Caselet DI for SBI PO Prelims

Caselet DI

Direction (1-5):Read the following information carefully and answer the questions given below it. Natasha wants to pursue her B. Tech from Massachusetts Institute of Technology, United States, but to be able to afford it, she has to take an education loan. The loan agreement guaranteed to pay 80% of all her expenses. This way she only had to bear the remaining costs. As soon as she landed in the United States, she had to pay the rent for her new apartment. The apartment rent was $550 per month. She then paid her tuition fee for the current semester worth $25000. On an average she spent $340 on utilities and groceries per month. Given that, Natasha's course lasted a total of two years (comprising of 2 semesters per year) and the bank gave 80% of the total expenses of two years at the beginning of her course.

1. How much did the bank have to pay in total for two years on behalf of Natasha?

A) $90308

B) $85428

C) $97088

D) $90288

E) Cannot be determined

2. If the bank charges simple interest at the rate of 9% per annum, then find the total interest amount that Natasha paid after 2 years. (Assume she pays off the entire loan after 2 years of completion of course)

A) $17075. 84

B) $17005. 48

C) $17975. 84

D) $16845. 48

E) $17475. 84

3. Find, the annual amount spent on utilities is what percentage less than the annual amount spent on rent? (Approximate)

A) 50%

B) 38%

C) 30%

D) 24%

E) 10%

4. Natasha gets an internship for a period of 3 months. The company where she'll be doing internship pays $12000 per month. The utilities and rent for these 3 months is what percentage of the total amount she earns from the internship?

A) 7.41%

B) 5.41%

C) 17.41%

D) 15.41%

E) None of these

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5. Natasha decides to live with her relatives for 6 months so she will not have to pay for rent and utilities. How much does she save on rent and utilities?

A) $8340

B) $3640

C) $5340

D) $8940

E) Cannot be determined

Directions(6-10) : Study the following information carefully and answer the questions given beside. Three companies Xiomi, Vivo and Realme sold mobiles in 3 different months January, February and March. In January, Xiomi sold 20% more mobiles than February. Ratio of mobiles sold by Vivo in February to Realme in March was 8:5. Total number of mobiles sold by Xiomi in three months together was 2270. Vivo sold 350 more mobiles than Realme in February. In February, Xiomi sold 75% of mobiles sold by Vivo in same month. There was decrease in 20% of mobiles sold from February to March by Vivo. Total number of mobiles sold in March by three companies together was 2090. Total number of mobiles sold by Realme in three months together was 1250 and Vivo sold 540 mobiles in January.

6. What is the difference between total number of mobiles sold by Xiomi and Vivo in three months together?

A) 290

B) 220

C) 320

D) 370

E) 250

7. Find ratio of mobiles sold by Xiomi in February and March together to mobiles sold by Realme in January and February together.

A) 28 : 13

B) 31 : 15

C) 12 : 7

D) 23 : 17

E) 36 : 23

8. Mobiles sold by Xiomi and Vivo in February together is what percentage (approx) of mobiles sold by all three in January?

A) 73%

B) 96%

C) 82%

D) 90%

E) 62%

9. Average rate per mobile sold by Xiomi in January was Rs. 8000 and same for Realme in March was Rs. 8800. What was the difference of revenue earned by Xiomi in January and Realme in March?

A) Rs. 12,40,000

B) Rs. 13,60,000

C) Rs. 14,20,000

D) Rs. 11,80,000

E) Rs. 16,30,000

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10. Find the total number of mobiles sold by all three companies in three months together.

A) 5200

B) 5500

C) 5000

D) 4800

E) 5800

Directions (11-15) : Study the following information carefully and answer the questions given beside.

A train started running from source station P to its destination station Q. There were three intermediate stations i.e. A, B and C between station P and station Q in the given order and the fare between any two consecutive stations was Rs. 5. The total number of passengers boarded at station P was 2280. The ratio of the number of passengers boarded and left the train at station A was 9 : 7, respectively and the total tickets sold for station Q at station B was 140 and the total number of Rs. 5 tickets sold at station B was 210. The ratio of the total number of passengers who left the train at station A and at station B was 7 : 6, respectively. The total amount earned by selling Rs. 5 tickets at station P was Rs. 2800 and the total number of passengers left the train at the station Q was 1740. The total amount earned by selling tickets at the station C was Rs. 1250.

11. How many passengers had left the train at station C?

A) 780

B) 820

C) 850

D) 940

E) 760

12. The ratio of the number of Rs. 5, Rs. 10, Rs. 15 and Rs. 20 tickets sold at the station P was 14: 6: 8: 29, respectively. Find the number of Rs. 5 tickets sold at the station A.

A) 228

B) 270

C) 240

D) 300

E) 264

13. How many passengers were on the train between station B and station C?

A) 2190

B) 2580

C) 2640

D) 2310

E) 2420

14. The per person average weight of the passengers travelling in the train from station A to station B was 35 kg and the resultant weight of the train (including the passengers) was 200 ton then find the weight of the train only. (1 ton = 1000 kg)

A) 114.6 ton

B)118.4 ton

C) 115.2 ton

D) 116.8 ton

E) 124.2 ton

15. Find the total amount collected at the station B on selling all the tickets.

A) Rs. 2250

B) Rs. 2450

C) Rs. 2600

D) Rs. 3000

E) Rs. 2500

Directions(16-20) : Study the following information carefully and answer the questions given beside. The information given below is the investment of three Venture capitalists in a partnership for the period of 1991 – 1995.

The investments made by an individual are for the same period. The investment of Bikram in 1991 is Rs. 40000 and is equal is to the investment of Chandan in 1993. The total investment in 1994 is Rs. 24000 and the ratio of investments of Arjun, Bikram and Chandan is 8 : 9 : 7 respectively. The investments of Arjun in 1991, 1992 and 1993 are Rs. 32000, Rs. 48000 and Rs. 44000 respectively. The investment of Chandan in 1991 and 1992 are same i.e. Rs. 22000. The investment of Bikram in 1993 is Rs. 6000 more than the investment by him in 1992 i.e. Rs. 30000.

16. Find the share of profit earned by Bikram in the year 1993, if the total profit in 1993 is Rs. 15000?

A) Rs. 4250

B) Rs. 4050

C) Rs. 4500

D) Rs. 4400

E) Rs. 3600

17. Suppose all the VCs invested for one more year i.e. 1995 and the total investment of Arjun and Bikram is Rs. 56000 and invested their amounts for 24 and 16 months respectively, find for how many months Chandan invested his amount of Rs. 64,000? [Given profits of Arjun, Bikram and Chandan are Rs. 12600, Rs. 11200 and Rs. 16800 respectively]

A) 16 months

B) 21 months

C) 15 months

D) 6 months

E) 12 months

18. If the share of profit of Chandan in 1991 and 1992 is Rs. 7700 and Rs. 8800 respectively, find the ratio of profit of Arjun in 1991 to that in 1992?

