Practice Questions for Quantitative Aptitude

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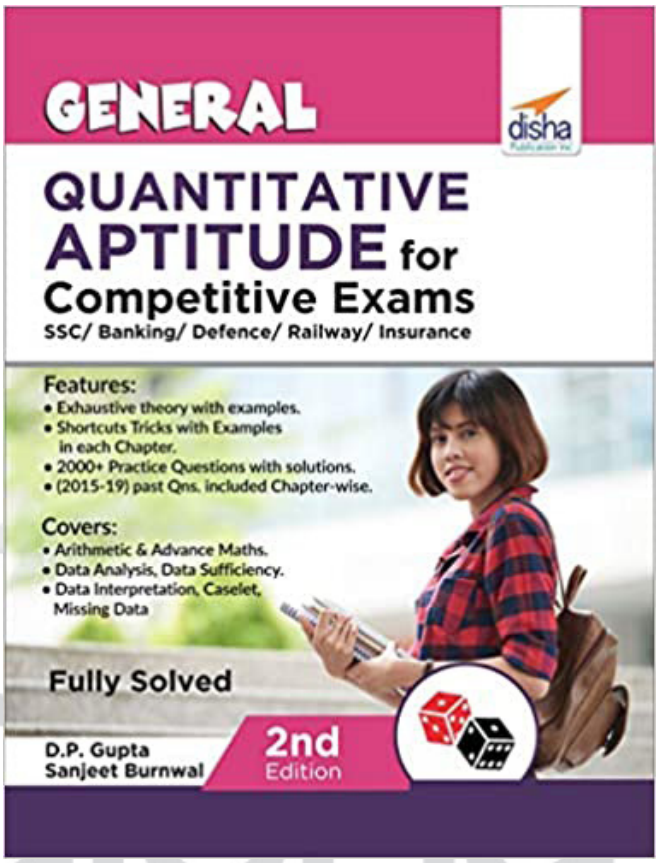

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Chapter

Percentage

EXERCISE

1. Income of *A* is 150% of the income of *B* and income of *C* is 120% of the income of *A*. If the total income of *A*, *B* and *C* together is ₹ 86,000, what is C's income?
(a) ₹ 30,000 (b) ₹ 32,000
(c) ₹ 20,000 (d) ₹ 36,000
(e) None of these

2. Population of a country increases every year by 10%. If the population in January 2006 was 15.8 lakhs, what was the population in January 2008?
(a) 19, 11, 800 (b) 18, 96, 000
(c) 19, 11, 600 (d) 18, 94, 000
(e) None of these

3. A candidate appearing for an examination has to secure 35% marks to pass. But he secured only 40 marks and failed by 30 marks. What would be the maximum marks of test? ***(IBPS PO Pre – 2016)***
(a) 280 (b) 180 (c) 200 (d) 150
(e) 210

4. In a test, minimum passing percentage for girls and boys is 35% and 40% respectively. A boy scored 483 marks and failed by 117 marks. What are the minimum passing marks for girls? ***(IBPS RRB PO – 2016)***
(a) 425 (b) 520 (c) 500 (d) 625
(e) None of these

5. Two candidates fought an election. One of them got 64% of the total votes polled and won with 992 votes. What was the total number of votes polled?
(a) 1500 (b) 1580
(c) 1550 (d) Cannot be determined
(e) None of these

6. In a test, minimum passing percentage for girls and boys is 30% and 45% respectively. A boy scored 280 marks and failed by 80 marks. How many more marks did a girls require to pass in the test if she scored 108 marks?
(a) 132 (b) 140 (c) 160 (d) 112
(e) None of these

7. Puneet scored 175 marks in a test and failed by 35 marks. If the passing percentage of the test is 35 percent, what are the maximum marks of the test?
(a) 650 (b) 700 (c) 750 (d) 600
(e) None of these

8. Ram scored 456 marks in an exam and Sita got 54 percent marks in the same exam which is 24 marks less than Raman. If the minimum passing marks in the exam is 34 percent, then how much more marks did Ram score than the minimum passing marks? ***(IBPS PO Pre – 2017)***
(a) 184 (b) 196 (c) 190 (d) 180
(e) None of these

9. Six-eleventh of a number is equal to twenty two percent of second number. Second number is equal to the one-fourth of third number. The value of the third number is 2400, what is the 45% of first number?
(a) 107.6 (b) 131.1 (c) 115.4 (d) 143.8
(e) None of these

10. In order to pass in an examination, a student is required to get 342 marks out of the aggregate marks. Neha got 266 marks and was declared fail by 8 percent. What is the minimum passing percentage of the examination?
(a) 28% (b) 36% (c) 33% (d) 26%
(e) None of these

