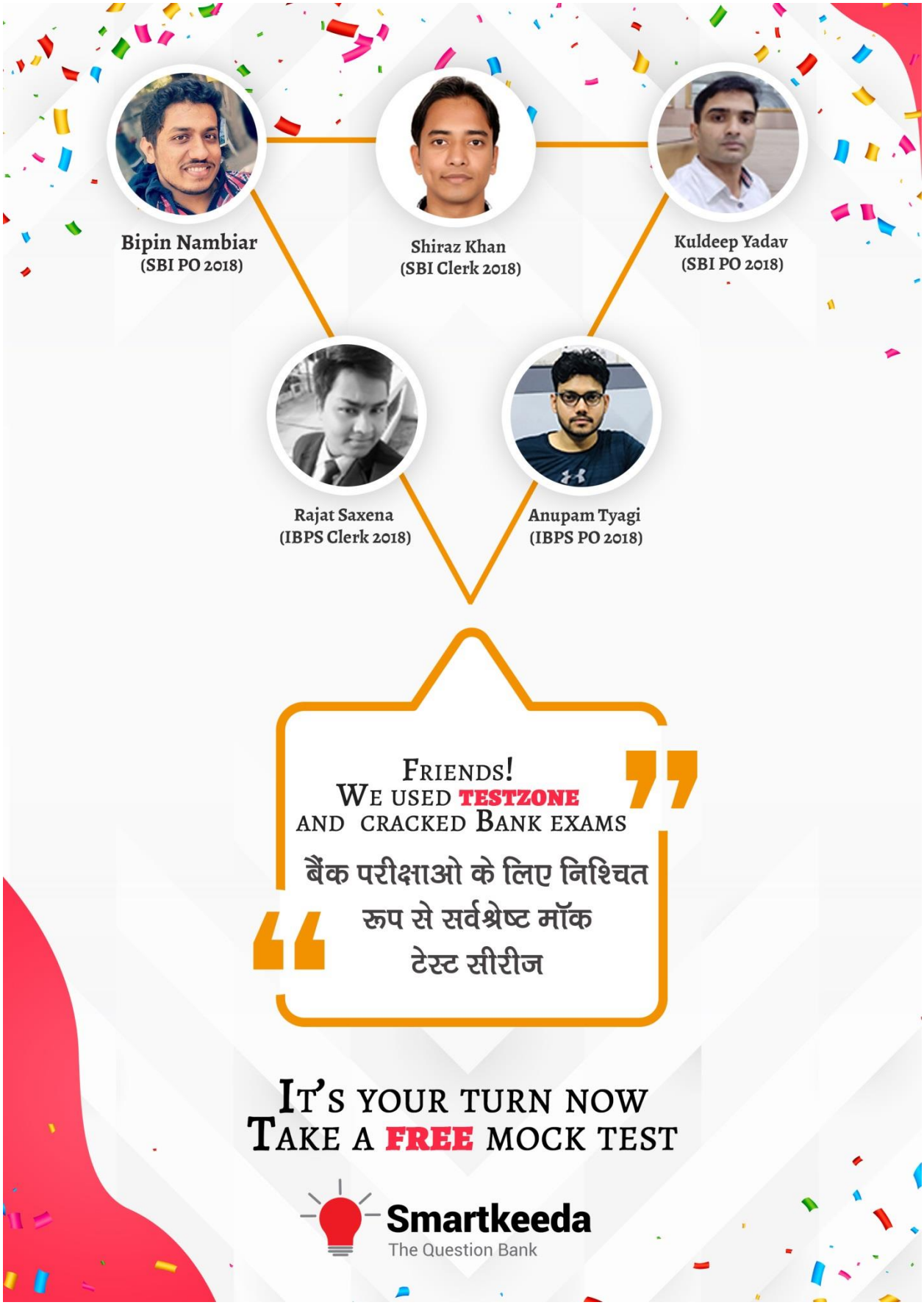
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The Question Bank

Mixed Maths Questions for SBI Clerk Pre, IBPS Clerk Pre and IBPS RRB Exams

Direction: Study the following questions carefully and choose the right answer.

1. A can paint ceiling of a room of length 5 cm and breadth 12 cm in 12 hours but B can paint ceiling of a room of length 10 cm and breadth 5 cm in 10 hours. How long A and B together will take to paint ceiling of a room of length 15 cm and breadth 20 cm?

A. 45 hours B. 20 hours C. 60 hours
D. 30 hours E. None of these

2. A and B started a business by investing in the ratio of 7: 10. C joins after 3 months with the investment one and a half of that of A. At the end of 1 year, out of the total profit, C's share was Rs. 12600, then what was the total profit (in Rs.)?

A. 39600 B. 39800 C. 36400
D. 41200 E. None of these

3. Normally, a bakery shop owner sells a pack of 16 biscuits for Rs. 50. In the peak hour, he sells a pack of same 12 biscuits for the same price. In peak hour, the selling price is how much above than that of normal hour?

A. 25% B. 33.33% C. 30%
D. 40.67% E. None of these

4. Pallavi got marks in physics and chemistry in the ratio of 4: 5 respectively. In chemistry, her marks were 30 more than that of physics and the average of marks received by her in physics, chemistry and maths together was 180. How many marks did she get in maths?

A. 270 B. 60 C. 120
D. 180 E. None of these

5. The simple interest received on a sum of money at the end of 10 years is two times of the principal. At the same rate of interest, what would be the ratio of principal and compound interest received at the end of two years?

A. 20 : 11 B. 20 : 9 C. 25 : 11
D. 25 : 9 E. None of these

6. The uniform speed of a motorboat in upstream is 12 km per hour and its downstream speed is 18 km per hour. The motorboat goes from point P to point Q in upstream and returns the same distance in downstream. What is its average speed of the entire journey? (the speed of the motorboat and stream was uniform during the entire journey)

A. 15 km per hour B. 14.8 km per hour C. 14.2 km per hour
D. 14.4 km per hour E. None of these

7. At the speed of 60 km per hour, a motorcyclist can catch the train (last bogie) running in the same direction in 3 hours and he passes the train completely in the next 15 minutes. If the length of train is 200 meters then how much distance did the train travel from the time when motorcyclist started chasing it?

A. 204.8 km B. 192.4 km C. 158.6 km
D. 176.2 km E. None of these

8. At present, five times of the age of Rahul is equal to three times of the age of Rocky. The age of Rocky's wife is 5 years less than that of Rocky. 5 years ago, the ratio of the age of Rahul and Rocky's wife was 2 : 3. At present, what is the average age of Rahul, Rocky and his wife?

