. 15 minutes B. 10 minutes
C. 20 minutes D. 25 minutes
E. None of these

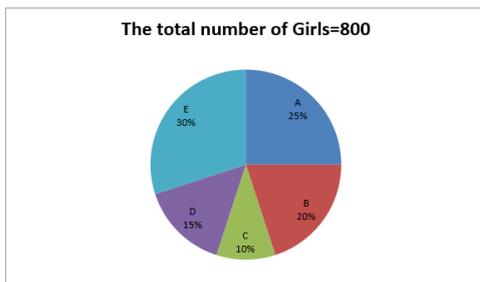
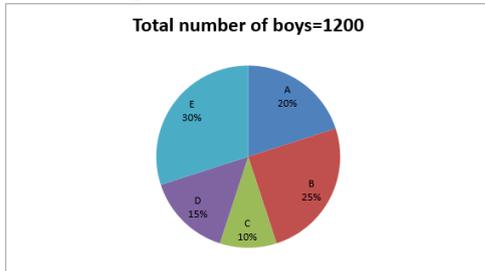
Direction (16-20): Study the graphs carefully and answer the given questions.

The pie charts show the percentage distribution of boys and the percentage distribution of girls in 5 different schools i.e. A, B, C, D and E in 2017.



The table shows the total number of teachers in different schools.

Total number of persons in a school = Boys + Girls + Teachers



School	The total number of Teachers
A	60
B	-----
C	120
D	-----
E	-----

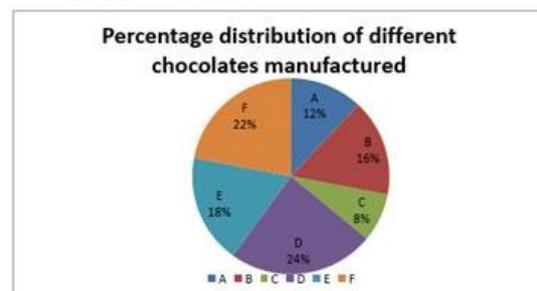
- If the total number of Teachers in school A and School B together is 200 and the ratio of the total number of persons in school B to that of school E is 6:7 then find the total number of Teachers in school E.
 A. 120 B. 100
 C. 180 D. 140
 E. 160
- If the total number of persons in school A and school D together is 880, then the total number of teachers in school D is approximately what percentage of the total number of teachers in school C?
 A. 33.33% B. 167%
 C. 67% D. 150%
 E. 50%
- The total number of boys in school C, school D and school E together is what percentage more/less to that of the total number of girls in school A, school C and school D together?

- A. 75% B. 55%
 C. 50% D. 78%
 E. 65%

- In 2018, the total number of Teachers in school A is "X" and the total number of Boys and Girls together is 550. If the total number of Boys in school A in 2018 is "2X" and the total number of persons in school A is increased by 40% from that of the previous year then find the difference between the total number of Boys in school A in 2017 to that of the total number of Boys in school A in 2018.
 A. 40 B. 80
 C. 60 D. 50
 E. 100
- In 2018, the total number of persons in school C is increased by 30% from that of the previous year and the total number of Boys and Girls in school C in 2018 is 280. Then find the ratio of the total number of Teachers in school C in 2018 to that of the total number of Teachers in school C in 2017.
 A. 15 : 13 B. 13 : 17
 C. 17 : 19 D. 17 : 15
 E. 21 : 23

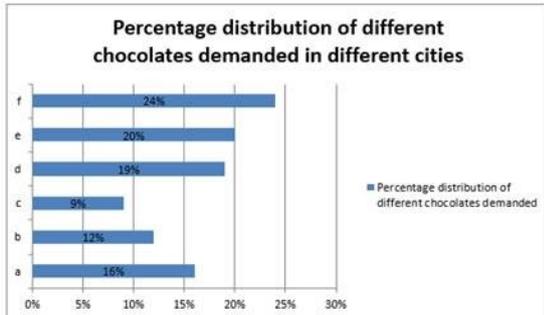
Direction (21-25): Study the following information and Caselet carefully to answer the given questions.

The pie - chart represents the percentage distribution of the number of six different chocolates (A, B, C, D, E and F) manufactured by company XYZ in the year 2011. Note: Total number of chocolates manufactured by company XYZ in 2011 = 84600



The bar chart represents the percentage of the number of six different chocolates i.e. A, B, C, D, E and F demanded by cities a, b, c, d, e, and f respectively in the year 2011.

Note: Total number of chocolates demanded by different cities from the company XYZ in 2011 = 62900



- The number of chocolates B demanded by city b is approximately what percentage of the chocolate B manufactured by the company XYZ in 2011?
A. 63% B. 59%
C. 21% D. 56%
E. 32%
- What is the sum of the number of chocolates D and E which are not in demand in city d and city e respectively?
A. 11001 B. 11302
C. 11401 D. 11201
E. 11101
- The number of chocolates A and chocolate E manufactured by company XYZ is how much more than the difference between the number of chocolates E and F demanded in city e and city f respectively by the company XYZ in 2011?
A. 22394 B. 23544
C. 22864 D. 24474
E. 25414
- If all the demand from city c and city d were fulfilled and were sold at Rs. 20 and Rs. 10, respectively. Find the difference between the revenue earned by the company XYZ from chocolate C and chocolate D in city c and city d together.

- A. Rs. 6160 B. Rs. 7260
C. Rs. 5990 D. Rs. 7140
E. Rs. 6290
25. Find the ratio of the number of chocolates E manufactured to the number of chocolate E demanded in city e by the company XYZ in 2011?
A. 3807: 3145 B. 3361: 2921
C. 361: 299 D. 561: 470
E. None of these

Direction (26-27): Study the following table carefully to answer the given questions.

The Average Speed and Mileage of five bikes					
	Bajaj	TVS	Hero	Honda	Suzuki
Average Speed (s) in Km/hr	50	30	40	60	75
Mileage (Distance covered (in kms) per litre of Fuel)	30	36	32	42	40

The rating of the bike is given by

$$\frac{S}{s} + \frac{m}{M}$$

The higher the rating, the better is the bike

S = Average speed of the five bikes

M = Average of Mileage of the five bikes

Price of fuel = Rs. 100.8/litre

Fuel consumption = Distance / Mileage (Distance covered per litre of fuel) [m]

- A person used each of the given five bikes for equal distances to complete his journey. He completed his journey in 3 hours and 25 minutes. Had he used the best bike for the whole distance, approximately how much money he could have saved on fuel?
A. Rs. 1 B. Rs. 3
C. Rs. 5 D. Rs. 7
E. Rs. 9
27. At certain tunings, the mileage of Bajaj and Suzuki bikes increased by 20% but their average speed got reduced by 10%. What would be the cost of fuel for covering 200 km on the bikes if each half of the first 50 km distance is travelled by the best bike and the worst bike and the remaining distance is covered equally by the other three bikes?