A) 1 : 2

B) 1 : 4

C) 12 : 7

D) 7 : 12

E) 3 : 4

19. If the amount of profit shared by Arjun and Bikram in 1994 is Rs. 4000 and Rs. 4500 respectively and Chandan makes $3/4^{th}$ of the profit in 1995 as compared to his profit in 1994. Find the amount of Profit shared by Chandan in 1995?

A) Rs. 2625
B) Rs. 3000
C) Rs. 2265
D) Rs. 3500
E) Rs. 6225

20. The profit earned by Bikram in 1996 is 8% of the investment made by Bikram in 1992 and the profit of Chandan in 1996 is 10% of the investment made by Chandan in 1992. Find the ratio of profit of Chandan in 1996 to that of Bikram in 1996.

A) 12 : 11
B) 11 : 12
C) 1 : 12
D) 15 : 11
E) None of these

Directions (21-25): Study the following information carefully and answer the questions given beside.

Information about number of patients who were tested positive to COVID-19 tests in five different cities of India is as follows.

Delhi has 60% more patients than Jaipur, which has 400 more than Chennai. Number of patients in Calcutta was half the number of patients in Chennai. Number of patients in Mumbai was 100 less than Chennai. Total patients were 9100 as on 31 March 2019 in all the five cities together.

It was found that out of every 200 patients, 180 recovered within 14 days, 18 took 30 days to recover and 2 died.

21. Find average number of patients in Chennai, Calcutta and Mumbai.

A) 1100
B) 1200
C) 1300
D) 1400
E) None of these

22. Number of patients in Jaipur was what percent more than Calcutta?

A) 100%
B) 150%
C) 200%
D) 250%
E) None of these

23. For each 1000 tests the numbers of people who were found positive were 130. Find out how many tests were conducted that produced 9100 total positive cases?

A) 35000
B) 40000
C) 91000
D) 130000
E) 70000

24. How many patients recovered till 30 April 2020, if all the patients in Delhi, Jaipur and Calcutta are considered?

A) 5400
B) 5540
C) 4590

D) 5940

E) 5990

25. How many people died in Jaipur, Mumbai and Chennai together?

A) 41

B) 51

C) 55

D) 112

E) 102

Direction (26-30): Study the following information carefully and answer the questions given beside. The census officers provided the data regarding changes in population of three major towns for three years. Population of town A was 180600 in the third year and it increased 5% and 7.5% in second and third year respectively. Population of town B increased by 25% in second year and in the second year it was equal to 150% of the population of town A in first year. After taking population control measures, town B succeeds in controlling population as growth rate in third year was half of that of previous year. The area of town C is 1250 km and population density for second year was 250. Growth rate for town C was 11.11% and 10% for second and third year respectively.

Note: Population density is calculated as Total population ÷ Total area.

26. Population of town B in third year exceed by how much compare to population of town A in second year?

A) 110000

B) 107500

C) 102000

D) 105250

E) None of these

27. The average population of town B for three years forms what percentage of average population of town C for three years?

A) 73.15%

B) 74.88%

C) 78.44%

D) 76.28%

E) None of these

28. For town B, male to female ratio for the last two years was 7 : 5 and literate male and illiterate male are in the ratio of 4 : 1 for same years. Find the ratio between illiterate male in second year and literate male in third year.

A) 8 : 9

B) 4 : 9

C) 9 : 2

D) 2 : 9

E) 7 : 2

29. Refer the data provided in previous question, by what percentage the number of illiterate male in third year for town B less than female in third year for town B?

A) 72%

B) 75%

C) 69%

D) 70.50%

E) 74.25%

30. For the third year, if 3/8th part of population of A town are above 20 years old, 33% of population of B town are above 20 years old and 70% of population of C town are above 20 years old, how much population of three towns are above 20 years for third year?

A) 530440

B) 545400

C) 543300

D) 534400

E) Can't be determined

Directions(31-35) : Study the following information carefully and answer the questions given beside. In ecommerce industry, the growth of the industry is driven by the increase in the number of people buying online and the increase in the number of people selling online.

In 2016, it was expected that total 100 million people would buy products online in India that would be 20% of the total population of India and 2% of the total population of India would sell products online. If in 2017, the population of India was increased by 10% over the previous year together with the total number of people who bought products online was increased by 20% over the previous year and the number of sellers remained constant then in the year 2017 the Industry revenue was $ 50 billion.

31. In 2016, what was the total number of people from India who sold the products online?

A) 1 million

B) 5 million

C) 50 million

D) 10 million

E) None of these

32. If the revenue per seller was same in 2016 as compared to 2017 then what was the revenue per seller (in $) in 2016? (one billion is equal to 1000 millions)

A) 50 million

B) 500 million

C) 5 million

D) 5 billion

E) None of these

33. If in 2018, the number of people who will buy products online will increased by 30% over the previous year then in 2018, total how many people in million will buy product online?

A) 144

B) 156

C) 132

D) 150

E) None of these

34. In 2018, the population of India was 900 million then what was the percentage growth of India over the period 2016 to 2018?

A) 60%

B) 40%

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C) 80%

D) 20%

E) None of these

35. It is assumed that in 2018, because of JIO, 40% of the total population of India will buy products online. If in 2018, the population of India was increased by 5% over previous year then in 2018, total how many people will buy product in India?

A) 231 million

B) 243 million

C) 239 million

D) 233 million

E) None of these

Directions(36-40): Study the following information carefully and answer the questions given beside. Three friends, Chand, Chandni, and Chanchal went to a shopping centre. Each of them had Rs. 2500. In the shopping centre, the session sale discount was 10% on the marked price. Chandni and Chanchal were regular customers so they got 20% each an additional discount on the discounted price but Chand being a new customer didn't get any additional discount. Only Chanchal had a membership card of the shopping centre which gave an additional discount of 25% on the discounted price. They all like Juicers of xyz brand and they purchased one piece each of that brand. The marked price of each piece was same. In last, when they calculated then they found that Chandni had paid Rs. 360 more than that of Chanchal.

36. If all of them combine the money paid for Juicer then, the total money paid by them for three pieces of the juicers was what percentage of the total marked price of the three juicers.