A. 25 years B. 30 years C. 20 years
D. 15 years E. None of these

9. The difference between the simple interest and compound interest (compounded annually) received on a sum of money for 2 years at the rate of 18% per annum is Rs. 8100. How much amount (in Rs. lakhs) will be received at the end of 5 years under simple interest on the same sum of money and the same rate of interest?

A. 0.475 B. 475 C. 4.65
D. 4.75 E. None of these

10. The length, breadth and height of a rectangular base godown (storage room) is in the ratio of 3 : 5 : 4 respectively. If the area of the floor of the godown is 300 sq. m then how much money will be required to paint all the surface of the godown except the floor at the rate of Rs. 2.5 per sq. m?

A. Rs. 3350 B. Rs. 3275 C. Rs. 3950
D. Rs. 4250 E. None of these

11. The average age of A, B and C is 30 years. If the difference between B's age and A's age is same as the difference between C's age and B's age. If D is 40 years older than B then what is the sum of the age of B and D?

A. 130 years B. 100 years C. 60 years
D. 75 years E. None of these

12. Babloo has candy and chewing gum in the ratio of 17: 19. He ate 5 candies but purchased 25 more chewing gums then the number of chewing gums becomes 50% more than that of candies. How many chewing gums he had in starting?

A. 190 B. 95 C. 57
D. 76 E. None of these

13. A motorcyclist takes 2 hour more to go uphill than to come downhill. If the ratio of his speeds to come downhill to go uphill is 5 : 4 then how total how much time will he take in the entire journey? (the total distance to go uphill is same as that of come downhill)

A. 16 hours B. 12 hours C. 20 hours
D. 14 hours E. None of these

14. From 10 kgs of sunflower seeds, 2.5 litres of oil can be extracted. A person has 45 kg of sunflower seeds but he mixes the oil extracted from them with coconut oil in the ratio of 2 : 3 respectively then how many litres of coconut oil will be required to make the mixture of sunflower oil and coconut oil?

A. 16.875 litres B. 16.225 litres C. 18.775 litres
D. 15.675 litres E. None of these

15. 10 men started working together but at the end of every day from the first day, 1 man left the work. In this way, they complete the total work in 8 days. If the efficiency of one woman is 25% less than that of one man then how many women can complete the triple of the work in double of the time?

A. 12 B. 16 C. 13
D. 17 E. None of these

16. A certain manufacturing company sells its product in 45 regions worldwide with an average of 60 stores per region. Last year, these stores sold an average of 75 units per store then what was the average of the total units of products sold in region wise?

A. 4500 B. 45 C. 100
D. 250 E. None of these

17. Ruchika saves some amount at the end of each month and she had saved total of Rs 640 till the end of 2017 and Rs. 1025 till the end of 2018. Which of the following is closest to the percentage increase/decrease in the amount Ruchika saved during the year 2018 compare to the amount she saved during the year 2017? (assume that she started saving from the year 2017 only)

A. 60% increase B. 43% increase C. 60% decrease
D. 40% decrease E. None of these

18. The windows of a room are in the shape of regular hexagon, each side of which is 60 cm. In the room there are total of 5 such kind of windows which are covered with glass. What would be the total cost of laminating one side of the glass of windows with at the rate of Rs. 10 per sq. cm? (√3 = 1.732)

A. Rs. 467640 B. Rs. 448460 C. Rs. 492530
D. Rs. 428440 E. None of these

19. On a particular day, in Navsera passenger train, 30% of the total number of passengers were travelling without ticket and 30% of the remaining number of passengers were travelling with daily pass. The number of passengers who had purchased ticket was 2450 , then what was the number of passengers who were travelling without ticket?

A. 5000 B. 4500 C. 3000
D. 1500 E. None of these

20. A and B together can do a piece of work in 20 days but B and C together take 25 days to compete the same piece of work. When A works alone, he takes 16 2/3 less days than that of C to complete the same piece of work. In how many days, C alone can complete the piece of work?

A. 100/3 days B. 40 days C. 75 days
D. 50 days E. None of these

21. The speed of a passenger train is 25% less than that of the express train. 4 hours after the passenger train starts from a station, the express train starts from the same station and completely crossed the passenger in another R hours. What is the value of R ?

A. 10 B. 12 C. 15
D. 8 E. None of these

22. Pipe P can fill an empty tank in 4 hours but pipe Q can completely empty the same tank in 8 hours. Both the pipes were opened alternately after every two hours starting with pipe P then in how many hours, the tank was completely filled?

A. 6 hours B. 5 hours C. 10 hours
D. 12 hours E. None of these

23. At the end of 2 years, the difference between the simple interest and compound interest received on a sum of money is Rs. 500. At the end of 5 years under simple interest, double the sum of money become seven times the sum of money then what was the sum of money? (the rate of interest per annum was same in all the cases)

A. Rs. 40000 B. Rs. 20000 C. Rs. 2000
D. Rs. 10000 E. None of these

24. Ram can complete a piece of work in 20 days. Ram started working alone but at the end of 5 days from starting Mohan joined him and they together complete remaining piece of work in 6 days less than Ram would have taken alone. In how many days, Ram and Mohan together can complete double of the work?

A. 12 days B. 8 days C. 20 days
D. 24 days E. None of these

25. The cost price of an article is Rs. 400. A shopkeeper marked the price 2x percentage above the cost price and gave x% discount on the marked price and earned a profit of Rs. 48. If he had not given discount and had sold the article on the marked price then how much more profit he would have earned?

A. Rs. 160 B. Rs. 152 C. Rs. 112
D. Rs. 124 E. None of these

26. A boy went from his house to school and covered half of the distance between his house and school at 25% more than the usual speed and the remaining half of the distance at 25% less than the usual speed thereby took 1 hours more than the usual time. What was the ratio of the numerical value of total distance and that of his usual speed?

A. 1 : 30 B. 15 : 1 C. 30 : 1
D. 60 : 1 E. None of these

27. A water tank X can be filled by an inlet pipe in some hours. The same inlet pipe can fill another water tank Y of capacity 8000 litre in 16 hours. If the inlet pipe and an outlet pipe are opened together to fill the water tank X then they together take 7.5 hours but the outlet pipe alone can empty the water tank Y in 24 hours. What is the capacity of the water tank X?