11. Ram and Shyam started a business in partnership by investing certain amount in the respective ratio of 3 : 5 for a fixed and equal period of time. By what per cent is the Ram's share less than that of Shayam's share in the annual profit? ***(IBPS PO Pre – 2017)***
(a) 35% (b) 20% (c) 40% (d) 42%
(e) 45%

12. Sumitra has an average of 56% on her first 7 examinations. How much she should make on her eighth examination to obtain an average of 60% on 8 examinations?
(a) 88% (b) 78%
(c) 98% (d) Cannot be determined
(e) None of these

13. The salary of an employee increases consistently by 50% every year. If his salary today is ₹ 10,000 what will be the salary after another 4 years? ***(IBPS RRB PO – 2017)***
(a) ₹ 62,500 (b) ₹ 26,500
(c) ₹ 50, 625 (d) ₹ 33,750
(e) None of these

14. Mr. Yadav spends 80% of his monthly salary on consumable items and 50% of the remaining on clothes and transport. He saves the remaining amount. If his savings at the end of the year are ₹ 5370 how much amount per month he would have spent on clothes and transport?
(a) ₹ 403 (b) ₹ 807
(c) ₹ 969.12 (d) ₹ 484.56
(e) None of these

15. Sonika spent ₹ 45,760 on the interior decoration for her home, ₹ 27896 on buying air conditioner and the remaining 28% of the total amount she had as cash with her. What was the total amount?
(a) ₹ 98540 (b) ₹ 102300
(c) ₹ 134560 (d) Cannot be determined
(e) None of these

16. The price of an article was increased two times successively by 10% each time. By what percent should the new price be reduced so as to restore the original price. ***(IBPS RRB PO – 2017)***
(a) 15% (b) 17.36% (c) 17% (d) 16.36%
(e) None of these

17. A candidate who scores 30 percent fails by 5 marks, while another candidate who scores 40 percent marks gets 10 more marks than minimum pass marks. The minimum marks required to pass are :
(a) 50 (b) 70 (c) 100 (d) 150

18. 90% of the students in school passed in English, 85% passed in Mathematics and 150 students passed in both the subjects. If no student failed in both the subjects, find the total number of students.
(a) 120 (b) 220 (c) 200 (d) 300

19. A man gives 50% of his money to his son and 30% to his daughter. 80% of the rest is donated to a trust. If he is left with 16,000 now, how much money did he have in the beginning? ***(IBPS PO Pre – 2018)***
(a) ₹ 4,00,000 (b) ₹ 40,000
(c) ₹ 90,000 (d) ₹ 80,000
(e) None of these

20. The value of a machine is ₹ 6,250. It decreases by 10% during the first year, 20% during the second year and 30% during the third year. What will be the value of the machine after 3 years? ***(IBPS Clerk Main – 2018)***
(a) ₹ 2,650 (b) ₹ 3,050 (c) ₹ 3,150 (d) ₹ 3,510
(e) None of these

21. A sample of 50 litres of glycerine is found to be adulterated to the extent of 20%. How much pure glycerine should be added to it so as to bring down the percentage of impurity to 5%? ***(IBPS RRB PO Main – 2018)***
(a) 155 litres (b) 150 litres
(c) 150.4 litres (d) 140 litres
(e) None of these

22. 75 gm of sugar solution has 30% sugar in it. Then the quantity of sugar that should be added to the solution to make the quantity of the sugar 70% in the solution is :
(a) 125 gm (b) 100 gm
(c) 120 gm (d) 130 gm

23. Ram's expenditure and savings are in the ratio 5 : 3. If his income increases by 12% and expenditure by 15%, then by how much percent does his savings increase?
(a) 12% (b) 7% (c) 8% (d) 13%

24. The sum of the numbers of boys and girls in a school is 150. If the number of boys is x, the number of girls becomes x% of the total number of students. The number of boys is :
(a) 90 (b) 75 (c) 25 (d) 60

25. The price of a school bag and a shoe are in the ratio 7 : 5. The price of the school bag is ₹ 200 more than the price of the shoe. Then the price of the shoe is :
(a) ₹ 200 (b) ₹ 700 (c) ₹ 500 (d) ₹ 1,200

26. The sum of two numbers is 520. If the bigger number is decreased by 4% and the smaller number is increased by 12% then the numbers obtained are equal. The smaller number is
(a) 280 (b) 240 (c) 210 (d) 300

27. In an office, 40% of the staff is female. 70% of the female staff and 50% of the male staff are married. The percentage of the unmarried staff in the office is
(a) 65% (b) 42% (c) 60% (d) 64%