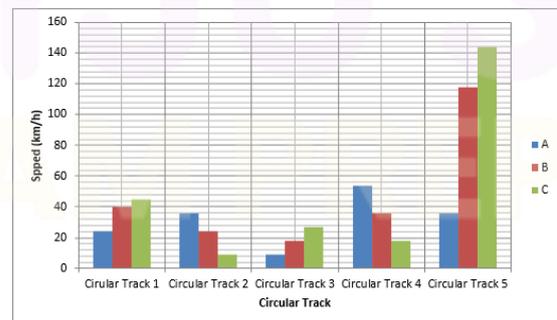
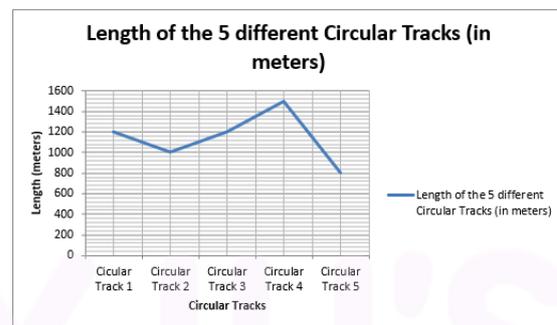
- A. Rs. 432.5 B. Rs. 505.25
C. Rs. 532.5 D. Rs. 575.5
E. Rs. 612.5
28. Six years ago, ratio of age of Kanika and Neha was 2:3 respectively. Fourteen years hence, the ratio of their age becomes 6:7 respectively. From the above given information which of the following cannot be find out.
- (a). The ratio of ages of Kanika and Neha after 4 years.
(b). The present age of Monika, who is 3 years younger than Kanika.
(c). Ashok is 5 years older than Neha. The age of Monika, when Ashok is married.
(d). 8 years hence the difference of the ages Kanika and Neha.
(e). 2 years hence, the age of Rohit will be 2 years less than the twice of the age of Neha, then the sum of present ages of Rohit and Kanika.
- A. Only (b) and (c)
B. Only (c)
C. Only (d)
D. Only (d) and (e)
E. None of the above
29. A, B and C can complete 20%, 25% and 50% of the work in 8 days, 12.5 days and 30 days, respectively. A started the work alone, worked for 10 days and then C joined the work. After working together 10 days A left the work. If the remaining work is done by B and C together but B left the work 9 days before its completion, then in how many days the whole work is completed?
- A. 35 days
B. 37 days
C. 39 days
D. 34 days
E. None of these
30. A ship leaves Vishakhapatnam for Kolkata at 2:45 pm, while another ship leaves Kolkata for Vishakhapatnam at 3:15 pm. Speed of both ships in still water is 60 kmph and the speed of current is 10 kmph which is in direction of Kolkata to

Vishakhapatnam. Both ships will meet at _____, if the distance between the two port is 685 km.

A. 8:30 pm B. 9:15 pm
C. 8:45 pm D. 7:45 pm
E. 9:45 pm

Direction (31-35): Read the information carefully and give the answers of following questions-

In the Line graph the length of 5 different circular track which is used for 5 different races, is given. And the Bar graph shows the speed of three different persons A, B and C respectively.



31. In a circular race 1, A and B start from the same point and at the same time from the circular track 1. When will they meet again for the first time on the track when they are running in the same direction and opposite direction? (consider Circular Track 1)
- A. 265.45sec, 45.65sec
B. 270.27sec, 67.49sec
C. 275.67sec, 89.67sec
D. 231.34ec, 43.45sec
E. None of these



32. In a circular race 2, A and C start with their speed starting at the same time from same point. When will they meet for the first time at the starting point when running in the same direction and opposite direction? (consider Circular Track 2)
- A. 400sec,400sec
B. 400sec,300sec
C. 300sec,300sec
D. 300sec,400sec
E. None of these
33. A, B and C run around a circular track 3 with their respective speeds. If they started at the same time from the same point and run in the same direction, when they will meet for the first time?
- A. after 10 minutes
B. after 7 minutes
C. after 8 minutes
D. after 5 minutes
E. None of these
34. A, B and C run around a circular track 4 with their speed. If they start at the same point and at the same time in the same direction, when will they meet again at the starting point?
- A. after 7 minutes
B. after 8 minutes
C. after 10 minutes
D. after 5 minutes
E. None of these
35. Two people A and C start running towards a circular track 5 in opposite directions with their speeds. Whenever they meet, A's speed doubles and C's speed halves. After what time from the start will they meet for the third time?
- A. 55 seconds
B. 52 seconds
C. 50 seconds
D. 45 seconds
E. None of these

Direction (36-40): Read the following information and answer the questions below:

Two trains Vaishali and Gorakhnath express starts from the Gorakhpur and their final destinations are New

Delhi. They are having 4 official stoppage for the passengers in between namely Gonda, Lucknow, Kanpur and Agra. Distances from Gorakhpur to Lucknow is exactly 300km where Gonda is the midpoint between these two stations. While Lucknow is the mid-point of Gorakhpur and Kanpur. Distance between Kanpur and Agra is very less and is equal to only 100 km. Again, distance from Agra to final destination i.e. New Delhi is exactly the same distance as between Lucknow and Kanpur. Both train travels at a different uniform speed and starts at the same time from origin. Difference in the time taken by both trains for reaching their 1st stoppage are 20 mins. If any train is reaching earlier, it is waiting for another train to reach and starting at the same time from each stoppage. Similarly the time difference for reaching Gonda to Lucknow their time difference is also 20 mins. For reaching 3rd stoppage i.e. Kanpur time difference is 40 mins. For reaching Agra time difference is 13 minutes 20 seconds and finally for reaching New Delhi from Agra, time difference is 40 mins. Speed of Gorakhnath express > speed of Vaishali express

36. Average speed of Train Gorakhnath Express is 90 kmph. Train vaishali starts from Gorakhpur with its normal speed and after reaching Gonda it reduces the speed $\frac{2}{3}$ till halfway from Gonda to Lucknow and then increases its subsequent speed by 20% and reached Lucknow. Find the ratio of Time taken by train Vaishali in given Journey to the time taken by train vaishali to go from Gorakhpur to Lucknow without change in speed.
- A. 0.60
B. 0.8
C. 1.18
D. 2.0
E. 2.2