A. 750 litres
B. 1200 litres
C. 1250 litres
D. 1500 litres
E. None of these

28. Three dice are thrown together. Find the probability of getting a total of at least 6 ?

A. $\frac{103}{216}$
B. $\frac{103}{208}$
C. $\frac{103}{108}$
D. $\frac{36}{103}$
E. None of these

29. The discount series of 15%, 20% and 30% is equal to a single discount of:

A. 50%
B. 52.80%
C. 52.40%
D. 53.40%
E. None of these

30. A farmer has some number of cows and n number of cattle houses. He can tie 12 cows with equal number of cows in each cattle house or 8 cows with equal number of cows in each cattle house. What is the minimum possible number of cows the farmer has?

A. 36
B. 48
C. 60
D. 24
E. None of these

31. The average age of the 20 aspirants of a class is 19.2 years. After Some time two more aspirants join them and then average is increased by 0.3 years. Find the difference between the age of new aspirants.

A. 12
B. 15
C. 8
D. Can't be determined
E. None of these

32. The total income of Ramesh, Suresh and Dinesh is Rs. 17325. Ramesh spend 70%, Suresh spend 75% and Dinesh spend 80% of their income. The ratio of their saving is 6 : 8 : 5. What is the income of Dinesh?

A. Rs. 4500 B. Rs. 5625 C. Rs. 7200
D. Rs. 4800 E. None of these

33. A sum fetches a simple interest of Rs. 6000 at the rate of 5% p.a. in 6 years. What would be the compound interest earned at the same rate of interest and the same principal in 2 years?

A. Rs. 2500 B. Rs. 2125 C. Rs. 2245
D. Rs. 2325 E. None of these

34. In a college Anjana scored 80 marks out of 150 in History and 95 marks out of 120 in English. If she wants to score 70% marks in 3 subjects, find the minimum marks she should score in Geography out of 100.

A. 70 B. 55 C. 76
D. 85 E. None of these

35. If a person sells a radio on the marked price then he earns total profit of Rs. x. if he sells the same radio for 30% discount on the marked price then he earns Rs. y but if he gives two successive discounts of 20% and 10% then he earns Rs. z. if the difference between Y and Z is Rs. 18 and the cost price of the radio is Rs. 500 then find the sum (in Rs.) of x, y, and z?

A. 648 B. 678 C. 712
D. 672 E. None of these

36. Ram takes Rs. 5000 from Mohan for 3 years under simple interest at the rate of 10% per annum calculated half-yearly. What amount will be paid by Ram to Mohan after the end of 3 years?

A. Rs. 9000 B. Rs. 3000 C. Rs. 6500
D. Rs. 7500 E. None of these

37. A person purchased firecrackers of worth Rs. 6000. He sold 1/3rd part of the firecrackers at 100% profit, 1/2nd part of the remaining at 50% profit and the remaining part he burst himself. What was his total profit percentage?

A. 16.67% B. 18.33% C. 20.33%
D. 12.67% E. None of these

38. Ram divided his total property between his two sons. The elder son received 70% of the total property. If the elder son donates Rs. 8500 in charity then the total property remained with him will be 20% more than that of younger son. What was the difference between the total property received by the elder son and that by younger son?

A. Rs. 7500 B. Rs. 12500 C. Rs. 15000
D. Rs. 10000 E. None of these

39. In a group of 4 women the average weight of which is 40 kg, when two new women, the difference of whom weight was 14 kg, joined then the average age of all the women was increased by 10%. What would have been the average if only fatter woman had joined the group?

A. 43.6 kg B. 43.8 kg C. 43.4 kg
D. 43.2 kg E. None of these

40. In a school, one – fourth of the total number of boys and three – fourth of the total number of girls participated in Annual function of the school. If 200 students had not participated in the annual function of the school then what was the total number of students in the school?

A. 500 B. 600 C. 800
D. 750 E. Can't be determined

41. Jai sold a laptop to Veeru at a profit of 20%. Later on Veeru sold it back to Jai at a profit of 25%, thereby gaining Rs.750. What is the original price of laptop?

A. Rs. 20000 B. Rs. 3000 C. Rs. 5000
D. Rs. 2500 E. None of these

42. A milkman has 2 jar of milk of same quantity. In the first jar, water is 20% and rest is milk and in the second jar, water is 35% and rest is milk. He mixed the both mixture. Find the ratio of milk and water in the final mixture.

A. 2.1 B. 3.2 C. 11.3
D. 29.11 E. None of these

43. X can do a piece of work in 20 days and Y can do the 1/7th of the same work in 5 days. In how many days together they can complete the 11/14th of the total work?

A. $\frac{140}{11}$ days B. 15 days C. 20 days
D. 10 days E. None of these

44. Akansha purchased two macbooks on the same cost price. She sold first at a 8% loss and second at a 10% profit. If the difference between the selling price is Rs. 1080, find the cost price of both macbooks.

A. Rs. 10000 B. Rs. 6000 C. Rs. 12000
D. Rs. 15000 E. None of these

45. Satyam invested Rs. 2250 in a business and after some time Sundar also join him and invested Rs. 2500. At the end of year Sundar received Rs. 2750 profit out of Rs. 6050. After how much time did he join the business?

A. 9 B. 6 C. 4
D. 8 E. None of these

46. The circumference of the circle and the perimeter of the square is equal and the ratio between the diameter of the circle and the side of the square is 7 : 11. What is the area of the circle?

A. 154 cm^2 B. 160 cm^2 C. 132 cm^2
D. Can't be determined E. None of these

47. How many words can be formed using all the letters of the word 'PICTURE' without repetition such that the vowels occupy the even places?

A. 44 B. 720 C. 360
D. 1520 E. None of these

48. Ratio of present age of Priyam and Deepak is 3 : 2 respectively. Before 9 years, ratio of age of Deepak and Sandeep was 3 : 5 respectively and Priyam is 3 years older than Sandeep. What will be the ratio of age of Deepak and Sandeep after 12 years?

A. 6 : 7 B. 7 : 8 C. 4 : 5
D. 5 : 6 E. None of these

49. Average weight of 32 students in a class is 38 kg while average weight of 6 teachers who take the class of these students is 62 kg. 12 students and 2 teachers go for a picnic and the average weight of remaining students and teachers is 35 kg and 61 kg respectively. Find the average weight of the people who went for the picnic.