28. In a college election between two candidates, one candidate got 55% of the total valid votes. 15% of the votes were invalid. If the total votes were 15,200, what is the number of valid votes the other candidate got ?
(a) 7106 (b) 6840 (c) 8360 (d) 5814
(e) None of these

29. The red blood cells in a blood sample grows by 10% per hour in first two hours, decreases by 10% in next one hour, remains constant in next one hour and again increases by 5% per hour in next two hours. If the original count of the red blood cells in the sample is 40000, find the approximate red blood cell count at the end of 6 hours.
(a) 40000 (b) 45025 (c) 48025 (d) 50025

30. Twenty five percent of Pranab's annual salary is equal to eighty percent of Surya's annual salary. Surya's monthly salary is forty percent of Dheeru's monthly salary. If Dheeru's annual salary is ₹ 6 lacs,what is Pranab's monthly salary ? (At some places annual income and in some place monthly income is given.) ***(IBPS PO Main – 2018)***
(a) ₹ 7.68 lacs (b) ₹ 56,000
(c) ₹ 8.4 lacs (d) ₹ 64,000
(e) None of these

31. In a big garden 60% of the trees are coconut trees, 25% of the number of coconut trees are mango trees and 20% of the number of mango trees are apple trees. If the number of apple trees in the garden is 1440. Then find the number of trees in the garden is:
(a) 48000 (b) 50000
(c) 51000 (d) 45000

32. Mr. *X* spends 20% of his monthly income on household expenditure. Out of the remaining 25% he spends on children's education, 15% on transport, 15% on medicine and 10% on entertainment. He is left with ₹ 9, 800 after incurring all these expenditures. What is his monthly income? ***(IBPS Clerk – 2018)***
(a) ₹ 35,000 (b) ₹ 28,000
(c) ₹ 65, 333 (d) ₹ 48,400
(e) None of these

33. Aman's expense is 30% more than Vimal's expense and Vimal's expense is 10% less than Raman's expense. If the sum of their expense is ₹ 6447, then what would be the Aman's expense? ***(IBPS PO Pre – 2019)***
(a) ₹ 2, 200 (b) ₹ 2, 457
(c) ₹ 1, 890 (d) ₹ 2, 100
(e) None of these

34. Twenty percent of Anuj's annual salary is equal to seventy five percent of Raj's annual salary. Raj's monthly salary. Raj's monthly salary is 60% of Ravi's monthly salary. If Ravi's annual salary is ₹ 1.44 lac,s what is Anuj's monthly salary? ***(IBPS PO Pre – 2019)***
(a) ₹ 2,70,000 (b) ₹ 27,000
(c) ₹ 34,000 (d) ₹ 54,000
(e) None of these

35. Twelve percent of Kaushal's monthly salary is equal to sixteen percent of Nandini's monthly salary. Suresh's monthly salary is half that of Nandini's monthly salary. If Suresh's annual salary is ₹ 1.08 lacs, what is Kaushal's monthly salary? ***(IBPS Clerk Pre – 2019)***
(a) ₹ 20,000 (b) ₹ 18,000
(c) ₹ 26,000 (d) ₹ 24,000
(e) None of these

36. In a school there are 2000 students out of whom 36 percent are girls. Each boy's monthly fee is ₹ 480 and each girl's monthly fee is 25 percent less than a boy. What is the total of the monthly fees of girls and boys together?
(a) ₹ 8,73,400 (b) ₹ 8,67,300
(c) ₹ 8,76,300 (d) ₹ 8,73,600
(e) None of these

37. A sum of ₹ 731 is divided among *A*, *B* and *C*, such that '*A*' receives 25% more than '*B*' and '*B*' receives 25% less than '*C*'. What is C's share in the amount?
(a) ₹ 172 (b) ₹ 200 (c) ₹ 262 (d) ₹ 258
(e) None of these

38. An HR Company employs 4800 people, out of which 45 percent are males and 60 percent of the males are either 25 years or older. How many males are employed in HR Company who are younger than 25 years?
(a) 2480 (b) 2320 (c) 1278 (d) 864
(e) None of these

39. Dinesh's monthly income is four times Suresh's monthly income Suresh's monthly income is twenty percent more than Jyoti's monthly income. Jyoti's monthly income is ₹ 22,000. What is Dinesh's monthly income?
(a) ₹ 1,06,500 (b) ₹ 1,05,600
(c) ₹ 1,04,500 (d) ₹ 1,05,400
(e) None of these