37. If Speed of train vaishali increases by 20% and Speed of Train Gorakhnath decreases by 20% and they both starts from Place Gonda at the same time then find the changed speed of train vaishali. Also, given that with changed speed time taken by train gorakhnath to go from agra to new delhi is twice the time taken by train vaishali to go from Gorakhpur to Gonda.
- A. 160 kmph B. 180 kmph
C. 200 kmph D. 240 kmph
E. 260 kmph
38. If Speed of train vaishali increases by 20% and Speed of Train Gorakhnath decreases by 20% and they both starts from Place Gonda at the same time then what is the ratio of changes speeds of both Also, given that with changed speed time taken by train gorakhnath to go from Agra to new delhi is twice the time taken by train vaishali to go from Gorakhpur to Gonda.
- A. 1: 2 B. 1:3
C. 1:1 D. 1.5:1
E. 1: 2.5
39. If Speed of train vaishali increases by 20% and Speed of Train Gorakhnath decreases by 20% and they both starts from Place Gonda at the same time then find the sum of time taken by both of them with change speed from Gonda to Kanpur. Also, given that with changed speed time taken by train gorakhnath to go from agra to new delhi is twice the time taken by train vaishali to go from Gorakhpur to Gonda.
- A. 5 hrs B. 7 hrs
C. 8 hrs D. 9 hrs
E. 11 hrs
40. If both train starts a journey with same speed of 60kmph and after ever stoppage train vaishali increases its speed by 10 kmph and train Gorakhnath increases its speed by 20 kmph. What will be the time difference when both reaches to New Delhi. (Assume train stoppage time as equal and negligible.)

- A. Between 0 hr and 0.5 hr
B. Between 0.5 hr and 1.5 hr
C. Between 1.5 hr and 2 hr
D. Between 2 hr and 2.5 hr
E. Between 2.5 hr and 3 hr

Directions (41-46): Study the following charts and answer the following questions:

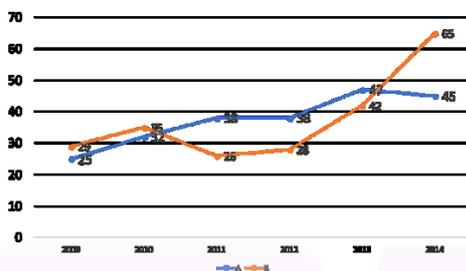
In a school there are total of 240 staff members and 1600 students. 65 percent of the numbers of staff members are teachers and the remaining staff members are administrative officials. Out of the total number of the students 45 percent are girls. Twenty percent of the number of girls can speak only English. The remaining girls can speak both Hindi and English. Three-fourths of the number of boys can speak only English. The remaining boys can speak both Hindi and English. Two-thirds of the numbers of teachers are males. Five-fourteens of the number of the administrative officials are females.

41. What is the difference between the number of boys (students) who can speak both Hindi and English and the number of girls (students) who can speak both Hindi and English?
- A. 346 B. 356
C. 376 D. 400
E. None of these
42. The total number of girls students is what percent of the total number of staff members in the school?
- A. 100% B. 200%
C. 300% D. 400%
E. None of these
43. What is the difference between the number of total numbers of female administrative officials, female teachers and the number of male administrative officials?
- A. 14 B. 22
C. 28 D. 30
E. None of these
44. What is the ratio of the total number of teachers to the number of boys (students) who can speak English only?



- A. 13:53 B. 13:55
C. 13:56 D. 13:57
E. None of these
45. What is the total number of male administrative officials, female teachers and girls (students) who can speak English only?
A. 125 B. 225
C. 250 D. 300
E. None of these

Direction (46-50): Given below is the line graph showing percentage profit of 2 companies in different years. Study the following graph carefully and answer the following questions.



$$\% \text{ profit} = \frac{(\text{Income} - \text{expenditure}) \times 100}{\text{expenditure}}$$

46. If income of company A in 2010 is equal to income of company B in 2014. Then expenditure of company A in 2010 is what percent more than expenditure of company B in 2014?
A. 20 B. 24
C. 30 D. 35
E. none of these
47. If income of company B in 2012 is 165 cr. and expenditure of the same

in 2012 was increased by 25% as compared to the expenditure of previous year. Then find the expenditure of company B in 2011.

- A. 101.625 cr. B. 102.325 cr.
C. 101.325 cr. D. 103.125 cr
E. None of these
48. Percentage increase in profit percent of a company A from 2009 to 2010 is what% more or less than percentage increase in profit percentage of same company from 2012 to 2013? (Approximate).
A. 22% more B. 18 % less
C. 18% more D. 26% more
E. 8% less
49. Average profit percent of company A over the years is what percent more or less than that of company B?
A. $\frac{4}{9}\%$ more
B. $\frac{4}{9}\%$ less
C. $\frac{5}{9}\%$ less
D. Cannot be determined
E. None of these
50. If expenditures of company B in 2009 and 2011 are equal and total income of company B in both the years together is 335 cr. Then find the expenditure of the same in each year. (round off to 2 decimal places).
A. 133.37 Cr B. 131.37 Cr
C. 132.55 Cr D. 134.53 Cr
E. 135.25 Cr



ANSWERS

1. Ans. C.

Number of employees in the company = $N(N-6)$

Number of employees supposed be present = $N(N-6) - 32$

Now, these were divided into $(N+1)$ teams of $(N-8)$ members each.

$$N(N-6) - 32 = (N+1)(N-8)$$

$$N^2 - 6N - 32 = N^2 - 7N - 8$$

$$\Rightarrow N = 24$$

Number of employees in the company = $24 \times 18 = 432$

Number of employees supposed be present = $432 - 32 = 400$

Number of employees actually present = $25 \times 15 = 375$

Hence, 25 employees were absent without informing.

2. Ans. C.

Number of employees in the company = $N(N-6)$

Number of employees supposed be present = $N(N-6) - 32$

Now, these were divided into $(N+1)$ teams of $(N-8)$ members each.

$$N(N-6) - 32 = (N+1)(N-8)$$

$$N^2 - 6N - 32 = N^2 - 7N - 8$$

$$\Rightarrow N = 24$$

Number of employees in the company = $24 \times 18 = 432$

Number of employees supposed be present = $432 - 32 = 400$

Number of employees actually present = $25 \times 15 = 375$

Hence, 25 employees were absent without informing.

3. Ans. B.

Number of employees in the company = $N(N-6)$

Number of employees supposed be present = $N(N-6) - 32$

Now, these were divided into $(N+1)$ teams of $(N-8)$ members each.

$$N(N-6) - 32 = (N+1)(N-8)$$

$$N^2 - 6N - 32 = N^2 - 7N - 8$$

$$\Rightarrow N = 24$$

Number of employees in the company = $24 \times 18 = 432$

Number of employees supposed be present = $432 - 32 = 400$

Number of employees actually present = $25 \times 15 = 375$

Hence, 25 employees were absent without informing.