A. 42 kg B. 50 kg C. 43 kg
D. 46 kg E. None of these

50. A man deposited a certain amount on simple interest at certain rate of interest. If the principal amount deposited becomes Rs. 18240 in 5 years and Rs. 20500 in 9 years. Find the principal amount deposited by the man

A. Rs. 15415 B. Rs. 16115 C. Rs. 15885
D. Rs. 14755 E. None of these

51. Two containers M and N contain mixture of petrol and diesel in the ratio of 3 : 1 and 7 : 3. The quantity of liquid in the container N is 40 litres more than the quantity of liquid in the container M and the total quantity in the 2 containers is 600 litres. What is the difference between the quantity of diesel in container M and N?

A. 44 litres B. 30 litres C. 18 litres
D. 26 litres E. None of these

52. R, S and T started a business by investing Rs. 40000, Rs. 60000 and Rs. 'x' respectively. At the end of 4 month, R contributed an additional capital equal to half of T's initial capital. T left the business at the end of the 4th month while R and S invested for the whole year. If S's share of 1st year profit of Rs. 9200 was Rs. 3600, find the value of x.

A. 32000 B. 80000 C. 60000
D. 48000 E. None of these

53. A sum of money amounts to 12000 in 4 years and 9500 in 3 years under compound interest. What is the rate of interest per annum?

A. 22.3% B. 16.4% C. 26.3%
D. 12.3% E. None of these

54. A salesman has certain number of oranges of which 5% are found to be broken. He sells 93% of the remainder and still has 266 oranges left. How many oranges he originally had?

A. 4000 B. 4500 C. 3500
D. 4200 E. None of these

55. When Chitra was born her mother's age was 30 years and when her sister Bittu was born 4 years after her birth her father was 26 years old. Find the age difference between her parents?

A. 4 years B. 5 years C. 1 years
D. 2 years E. None of these

56. The area of lawn is 460 square metres. If the length is 15 percent more than the breadth of the rectangular field. What is the length of the field?

A. 15 m B. 26 m C. 34.5 m
D. Can't be determined E. None of these

57. The average weight of 17 students is 90 kg. If the weight of teacher is also included, then the average weight is increased by 200 grams. Find the weight of the teacher?

A. 94 kgs B. 93.6 kgs C. 93.4 kgs
D. 94.6 kgs E. None of these

58. If n is a natural number, then $(12n^2 + 12n)$ is always divisible by?

A. 6 only B. 6 and 12 both C. 12 only
D. 18 only E. None of these

59. A student reads 3/8 of a novel on the first day and 4/5 of the remaining on the second day. If the number of unread pages of the novel still is 40, then how many pages did the novel contain?

A. 240 B. 480 C. 320
D. 160 E. None of these

60. A milkman sells milk at its cost price but measures 850 millilitres instead of 1000 millilitres. Find his gain percent?

A. $17\frac{11}{17}\%$ B. $7\frac{1}{12}\%$ C. $33\frac{1}{3}\%$

D. 15% E. 17.5%

Correct options:

1	2	3	4	5	6	7	8	9	10
D	B	B	A	C	D	B	C	D	C
11	12	13	14	15	16	17	18	19	20
B	B	E	A	C	A	D	A	D	D
21	22	23	24	25	26	27	28	29	30
B	C	C	D	C	B	C	C	C	D
31	32	33	34	35	36	37	38	39	40
D	B	E	E	B	C	A	D	B	E
41	42	43	44	45	46	47	48	49	50
D	D	D	C	E	D	E	D	D	A
51	52	53	54	55	56	57	58	59	60
D	B	C	A	E	E	B	B	C	A

Explanations:

1. We know that,

$$\frac{M1D1}{W1} = \frac{M2D2}{W2}$$

Or, M1D1W2 = M2D2W1

A × 12 × (10 × 5) = B × 10 × (12 × 5) (Where 10 × 5 and 12 × 5 is the area of the ceiling of the rooms)

A : B = The ratio of efficiency = 1 : 1

Now, A and B together can paint the area of

60 cm^2 in $\frac{12}{2}$ = 6 hours

The time taken by A and B together to paint

$15 \times 20\ cm^2 = \frac{6 \times 15 \times 20}{60}$ = 30 hours

Hence, option D is correct.

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2. Let the investment of A = Rs. 7x then the investment of B = Rs. 10x and the investment of C = 1.5 × 7x = Rs. 10.5x

The ratio of share = 7x × 12: 10x × 12 : 10.5x × 9 = 28 : 40 : 31.5

C's share = 31.5x = 12600

x = Rs 400

Total profit = (28x + 40x + 31.5x) = 99.5x = Rs 39800

Hence, option B is correct.

3.

In the normal time, the SP of one biscuit = $\frac{50}{16}$

In peak hour, The SP of one biscuit = Rs. $\frac{50}{12}$

The reqd. % = $\left(\frac{50}{12} - \frac{50}{16}\right) \times \frac{100}{50/16} = \left(\frac{4}{12 \times 16} \times 100 \times 16\right)$

$= \frac{100}{3}\% = 33.33\%$

Hence, option B is correct.

---

4. Let the marks of physics = 4x then the marks of chemistry = 5x

According to the question, 5x – 4x = x = 30

The sum of the marks of physics, chemistry and maths = 9x + y = 180 × 3 = 540 (y = the marks of maths)

270 + y = 540

y = 540 – 270 = 270 = The marks of maths

Hence, option A is correct.

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5. Let the principal = Rs. 100x

Then, according to the question, SI = 2 × 100x = 200x

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

$200x = \frac{100x \times R \times 10}{100}$

R = 20%

The CI on Rs. 100x for 2 years = $100x \left(1 + \frac{20}{100}\right)^2 - 100x = 44x$

The required ratio = 100x : 44x = 25 : 11

Hence, option C is correct.

6. Let the total distance from point P to Q = x km

Then, Total time taken in upstream = $\frac{x}{12}$ hours

Total time taken in downstream = $\frac{x}{18}$ hours

The average speed = $\frac{2x}{(\frac{x}{12} + \frac{x}{18})} = \frac{2 \times 12 \times 18}{12 + 18} = \frac{2 \times 12 \times 18}{30}$ = 14.4 km per hour

Hence, option D is correct.

---

7. Since, the motorcyclist passes the train completely in 15 minutes

Let the speed of train = x km per hour

Relative speed of train and motorcyclist = 60 – x km per hour

Distance = speed × time

$\frac{200}{1000} = 0.2 = (60 - x) \times \frac{15}{60}$

0.8 = 60 – x

x = 59.2 km per hour

The motorcyclist passes the train in 3 hour 15 minutes

$= \frac{13}{4}$ hours

The total distance travelled by the train in 13/4 hours

$= \frac{59.2 \times 13}{4}$ = 192.4 km

Hence, option B is correct.