40. Ruby's monthly income is three times Gayatri's monthly income. Gayatri's monthly income is fifteen percent more than Priya's monthly income, Priya's monthly income is ₹ 32,000. What is Ruby's Annual income? ***(IBPS Clerk Main – 2019)***
(a) ₹ 1,20,300 (b) ₹ 13,24,800
(c) ₹ 38,800 (d) ₹ 54,600
(e) None of these

41. Akash scored 73 marks in subject *A*. He scored 56% marks in subject *B* and *x* marks in subject *C*. Maximum marks in each subject were 150. The overall percentage marks obtained by Akash in all the three subjects together were 54%. How many marks did he score in subject *C*?
(a) 84 (b) 86 (c) 79 (d) 73
(e) None of these

42. In a company '*XYZ*', the respective ratio between the total number of under-graduate employees and the total number of graduate employees is 13 : 23. The Company has only two branches, one in Mumbai and other in Delhi. If the total number of under-graduate employees in Mumbai branch is 351, which is 30% of the total undergraduate employees in the company, what is the total number of graduate employees in the company? ***(IBPS PO Main – 2019)***
(a) 2185 (b) 1955 (c) 2070 (d) 2691
(e) None of these

43. In a competitive examination in state '*A*', 6% candidates got selected from the total appeared candidates. State '*B*' had an equal number of candidates appeared and 7% candidates got selected with 80 more candidates got selected than state '*A*'. What was the number of candidates appeared from each state?
(a) 8000 (b) 8400
(c) 7600 (d) Data inadequate
(e) None of these

44. The strength of a school increases and decreases every alternate year. It startes with increase by 10% and thereafter the percentage of increase/decrease is the same. Which of the following is **definitely true** about the strength of the school in 2000 as compared to that in 1996?
(a) Increase approximately by 2%
(b) Decrease approximately by 2%
(c) Increase approximately by 0%
(d) Decrease approximately by 0%
(e) None of these

45. 405 sweets were distributed equally among children in such a way that the number of sweets received by each child is 20% of the total no. of children. How many sweets did each child receive?
(a) 15 (b) 45 (c) 9 (d) 18
(e) None of these

46. Mr. Sarang invests 6% of his monthly salary i.e., ₹ 2,100 on insurance policies. Also he invests 8% of his monthly salary on family mediclaim policies and another 9% of his salary on NSCs. What is the total annual amount invested by Mr. Sarang?
(a) ₹ 11,400 (b) ₹ 96.600
(c) ₹ 8,050 (d) ₹ 9,050
(e) ₹ 9,500

47. Ms. Pooja Pushpan invests 13% of her monthly salary, i.e., ₹ 8554 in Mediclaim Policies. Later she invests 23% of her monthly salary on Child Education Policies. Also she invests another 8% of her monthly salary on Mutual Funds. What is the total annual amount invested by Ms. Pooja Pushpan?

(a) ₹ 28952 (b) ₹ 43428
(c) ₹ 347424 (d) ₹ 173712
(e) None of these

48. In a vessel there is 40 litres mixture of milk and water. There is 15% water in the mixture. The milkman sells 10 litres of mixture to a customer and thereafter adds 12.5 litres of water to the remaining mixture. What is the respective ratio of milk and water in the new mixture?

(a) 2 : 3 (b) 3 : 2 (c) 3 : 4 (d) 4 : 3
(e) None of these

49. In a 90 litres mixture of milk and water, percentage of water is only 30%. The milkman gave 18 litres of this mixture to a customer and then added 18 litres of water to the remaining mixture. What is the percentage of milk in the final mixture? ***(IBPS RRB PO – 2019)***

(a) 64 (b) 48 (c) 52 (d) 68
(e) 56

50. Mrs. Sharma invests 15% of her monthly salary, i.e., ₹ 4428 in Mutual Funds. Later she invests 18% of her monthly salary on Pension Policies and she also invests another 9% of her salary on Insurance Policies. What is the total monthly amount invested by Mrs. Sharma?

(a) ₹ 113356.8 (b) ₹ 12398.4
(c) ₹ 56678.4 (d) Can't be determined
(e) None of these

Hints & Solutions

1. (d) Let B's income = ₹ x

$\therefore$ A's income = $\frac{150}{100}\times x$ = ₹ $\frac{3x}{2}$

C's income = $\frac{120}{100}\times\frac{3x}{2}$ = ₹ $\frac{9x}{5}$

$\therefore \quad x+\frac{3x}{2}+\frac{9x}{5}=86000$

$\Rightarrow \quad \frac{10x+15x+18x}{10}=86000 \quad \Rightarrow \quad 43x=860000$