Factors of 432 =

1,2,3,4,6,8,9,12,16,18,24,27,36,48,54,72,108,144,216,432.

Hence, the possible team size is 12,16,18,24,27, there are 5 such possibilities.

4. Ans. A.

Number of employees in the company = $N(N-6)$

Number of employees supposed be present = $N(N-6) - 32$

Now, these were divided into $(N+1)$ teams of $(N-8)$ members each.

$$N(N-6) - 32 = (N+1)(N-8)$$

$$N^2 - 6N - 32 = N^2 - 7N - 8$$

$$\Rightarrow N = 24$$

Number of employees in the company = $24 \times 18 = 432$

Number of employees supposed be present = $432 - 32 = 400$

Number of employees actually present = $25 \times 15 = 375$

Hence, 25 employees were absent without informing.

5. Ans. E.

Number of employees in the company = $N(N-6)$

Number of employees supposed be present = $N(N-6) - 32$

Now, these were divided into $(N+1)$ teams of $(N-8)$ members each.

$$N(N-6) - 32 = (N+1)(N-8)$$

$$N^2 - 6N - 32 = N^2 - 7N - 8$$

$$\Rightarrow N = 24$$

Number of employees in the company = $24 \times 18 = 432$

Number of employees supposed be present = $432 - 32 = 400$

Number of employees actually present = $25 \times 15 = 375$

Hence, 25 employees were absent without informing.

The perfect square less than 375 is 361.

Hence, 14 employees should be discarded.



6. Ans. B.

Required difference = $(9 - 7.5)\%$ of
6.75 lakhs = 1.5% of 6,75,000 = Rs.
10,125

7. Ans. E.

Required ratio = $(9\% \text{ of } 7x) : (7\% \text{ of } 9x) = 1 : 1.$

8. Ans. C.

Let amount invested in SBI in 2012 be x
 \Rightarrow The amount invested in BOB in 2012 =
INR $(19,00,000 - x)$

Total interest received from the both the
banks after 1 year = INR 1,74,500

According to the given information:

\Rightarrow INR $[(9\% \text{ of } x) + (9.5\% \text{ of } 19,00,000 - x)] = 1,74,500$

\Rightarrow INR $\frac{9x}{100} + \frac{1,80,50,000 - 9.5x}{100} =$

$= 1,74,500$

\Rightarrow INR $1,80,50,000 - .5x = 1,74,50,000$

\Rightarrow INR $1,80,50,000 - 1,74,50,000 = .5x$

$\Rightarrow 6,00,000 = .5x$

$\Rightarrow x = 12,00,000$

Hence, the amount invested in SBI was
12,00,000

9. Ans. A.

Let the interest rate of SBI for the year
2016 be $x\%$, then

According to question

$7\% : [9\% + x\% + 9x\%/100] = 140 : 289$

$\Rightarrow 7 : [9 + x + 9x/100] = 140 : 289$

Multiply by 20 in both terms of LHS,
then

$\Rightarrow 140 : (180 + 20x + 1.8x) = 140 : 289$

$\Rightarrow 180 + 21.8x = 289$

$\Rightarrow 21.8x = 109$

$\Rightarrow x = 5$

Hence, the required interest = 5% of
280000 = Rs. 14000

10. Ans. B.

Amount received from SBI after 1 year
on investment of INR 5 lakhs in the year
2013 = $[5 + 8\% \text{ of } 5]$ lakhs = Rs.
5,40,000

Amount received from BOB after one
year on investment of Rs. 5,40,000 in
the year 2014 = $[5.40 + (8.5\% \text{ of } 5.4)]$
lakhs = Rs. 5,85,900

Hence, INR 5,85,900 amount will be
received from BOB by the account
holder.

11. Ans. B.

Time taken by Pipe P to fill 22% = 11
minutes

Hence, Pipe P fills 100% = 50 minutes

Time taken by Pipe Q to fill 15% = 30
minutes

Hence, Pipe Q fills 100% = 200 minutes

Time taken by Empty pipe Z to empty
80% = 40 minutes

Hence, empty Pipe empties 100% = 50
minutes

Let total capacity of the cistern = LCM
 $(50,200,50) = 200$ units

Capacity of P = $\frac{200}{50} = 4$ units/min

Capacity of Q = $\frac{200}{200} = 1$ unit/min

Capacity of empty pipe Z = $\frac{200}{50} = -4$
units/min

Filled tank in 1 minute = $4 + 1 - 4 = 1$
unit

Filled tank in 20 minutes = $20 \times 1 = 20$
units

Rest units = $200 - 20 = 180$ units

Capacity of P+Q = $4+1 = 5$ units/min

Time taken by Pipe P and Pipe Q = $\frac{180}{5} =$
36 minutes

12. Ans. C.

Pipe R takes time to fill 24% = 48
minutes

Hence, Pipe R fills 100% = 200 minutes

Pipe S takes time to fill 25% = 12.5
minutes

Hence, pipe S fills 100% = 50 minutes

Empty pipe Z empties 100% = 30
minutes

Let total capacity of the tank = LCM
 $(200,50,30) = 600$ units

Capacity of R = $\frac{600}{200} = 3$ units/min

Capacity of S = $\frac{600}{50} = 12$ units/min

Capacity of empty pipe Z = $\frac{600}{30} = 20$
units/min

Tank filled in 5 minutes = $5 \times 3 + 5 \times 12$
 $= 75$ units



Work by R + S + Z Empty = 3+12 - 20 = -5 units
Cistern emptied in = 75/5 = 15 minutes.
13. Ans. A.

Time taken by pipe P to fill 22% = 22 minutes
Hence, pipe P fills 100% = 100 minutes
Time taken by pipe T to fill 14 % = 7 minutes
Hence, pipe E fills 100% = 50 minutes
Let empty pipe Z empties 100% in M minutes
Let total capacity of tank = LCM
(100,50) = 100 units

Capacity of P = $\frac{100}{100} = 1$ unit/min

Capacity of T = $\frac{100}{50} = 2$ unit/min
Capacity of empty pipe Z = M units/min
Tank filled in 1 minute = (3-M) units/min
Tank filled in 57(1/7) minutes = (400/7)*(3-M) units

$$\frac{400}{7}(3-M) = 100$$

Solving for M from the above equation, we get, M = 5/4 units/ minute
So Pipe Z will take to empty the tank of capacity of 100 units = 100/(5/4) = 80 minutes