8. At present, five times of the age of Rahul is equal to three times of the age of Rocky

Rahul's age: Rocky's age = 3 : 5

Let the age of Rahul = 3x years then the age of Rocky = 5x years

The age of Rocky's wife = 5x – 5 years,

5 years ago, the age of Rahul = 3x – 5 years

The age of Rocky's wife = 5x – 5 – 5 years

$$\frac{3x-5}{5x-10}=\frac{2}{3}$$

9x – 15 = 10x – 20

x = 5 years

At present, the sum of their age = 3x + 5x + 5x – 5 years = 13x – 5 = 65 – 5 = 60 years

The reqd. average = $\frac{60}{3}$ = 20 years

Hence, option C is correct.

---

9. Let the sum of money = Rs. x

Then, The difference = $\left[x\left(1+\frac{18}{100}\right)^2-x\right]-\frac{x\times 2\times 18}{100}=8100$

By solving, 3.24x = 8100 × 100

x = 250000

The SI of 5 years @ 18% per annum

$=\frac{250000\times 18\times 5}{100}=225000$

The amount = 250000 + 225000 = 475000 = Rs. 4.75 lakhs

Hence, option D is correct.

10. Let length = 3x m

Breadth = 5x meters

Height = 4x meters

The area of the floor = l × b = 3x × 5x = 300

x × x = 20 sq m

The total area except floor = 2(l × h + b × h) + l × b

= 2 × (3 × 4 × x × x + 5 × 4 × x × x) + 3 × 5 × x × x = 2 × 4 × 20(3 + 5) + 15 × 20 = 160 × 8 + 300 = 1280 + 300 = 1580

The required cost = 1580 × 2.5 = Rs. 3950

Hence, option C is correct.

---

11. According to the question, (B – A) = (C – B)

2B = A + C

Let B = x

A = x – d years and C = x + d years then the above condition is satisfied

Now, x – d + x + x + d = 30 × 3

By solving, x = 30 years

And D = B + 40 = 30 + 40 = 70 years

The required sum = 30 + 70 = 100 years

Hence, option B is correct.

---

12. Let the number of candies = 17x and the number of chewing gums = 19x

According to the question,

150% of (17x – 5) = (19x + 25)
(17x – 5) × 3 = 2 × (19x + 25)
51x – 15 = 38x + 50

$13x = 65$

$x = 5$

The required answer = $19 \times 5 = 95$

Hence, option B is correct.

13. Let the time taken to go uphill = $x + 2$ hour then time to come downhill = x hour

Since, the distance is same

Let the speed to come downhill = $5a$ km per hour then the speed to go uphill = $4a$ km per hour

We know that, distance = speed × time

$5a \times x = 4a(x + 2)$

$x = 8$ hours

Therefore, the total distance taken by him in the entire journey = $8 + 10 = 18$ hours

Hence, option E is correct.

---

14. From 10 kg of sunflower, 2.5 kg of oil can be extracted

Therefore, from 45 kg of sunflower seeds

The quantity of oil = $\frac{2.5 \times 45}{10}$ = 11.25 litres

In the mixture, let the quantity of sunflower oil = $2x$ litres = 11.25 litres

$x = 5.625$ litres

Therefore, the quantity of coconut oil required = $3x = 3 \times 5.625 = 16.875$ litres

Hence, option A is correct.

---

15. Let the efficiency of one man = 4 units per day
Then on the first day, the number of units done by 10 men = $10 \times 4 = 40$ units
On 2nd day, $9 \times 4 = 36$ units
On 3rd day, $8 \times 4 = 32$ units
On 4th day, $7 \times 4 = 28$ units
On 5th day, $6 \times 4 = 24$ units
On 6th day, $5 \times 4 = 20$ units
On 7th day, $4 \times 4 = 16$ units
On 8th day, $3 \times 4 = 12$ units

The total units of work done by them in 8 days = (40 + 36 + 32 + 28 + 24 + 20 + 16 + 12) = 208 units

The efficiency of one woman = 75% of 4 = 3 units per day
Triple of the work = 208 × 3 units
The double of the time = 8 × 2 = 16 days
Let x women work together then, x × 3 × 16 = 208 × 3
x = 13 = The number of women
Hence, option C is correct.

16. In 45 regions, there are total 60 × 45 = 2700 stores

The total number of units sold in all the store together = 2700 × 75 = 202500

The average total number of units sold in all 45 regions

$= \frac{202500}{45} = 4500$

Hence, option A is correct.

---

17. The total amount she saved during the year 2017 = 640

The total amount she saved during the year 2018 = 1025 – 640 = 385

The reqd. % decrease = $\frac{(640 - 385) \times 100}{640} = \frac{255 \times 100}{640} = 39.843\%$

= closest to 40%

Hence, option D is correct.

18.

The area of a hexagon = $6 \times \frac{\sqrt{3}}{4} \times a^2$

where a is the side of the hexagon

By putting a = 60 cm

The area of one such hexagon shaped window = $6 \times \frac{\sqrt{3}}{4} \times 60 \times 60 = 5400\sqrt{3}$ sq.cm

The area of 5 such windows = 5 × 5400 × 1.732

The total cost of lamination one side of the glass @ 10 per sq. cm = 5 × 5400 × 1.732 × 10 = Rs. 467640

Hence, option A is correct.

19. On the particular day, let the total number of passengers = 100x

The total number of passengers who were travelling without ticket = 30% of 100x = 30x

The remaining number of passengers = 100x – 30x = 70x

The total number of passengers who were travelling on daily pass = 30% of 70x = 21x

The remaining number of passengers = 70x – 21x = 49x = 2450

x = 50

Therefore, the total number of passengers who were travelling without ticket = 30 × 50 = 1500

Hence, option D is correct.

20.

$\frac{1}{A}+\frac{1}{B}=\frac{1}{20}$ .....(i)

$\frac{1}{B}+\frac{1}{C}=\frac{1}{25}$ .....(ii)

According to the question,

$A = C-\frac{50}{3}$ days

Put the value of $A = C-\frac{50}{3}$ in the equation (i)

$\frac{1}{(C-\frac{50}{3})}+\frac{1}{B}=\frac{1}{20}$ .....(iii)

Subtracting equation (iii) and (ii)

$\frac{1}{(C-\underline{50})}-\frac{1}{C}=\frac{1}{20}-\frac{1}{25}=\frac{1}{100}$

3

$$\frac{C - C + \frac{50}{3}}{C \times (C - \frac{50}{3})} = \frac{1}{100}$$

$$\frac{50}{3} \times 100 = c^2 - c \times \frac{50}{3}$$

$3c^2 - 50c - 5000 = 0$

By solving, c = 50 or – 33.33

Negative value is not possible therefore, c = 50 days

Hence, option D is correct.