$\Rightarrow \quad x=\frac{860000}{43}=20000$

$\therefore$ C's income = ₹ $\left(\frac{9}{5}\times 20000\right)$ = ₹ 36000

2. (a) Required population

$$= P\left(1+\frac{R}{100}\right)^T = 15.8\left(1+\frac{10}{100}\right)^2 \text{ lakh}$$

$$15.8\times\frac{11}{10}\times\frac{11}{10} \text{ lakh} = 1911800$$

3. (c) If the maximum marks be x.

then $x\times\frac{35}{100}=40+30$

$\Rightarrow \quad x=\frac{70\times 100}{35}=200$

4. (e) If the maximum marks be x. then

40% of x = 483 + 117

$\Rightarrow \quad \frac{x\times 40}{100}=600$

$\Rightarrow \quad x=\frac{600\times 100}{40}=1500$

$\therefore$ Minimum passing marks for girls

$$=\frac{1500\times 35}{100}=525$$

5. (e) Number of votes cast = x (let)

$\therefore$ (64 – 36)% of x = 992 $\Rightarrow \quad \frac{x\times 28}{100}=992$

$\Rightarrow \quad x=\frac{992\times 100}{28}=3543$ (approx.)

6. (a) If the maximum marks of examination be x, then

$\frac{x\times 45}{100}=280+80=360$

$\Rightarrow \quad x=\frac{360\times 100}{45}=800$

$\therefore$ 30% of 800 = $\frac{800\times 30}{100}=240$

= Maximum marks to pass for girls

Required difference = 240 – 108 = 132

7. (d) If the maximum marks in the test be x. then

$\frac{x\times 35}{100}=175+35=210$

$\Rightarrow \quad x=\frac{210\times 100}{35}=600$

8. (a) If total maximum marks be x. then

$x\times\frac{54}{100}=456-24=432$

$\Rightarrow \quad x=\frac{432\times 100}{54}=800$

$\therefore$ Minimum passing marks

$$=\frac{800\times 34}{100}=272$$

$\therefore$ Required answer = 456 – 272 = 184

9. (e) Second number = $2400\times\frac{1}{4}=600$

If the first number be x, then

$x\times\frac{6}{11}=600\times\frac{22}{100}=132$

$\Rightarrow \quad x=\frac{132\times 11}{6}=242$

$\therefore$ 45% of 242 = $242\times\frac{45}{100}=108.9$

10. (b) Total marks of the examination = x

$\therefore \quad \frac{x\times 8}{100}=342-266=76$

$\Rightarrow \quad x=\frac{76\times 100}{8}=950$

$\therefore$ Required percentage

$$=\frac{342}{950}\times 100=36\%$$

11. (c) Ratio of investment of Ram and Shyam

$\Rightarrow$ Ram : Shyam = $3x : 5x$

Hence profit share will be in the same ratio.

Required percentage

$$=\frac{5x-3x}{5x}\times 100=\frac{2x}{5x}\times 100=40\%$$

12. (d) The question cannot be answered because total marks are not given.

(**Note :** The answer choice (*a*) *i.e.*, 88% marks obtained by following method would be wrong.

60 × 8 – 56 × 7 = 88

Per example.

Let the maximum marks in each of the first 7 examination be 100 and in the 8th exam only 50. Total maximum marks in first 7 exams = 7 × 100 = 700

Total marks obtained in first 7

Exams $= \frac{56}{100} \times 700 = 392$

Total maximum marks obtained in 8 exams
$= 700 + 50 = 750$

For the average percentage in 8 exams to be 60% the total marks obtained should be

$= \frac{60}{100} \times 750 = 450$

$\therefore$ Marks to be obtained in the eighth exam should be $450 - 392 = 58$

But, $58 > 50$

It means the marks to be obtained would be greater than the maximum marks. This is impossible.

13. (c) Current salary = ₹ 10,000

Rate = 50%

Salary after 4 years $= 10{,}000\left[1+\frac{50}{100}\right]^4$

$= 10{,}000 \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} =$ ₹ 50,625

14. (e) Let Mr. Yadav's annual Salary be x.

Amount spent on clothes and transport
$= 0.50\,(x - 0.80\,x) = 0.50 \times 0.20\,x = 0.10\,x$

Savings $= x - 0.80\,x - 0.10\,x$

Savings $= x - 0.80\,x - 0.10\,x = 0.10\,x$

$\therefore$ $0.10\,x$ = Expenditure on clothes and transport
= ₹ 5370

$\therefore$ Monthly expenditure

$= \frac{5370}{12} =$ ₹ 447.50

15. (b) Let the total amount be ₹ x.