14. Ans. D.
Time taken by Pipe Q to fill 15% = 7.5 minutes
Hence, pipe Q fills 100% = 50 minutes
Time taken by Pipe S to fill 25% = 25 minutes
Hence, Pipe S fills 100% = 100 minutes
Let capacity of the tank = LCM(50,100) = 100x units
Capacity of Q = 100x/50 = 2x unit/min
Capacity of S = 100x/100 = 1x unit/min
Let the Capacity of empty Pipe Z = M units/min
Tank filled in 1 minute = (2x+1x - M) = (3x-M) units
Tank filled in 130 minutes:
It means: 130(3x-M) = 100x units
390x - 130M = 100x
130M = 290x
M = 290x/130
Therefore, it means Pipe Z empties (29x/13) units per minute

Also, given that, Z pipe empties 1 gallon per minute, it means 1 gallon = 29x/13 units

So 100x units is equal to:
(13/29x)*100x = 1300/29 gallons = 44.83 gallons

15. Ans. C.
Time taken by pipe Q to fill 15% = 3.75 minutes

Hence B fills 100% = 25 minutes
Time taken by pipe R to fill 24% = 6 minutes
Hence R fills 100% = 25 minutes
Let capacity of tank = LCM(25,25) = 25 units

Capacity of pipe Q = $\frac{25}{25} = 1$ unit/min

Capacity of pipe R = $\frac{25}{25} = 1$ unit/min
Let the total time = t

(Q+R)'s capacity = 1+1 = 2 units/min
 $\left(1 \times \frac{3t}{4}\right) + \left(2 \times \frac{t}{4}\right) = 25$

$$\frac{5t}{4} = 25$$

t=20 minutes

16. Ans. B.
In school A,

The total number of Boys = $\frac{1200}{100} \times 20 = 240$

The total number of Girls = $\frac{800}{100} \times 25 = 200$

Like this we get this table,

School	Total number of Boys	Total number of Girls
A	240	200
B	300	160
C	120	80
D	180	120
E	360	240

The total number of Teachers in school A=60

The total number of Teachers in school B=200-60= 140

The total number of person in school B=Boys + Girls + Teachers =300+160+140=600

The ratio of the total number of person in school B to that of school E is 6 : 7 (Given)



The total number of person in school E=
 $\frac{600}{6} \times 7 = 700$

The total number of Teachers in school E= $700 - (360+240)$
 $=700-600=100$

17. Ans. C.
In school A,

The total number of Boys= $\frac{1200}{100} \times 20=$
240

The total number of Girls= $\frac{800}{100} \times 25=$
200

Like this we get this table,

School	Total number of Boys	Total number of Girls
A	240	200
B	300	160
C	120	80
D	180	120
E	360	240

The total number of person in school A=
 $240+200+60=500$

The total number of person in school D=
 $880-500=380$

The total number of Teachers in school D=
 $380 - (180+120)= 80$

So, required percentage = $\frac{80}{120} \times 100=$
67 % (**Approx**)

18. Ans. E.
In school A,

The total number of Boys= $\frac{1200}{100} \times 20=$
240

The total number of Girls= $\frac{800}{100} \times 25=$
200

Like this we get this table,

School	Total number of Boys	Total number of Girls
A	240	200
B	300	160
C	120	80
D	180	120
E	360	240

The total number of Boys in school C, D
and E together= $120+180+360=660$

The total number of Girls in school A, C
and D together= $200+80+120=400$

So, required percentage = $\frac{(660-400)}{400} \times$
100

= $\frac{260}{400} \times 100= 65\%$

19. Ans. C.
In school A,

The total number of Boys= $\frac{1200}{100} \times 20=$
240

The total number of Girls= $\frac{800}{100} \times 25=$
200

Like this we get this table,

School	Total number of Boys	Total number of Girls
A	240	200
B	300	160
C	120	80
D	180	120
E	360	240

The total number of person in school A
in 2017= $240+200+60=500$

The total number of person in school A

in 2018= $\frac{500}{100} \times 140= 700$

The total number of Boys and Girls
together in 2018= 550

The total number of Teachers in school A
in 2018= $700-550=150$

So, $X=150$

Then $2X= 150 \times 2= 300$

The total number of Boys in school A in
2018=**300**

The total number of Boys in school A in
2017=**240**

So, required difference= $300-240=60$

20. Ans. D.
In school A,

The total number of Boys= $\frac{1200}{100} \times 20=$
240

The total number of Girls= $\frac{800}{100} \times 25=$
200

Like this we get this table,



School	Total number of Boys	Total number of Girls
A	240	200
B	300	160
C	120	80
D	180	120
E	360	240

The total number of person in school C in 2017 = 120 + 80 + 120 = 320

The total number of person in school C

$$\frac{320}{100}$$

in 2018 = $100 \times 130 = 416$

The total number of Teachers in school C in 2018 = 416 - 280 = 136

The total number of Teachers in school C in 2017 = 120

$$\frac{136}{120}$$

So, required ratio = $\frac{136}{120} = 17 : 15$

21. Ans. D.

	Number of chocolate manufactured	Number of chocolate demanded
Chocolate A / city a	12% of 84600 = 10152	16% of 62900 = 10064
Chocolate B / city b	16% of 84600 = 13536	12% of 62900 = 7548
Chocolate C / city c	8% of 84600 = 6768	9% of 62900 = 5661
Chocolate D / city d	24% of 84600 = 20304	19% of 62900 = 11951
Chocolate E / city e	18% of 84600 = 15228	20% of 62900 = 12580
Chocolate F / city f	22% of 84600 = 18612	24% of 62900 = 15096

Required percentage =

$$\frac{7548}{13536} \times 100 = 56\%$$

So option (d) is the correct answer.

22. Ans. A.

	Number of chocolate manufactured	Number of chocolate demanded
Chocolate A / city a	12% of 84600 = 10152	16% of 62900 = 10064
Chocolate B / city b	16% of 84600 = 13536	12% of 62900 = 7548
Chocolate C / city c	8% of 84600 = 6768	9% of 62900 = 5661
Chocolate D / city d	24% of 84600 = 20304	19% of 62900 = 11951
Chocolate E / city e	18% of 84600 = 15228	20% of 62900 = 12580
Chocolate F / city f	22% of 84600 = 18612	24% of 62900 = 15096

Number of chocolate D which are not in demand = 20304 - 11951 = 8353

Number of chocolate E which are not in demand = 15228 - 12580 = 2648

So, the required sum = 8353 + 2648 = 11001

So option (a) is the correct answer.

