

LIC & SBI Exam 2019

40 Important Arithmetic
Questions PDF



1. Pipes A and B can fill a tank in 12 and 15 hours respectively. Pipe C can empty it in 6 hours. If A and B are kept open for 5 hours in the beginning and then C is also opened. Now In how many hrs tank will be empty?
 A. 42 hours B. 43 hours
 C. 45 hours D. 50 hours
 E. None of these
2. Five bells begin to toll together and toll respectively at intervals of 6,7,8,9 and 12 seconds. How many times will they toll together in one hour, excluding the one at the start?
 A. 3 B. 5
 C. 7 D. 9
 E. 10
3. 8 litres are drawn from a cask full of wine and is then filled with water. This operation is performed three more times. The ratio of the quantity of wine now left in cask to that of the water is 16 : 65 . How much wine the cask hold originally?
 A. 18 litres B. 24 litres
 C. 32 litres D. 42 litres
 E. 50 litres
4. A man purchased 120 kg of sugar and was forced to sell it at a loss equal to the selling price of 30 kg of sugar. If he purchased each kilogram of sugar for 15, then at what price (in) did he sell each kilogram of sugar?
 A. 12 B. 24
 C. 18 D. 16
 E. None of these
5. If the circumference of a circle is equal to the perimeter of a rectangle whose breadth is half of its length, then find the ratio of radius to length.
 A. $\frac{3}{2\pi}$ B. $\frac{3}{\pi}$
 C. $\frac{3}{4\pi}$ D. $\frac{3}{6\pi}$
 E. $\frac{2}{2\pi}$
6. X and Y borrowed Rs. 2,000 and Rs. 3,000 respectively at the same rate of interest for $2\frac{1}{2}$ years. If Y paid Rs. 125 more interest than X, find the rate of interest.
 A. 5% B. 2%
 C. 4% D. 9%
 E. 3%
7. The ratio of the present ages of Sonu and Monu is 7 : 6 respectively. Eight years ago, the respective ratio of their ages was 5 : 4. What will be Monu's age four years from now?
 A. 28 years B. 32 years
 C. 24 years D. 30 years
 E. None of these
8. The average age of 50 male in a company is 20 Years. One man, aged 30 years, left the company, but two new men come in his place whose ages differ by 5 years. If the average age of all the males now in the company becomes 21 years, the age of the younger new comer is
 A. 30 years B. 48 years
 C. 35 years D. 45 years
 E. None of these
9. P, Q and R start a business and their investments are in the ratio 3 : 6 : 4. Both P and R start the business and Q joins them after 6 months. It was decided that apart from profit, Q will get a monthly salary of Rs. 500 from the annual profit. Q's total salary came out to be 10% of the annual profit after a year. What is the share of P in the total profit?
 A. Rs. 10600 B. Rs. 9600
 C. Rs. 8100 D. Rs. 12800
 E. None of these
10. 64 men working 8 hours a day plan to complete a piece of work in 9 days. However 5 days later they find that they had completed only 40% of the work. They now wanted to finish the remaining portion of the work in remaining 4 days. Find the number of hours per day that they need to work in order to achieve the target.
 A. 20 B. 15
 C. 5 D. 10
 E. None of these