The amount spent = $(100 - 28)\% = 72\%$

$\therefore$ 72% of $x =$ ₹ (45760 + 27896)

$\Rightarrow \frac{72 \times x}{100} = 73656 \Rightarrow x = \frac{73656 \times 100}{72} =$ ₹ 102300

16. (b) $10\% = \frac{1}{10}$

Initial Price	:	Final Price
10 ↘ × 10		11 ↘ × 11
100		121

-21

% Reduction $= \frac{21}{121} \times 100 = \frac{2100}{121} = 17.36\%$

17. (a) Let the maximum marks = x

According to the question,

Case (i) Minimum pass marks

$= x \times \frac{30}{100} + 5 = \frac{30x}{100} + 5$

Case (ii) Minimum pass marks

$= x \times \frac{40}{100} - 10 = \frac{40x}{100} - 10$

Note : Pass marks will be equal in both cases

$\frac{30x}{100} + 5 = \frac{40x}{100} - 10$

$\frac{40x}{100} - \frac{30x}{100} = 15$

$\frac{10x}{100} = 15 \quad \Rightarrow \quad x = 150$

Hence maximum marks = 150

Pass marks $= 150 \times \frac{30}{100} + 5 = 50$

18. (c) Percentage of passed students in both subjects
$= (90 + 85) - 100 = 75\%$

According to the question,

Total number of students $= \frac{150}{75} \times 100 = 200$

19. (a) $x \times \frac{20}{100} \times \frac{20}{100} = 16000 \Rightarrow x =$ ₹ 4,00,000

20. (c) $10\% = \frac{1}{10}$, $20\% = \frac{1}{5}$

$30\% = \frac{3}{10}$

Initial	Final
10	9
5	4
10	7
$(10 \times 5 \times 10)$	$(9 \times 4 \times 7)$
$= 500$	$= 252$
$\times 12.5$ ↓	$\times 12.5$ ↓
6250	3150

Hence value after 3 years = ₹ 3150

Alternate :

Current value of machine

$= 6250 \times \frac{90}{100} \times \frac{80}{100} \times \frac{70}{100} =$ ₹ 3150

21. (b) $20\% = \frac{1}{5}$ → Impurity, Mixture ←, $5\% = \frac{1}{20}$

Impurity		Pure glycerine	
1	:	4 ↘	+ 15 units
1	:	19 ↙	

According to the question,

(1 + 4) units = 50 litres

1 unit = 10 litres

15 units = 10 × 15 = 150 litres

Required quantity of glycerine = 150 litres

22. (b) $30\% = \frac{}{10}$, $70\% = \frac{7}{10}$

Sugar	:	Other
$3_{\times 3}$	:	$7_{\times 3}$
$7_{\times 7}$	:	$3_{\times 7}$

Note : We are adding sugar so other part will be same.

	Sugar	:	Other
+ 40 units	9	:	21
	49	:	21

According to the question,
(9 + 21) units = 75 gm

1 unit = $\frac{75}{30}$ gm

40 units = $\frac{75}{30} \times 40 = 100$ gm

23. (b) **By Alligation rule :**

Expenditure Savings

15% x

12%

5 : 3

$\frac{12-x}{15-12} = \frac{5}{3}$ or $\frac{15\times5+3x}{5+3} = 12$

$\Rightarrow \quad 75 + 3x = 96 \quad \Rightarrow \quad 3x = 21 \quad \Rightarrow x = 7\%$

Hence required increase in savings = 7%

24. (d) Number of boys = x
Number of girls = $(150 - x)$
According to the question,

$\Rightarrow \quad 150 \times \frac{x}{100} = (150 - x) \quad \Rightarrow \quad 3x = 300 - 2x$

$\Rightarrow \quad 5x = 300 \quad \Rightarrow \quad x = 60$

Hence, the required number of boys = 60

25. (c)

Bag	:	Shoe
7	:	5
	+ 2 units	

According to the question,
2 units = ₹ 200
1 unit = ₹ 100
5 units = ₹ 100 × 5 = ₹ 500
Required price of shoes = ₹ 500

26. (b) Let the bigger number is a and the smaller number is $(520 - a)$
According to the question,

$a \times \frac{(100-4)}{100} = (520 - a) \times \left(\frac{100+12}{100}\right)$

$\frac{96a}{100} = (520 - a)\frac{112}{100}$

$96a = (520 - a)\ 112$

$13a = 3640 \Rightarrow a = 280$

Hence, bigger number = 280
Smaller number = (520 – 280) = 240

Alternate :

Note : In such type of questions take help from options to save your time and then satisfy the question condition.

Option (b) : Smaller number = 240
Hence, bigger number = 520 – 240 = 280
According to the question,

$280 \times \frac{96}{100} = 240 \times \frac{112}{100}$

268.8 = 268.8
Both sides are equal hence option (b) is correct.