23. Ans. C.

	Number of chocolate manufactured	Number of chocolate demanded
Chocolate A / city a	12% of 84600 = 10152	16% of 62900 = 10064
Chocolate B / city b	16% of 84600 = 13536	12% of 62900 = 7548
Chocolate C / city c	8% of 84600 = 6768	9% of 62900 = 5661
Chocolate D / city d	24% of 84600 = 20304	19% of 62900 = 11951
Chocolate E / city e	18% of 84600 = 15228	20% of 62900 = 12580
Chocolate F / city f	22% of 84600 = 18612	24% of 62900 = 15096

Total number of chocolate A and chocolate E manufactured by company XYZ = 10152 + 15228 = 25380

And, the difference between the numbers of chocolates demanded in city e and city f by the company XYZ in 2011 = 15096 - 12580 = 2516

So, the required number = 25380 -

$$2516 = 22864$$

So option (c) is the correct answer.

24. Ans. E.

	Number of chocolate manufactured	Number of chocolate demanded
Chocolate A / city a	12% of 84600 = 10152	16% of 62900 = 10064
Chocolate B / city b	16% of 84600 = 13536	12% of 62900 = 7548
Chocolate C / city c	8% of 84600 = 6768	9% of 62900 = 5661
Chocolate D / city d	24% of 84600 = 20304	19% of 62900 = 11951
Chocolate E / city e	18% of 84600 = 15228	20% of 62900 = 12580
Chocolate F / city f	22% of 84600 = 18612	24% of 62900 = 15096

Required difference =

$$11951 \times 10 - 5661 \times 20 = 119510 - 113220 = \text{Rs. } 6290$$

So option (e) is the correct answer.

25. Ans. A.

	Number of chocolate manufactured	Number of chocolate demanded
Chocolate A / city a	12% of 84600 = 10152	16% of 62900 = 10064
Chocolate B / city b	16% of 84600 = 13536	12% of 62900 = 7548
Chocolate C / city c	8% of 84600 = 6768	9% of 62900 = 5661
Chocolate D / city d	24% of 84600 = 20304	19% of 62900 = 11951
Chocolate E / city e	18% of 84600 = 15228	20% of 62900 = 12580
Chocolate F / city f	22% of 84600 = 18612	24% of 62900 = 15096

Required ratio =

$$15228 : 12580 = 3807 : 3145$$

So option (a) is the correct answer.

26. Ans. D.

Let the total distance in the journey = 5d

According to the question,

$$\frac{d}{50} + \frac{d}{30} + \frac{d}{40} + \frac{d}{60} + \frac{d}{75} = \frac{13}{4}$$

$$d = 30 \text{ km}$$

Fuel consumption =

$$\frac{30}{30} + \frac{30}{36} + \frac{30}{32} + \frac{30}{42} + \frac{30}{40} = 4.24 \text{ L}$$

$$S = \frac{50 + 30 + 40 + 60 + 75}{5} = 51$$

$$M = \frac{30 + 36 + 32 + 42 + 40}{5} = 36$$

Rating of Bajaj Bike =

$$\frac{51}{50} + \frac{30}{36} = 1.85$$

Rating of TVS Bike =

$$\frac{51}{30} + \frac{36}{36} = 2.70$$

(Best Bike)

Rating of Hero Bike =

$$\frac{51}{40} + \frac{32}{36} = 2.16$$

Rating of Honda Bike =

$$\frac{51}{60} + \frac{42}{36} = 2.02$$

Rating of Suzuki Bike =

$$\frac{51}{75} + \frac{40}{36} = 1.79$$



(Worst Bike)

Fuel consumption when entire journey is covered by best bike = $150/36 = 4.17$ litre

Total amount of money he could have saved = $(4.24 - 4.17) * 100.8 = \text{Rs. } 7$

So option (d) is the correct answer.

27. Ans. C.

After the tuning the Average speed and mileage of the five bikes will be as follow:

The Average Speed and Mileage of five bikes					
	Bajaj	TVS	Hero	Honda	Suzuki
Average Speed (s) in Km/hr	45	30	40	60	67.5
Mileage (Distance covered (in kms) per litre of Fuel)	36	36	32	42	48

$$S = \frac{45 + 30 + 40 + 60 + 67.5}{5} = 48.5$$

$$M = \frac{36 + 36 + 32 + 42 + 48}{5} = 38.8$$

$$\text{Rating of Bajaj Bike} = \frac{48.5}{45} + \frac{36}{38.8} = 2$$

$$\text{Rating of TVS Bike} = 2.55 \text{ (Best Bike)}$$

$$\text{Rating of Hero Bike} = 2.03$$

$$\text{Rating of Honda Bike} = 1.89 \text{ (Worst Bike)}$$

$$\text{Rating of Suzuki Bike} = 1.95$$

Therefore, total cost of fuel in the journey = $(25/36 + 25/42 + 50/36 + 50/32 + 50/48) = \text{Rs. } 532.49 = \text{Rs. } 532.5$

So option (c) is the correct answer.

28. Ans. B.

Let the age of Kanika four years ago be $2X$ years, then

the age of Neha four years ago will be $3X$ years

Their present ages will be $(2X + 6)$ years and $(3X + 6)$ years

ATQ-

$$(2X + 6 + 14)/(3X + 6 + 14) = 6/7$$

$$\Rightarrow 4X = 20$$

$$\Rightarrow X = 5 \text{ years}$$

The ratio of their ages after 4 years = $(2X+6+4)/(3X+6+4) = 20/25 = 4 : 5$

29. Ans. D.

The work completed by A alone in $8 \times 5 = 40$ days

The work completed by B alone in $12.5 \times 4 = 50$ days

The work completed by C alone in $30 \times 2 = 60$ days

Total work = 600 units (L.C.M of 40,50,60)

Efficiency of A = $600/40 = 15$

Efficiency of B = $600/50 = 12$

Efficiency of C = $600/60 = 10$

ATQ-

$$(15 \times 10) + (15 + 10) \times 10 + (12 + 10)X + 10 \times 9 = 600$$

$$150 + 250 + 22X + 90 = 600$$

$$X = 110/22 = 5$$

Hence, the whole work will be completed in $10 + 10 + 5 + 9 = 34$ days

30. Ans. C.

Speed in upstream = $(60 - 10) = 50$ kmph

Speed in downstream = $(60+10) = 70$ kmph

Till 3:15 distance travelled by 1st ship = $50 \times \frac{1}{2} = 25$ kmph

So, time to cover $(685-25)$ km = 660 km / $(50+70) = 5.5$ hours ...(since both are travelling towards each other so, speed will add)

So, they will meet at $(3:15 + 5:30) = 8:45$ pm

31. Ans. B.

length of the circular track = 1200 meters

$$\text{Speed of A} = 24 \text{ km/h} = 24 \times \frac{5}{18} = 6.67 \text{ m/sec}$$

$$\text{Speed of B} = 40 \text{ km/h} = 40 \times \frac{5}{18} = 11.11 \text{ m/sec}$$

When they are running in the same direction,

$$\text{Relative speed} = 11.11 - 6.67 = 4.44 \text{ m/sec}$$

$$\text{Time} = \frac{\text{Length}}{\text{Relative Speed}} = \frac{1200}{4.44} = 270.27 \text{ sec}$$

When they are running in the opposite direction,

$$\text{Relative Speed} = 11.11 + 6.67 = 17.78 \text{ m/sec}$$



$$\text{Time} = \frac{1200}{17.78} = 67.49 \text{ sec}$$

Option B. is correct.