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11. Two vehicles with speed 30 kmph are moving in same direction. Both are 5 km apart. A car moving in opposite direction passes both vehicles in 4 mins. What is the speed of the car in kmph?
 A. 15 B. 30
 C. 45 D. 60
 E. 75
12. The marked price of a chair and a table are in the ratio 1: 3. The furniture dealer gives 30% discount on the chair. If the total discount on the chair and table is 25%, the discount offered on the table is
 A. 25% B. 23.33%
 C. 35% D. 30%
 E. none of these
13. In a pattern A, B and C are working together to complete a job in 15 days, where C only worked for the first 6 days when 37/100 of the job was done and further work was completed by A & B. Also, the work done by A in 4 days is equal to the work done by B in 3 days. How many days would be required by the B to complete the entire work?
 A. 44 days B. 35 days
 C. 25 days D. 10 days
 E. None of these
14. Vikash leaves from Delhi to Noida at 9:00 Am and Rahul leaves from Noida at 10:20 Am for Delhi. At 11:05 Am they meet at a hotel and after their meeting, they again started and take the same time to reach their destination. Find the time taken by both of them for reaching their destination?
 A. 75 Minutes B. 85Min
 C. 95 min D. 45 min
 E. 100 min
15. A man buys two horses for Rs.86, by selling one for three-quarters of its cost price, and the other four-thirds of its cost price, he makes a profit of Rs.3 on the whole transactions. Find the cost price (in rupees) of each horse.
 A. Rs.39, Rs.47 B. Rs.34, Rs.52
 C. Rs.48, Rs.38 D. Rs.44, Rs.42
 E. Rs.50, Rs.44
16. Three persons A, B and C started a business together by investing Rs 10000, Rs 15000 and Rs 30000. After 3 months, A withdrew 1/4 of his invested and B and C together reinvested Rs 12000 in the ratio of 3:7. What will be the A's share of profit after the end of one year if the total profit earned is Rs 19880?
 A. 2600 B. 3000
 C. 1200 D. 6000
 E. 1500
17. A shopkeeper allows initial discount of 'd' percent on an article and earns 80% profit. If the shopkeeper gives another discount of 10% then he earns Rs. 288 less profit. What will be his profit or loss percent when he allowed the discount of 10%?
 A. 52% B. 65%
 C. 56% D. 62%
 E. 66%
18. The price of rice is reduced by 25 % and a person increase his expenditure on rice by 20 %. What is the percentage change of the monthly consumption of rice?
 A. +60% B. -60%
 C. +12% D. -12%
 E. +16%
19. Four years ago, the average age of 5 friends i.e. A, B, C, D and E was 25 years. The sum of the present ages of A and B is 60 years. Ten years later, the ages of the D and E will be in the ratio 17: 23, respectively and five years later, the average age of C and D will be 29.5 years. If one more friend F's present age is added to the present age of the 5 friends, then the average present ages of the 6 friends' decreases by 0.5 years. If B is 2 years older than F, find the difference between the present ages of A and C.
 A. 8 years B. 4 years
 C. 5 years D. 6 years
 E. None of these

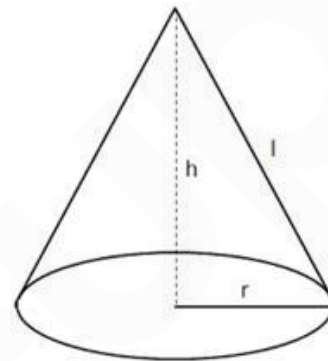


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20. The ratio of the present ages of Sonam and Surekha is 5: 7. Sonam is 4 years older than her cousin Abhay. The ratio between the ages of Surekha and Abhay is 5: 3. What is the ratio between the ages of Sonam and Surekha after 12 years?
 A. 25/47 B. 35/47
 C. 12/47 D. 42/47
 E. 37/47
21. A is 1.5 times more efficient than B and C is two times efficient than A. A and B take $7\frac{1}{2}$ days to complete the work. How many days will B & C together take to complete the work?
 A. $4\frac{1}{6}$ days B. $5\frac{2}{3}$ days
 C. $5\frac{5}{6}$ days D. $3\frac{5}{6}$ days
 E. None of these
22. Two pipes A and B can fill the tank in 36 minutes. If both the pipes work together for 30 minutes and then the pipe B was closed, the tank is filled in 40 minutes. Find the time taken by the pipe B to fill the tank?
 A. 45 minutes B. 60 minutes
 C. 75 minutes D. 90 minutes
 E. 85 minutes
23. A train takes 18 seconds to cross a platform while running at 25 km/hr and it takes 12 seconds to pass a man walking at 5 km/hr in the opposite direction. Length of train in how much more than length of the platform (in m)
 A. 50 B. 75
 C. 100 D. 125
 E. 150
24. In a chemistry laboratory, two solutions of concentrated acid contains 'a' g/ml and 'b' g/ml of concentrated acid in them. When 20 ml of first solution and 30 ml of second solution is mixed, the resulting concentrated solution had 9.2 g/ml of concentrated acid in it. When 70 ml of first solution and 140 ml of second solution is mixed, the resulting solution had $9\frac{1}{3}$ g/ml of concentrated acid in it. What is the value of 'a+b'?