21. Let the speed of express train = 4x km per hour

The speed of passenger train = 75% of 4x = 3x km per hour

4 hours after the passenger train start from a station, the express train start from the same station

The distance between the passenger train and express train = 3x × 4 = 12x km

The relative speed of passenger train and express train = 4x – 3x = x km per hour

The time taken by the express train to completely cross the passenger train

$= \frac{12x}{x}$ = 12 hours

Hence, option B is correct.

---

22. Let the capacity of the water tank = lcm of 4 and 8 = 16 units

The efficiency of pipe P = $\frac{16}{4}$ = 4 units per hour

The efficiency of pipe q = $\frac{16}{8}$ = 2 units per hour

In the first 2 hours, the units of water filled = 4 × 2 = 8 units

In the next 2 hours, the units of water withdraws = 2 × 2 = 4 units

It means, in one cycle i.e. 4 hours, the total quantity of water filled = 4 units

In the next cycle, the total quantity of water will be filled = 4 × 2 = 8 units

The remaining quantity = 16 – 8 = 8 units

In the next 2 hours, pipe P can fill 8 units of water

Therefore, the total time = 8 + 2 = 10 hours

Hence, option C is correct.

23. Let the sum of money = Rs. x

Double the sum of money = 2x

The amount received at the end of 5 years = 7x

The total interest = 7x – 2x = 5x

We know that, SI = $\frac{P \times R \times T}{100}$

$5x = \frac{2x \times R \times 5}{100}$

By solving, R = 50%

The SI at the end of 2 years on Rs. x @ 50% per annum

$= \frac{x \times 50 \times 2}{100}$ = Rs. x

The CI at the end of 2 years on Rs. x @ 50% per annum

$= x \times \left(1 + \frac{50}{100}\right)^2 - x = \frac{5}{4x} = 1.25x$

According to the question,

1.25x – x = Rs. 500

0.25x = 500

x = 2000

Hence, option C is correct.

24. According to the question,

$\frac{5}{20}+\frac{15-6}{20}+\frac{15-6}{\text{mohan}}=1$

$\frac{9}{\text{mohan}}=1-\frac{14}{20}=\frac{6}{20}$

The number of days, Mohan will take alone = $\frac{9\times 20}{6}$ = 30 days

The number of days Ram and Mohan together will take to complete the same piece of work
$=\frac{1}{20}+\frac{1}{30}=\frac{50}{600}$ = 12 days

Therefore, the number of days they will take to complete double of the work = 12 × 2 = 24 days
Hence, option D is correct.

25. The marked price of the article = (100 + 2x)% of 400 = (100 + 2x) × 4

The SP = $(100+2x)\times 4\times \frac{100-x}{100}=(100+2x)\times 4\times \left(1-\frac{x}{100}\right)$

According to the question,

$(100+2x)\times 4\times \left(1-\frac{x}{100}\right)-400=48$

$(100+2x)\times 4\times \left(1-\frac{x}{100}\right)=448$

(100 + 2x)(100 – x) = 11200

By solving, x = 20

Therefore, the marked price = (100 + 2x) × 4 = 140 × 4 = 560

The profit = 560 – 400 = 160

The required answer = 160 – 48 = 112

Hence, option C is correct.

---

26. Let the total distance = 2p km

And his usual speed = 4s km per hour

Therefore, $\frac{p}{5s}+\frac{p}{3s}=\frac{2p}{4s}+1$

$$\frac{8p}{15s} = \frac{p}{2s} + 1$$

$$\frac{8p}{15s} - \frac{p}{2s} = 1$$

$$\frac{p}{30s} = 1$$

$$\frac{p}{s} = 30 \text{ ..... (i)}$$

The reqd. ratio = $2p : 4s = \frac{p}{2s} = \frac{30}{2} = 15 : 1$

Hence, option B is correct.

27. The inlet pipe fill 8000 litres water in 16 hours

Therefore, the efficiency of the inlet pipe = $\frac{8000}{16}$ = 500 litres per hour

The outlet pipe empty 8000 litres water in 24 hours

Therefore, the efficiency of outlet pipe = $\frac{8000}{24} = \frac{1000}{3}$ litre per hour

When both the pipe work together then the quantity of water filled in 1 hour

$= 500 - \frac{1000}{3} = \frac{500}{3}$ litre per hour

They together take 7.5 hours to fill the tank X

Therefore, the capacity of the tank X

$= \frac{500 \times 7.5}{3} = 1250$ litres

Hence, option C is correct.

---

28. Since one die can be thrown in six ways to obtain any one of the six numbers marked on its six faces

⇒ Total number of elementary events = 6 × 6 × 6 = 216

Let A be the event of getting a total of at least 6.Then $\bar{A}$ denotes the event of getting a total of less than 6 i.e. 3, 4, 5.

$\Rightarrow \bar{A}$ = { (1,1,1), (1,1,2), (1,2,1), (2,1,1), (1,1,3),(1,3,1), (3,1,1), (1,2,2), (2,1,2), (2,2,1) }

So, favorable number of cases = 10

$\Rightarrow P(\bar{A}) = \frac{10}{216}$

$\Rightarrow 1 - P(A) = \frac{10}{216}$

$\Rightarrow P(A) = 1 - \frac{10}{216}$

$= \frac{103}{108}$

Hence, option (C) is correct.

29. For simplicity let us assume that the initial amount is Rs.100

Then 15% discount on this amount gives

$= Rs.100 - \left(Rs.100 \times \frac{15}{100}\right)$

= Rs.100 – Rs.15 = Rs.85

Further 20% discount on Rs.85 gives

$= Rs.85 - \left(Rs.85 \times \frac{20}{100}\right)$

= Rs.85 – Rs.17 = Rs.68

Again 30% discount on Rs.68 gives

$= Rs.68 - \left(Rs.68 \times \frac{30}{100}\right)$

= Rs.68 – Rs.20.4 =Rs.47.6 Now after discount series of 15%, 20% and 30% we are getting Rs.47.6

$\Rightarrow$ equivalent discount $= \frac{100 - 47.6}{100} \times 100 = 52.4\%$

Hence, option (C) is correct

---

30. The minimum possible number of cows the farmer has = LCM of 8 and 12 = 24

Hence, option D is correct.