A) 62%

B) 72%

C) 78%

D) 68%

E) None of these

37. The amount paid by Chand for the juicer was how much more than that by Chanchal?

A) 45%

B) 50%

C) 55.33%

D) 66.67%

E) None of these

38. What is the ratio of the amount paid by Chand to that by Chanchal?

A) 9 : 7

B) 3 : 2

C) 6 : 5

D) 5 : 3

E) None of these

39. How much money was left with Chand after purchasing the juicer?

A) Rs. 900

B) Rs. 500

C) Rs. 700

D) Rs. 750

E) None of these

40. What was the marked price of the juicer?

A) Rs. 1800

B) Rs. 2400

C) Rs. 2000

D) Rs. 2150

E) None of these

Directions (41-45): Study the following information carefully and answer the questions given beside. Krishna invested some money under 20% per annum simple interest in Axis bank. At the end of one – year, he withdrew all amount from the Axis bank and invested in Bandhan bank at the rate of R % per annum under compound interest compounded annually for two years and received Rs. 57600 as total interest from the Bandhan bank. The first year's interest at Bandhan bank was Rs. 24000.

41. In starting, how much money had Krishna invested in Axis bank?

A) Rs. 60000

B) Rs. 75000

C) Rs. 10000

D) Rs. 50000

E) None of these

42. Total how much interest did Krishna get from the Axis bank and the Bandhan bank together?

A) Rs. 68600

B) Rs. 67600

C) Rs. 64600

D) Rs. 71200

E) None of these

43. If the rate of interest was interchanged i.e. Axis bank had offered R% per annum simple interest and Bandhan bank had offered 20% per annum compound interest then how much less money Krishan would have received at the end of 3 years?

A) Rs. 16800

B) Rs. 15800

C) Rs. 14800

D) Rs. 16400

E) None of these

44. If Krishan had invested the sum of money only in Axis bank for 3 years under 20% per annum simple interest then at the end of 3 years, total how much simple interest he would have received from the Axis bank?

A) Rs. 25000

B) Rs. 30000

C) Rs. 40000

D) Rs. 20000

E) None of these

45. If the first year's interest at Bandhan bank was same as the simple interest received from the Axis bank at the end of 1 year and the rate of interest for the Bandhan bank remained constant then what should be the rate of interest for Axis bank?

A) 40%

B) 50%

C) $66\frac{2}{3}\%$

D) $66\frac{2}{5}\%$

E) $43\frac{2}{5}\%$

Direction (46-50): Answer the following question based on the information given below. Every year, a survey of 1000 people is conducted by the World Health Organization (WHO). WHO found that in the year 2005, 2006, 2007, 2008 and 2009 the percentage of people affected by malaria were 30%, 40%, 30%, 20% and 45% respectively. WHO also found that every year out of the affected people 60% were students, 10% were house-wives and 30% were drivers. The number of house-wives, students and drivers were in the ratio 20 : 11 : 9, every year.

46. In the year 2007, find the number of house-wives affected by malaria?

A) 60

B) 30

C) 50

D) 110

E) 150

47. In the year 2009, find the number of drivers who were not affected by malaria?

A) 110

B) 125

C) 415

D) 190

E) 90

48. What is the difference in the number of students affected and not affected by malaria in the year 2006?

A) 205

B) 35

C) 200

D) 240

E) 420

49. Find the ratio of the number of house-wives affected by malaria in the year 2005 to that affected by malaria in the year 2008.

A) 5 : 3

B) 9 : 4

C) 3 : 2

D) 2 : 1

E) 4 : 3

50. Which year had the maximum number of students not affected by malaria?

A) 2005

B) 2006

C) 2007

D) 2008

E) 2009

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Caselet DI – Answer and Explanation

1 Correct Option: C

Total expenditure on rent = 24 months × $550 = $13200

Total expenditure on utilities = 24 months × $340 = $8160

Total expenditure on tuition fees = 4 semesters × $25000 = $100000

Thus total expenditure = $(13200 + 8160 + 100000) = $121360

The bank paid 80% of this amount.

∴ Amount paid by the bank = (80/100) × 121360 = $97088

Hence, option C is correct.

2 Correct Option: E

Total expenditure on rent = 24 months × $550 = $13200

Total expenditure on utilities = 24 months × $340 = $8160

Total expenditure on tuition fees = 4 semesters × $25000 = $100000

Thus total expenditure = 13200 + 8160 + 100000 = $121360

The bank paid 80% of this amount.

∴ Amount paid by the bank = 80/100 × 121360 = $97088

Simple Interest = (97088 × 2 × 9)/100 = $17475. 84

Hence, option E is correct.

3 Correct Option: B

Total annual expenditure on rent = 12 months × $550 = $6600

Total annual expenditure on utilities = 12 months × $340 = $4080

Clearly the amount spent on utilities is less than the amount spent on rent

∴ Required percentage = [(6600 – 4080)/6600] × 100

= (2520 × 100)/6600 = 38. 18 = 38% (approximate)

Hence, option B is correct.

4 Correct Option: A

The salary earned during internship = 3 × 12000 = $36000

Total expenditure on rent in 3 months = 3 × $550 = $1650

Total expenditure on utilities in 3 months = 3 × $340 = $1020

Total expense = $(1650 + 1020) = $2670

∴ Required percentage = (2670/36000) × 100 = 267/36 = 7. 41

Hence, option A is correct.

5 Correct Option: C

Per month rent = $550

Utilities cost per month = $340

∴ The amount she would save in 6 months = 6 × (550 + 340) = 6 × 890 = $5340

Hence, option C is correct.

6 Correct Option: A

Let mobiles sold by Vivo in February be 8x

Mobiles sold by Realme in March = 5x

Mobiles sold by Xiomi in February = 75% of 8x = 6x

Mobiles sold by Xiomi in January = 120% of 6x = 7.2x

Mobiles sold by Realme in February = 8x – 350

Mobiles sold by Xiomi in March = 2270 – 6x – 7.2x = 2270 – 13.2x

Mobiles sold by Vivo in March = 80% of 8x = 6.4x

So 5x + 2270 – 13.2x + 6.4x = 2090

1.8x = 180

x = 100

For Xiomi:

Mobiles sold in January = 720

Mobiles sold in February = 600

Mobiles sold in March = 950

Total mobiles sold = 2270

For Vivo:

Mobiles sold in January = 540

Mobiles sold in February = 800

Mobiles sold in March = 640

Total mobiles sold = 1980

For Realme:

Mobiles sold in January = 1250 – 450 – 500 = 300

Mobiles sold in February = 450

Mobiles sold in March = 500

Total mobiles sold = 1250

Difference = 2270 – 1980 = 290

Hence, option A is correct.