- A. 14 B. 15
 C. 16 D. 17
 E. 18
25. The curved surface area and total surface area of a cone is 1107 cm^2 and 1350 cm^2 , respectively. If the height of the cone is 'x' cm and the slant height of the cone is 1 cm more than the height of the cone, then find the value of 'x'. take the value of $\text{Pie}=3$



- A. 24 cm B. 42 cm
 C. 33 cm D. 35 cm
 E. None of these
26. A man spends 20% of his monthly income on rent. Out of the remaining monthly income, he spends 25% on food, Rs. 'a' on transportation and the remaining money is deposited in the savings account which is 48% of the total monthly salary. If the amount is deposited for 5 years in the savings account he gets a simple interest of Rs. 8294.4 at the rate of 7.2% per annum, then find the value of 'a'.
 A. Rs. 6240 B. Rs. 7280
 C. Rs. 5760 D. Rs. 6860
 E. None of these
27. The age of Ram and shaym is in ratio of 2:6 and after 5 years the ratio of their age becomes 6:8. Find the average age of their ages after 10 Years .
 A. 12 B. 13
 C. 14 D. 15
 E. 16

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28. A service bus consists of forty passengers with average weight 40 kg. If 5 new passengers are added to this bus whose average weight is $(p+8)$ kg. now new average becomes $(p+16)$. find the value of p.
 A. 26 B. 23
 C. 33 D. 27
 E. none of these
29. A and B started a business by investing some amount in the ratio of 5:7, C joined them after 6 months with an amount equal to that of B, what will be their profit ratio for a period of 1 year?
 A. 5:6:7 B. 10:14:7
 C. 11:13:6 D. 9:5:4
 E. None of these
30. Savita gives a discount of 15% on the marked price of an article and in the process makes a profit of 19%. By what percentage did she mark the product over the cost price?
 A. 45 B. 40
 C. 36 D. 42
 E. 35
31. Pipe A can fill a tank in 40 minutes. Another pipe B can fill the tank 7 times as fast as pipe A. If both of them are connected simultaneously to the tank, then find the time after which the tank overflows.
 A. $40/7$ min B. $240/7$ min
 C. $160/7$ min D. $120/7$ min
 E. None of these
32. A 24 liters solution contains liquids water and cold drink in the ratio 3 : 5. How much amount of cold drink is to be added so that amount of cold drink is 70% of the new solution?
 A. 4 liters B. 5 liters
 C. 6 liters D. 7 liters
 E. None of these
33. X, Y, and Z completed a job in 10 days. However, Z only worked for the first three days when $37/100$ of the job was done. Also, the work done by X in 5 days is equal to the work done by Y in 4 days. How many days would be required by the fastest worker to complete the entire work?
 A. 35 days B. 20 days
 C. 50 day D. 45 days
 E. None of these
34. Kartik sold an item for ₹6,500 and incurred a loss of 20%. At what price should have sold the item to have gained a profit of 20%?
 A. ₹10,375
 B. ₹9,750
 C. ₹8,125
 D. Cannot be determined
 E. None of these
35. Three pipes A, B and C can fill a tank in 9 hours. After working for 3 hours together C is closed. A and B can fill it in 12 hours more. The time taken by C alone to fill the tank.
 A. 18 hrs B. 15 hrs
 C. 21 hrs D. 25 hrs
 E. 13 hrs
36. In a company, 70% of employees are above 30 years old and 60% of that is males. If the total no. of male employees aged 30 years above is 4200. Find the total no. of employees in the company.
 A. 11560 B. 10000
 C. 9050 D. 12500
 E. None of these
37. The average weight of 17 boxes is 92 kg. If 18 new boxes are added, the new average increases by 3 kg. What will be the average weight of the 18 new boxes?
 A. 98.8 kg B. 97.8 kg
 C. 91.8 kg D. 92.8 kg
 E. None of these
38. Ram is twice as fast as Aman and Aman is thrice as fast as Rohit in doing a work. Working together they can finish the work in 10 days. In how many days can Aman and Rohit together finish the work.
 A. 15 B. 20
 C. 25 D. 27
 E. 32



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39. Karu gave 40% of the amount to Goru. Goru gave one-fourth of what he received from Karu to papu. After paying Rs200 to the taxi driver out of the amount he got from Goru, Papu is now left with Rs600. How much amount did Karu have?
- A. 16000 B. 8000
C. 5000 D. 9000
E. 3000

40. Two pipes p₁ and p₂ can fill a tank in 40 minutes and 60 minutes respectively. Both the taps are opened and after 10 minutes p₁ was shut. In how much more time (in minutes) would the tank be full?
- A. 35 B. 54
C. 25 D. 41
E. None of these