---

31. Total age of 20 aspirants = 20 × 19.2 = 384

Total age of 22 aspirants = 22 × 19.5 = 429

Total Age of new aspirants = 429 – 384 = 45 years

But we can not find the difference of the new aspirants'. So answer is can't be determined.

Hence, option D is correct.

32. The ratio of the saving = 6 : 8 : 5

So the saving of Ramesh, Suresh and Dinesh is 6x, 8x, 5x.

The saving of Ramesh is (100 – 70)% = 30% that is 6x. So the income is 6x ÷ 30 × 100 = 20x

The saving of Suresh is (100 – 75)% = 25% that is 8x. So the income is 8x ÷ 25 × 100 = 32x

The saving of Dinesh is (100 – 80)% = 20% that is 5x. So the income is 5x ÷ 20 × 100 = 25x

Total income = 20x + 32x + 25x

17325 = 77x

x = 225

Dinesh's income = 25 × 225 = Rs. 5625.

Hence, option B is correct.

---

33. Let Rs. P be the principal value.

$\therefore \quad 6000 = \frac{P \times 5 \times 6}{100}$

$\therefore \quad P = \text{Rs. } 20000$

$\text{Amount} = P \times \left(1 + \frac{R}{100}\right)^2$

$= 20000 \times \left(1 + \frac{R}{100}\right)^2$

∴ Amount = Rs. 22050

∴ CI = 22050 – 20000 = Rs. 2050

Hence, option E is correct.

---

34. Total maximum marks = 100 + 120 + 150 = 370

Total marks in History and English = 95 + 80 = 175

Total marks required by her to get 70% = 370 × 70% = 259

So, she needs 259 – 175 = 84 marks to score 70%.

Hence, option E is correct.

35. Let the marked price = Rs. 100a

At no discount,

Profit = x = 100a – 500 ..... (i)

At 30% discount,

The selling price = 70% of 100a = 70a

Profit = y = 70a – 500 ..... (ii)

At 20% and 10% two successive discount

$= \frac{20 + 10 - 20 \times 10}{100}$ = 28% discount

The selling price = 72% of 100x = 72x

Profit = z = 72a – 500--------- (iii)

y – z – equation (iii) – (ii)

= 2a = 18

A = 9

Then from the equation (i)

x = 900 – 500 = 400

From the equation (ii)

y = 630 – 500 = 130

From the equation (iii)

z = 648 – 500 = 148

The required sum = 400 + 130 + 148 = 678

Hence, option B is correct.

---

36. Actual rate for consideration = 10/2 = 5%

The total SI = $\frac{P \times R \times T}{100} = \frac{5000 \times 5 \times 6}{100} = 1500$

The total amount = Rs. (5000 + 1500) = Rs. 6500

Hence, option C is correct.

37.

One third of 6000 = $\frac{6000}{3} = 2000$

The total SP of the worth of Rs. 2000 = $\frac{(100 + 100) \times 2000}{100} = 4000$

The remaining = 6000 – 2000 = 4000

Half of 4000 = $\frac{4000}{2} = 2000$

The total SP of the worth of Rs. 2000 = (100 + 50)% of 2000 = Rs. 3000

The total SP = 4000 + 3000 = 7000

The profit = 7000 – 6000 = 1000

The reqd. profit % = $\frac{1000 \times 100}{6000} = \frac{100}{6} = \frac{50}{3} = 16.67\%$

Hence, option A is correct.

---

38. Let the total property Ram had = 100x

The property received by elder son = 70% of 100x = 70x

The property received by younger son = 100x – 70x = 30x

20% more than 30x = 120% of 30x = 36x

According to the question,

70x – 36x = 34x = 8500

x = 250

The difference between the total property received by the elder son and that by younger son = 70x – 30x = 40x = 250 × 40 = 10,000

Hence, option D is correct.

39. Let A and B joined the group

Let the weight A = x kg

Then the weight of B = x + 14 kg

The sum of the weight of 4 women = 40 × 4 = 160 kg

10% of 40 = 4 kg

The sum of the weight of 6 women = 44 × 6 = 264 kg

The weight of two new joiner,

160 + x + x + 14 = 264

2x = 90

x = 45

If the fatter woman had joined the group = 160 + 45 + 14 = 219 kg

The average = $\frac{219}{5}$ = 43.8 kg

Hence, option B is correct.

40. In the question, the total number of students who had not participated in the annual function is given but we don't know the number of boys and girls therefore, answer could not be determine

Hence, option E is correct.

---

41. Let the original price of laptop = Rs. x

Jai sold it to Veeru for x × 120% = Rs.1.2x

Veeru sold it back to Jai for 1.2x × 125% = Rs. 1.5x

Profit of Veeru = 1.5x – 1.2x

750 = .3x

x = Rs. 2500

Hence, option D is correct.

42. In first jar Ratio of Milk and Water = 80 : 20 = 4 : 1

In second jar Ratio of Milk and Water = 65 : 35 = 13 : 7

Assume the capacity of the two jar is 20 litres.

$$= 20 \times \frac{4}{5} + 20 \times \frac{13}{20} : 20 \times \frac{1}{5} + 20 \times \frac{7}{20}$$

= (16 + 13) : (4 + 7) = 29 : 11

Hence, option D is correct.

---

43. X can do the work in 20 days.

In one day X can do the 1/20th of the work.

Y can do the 1/7th of the work in 5 days, so he can do the same work in 7 × 5 = 35 days.

In one day Y can do the 1/35th of the work.

In one day X and Y together can do the 1/20+ 1/35 work

$$= \frac{1}{20} + \frac{1}{35} = \frac{7+4}{140} = \frac{11}{140}^{th} \text{ work}$$

11/140 work is done in 1 day

$\frac{11}{14}$ work is done in $\frac{140}{11} \times \frac{11}{14}$ = 10 days

Hence, Option D is correct.

---

44. Let the cost price of the macbook is Rs. x.

As per the statement given in the question:

x × 110 % – x × 92 % = 1080

(110 × x – 92 × x) ÷ 100 = 1080

110 × x – 92 × x = 1080 × 100

18 × x = 108000

x = Rs. 6000

Cost Price of both macbooks is 6000 + 6000 = Rs. 12000

Hence, Option C is correct.