7 Correct Option: B

Let mobiles sold by Vivo in February be 8x

Mobiles sold by Realme in March = 5x

Mobiles sold by Xiomi in February = 75% of 8x = 6x

Mobiles sold by Xiomi in January = 120% of 6x = 7.2x

Mobiles sold by Realme in February = 8x – 350

Mobiles sold by Xiomi in March = 2270 – 6x – 7.2x = 2270 – 13.2x

Mobiles sold by Vivo in March = 80% of 8x = 6.4x

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Mobiles sold in February = 800

Mobiles sold in March = 640

Total mobiles sold = 1980

For Realme:

Mobiles sold in January = 1250 – 450 – 500 = 300

Mobiles sold in February = 450

Mobiles sold in March = 500

Total mobiles sold = 1250

Mobiles sold by Xiomi in February and March together = 600 + 950 = 1550

Mobiles sold by Realme in January and February together = 300 + 450 = 750

Ratio = 1550 : 750 = 31 : 15

Hence, option B is correct.

8 Correct Option: D

Let mobiles sold by Vivo in February be 8x

Mobiles sold by Realme in March = 5x

Mobiles sold by Xiomi in February = 75% of 8x = 6x

Mobiles sold by Xiomi in January = 120% of 6x = 7.2x

Mobiles sold by Realme in February = 8x – 350

Mobiles sold by Xiomi in March = 2270 – 6x – 7.2x = 2270 – 13.2x

Mobiles sold by Vivo in March = 80% of 8x = 6.4x

So 5x + 2270 – 13.2x + 6.4x = 2090

1.8x = 180

x = 100

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Mobiles sold in March = 950

Total mobiles sold = 2270

For Vivo:

Mobiles sold in January = 540

Mobiles sold in February = 800

Mobiles sold in March = 640

Total mobiles sold = 1980

For Realme:

Mobiles sold in January = 1250 – 450 – 500 = 300

Mobiles sold in February = 450

Mobiles sold in March = 500

Total mobiles sold = 1250

Mobiles sold by Xiomi and Vivo in February together = 600 + 800 = 1400

Mobiles sold by all three in January = 720 + 540 + 300 = 1560

$$\text{Percentage} = \frac{1400}{1560} \times 100 = 90\%$$

Hence, option D is correct.

9 Correct Option: B

Let mobiles sold by Vivo in February be 8x

Mobiles sold by Realme in March = 5x

Mobiles sold by Xiomi in February = 75% of 8x = 6x

Mobiles sold by Xiomi in January = 120% of 6x = 7.2x

Mobiles sold by Realme in February = 8x – 350

Mobiles sold by Xiomi in March = 2270 – 6x – 7.2x = 2270 – 13.2x

Mobiles sold by Vivo in March = 80% of 8x = 6.4x

So 5x + 2270 – 13.2x + 6.4x = 2090

1.8x = 180

x = 100

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Total mobiles sold = 2270

For Vivo:

Mobiles sold in January = 540

Mobiles sold in February = 800

Mobiles sold in March = 640

Total mobiles sold = 1980

For Realme:

Mobiles sold in January = 1250 – 450 – 500 = 300

Mobiles sold in February = 450

Mobiles sold in March = 500

Total mobiles sold = 1250

Revenue earned by Xiomi in January = 8000 × 720 = Rs. 57,60,000

Revenue earned by Realme in March = 8800 × 500 = Rs. 44,00,000

Difference = 57,60,000 – 44,00,000 = Rs. 13,60,000

Hence, option B is correct.

10 Correct Option: B

Let mobiles sold by Vivo in February be 8x

Mobiles sold by Realme in March = 5x

Mobiles sold by Xiomi in February = 75% of 8x = 6x

Mobiles sold by Xiomi in January = 120% of 6x = 7.2x

Mobiles sold by Realme in February = 8x – 350

Mobiles sold by Xiomi in March = 2270 – 6x – 7.2x = 2270 – 13.2x

Mobiles sold by Vivo in March = 80% of 8x = 6.4x

So 5x + 2270 – 13.2x + 6.4x = 2090

1.8x = 180

x = 100

For Xiomi:

Mobiles sold in January = 720

Mobiles sold in February = 600

Mobiles sold in March = 950

Total mobiles sold = 2270

For Vivo:

Mobiles sold in January = 540

Mobiles sold in February = 800

Mobiles sold in March = 640

Total mobiles sold = 1980

For Realme:

Mobiles sold in January = 1250 – 450 – 500 = 300

Mobiles sold in February = 450

Mobiles sold in March = 500

Total mobiles sold = 1250

Total mobiles sold = 2270 + 1980 + 1250 = 5500

Hence, option B is correct.

11 Correct Option: B

Following the common explanation, we get

So, the total number of passengers who had left the train at the station C = 820

Hence, option B is correct.

Common explanation:

Let, the number of passengers boarded and left the train at station A be 9x and 7x, respectively

And, the total number of passengers left the train at station A and at station B be 7y and 6y, respectively

Since the total amount earned by selling Rs. 5 tickets at station P was Rs. 2800

So, the total number of passengers left the train at station A

= 2800 = 560

5

Therefore, $7x = 560$, $x = \frac{560}{7} = 80$

So, the number of passengers boarded the train at station A = $9x = 9 \times 80 = 720$

Also, $7y = 560$

$y = \frac{560}{7} = 80$

Therefore, the total number of passengers left the train at station B = $6y = 6 \times 80 = 480$

The total number of passengers boarded the train at station B = 210 + 140 = 350

And, the total number of passengers boarded the train at station C

$= \frac{1250}{5} = 250$

Let, the total number of passengers who left the train at station C be 'z'

So, 2310 + 250 – z = 1740

z = 2310 + 250 – 1740 = 820

	Boarded	Left	Number of passengers in the train
Station P	2280	–	2280
Station A	720	560	2440
Station B	350	480	2310
Station C	250	820	1740
Station Q	–	1740	–

12 Correct Option: C

following the common explanation, we get

2280

Let, the number of Rs. 5 tickets, Rs. 10 tickets, Rs. 15 tickets, and Rs. 20 tickets sold at the station P be 14x, 6x, 8x, and 29x respectively

57 =40

So, 14x + 6x + 8x + 29x = 2280

57x = 2280 ; x =40

Thus, total number of passengers who left the train at station B and had boarded at the station P = 6x = 240

So, total number of passengers who left the train at station B and had boarded at the station A i.e. purchased Rs. 5 ticket from station A = 480 – 240 = 240

Therefore, the total number of Rs. 5 tickets sold at the station A was 240.
Hence, option C is correct.