32. Ans. A.

Length of the circular track 2 = 1000 meters

$$\text{Speed of A} = 36 \text{ km/h} = 36 \times \frac{5}{18} = 10 \text{ m/sec}$$

$$\text{Speed of C} = 9 \text{ km/h} = 9 \times \frac{5}{18} = 2.5 \text{ m/sec}$$

Time taken by A to complete one round

$$= \frac{1000}{10} = 100 \text{ sec}$$

Time taken by C to complete one round

$$= \frac{1000}{2.5} = 400 \text{ sec}$$

When they are running in the same direction,

They will meet at the starting point which is the LCM of the timings taken by each of them to complete one round.

i.e. LCM of 100 sec and 400 sec = 400 sec

So they will meet for the first time at the starting point after 400 sec.

When they are running in the different direction,

They will meet at the starting point which is the LCM of the timings taken by each of them to complete one round.

i.e. LCM of 100 sec and 400 sec = 400 sec

So they will meet for the first time at the starting point after 400 sec.

Option A. is correct.

33. Ans. C.

length of circular track 3 = 1200 meters

$$\text{Speed of A} = 9 \text{ km/h} = 9 \times \frac{5}{18} = 2.5 \text{ m/sec}$$

$$\text{Speed of B} = 18 \text{ km/h} = 18 \times \frac{5}{18} = 5 \text{ m/sec}$$

$$\text{Speed of C} = 27 \text{ km/h} = 27 \times \frac{5}{18} = 7.5 \text{ m/sec}$$

A and B will meet for the first time =

$$\frac{\text{Length}}{(\text{Speed of B} - \text{Speed of A})} = \frac{1200}{5 - 2.5} = 480 \text{ seconds}$$

B and C will meet for the first time =

$$\frac{\text{Length}}{(\text{Speed of C} - \text{Speed of B})} = \frac{1200}{7.5 - 5} = 480 \text{ seconds}$$

C and A will meet for the first time =

$$\frac{\text{Length}}{(\text{Speed of C} - \text{Speed of A})} = \frac{1200}{7.5 - 2.5} = 240 \text{ seconds}$$

LCM of (480, 480, 240) = 480 seconds

So they will meet for the first time after 480 seconds i.e. 8 minutes after they start.

Option C. is correct.

34. Ans. D.

Length of the circular track 4 = 1500 meters

$$\text{Speed of A} = 54 \text{ km/h} = 54 \times \frac{5}{18} = 15 \text{ m/sec}$$

$$\text{Speed of B} = 36 \text{ km/h} = 36 \times \frac{5}{18} = 10 \text{ m/sec}$$

$$\text{Speed of C} = 18 \text{ km/h} = 18 \times \frac{5}{18} = 5 \text{ m/sec}$$

They will meet for the first time at a time which is LCM of

$$\frac{\text{Length}}{\text{Speed of A}} \quad \frac{\text{Length}}{\text{Speed of B}} \quad \frac{\text{Length}}{\text{Speed of C}}$$

$$\frac{1500}{15} = 100 \text{ sec}$$

$$\frac{1500}{10} = 150 \text{ sec}$$

$$\frac{1500}{5} = 300 \text{ sec}$$

$$\text{LCM of } (100, 150, 300) = 300 \text{ seconds} = 5 \text{ minutes}$$

So they will meet after 5 minutes.

So option D. is correct.

35. Ans. B.

Length of the circular track 5 = 800 meters



Speed of A = $36 \text{ km/h} = 36 \times \frac{5}{18} = 10 \text{ m/sec}$

Speed of C = $144 \text{ km/h} = 144 \times \frac{5}{18} = 40 \text{ m/sec}$

Time taken to meet for the first time = $\frac{800}{10+40} = 16 \text{ seconds}$

Now, A's Speed = $10 \times 2 = 20 \text{ m/sec}$;

C's Speed = $40/2 = 20 \text{ m/sec}$

Time taken to meet for the second time = $\frac{800}{20+20} = 20 \text{ seconds}$

Now, A's Speed = $20 \times 2 = 40 \text{ m/sec}$;

C's Speed = $20/2 = 10 \text{ m/sec}$

Time taken to meet for the third time = $\frac{800}{40+10} = 16 \text{ seconds}$

Therefore, Total Time = $16 + 20 + 16 = 52 \text{ seconds}$

Option B. is correct.

36. Ans. C.

Gorakhnath Express speed = 90 kmph
 Time taken by vaishali from Gorkahpur to Gonda = $150/S_v$
 Time taken by Gorakhnath express from Gkp to Gonda = $150/S_g$
 $\Rightarrow 150/V - 150/G = 20 \text{ minutes}$
 $\Rightarrow 150/v = 1/3 + 150/90$
 $\Rightarrow V = 75 \text{ kmph}$

Gorakhpur to Gonda by Vaishali = 75 kmph

Gonda to halfway till Lucknow = Speed will be = 50 kmph

Halfway to Lucknow, speed will be = $50 \times 1.2 = 60 \text{ kmph}$

Time taken by vaishali = $t_1 + t_2 + t_3$
 $= 150/75 + 75/50 + 75/60$
 $= 2 + 1.5 + 1.25$
 $= 4.75 \text{ hr}$

Time taken by Vaishali without changing speed = $300/75 = 4 \text{ hrs}$

Ratio = $4.75/4 = 1.18$

37. Ans. B.

let Speed of vaishali is V and Speed of gorakhnath is G.

Speed of train vaishali from gonda to Kanpur = $1.2 V$

Speed of train gorakhnath from gonda to Kanpur = $0.8 G$

Total distance between Gonda to Kanpur = 450

Time taken by Gorakhnath (with changed speed) from Agra to Delhi = $T_1 = 300/0.8 G$

Time taken by vaishali (with changed speed) from Gorakhpur to Gonda = $T_2 = 150/1.2 V$

$T_1 = 2 T_2$

$\Rightarrow 300/0.8 G = 2 * 150/1.2 V$

$\Rightarrow V/G = 2/3$

$\Rightarrow V = 2/3 G$

Implement the same for Gorakhpur to Gonda

Time taken by Vaishali - Time taken by Gonda = $20 \text{ mins} = 1/3 \text{ hr}$

$150/v - 150/G = 1/3$

$150 * 3/2 G - 150/G = 1/3$

$G = 225 \text{ Kmph}$

$V = 150 \text{ kmph}$

Changed Speed = $1.2 * V = 150 * 1.2 = 180 \text{ kmph}$

38. Ans. C.

let Speed of vaishali is V and Speed of gorakhnath is G.