45. Satyam's Profit = 6050 - 2750 = Rs. 3300

Sundar's profit = Rs. 2750

Ratio of the profit = 3300 : 2750 = 6 : 5

Because the ratio of the capital is equals to the ratio of the profit then,

2250 × 12 : 2500 × x = 6 : 5

5 (2250 × 12) = 6 (2500 × x)

x = 9 months

So Sundar invested after 3 months.

Hence, option E is correct.

---

46. The perimeter of the circle = 14x, the radius of the circle = 14x / 2 = 7x, The area of the square = 11x

The circumference of the circle = The perimeter of the square

2 π r = 4 a

$2 \times 22 \times 7x \div 7 = 4 \times 11x$

1 : 1

So given information is incorrect. We cannot find the answer so the would be C.N.D.

Hence, option D is correct.

---

47. There are 3 vowels and 3 even places and hence they can be arranged in 3! Ways consonants are 4 and they can be arranged in 4 available positions in 4! ways.

Total ways are $3! \times 4! = 144$.

Hence, option E is correct.

48. Let the present age of Priyam and Deepak be 3x years and 2x years respectively

And, present age of Sandeep be 'y' years

So, $3x - y = 3$

$y = 3x - 3$

And, $\frac{2x - 9}{y - 9} = \frac{3}{5}$

$10x - 45 = 3y - 27$

$10x - 45 = 3(3x - 3) - 27$

$10x - 45 = 9x - 9 - 27$

$x = 45 - 36 = 9$

$y = 3x - 3 = 24$

Hence, option D is correct.

---

49. 12 students and 2 teachers went for the picnic which means that 20 students and 4 teachers did not go to the picnic

Total weight of 12 students who went for picnic = 38 x 32 – 35 x 20 = 1216 – 700 = 516 kg

Total weight of 2 teachers who went for picnic = 62 x 6 – 61 x 4 = 128 kg

Total weight of all the people who went for the picnic = 516 + 128 = 644 kg

Reqd. average = $\frac{644}{14}$ = 46 kg

Hence, option D is correct.

---

50. Simple interest earned by man in 4 years = 20500 – 18240 = 2260

Simple interest earned by man in 1 year = $\frac{2260}{4}$ = Rs. 565

Principal amount deposited by the man = 18240 – 5 × 565 = Rs. 15415

Hence, option A is correct.

51. Let the quantity of liquid in container M and N be 'm' litres and 'n' litres respectively.

According to the question,

m + n = 600

Ans, n = m + 40

On solving, we get,

m = 280 litres and n = 320 litres respectively

So, quantity of diesel in M = $\frac{1}{4}$ × 280 = 70 litres

Quantity of diesel in N = $\frac{3}{10}$ × 320 = 96 litres

So, required difference = 96 – 70 = 26 litres

Hence, option D is correct.

---

52. Profit sharing ratio between R, S and T at the end of 1st year

$= \left[40000 \times 4 + \left(40000 + \frac{x}{2}\right) \times 8\right] : [60000 \times 12] : [x \times 4]$

$= [480000 + 4x] : [720000] : [4x]$

S's share of 1st year profit

$= \frac{720000}{480000 + 4x + 720000 + 4x} \times 9200 = 3600$

On solving, we get x = Rs. 80000

Hence, option B is correct.

---

53. It is given that the under compound interest, a sum of money amounts to 12000 in 4 years and 9500 in 3 years.

So, percentage increase in value of money in 4th year from the 3rd year is :

$\frac{12000 - 9500}{9500} \times 100 = 26.3\%$

So, the rate of interest per annum = 26.3%

Hence, option C is correct.

54. Let the total number of oranges be 'x'

5% are found to be broken

Remaining = 95%

He sells 93% of the remaining, it means 7% of the remaining oranges are left, which is equal to 266 oranges

So, $\frac{7}{100} \times \frac{95}{100} \times x = 266$

$x = \frac{266 \times 100 \times 100}{7 \times 95}$

x = 4000

Hence, option A is correct.

---

55. Father's age when Chitra's brother was born = 26 years

Chitra's brother was born 4 years after Chitra

Mother's age when Chitra's sister was born = Mother's age when Chitra was born + 4

Mother's age when Chitra's sister was born = 30 + 4 = 34

Age difference between her parents = 34 – 26 = 8 years

Hence, option E is correct.

---

56. Let, L and B are the length and breadth of the lawn

Length is 15% more than breadth

L = 1.15B

Area = L × B

460 = 1.15 B × B

B = 20 m

L = 23 m

Hence, option E is correct.

57. Average weight of 17 students = 90 kg

Let, the weight of teacher be x

So, the average weight is increased by 200 grams

Therefore, $\frac{(17 \times 90) + x}{18} = 90 + \frac{200}{1000}$

$\frac{1530 + x}{18} = 90.2$

1530 + x = 1623.6

x = 1623.6 – 1530 = 93.6kgs

Therefore, the weight of the teacher = 93.6 kgs

Hence, option B is correct.

---

58. Given, $(12n^2 + 12n) = 12n\,(n + 1)$

We know that $n\,(n + 1)$ will always be even

Therefore, $(12n^2 + 12n)$ will always be divisible by both 6 and 12

Hence, option B is correct.

---

59. Let the total number of pages be x

On day 1, the number of pages he read $= \frac{3}{8}x$

Remaining pages $= x - \frac{3}{8}x = \frac{5}{8}x$

On day 2, the number of pages he read $= \frac{5}{8}x \times \frac{4}{5} = \frac{x}{2}$

Remaining pages $= \frac{5}{8}x - \frac{x}{2} = \frac{x}{8}$

Given, if the number of unread pages still is 40;

i.e. $\frac{x}{8} = 40$

Therefore, x = 320

So, the number of pages did the novel contain = 320

Hence, option C is correct.

60. Let his cost price and selling price be Rs. x

Therefore, his cost price for 1000 ml is Rs. x

Therefore, his cost price for 1 ml is Rs. $\frac{x}{1000}$

He sells 850 ml for Rs. x

Therefore, his selling price for 1 ml is Rs. $\frac{x}{850}$

Profit = SP – CP

Profit $= \frac{x}{850} - \frac{x}{1000} = \frac{3x}{17000}$

Profit % $= \frac{\frac{3x}{17000}}{\frac{x}{}} \times 100 = \frac{300}{17} = 17\frac{11}{17}\%$

1000

Hence, option A is correct.