Common explanation :

Let, the number of passengers boarded and left the train at station A be 9x and 7x, respectively
And, the total number of passengers left the train at station A and at station B be 7y and 6y, respectively
Since the total amount earned by selling Rs. 5 tickets at station P was Rs. 2800
So, the total number of passengers left the train at station A

$= \frac{2800}{5} = 560$

Therefore, $7x = 560$, $x = \frac{560}{7} = 80$

So, the number of passengers boarded the train at station A = $9x = 9 \times 80 = 720$
Also, $7y = 560$

$y = \frac{560}{7} = 80$

Therefore, the total number of passengers left the train at station B = $6y = 6 \times 80 = 480$

The total number of passengers boarded the train at station B = 210 + 140 = 350
And, the total number of passengers boarded the train at station C

$= \frac{1250}{5} = 250$

Let, the total number of passengers who left the train at station C be 'z'
So, 2310 + 250 – z = 1740
z = 2310 + 250 – 1740 = 820

	Boarded	Left	Number of passengers in the train
Station P	2280	–	2280
Station A	720	560	2440
Station B	350	480	2310
Station C	250	820	1740
Station Q	–	1740	–

13 Correct Option: D
Following the common explanation, we get
So, the total number of passengers were on the train between station B and station C = 2310
Hence, option D is correct.

Common explanation :
Let, the number of passengers boarded and left the train at station A be 9x and 7x, respectively

And, the total number of passengers left the train at station A and at station B be 7y and 6y, respectively

Since the total amount earned by selling Rs. 5 tickets at station P was Rs. 2800

So, the total number of passengers left the train at station A

$= \frac{2800}{5} = 560$

Therefore, $7x = 560$, $x = \frac{560}{7} = 80$

So, the number of passengers boarded the train at station A = $9x = 9 \times 80 = 720$

Also, $7y = 560$

$y = \frac{560}{7} = 80$

Therefore, the total number of passengers left the train at station B = $6y = 6 \times 80 = 480$

The total number of passengers boarded the train at station B = 210 + 140 = 350

And, the total number of passengers boarded the train at station C

$= \frac{1250}{5} = 250$

Let, the total number of passengers who left the train at station C be 'z'

So, 2310 + 250 – z = 1740

z = 2310 + 250 – 1740 = 820

	Boarded	Left	Number of passengers in the train
Station P	2280	–	2280
Station A	720	560	2440
Station B	350	480	2310
Station C	250	820	1740
Station Q	–	1740	–

14 Correct Option: A

Following the common explanation, we get

Total weight of all passengers who were travelling from station A to station B = 2440 × 35 = 85400 kg

Weight of the train = (200000 – 85400) kg = 114600 kg = 114.6 ton

Hence, option A is correct.

Common explanation :

Let, the number of passengers boarded and left the train at station A be 9x and 7x, respectively

And, the total number of passengers left the train at station A and at station B be 7y and 6y, respectively

Since the total amount earned by selling Rs. 5 tickets at

station P was Rs. 2800

So, the total number of passengers left the train at station A

$= \frac{2800}{5} = 560$

Therefore, $7x = 560$, $x = \frac{560}{7} = 80$

So, the number of passengers boarded the train at station A = $9x = 9 \times 80 = 720$

Also, $7y = 560$

$y = \frac{560}{7} = 80$

Therefore, the total number of passengers left the train at station B = $6y = 6 \times 80 = 480$

The total number of passengers boarded the train at station B = 210 + 140 = 350

And, the total number of passengers boarded the train at station C

$= \frac{1250}{5} = 250$

Let, the total number of passengers who left the train at station C be 'z'

So, 2310 + 250 – z = 1740

z = 2310 + 250 – 1740 = 820

	Boarded	Left	Number of passengers in the train
Station P	2280	–	2280
Station A	720	560	2440
Station B	350	480	2310
Station C	250	820	1740
Station Q	–	1740	–

15 Correct Option: B

Following the common explanation, we get

Given, total tickets sold for station Q at station B was 140 and the total number of Rs. 5 tickets sold at station B was 210.

Therefore, total amount collected = Rs. (140 × 10 + 210 × 5) = Rs. (1400 + 1050) = Rs. 2450

Hence, option B is correct.

Common explanation :

Let, the number of passengers boarded and left the train at station A be 9x and 7x, respectively

And, the total number of passengers left the train at station A and at station B be 7y and 6y, respectively

Since the total amount earned by selling Rs. 5 tickets at station P was Rs. 2800

So, the total number of passengers left the train at station

A

$= \frac{2800}{5} = 560$

Therefore, $7x = 560$, $x = \frac{560}{7} = 80$

So, the number of passengers boarded the train at station A = $9x = 9 \times 80 = 720$

Also, $7y = 560$

$y = \frac{560}{7} = 80$

Therefore, the total number of passengers left the train at station B = $6y = 6 \times 80 = 480$

The total number of passengers boarded the train at station B = 210 + 140 = 350

And, the total number of passengers boarded the train at station C

$= \frac{1250}{5} = 250$

Let, the total number of passengers who left the train at station C be 'z'

So, 2310 + 250 – z = 1740

z = 2310 + 250 – 1740 = 820

	Boarded	Left	Number of passengers in the train
Station P	2280	–	2280
Station A	720	560	2440
Station B	350	480	2310
Station C	250	820	1740
Station Q	–	1740	–

16 Correct Option: C

Year	Investment by Venture Capitalists		
	Arjun	Bikram	Chandan
1993	44000	36000	40000

Ratio of profit = 44000 : 36000 : 40000

Ratio of profit = 44 : 36 : 40

So the profit shared by the venture capitalist would be in the ratio of 44 : 36 : 40

Share of Bikram = $\frac{36}{120} \times 15000 = 4500$

Hence, option C is correct.

17Correct Option: E

1995	Investment	Profit	Months
Arjun	56000	12600	24

Bikram		11200	16
Chandan	64000	16800	

Let A and B be the investment made by Arjun and Bikram respectively.

$$\frac{24A}{16B} = \frac{12600}{11200}$$

$$\frac{12A}{8B} = \frac{126}{112}$$

$$\frac{A}{B} = \frac{126 \times 8}{12 \times 112} = \frac{3}{4}$$

Therefore, investment of Arjun = $\frac{3}{7} \times 56000 = 24000$

So, the investment made by Bikram = 32000

Let, Chandan invested for C months

So, the ratio of Arjun and Chandan's profit

$$\frac{24000 \times 24}{64000 \times C} = \frac{12600}{16800}$$

C = 12

Hence, option E is correct.

18 Correct Option: D

Year	Investment		Profit	
	Arjun	Chandan	Arjun	Chandan
1991	32000	22000	A	7700
1992	48000	22000	B	8800

For the year 1991,

$$\frac{32000}{22000} = \frac{A}{7700}; A = 11200$$

For the year 1992,

$$\frac{48000}{22000} = \frac{A}{8800}; B = 19200$$

So, the ratio of profits of Arjun

$$\frac{11200}{19200} = \frac{112}{192} = \frac{28}{48} = \frac{7}{12}$$

Hence, option D is correct.

19 Correct Option: A

For the year 1994,

Profit of Chandan = $\frac{8000}{7000} = \frac{4000}{C}; c = \frac{7 \times 4000}{8} = 3500$

So, amount of Profit shared by Chandan in 1995

$= 3500 \times \frac{3}{4} = 2625$

Hence, option A is correct.