27. (b) Let the total staff = 100

100

(female) 40% 60% (male)

40 60

Unmarried (30%) ↓ 12 ↓ 30 (50%) Unmarried

$\Rightarrow$ 42 is unmarried staff out of 100

$\therefore$ Required percentage = $\frac{42}{100}\times100 = 42\%$

28. (d) Total valid votes = 85% of 15200 = 12920
$\therefore$ Number of valid votes to other candidate
= 45% of 12920 = 5814

29. (c)

1st hour	10	11
2nd hour	10	11
3rd & 4th hour	10	9
5th hour	20	21
6th hour	20	21
	400000	480249

400000 Units = 40000

1 unit = $\frac{40000}{400000} = \frac{1}{10}$

then 480249 → 48024.9 = 48025 (approx)

30. (d) Dheeru's monthly salary = $\frac{600000}{12}$ = ₹ 50000

Surya's monthly salary = $50000\times\frac{40}{100}$ = ₹ 20000

Pranab's monthly salary = $20000\times\frac{80}{25}$ = ₹ 64000

31. (a) If the number of trees in the garden be x, then

$x\times\frac{60}{100}\times\frac{25}{100}\times\frac{20}{100} = 1440$

$\Rightarrow \quad x\times\frac{3}{5}\times\frac{1}{4}\times\frac{1}{5} = 1440$

$\Rightarrow \quad x = \frac{1440\times5\times4\times5}{3} = 48{,}000$

32. (a) Let the monthly income of X be ₹ x.

Expenditure on household articles = ₹ $-$

Remaining amount = ₹ $\frac{4x}{5}$

Total percentage expenditure in the remaining amount = Remaining amount

$= 35\%$ of $\frac{4x}{5} =$ ₹ $\left(\frac{35}{100}\times\frac{4x}{5}\right) = \frac{7x}{25} = \frac{7x}{25} = 9800$

$\Rightarrow \quad x =$ ₹ $\left(\frac{9800\times 25}{7}\right) =$ ₹35000

33. (b) Let Vimal's expense be ₹ 100

$\therefore$ Aman's expense = ₹ 130

Raman's expenses = $\frac{100}{90}\times 100 = \frac{1000}{9}$

$\therefore$ Ratio of the expenses of Vimal. Aman and Raman respectively

$= 100 : 130 : \frac{1000}{9} = 90 : 117 : 100$

$\therefore$ Aman expense = $\frac{117}{90+117+100}\times 6447$

$= \frac{117}{307}\times 6447 =$ ₹ 2457

Alternate Method:

$100 + 130 + \frac{1000}{9} = 6447$

i.e., $\frac{3070}{9} = 6447$

$\Rightarrow \quad 130 = \frac{6447\times 9\times 130}{3070} =$ ₹ 2457

34. (b) Monthly salary of Raj = $\frac{1.44\times 60}{12\times 100} =$ ₹ 0.072 lakh

Raj's monthly salary $\times \frac{3}{4}$ = Anuj's monthly salary $\times \frac{1}{5}$

Anuj's monthly salary = ₹ $\left(0.072\times\frac{3}{4}\times 5\right)$ lakh

= ₹ 27000

35. (d) Suresh's monthly salary = $\frac{108000}{12} =$ ₹ 9000

Nandini's monthly salary = ₹ 18000 (= 2 × 9000)

$\therefore$ Kaushal's monthly salary $\times \frac{12}{100}$

$= \frac{18000\times 16}{100} = 2880$

$\therefore$ Kaushal's monthly salary

$= \left(\frac{2880\times 100}{12}\right) =$ ₹ 24000

36. (d) Girls $\Rightarrow \frac{2000\times 36}{100} = 720$

Boy $\Rightarrow 2000 - 720 = 1280$

Each girl's fee = $480 \times \frac{75}{100} =$ ₹ 360

$\therefore$ Total monthly fee

= ₹ [(1280 × 480) + (720 × 360)]

= ₹ (614400 + 259200) = ₹ 873600

37. (e) Let C receives ₹ 100

B receives 25% less i.e. ₹ 75

A receives 25% more than $B = \frac{5}{4}\times 75 = \frac{375}{4}$

$A \quad : \quad B \quad : \quad C$

$\frac{375}{4} \quad : \quad 75 \quad : \quad 100$

$\Rightarrow \quad 375 \quad : \quad 300 \quad : \quad 400$

$\Rightarrow \quad 15 \quad : \quad 12 \quad : \quad 16$

Total sum = 731

C's share = $\frac{16}{43}\times 731 =$ ₹ 272

38. (d) Number of males in company = $\frac{4800\times 45}{100} = 2160$

$\therefore$ Number of males younger than 25 years.