Speed of train vaishali from gonda to Kanpur = $1.2 V$

Speed of train gorakhnath from gonda to Kanpur = $0.8 G$

Total distance between Gonda to Kanpur = 450

Time taken by Gorakhnath (with changed speed) from Agra to Delhi = $T_1 = 300/0.8 G$

Time taken by vaishali (with changed speed) from Gorakhpur to Gonda = $T_2 = 150/1.2 V$

$T_1 = 2 T_2$

$\Rightarrow 300/0.8 G = 2 * 150/1.2 V$

$\Rightarrow V/G = 2/3$

$\Rightarrow V = 2/3 G$

Implement the same for Gorakhpur to Gonda

Time taken by Vaishali - Time taken by Gonda = $20 \text{ mins} = 1/3 \text{ hr}$

$150/v - 150/G = 1/3$

$150 * 3/2 G - 150/G = 1/3$

$G = 225 \text{ Kmph}$

$V = 150 \text{ kmph}$

Changed speeds are : $1.2 V = 1.2 * 150 = 180$

$0.8 G = 0.8 * 225 = 180$

Ratio of changed speeds : $1:1$



39. Ans. A.

let Speed of vaishali is V and Speed of gorakhnath is G.
Speed of train vaishali from gonda to Kanpur = $1.2V$
Speed of train gorakhnath from gonda to Kanpur = $0.8G$
Total distance between Gonda to Kanpur = 450

Time by V and Time by G = $450/1.2V + 450/0.8G = X$

Time taken by Gorakhnath (with changed speed) from Agra to Delhi = $T_1 = 300/0.8G$

Time taken by vaishali (with changed speed) from Gorakhpur to Gonda = $T_2 = 150/1.2V$

$T_1 = 2T_2$

$\Rightarrow 300/0.8G = 2 * 150/1.2V$

$\Rightarrow V/G = 2/3$

$\Rightarrow V = 2/3G$

Implement the same for Gorakhpur to Gonda

Time taken by Vaishali - Time taken by Gonda = 20 mins = $1/3$ hr

$150/V - 150/G = 1/3$

$150 * 3/2G - 150/G = 1/3$

$G = 225$ Kmph

$V = 150$ kmph

Time taken = $450/1.2V + 450/0.8G$
 $= 450/180 + 450/180 = 5$ hrs

40. Ans. D.

Time taken by Vaishali = $150/60 + 150/70 + 300/80 + 100/90 + 300/100$
 $= 2.5 + 2.14 + 3.75 + 1.11 + 3 = 12.5$ hr

Time taken by Gorakhnath = $150/60 + 150/80 + 300/100 + 100/120 + 300/140$
 $= 2.5 + 1.875 + 3 + 0.83 + 2.14 = 10.345$ hr

Difference = $12.5 - 10.345 = 2.155$

Option d

41. Ans. B.

Staff members = 240

[Teachers = 156 (male = 104. Females = 52)

Administrative staff = 84 (Male = 54, female = 30)]

Students = 1600

[Boys = 880 (only English = 660, both Hindi and English = 220)],

Girls = 720 (only English = 144,

both Hindi and English = 576)]

$576 - 220 = 356$

42. Ans. C.

Staff members = 240

[Teachers = 156 (male = 104. Females = 52)

Administrative staff = 84 (Male = 54, female = 30)]

Students = 1600

[Boys = 880 (only English = 660, both Hindi and English = 220)],

Girls = 720 (only English = 144, both Hindi and English = 576)]

$(720/240) * 100 = 300\%$

43. Ans. C.

Staff members = 240

[Teachers = 156 (male = 104. Females = 52)

Administrative staff = 84 (Male = 54, female = 30)]

Students = 1600

[Boys = 880 (only English = 660, both Hindi and English = 220)],

Girls = 720 (only English = 144, both Hindi and English = 576)]

$30 + 52 - 54 = 28$

44. Ans. B.

Staff members = 240

[Teachers = 156 (male = 104. Females = 52)

Administrative staff = 84 (Male = 54, female = 30)]

Students = 1600

[Boys = 880 (only English = 660, both Hindi and English = 220)],

Girls = 720 (only English = 144, both Hindi and English = 576)]

$156:660 = 13:55$

45. Ans. C.

Staff members = 240

[Teachers = 156 (male = 104. Females = 52)

Administrative staff = 84 (Male = 54, female = 30)]

Students = 1600

[Boys = 880 (only English = 660, both Hindi and English = 220)],

Girls = 720 (only English = 144, both Hindi and English = 576)]

$54 + 52 + 144 = 250$

46. Ans. E.

Let expenditure company A in 2010 = Exp_A



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Expenditure of company B in 2014 =

$$\frac{\text{Exp}_B}{100} \times \frac{(100+32)}{100} \times \text{exp}_A = \frac{(100+65)}{100} \times \text{Exp}_B$$
$$\frac{\text{exp}_A}{\text{exp}_B} = \frac{165}{132}$$

Required percentage =

$$\frac{(165-132)}{132} \times 100 = 25\%$$

47. Ans. D.

Expenditure of company B in 2012 =

$$165 \times \frac{100}{(100+28)}$$

Expenditure of company B in 2011 =

$$\frac{100}{125} \times 165 \times \frac{100}{128} = 103.125 \text{ Cr}$$

48. Ans. C.

Percent increase in profit percent of company A from 2009 to 2010

$$= \frac{32-25}{25} \times 100 = 28\%$$

Percent increase in profit percent of company A from 2012 to 2013

$$\frac{47-38}{38} \times 100 = 23.68$$

Required percentage =

$$\frac{28-23.68}{23.68} \times 100 = 18.24 \approx 18\%$$

49. Ans. D.

As the actual income or expenditure is not given, so we cannot determine the average profit percentage of companies A and B.

Therefore (D) is correct.

50. Ans. B.

Let expenditure of company B in 2009 =

x

Then total income in 2009 and 2011

x

$$x \times \frac{129}{100} + x \times \frac{126}{100} = x \left(\frac{129+126}{100} \right) = \frac{255x}{100} = 335$$

$$x = 335 \times \frac{100}{255} = 131.37 \text{ Cr}$$



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