20 Correct Option: B

Year	Investment	
	Bikram	Chandan
1992	30000	22000

For the year 1996,

Profit of Bikram $= \frac{8}{100} \times 30000 =$ Rs. 2400

For the year 1996,

Profit of Chandan $= \frac{10}{100} \times 22000 =$ Rs. 2200

So, the ratio of profit of Chandan in 1996 to that of Bikram in 1996

$\frac{2200}{2400} = \frac{22}{24} = \frac{11}{12}$

Hence, option B is correct.

21 Correct Option: C

From common explanation, we have

Chennai = 1600

Calcutta = 800

Mumbai = 1500

Total = 3900

Average = 1300

Hence, option C is correct.

Common explanation :

Let the number of patients in Delhi, Jaipur, Chennai, Calcutta, Mumbai were D, J, Ch, Cal, M respectively. Then we have

$D = 1.6J = 1.6(400+Ch)$

$Cal = \frac{1}{2} Ch$

$M = Ch - 100$

Therefore, we have

$D + J + Ch + Cal + M = 9100$

1.6 (400 + Ch) + (400 + Ch) + Ch 1 Ch + Ch – 100 =
+ 29100

940 + 5.1Ch = 9100

Ch = 1600

Thus, patients in various cities are

Delhi = 3200

Jaipur = 2000

Chennai = 1600

Calcutta = 800

Mumbai = 1500

22Correct Option: B

From common explanation, we have

Jaipur = 2000

Calcutta = 800

Percent difference = $\frac{2000 - 800}{800} \times 100 = 150\%$

Hence, option B is correct.

Common explanation :

Let the number of patients in Delhi, Jaipur, Chennai, Calcutta, Mumbai were D, J, Ch, Cal, M respectively. Then we have

D = 1.6J = 1.6(400+Ch)

Cal = $\frac{1}{2}$ Ch

M = Ch – 100

Therefore, we have

D + J + Ch + Cal + M = 9100

1.6 (400 + Ch) + (400 + Ch) + Ch 1 Ch + Ch – 100 =
+ 29100

940 + 5.1Ch = 9100

Ch = 1600

Thus, patients in various cities are

Delhi = 3200

Jaipur = 2000

Chennai = 1600

Calcutta = 800

Mumbai = 1500

23 Correct Option: E

From common explanation, we have

For each 1000 tests we have 130 positive.

Thus for 9100 = 70 (× 130), we should have 70 (× 1000) = 70,000 tests.

Hence, option E is correct.

Common explanation :

Let the number of patients in Delhi, Jaipur, Chennai, Calcutta, Mumbai were D, J, Ch, Cal, M respectively. Then we have

$D = 1.6J = 1.6(400+Ch)$

$Cal = \frac{1}{2} Ch$

$M = Ch – 100$

Therefore, we have

$D + J + Ch + Cal + M = 9100$

$1.6 (400 + Ch) + (400 + Ch) + Ch\ 1\ Ch + Ch – 100 = + \overline{2}9100$

$940 + 5.1Ch = 9100$

$Ch = 1600$

Thus, patients in various cities are

Delhi = 3200

Jaipur = 2000

Chennai = 1600

Calcutta = 800

Mumbai = 1500

24 Correct Option: D

From common explanation, we have

It is given that out of 200 patients, 180 recovered within 14 days, 18 takes 30 days to recover

Number of patients in Delhi, Jaipur and Calcutta = 3200, 2000, and 800 = 6000

From 31 March to 30 April, 180 + 18 = 198 people out of 200 will recovered,

means $\frac{198}{200} \times 100 = 99\%$ people will recover.

Thus, number of people who will recover from the three cities = 99% of 6000 = 5940.

Hence, option D is correct.

Common explanation :

Let the number of patients in Delhi, Jaipur, Chennai, Calcutta, Mumbai were D, J, Ch, Cal, M respectively.

Then we have

$D = 1.6J = 1.6(400+Ch)$

$Cal = \frac{1}{2} Ch$

$M = Ch – 100$

Therefore, we have

$D + J + Ch + Cal + M = 9100$

$1.6 (400 + Ch) + (400 + Ch) + Ch \frac{1}{2} Ch + Ch – 100 = 9100$

$940 + 5.1Ch = 9100$

$Ch = 1600$

Thus, patients in various cities are

Delhi = 3200

Jaipur = 2000

Chennai = 1600

Calcutta = 800

Mumbai = 1500

25 Correct Option: B

From the common explanation, we have

It is given that out of 200 patients, only 2 dies,

thus $\frac{2}{200} \times 100 = 1\%$ die.

Number of patients in Jaipur, Mumbai and Chennai = 2000 + 1500 + 1600 = 5100

Number of people who will die = 1% of 5100 = 51

Hence, option B is correct.

Common explanation :

Let the number of patients in Delhi, Jaipur, Chennai, Calcutta, Mumbai were D, J, Ch, Cal, M respectively.

Then we have

$D = 1.6J = 1.6(400+Ch)$

$Cal = \frac{1}{2} Ch$

$M = Ch – 100$

Therefore, we have

D + J + Ch + Cal + M = 9100

1.6 (400 + Ch) + (400 + Ch) + Ch 1 Ch + Ch – 100 =
+ 29100

940 + 5.1Ch = 9100

Ch = 1600

Thus, patients in various cities are

Delhi = 3200

Jaipur = 2000
Chennai = 1600
Calcutta = 800
Mumbai = 1500

26 Correct Option: C

Let the Population of Town A in first year be 100.

Thus, population of town A in third year = 105% of 107.50% of 100 = 112.875 i.e. 180600.

∴ Population of Town A in first year

$= \frac{180600 \times 100}{112.875} = 160000$

Thus, population of town A in second year = 105% of 160000 = 168000

Population of town B in second year = 150% of 160000 = 240000

As given, growth rate of population for town B in the second year was 25%, thus population in first year

$= \frac{240000 \times 100}{125} = 192000$

As growth year became half of previous years' growth rate, Population of town B in third year = 240000 + [240000 × 12.50% (half of 25%)] = 240000 + 30000 = 270000

For town C, population in second year = Population density × Area = 250 × 1250 = 312500

As growth rate for town C was 11.11% and 10% for second and third year respectively, population of C in first year

$= \frac{312500 \times 100}{111.11} = 281250$

Population of C in third year = 110% of 312500 =

343750.

Thus, we can present above data in tabular form as follows:

Towns	Population		
	First Year	Second Year	Third Year
A	160000	168000	180600
B	192000	240000	270000
C	281250	312500	343750

Required difference = Population of town B in third year – Population of town A in second year

= 270000 – 168000 = 102000

Hence, option C is correct.