$= \frac{2160\times 40}{100} = 864$

39. (b) Suresh's monthly income = $\frac{22000\times 120}{100} =$ ₹ 26400

$\therefore$ Dinesh's monthly income

= ₹ (4 × 264000) = ₹ 105600

40. (b) Gayatri's monthly income = $\frac{32000\times 115}{100} =$ ₹ 36800

$\therefore$ Ruby's annual income = ₹ (12 × 3 × 36800)

= ₹ 13,24,800

41. (b) Marks obtained by Akash in subject $B = \frac{150\times 56}{100} = 84$

Total marks obtained by Akash = $\frac{450\times 54}{100} = 243$

$\therefore$ Marks obtained in subject $C = 243 - 73 - 84 = 86$

42. (c) Number of undergraduates in Mumbai branch = 351

$\therefore$ Number of undergraduates employees

$= \frac{100}{30}\times 351 = 1170$

$\therefore$ Total graduate employees = $\frac{23}{13}\times 1170 = 2070$

43. (a) No. of candidates appeared in state A

= No. of candidates appeared in state $B = x$

$\therefore \quad \frac{7x}{100} - \frac{6x}{100} = 80$

$x = 8000$

44. (b) Let the strength of the school in 1996 be 100

The strength increases and decreases every alternate year by 10%

$\therefore$ Strength in 1997 = 110

Strength in 1998 = $110 \times \frac{90}{100} = 99$

Strength in 1999 = $99 \times \frac{110}{100} = 108.9$

Strength in 2000 = $108.9 \times \frac{90}{100} = 98.1$

100 – 98.1 = 2% decrease

45. (c) Let number of children be x

$\therefore$ No. of sweets received by each child = $\frac{405}{x}$

$\Rightarrow \quad \frac{405}{x} = 20\%$ of $x \quad \Rightarrow \quad \frac{405}{x} = \frac{x}{5}$

$\Rightarrow \quad x^2 = 405 \times 5$

$\Rightarrow \quad x = \sqrt{405 \times 5} = \sqrt{81 \times 5 \times 5} = 9 \times 5 = 45$

$\therefore$ Required no. of sweets received by each child

$= \frac{405}{45} = 9$

46. (b) Let salary of Mr. Sarang = x

ATQ, 6% of salary = 2100

$\Rightarrow \quad \frac{6}{100} \times x = 2100 \quad \Rightarrow \quad x = 35{,}000$

Total investment = 6% + 8% + 9% = 23%

Total Annual amount invested

$= 12 \times \frac{23}{100} \times 35000 = ₹ 96600$

47. (c) Let Ms. Pooja Pushpan's monthly salary = ₹ x

According to the question, 13% of the x = ₹ 8554

$\Rightarrow \quad x = ₹ \left(\frac{8554 \times 100}{13}\right) = ₹ 65800$

Total monthly investment in percentage

= 13 + 23 + 8 = 44%

$\therefore$ Total monthly investment

= 44% of ₹ 65800 = ₹ $\left(\frac{44 \times 65800}{100}\right) = ₹ 28952$

$\therefore$ Total annual investment

= ₹ (12 × 28952) = ₹ 347424

48. (b) In 30 litres of mixture.

Milk = $\frac{30 \times 85}{100} = 25.5$ litres

Water = 30 – 25.5 = 4.5 litres

On adding 12.5 litres of water total quantity of water

= 4.5 + 12.5 = 17 litres

$\therefore$ Required ratio of milk and water

= 25.5 : 17 = 1.5 : 1 = 3 : 2

49. (e) Remaining mixture = 90 – 18 = 72 litres

Milk = $\frac{70}{100} \times 72 = 50.4$

Water = 72 – 50.4 = 21.6 litres

On adding 18 litres of water. Required percentage of milk

$= \frac{50.4}{90} \times 100 = \frac{504}{9} = 56\%$

50. (b) Original amount with Abhay = ₹ x (let)

Amount received by :

Vijay $\Rightarrow \frac{30x}{100} = ₹ \frac{3x}{10}$

Vijay's mother $\Rightarrow \frac{2}{3} \times \frac{3x}{10} = ₹ \frac{x}{5}$

Grocer $\Rightarrow \frac{5}{8} \times \frac{x}{5} = ₹ \frac{x}{8}$

According to the question.

$\frac{x}{5} - \frac{x}{8} = 600 \quad \Rightarrow \quad \frac{8x - 5x}{40} = 600$

$\Rightarrow \quad 3x = 600 \times 40$

$x = \frac{600 \times 40}{3} = ₹ 8000$