27 Correct Option: B

Average population of town B

$$= \frac{192000 + 240000 + 270000}{3} = \frac{702000}{3} = 234000$$

Average population of town C

$$= \frac{281250 + 312500 + 343750}{3} = \frac{937500}{3} = 312500$$

$$\therefore \text{Reqd. } \% = \frac{234000}{312500} \times 100 = 74.88\%$$

Hence, option B is correct.

28Correct Option: D

Number of male in town B for Second year

$$= \frac{7 \times 240000}{12} = 140000$$

Number of male in town B for third year

$$= \frac{7 \times 270000}{12} = 157500$$

Number of illiterate male in second year

$$= \frac{1 \times 140000}{5} = 28000$$

Number of literate male in third year

$$= \frac{4 \times 157500}{5} = 126000$$

Thus, required ratio = 28000 : 126000 i.e. 2 : 9

Hence, option D is correct.

29 Correct Option: A

Number of illiterate male in third year for town B

$= \frac{1 \times 157500}{5} = 31500$

Number of female in third year for town B

$= \frac{5 \times 270000}{12} = 112500$

$\therefore$ Reqd. % $= \frac{112500 - 31500}{112500} \times 100 = 72\%$

Hence, option A is correct.

30Correct Option: D

Population above 20 years in town A

$= 180600 - \frac{180600 \times 3}{8} = 112875$

Population above 20 years in town B = (100 – 33)% of 270000 = 180900

Population above 20 years in town C = 70% of 343750 = 240625

Thus, required total = 112875 + 180900 + 240625 = 534400

Hence, option D is correct.

31 Correct Option: D

Let the total population of India in 2016 = x million then

20% of x million = 100 million

x = 100 × 5 = 500 million

2% of the total population of India sold products online = 2% of 500 million = 10 million

Hence, option D is correct.

32 Correct Option: D

Let the total population of India in 2016 = x million then

20% of x million = 100 millions

x = 100 × 5 = 500 millions

2% of the total population of India sold products online = 2% of 500 million = 10 million

In 2017, the number of sellers remained constant then in 2017, the revenue per sellers

$= \frac{50 \text{ billion}}{10 \text{ million}} = \frac{50 \times 1000}{10} = 5000$ million

= 5 billion = revenue per seller in 2016

Hence, option D is correct.

33 Correct Option: B

In 2016, 100 million people bought products online

In 2017, 120% of 100 = 120 million people brought products online

In 2018, 130% of 120 = 13 × 12 = 156 million people will buy products online

Hence, option B is correct.

34 Correct Option: C

Let the total population of India in 2016 = x million then

20% of x million = 100 millions

x = 100 × 5 = 500 millions

The reqd. % = $\frac{(900 - 500) \times 100}{500} = \frac{400 \times 100}{500} = 80\%$

Hence, option C is correct.

35 Correct Option: A

Let the total population of India in 2016 = x million then

20% of x million = 100 millions

x = 100 × 5 = 500 millions

The population of India in 2017 = 110% of 500 = 550 million

The population of India in 2018 = 105% of 550 million = 577.5 million

In 2018, because of JIO, 40% of the total population of India will buy product online = 40% of 577.5

$= \frac{40 \times 577.5}{100} = 231$ million

Hence, option A is correct.

36Correct Option: B

Total marked price of 3 juicers = 2000 × 3 = 6000

The total money paid by them = 90x + 72x + 54x = 216x = 4320

The reqd. % = $\frac{4320 \times 100}{6000} = 72\%$

Hence, option B is correct.

Common explanation:

Let the marked price of juicer = 100x

Then, The amount Chand paid = (100 – 10)% of 100x = 90% of 100x = 90x

The amount Chandni will pay = 90% of 80% of 100x = 72x

The amount Chanchal will pay = 90% of 80% of 75% of 100x = 54x

According to the question, 72x – 54x = 18x = 360

x = 20

37Correct Option: D

The amount paid by Chand = 90x

the amount paid by Chanchal = 54x

The reqd. % = $\frac{(90x - 54x) \times 100}{54x} = \frac{36 \times 100}{54} = \frac{200}{3} = 66.67\%$

Hence, option D is correct.

Common explanation :

Let the marked price of juicer = 100x

Then, The amount Chand paid = (100 – 10)% of 100x = 90% of 100x = 90x

The amount Chandni will pay = 90% of 80% of 100x = 72x

The amount Chanchal will pay = 90% of 80% of 75% of 100x = 54x

According to the question, 72x – 54x = 18x = 360

x = 20

38 Correct Option: D

The amount paid by Chand = 90x

the amount paid by Chanchal = 54x

The required ratio = 90x : 54x = 5 : 3

Hence, option D is correct.

Common explanation :

Let the marked price of juicer = 100x

Then, The amount Chand paid = (100 – 10)% of 100x = 90% of 100x = 90x

The amount Chandni will pay = 90% of 80% of 100x = 72x

The amount Chanchal will pay = 90% of 80% of 75% of 100x = 54x

According to the question, 72x – 54x = 18x = 360

x = 20

39 Correct Option: C

The amount Chand paid = (100 – 10)% of 100x = 90% of 100x = 90x = 90 × 20 = 1800

The money left with him = 2500 – 1800 = 700

Hence, option C is correct.

Common explanation :

Let the marked price of juicer = 100x

Then, The amount Chand paid = (100 – 10)% of 100x = 90% of 100x = 90x

The amount Chandni will pay = 90% of 80% of 100x = 72x

The amount Chanchal will pay = 90% of 80% of 75% of 100x = 54x

According to the question, 72x – 54x = 18x = 360

x = 20

40 Correct Option: C

MP = 100X = 100 × 20 = 2000

Hence, option C is correct.

Common explanation :

Let the marked price of juicer = 100x

Then, The amount Chand paid = (100 – 10)% of 100x = 90% of 100x = 90x

The amount Chandni will pay = 90% of 80% of 100x = 72x

The amount Chanchal will pay = 90% of 80% of 75% of 100x = 54x

According to the question, 72x – 54x = 18x = 360

x = 20

41 Correct Option: D

Following the common explanation, we get

At 40% per annum, 120x gives compound interest of 57600 in two years or Rs. 24000 in one year

$$CI = P\left(1 + \frac{R}{100}\right)^{N} - P$$

$$120x\left(1 + \frac{40}{100}\right) - 120x = 24000$$

$$120x \times 1.4 - 120x = 24000$$

$$168x - 120x = 48x = 24000$$

$$x = \frac{24000}{48} = 500$$

The sum of money he had invested in Axis bank = 100x = 100 × 500 = Rs. 50000

Hence, option D is correct.

Common explanation :

Let the sum of money he invested in Axis bank = 100x then at the end of one year

$$\text{Amount} = \frac{100x \times 1 \times 20}{100} + 100x = 120x$$

The CI of 2 years = 57600

The CI of 1 year = 24000

Difference = 57600 – 24000 = 33600

Now, 33600 – 24000 = 9600

At R% per annum, 24000 gives compound interest of Rs. 9600

$\frac{24000 \times R}{100} = 9600$

R = 40% per annum

42 Correct Option: B

Following the common explanation, we get

The interest, Krishna received from Axis bank = 20x = 20 × 500 = 10,000

The interest from Bandhan bank = 57600

The required sum = 10,000 + 57600 = 67600

Hence, option B is correct.

Common explanation :

Let the sum of money he invested in Axis bank = 100x

then at the end of one year

Amount = $\frac{100x \times 1 \times 20}{100} + 100x = 120x$

The CI of 2 years = 57600

The CI of 1 year = 24000

Difference = 57600 – 24000 = 33600

Now, 33600 – 24000 = 9600

At R% per annum, 24000 gives compound interest of Rs. 9600

$\frac{24000 \times R}{100} = 9600$

R = 40% per annum

43 Correct Option: A

Following the common explanation, we get

P = 50000

R = 40%

1st year = 40% per annum SI

Next 2 years = 20% per annum CI

Amount at the end of 1st year i.e. received from the Axis bank = 50000 + 40% of 50000 = 70000

SI = 70000 – 50000 = 20000

From the Bandhan bank

$CI = P\left(1 + \frac{R}{100}\right)^{N} - P$

$CI = 70000\left(1 + \frac{20}{100}\right)^{2} - 70000$

CI = 30800

Total interest = 20000 + 30800 = 50800

The interest, Krishna received from Axis bank = 20x = 20 × 500 = 10,000

The interest from Bandhan bank = 57600

The required sum = 10,000 + 57600 = 67600

The required difference = 67600 – 50800 = 16800

Hence, option A is correct.

Common explanation :

Let the sum of money he invested in Axis bank = 100x then at the end of one year

$$\text{Amount} = \frac{100x \times 1 \times 20}{100} + 100x = 120x$$

The CI of 2 years = 57600

The CI of 1 year = 24000

Difference = 57600 – 24000 = 33600

Now, 33600 – 24000 = 9600

At R% per annum, 24000 gives compound interest of Rs. 9600

$$\frac{24000 \times R}{100} = 9600$$

R = 40% per annum

44 Correct Option: B

Following the common explanation, we get

P = 50000

$$\text{SI at the end of 3 years} = \frac{50000 \times 20 \times 3}{100} = \text{Rs. } 30,000$$

Hence, option B is correct.

Common explanation :

Let the sum of money he invested in Axis bank = 100x then at the end of one year

$$\text{Amount} = \frac{100x \times 1 \times 20}{100} + 100x = 120x$$

The CI of 2 years = 57600

The CI of 1 year = 24000

Difference = 57600 – 24000 = 33600

Now, 33600 – 24000 = 9600

At R% per annum, 24000 gives compound interest of Rs. 9600

$$\frac{24000 \times R}{100} = 9600$$

R = 40% per annum

45 Correct Option: C

Following the common explanation, we get

P = 50,000

Let the interest received from the Axis bank = Rs. x then

the first year's interest at Bandhan bank = 40% of (50000 + x) = x

20000 + 0.4x = x

0.6x = 20000

$$x = \frac{200000}{6} = \frac{100000}{3}$$

$$R = \frac{SI \times 100}{P \times T}$$

$$R = \frac{(100000/3) \times 100}{50000 \times 1} = \frac{1000}{15} = \frac{200}{3}\% = 66\frac{2}{3}\%$$

Hence, option C is correct.

Common explanation :

Let the sum of money he invested in Axis bank = 100x then at the end of one year

$$\text{Amount} = \frac{100x \times 1 \times 20}{100} + 100x = 120x$$

The CI of 2 years = 57600

The CI of 1 year = 24000

Difference = 57600 – 24000 = 33600

Now, 33600 – 24000 = 9600

At R% per annum, 24000 gives compound interest of Rs. 9600

$\frac{24000 \times R}{100} = 9600$

R = 40% per annum

46 Correct Option: B

In the year 2007, 30% of the population was affected by malaria out of which 10% were house-wives.

∴ The number of house-wives affected by malaria in the year 2007 = 10% of 30% of 1000 = 0.1 × 0.3 × 1000 = 30

Hence, option B is correct.

47 Correct Option: E

The number of house-wives, students and drivers were in the ratio 20 : 11 : 9 in each year.

Let the common factor be x.

Also, every year 1000 people were surveyed.

∴ 20x + 11x + 9x = 1000

∴ x = 25

∴ The total number of house-wives, students and drivers was 500, 275 and 225 respectively.

Now, in the year 2009, 45% of the total population was affected by malaria.

45% of 1000 = 450

Out of the 450 affected people, 30% were drivers.

30% of 450 = 135

Hence, the numbers of drivers who were not affected by malaria in the year 2009 = 225 − 135 = 90

Hence, option E is correct.

48. Correct Option: A

Total population of students for each year = 275

In the year 2006, the numbers of students affected by malaria = 60% of 40% of 1000 = 0.6 × 0.4 × 1000 = 240 students

∴ The number of students not affected by malaria = 275 − 240 = 35

∴ Difference between the two = 240 − 35 = 205

Hence, option A is correct.

49 Correct Option: C

The number of house-wives affected by malaria in the year 2005 = 10% of 30% of 1000 = 0.1 × 0.3 × 1000 = 30

The number of house-wives affected by malaria in the year 2008 = 10% of 20% of 1000 = 0.1 × 0.2 × 1000 = 20

The required ratio = 30 : 20 = 3 : 2

Hence, option C is correct.

50 Correct Option: D

Total number of students = 275

The number of students affected by malaria in the year 2005 = 60% of 30% of 1000 = 180

∴ The number of students not affected by malaria = 275 − 180 = 95

The number of students affected by malaria in the year 2006 = 60% of 40% of 1000 = 240

∴ The number of students not affected by malaria = 275 − 240 = 35

The number of students affected by malaria in the year 2007 = 60% of 30% of 1000 = 180

∴ The number of students not affected by malaria = 275 − 180 = 95

The number of students affected by malaria in the year 2008 = 60% of 20% of 1000 = 120

∴ The number of students not affected by malaria = 275 − 120 = 155

The number of students affected by malaria in the year 2009 = 60% of 45% of 1000 = 270

∴ The number of students not affected by malaria = 275 − 270 = 5

Thus, 2008 had the maximum number of students not affected by malaria.

Hence, option D is correct.

Caselet DI for SBI PO Prelims