ANSWERS

1. Ans. C.
Let capacity of tank = 60 units
Efficiency of A = $\frac{60}{12} = 5$ units/hour
Efficiency of B = $\frac{60}{15} = 4$ units/hour
Efficiency of C = $\frac{60}{6} = 10$ units/hour
Efficiency of A and B together = 5 + 4 = 9 units/hour
Tank filled in 5 hours = 9 x 5 = 45 units
Efficiency of A, B and C together = 5 + 4 + 10 = 19 units/hour
Hence, time taken to empty the tank = $\frac{45}{19} = 2\frac{11}{19}$ hours

2. Ans. C.
The number of seconds after which they toll together is LCM(6,7,8,9,12)
= 2*2*2*3*3*7 = 504 sec
In 1 hour = 3600 sec
Total number of times they toll together in one hour, excluding the one at the start = 3600/504 = 7.14
it means 7 times.

3. Ans. B.
Let the quantity of the wine in the cask originally be x litres
Then, quantity of wine left in cask after 4 operations = $[x(1 - \frac{8}{x})^4]$ litres
 $\therefore [x(1 - \frac{8}{x})^4] / x = \frac{16}{81}$
 $\Rightarrow [1 - \frac{8}{x}]^4 = (\frac{2}{3})^4$
 $\Rightarrow x = 24$

4. Ans. A.
S. P of 150 kg = c P of 120 kg
S. P of 150 kg = (15 x 120)
S. p of 1 kg of sugar = $\frac{15 \times 120}{150} = 12$

5. Ans. A.
Let the radius be R & Let the breadth be L and length be 2L
• Circumference is 2πR & Perimeter = 2(2L+L)
• 2πR = 6L
• R/2L = 3/2π

6. Ans. A.
According to the question,
 $\frac{3000 \times 5 \times R}{100 \times 2} - \frac{2000 \times 5 \times R}{100 \times 2} = 125$
 $\frac{1}{200} [15000R - 10000R] = 125$
 $\frac{5000R}{200} = 125 = R = 5\%$

7. Ans. A.
Let the present ages of Sonu and Monu be 7x and 6x. Now
 $\frac{7x-8}{6x-8} = \frac{5}{4}$
x = 4
Present age of Monu = 24 years
Monu's age four years from now = 24 + 4 = 28 years

8. Ans. B.
X_{total}/50 = 20
Which means X_{total} = 20*50 = 1000
Now, [X_{total} - 30 + (a + b)]/51 = 21
X_{total} - 30 + (a + b) = 1071

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1000 - 30 + (a + b) = 1071
 (a + b) = 101 & (a - b) = 5 (given)
 So, a = 53 & b = 48

9. Ans. C.

Since Q has joined after 6 months and he is getting Rs 500 monthly as salary and his total salary is 10% of total annual profit;
 Total annual salary = 500 × 6 = Rs. 3000
 Total annual profit = 3000/0.1 = Rs. 30000
 Remaining profit = 30000 - 3000 = Rs. 27000

This is to be divided among them in the ratio of their investment;

Ratio of investment = 3 × 12 : 6 × 6 : 4 × 12
 = 36 : 36 : 48 = 3 : 3 : 4;

Share of P in the profit = 3/10 × 27000 = Rs. 8100

10. Ans. B.

Number of men hours put in the first 5 days
 64 × 5 × 8 = 2560 hours.

For the remaining 60% of the work, men

hours required $2560 \times \frac{60}{40} = 3840$

Let number of hours everyday = x

$X = \frac{3840}{64 \times 4} = 15$ hours

11. Ans. C.

Let the speed of car be v

Distance traveled by vehicle lagging behind in duration the car crossed first vehicle and met the second = $30 \times \frac{4}{60} = 2$ km

$v \times \frac{4}{60} = 5 - 2$

⇒ v = 45 kmph

12. Ans. B.

Let MP of chair be INR 100

MP of table be INR 300

The dealer gives 30% discount on the chair

⇒ Discount on the chair is INR 30

∴ Discounted price of chair = INR 70

Let discounted price of table be x

According to the given information:

The total discount on the chair and table is 25%

⇒ 70 + x = 75% of (100 + 300)

⇒ 70 + x = 75/100 × (400)

⇒ 70 + x = 300

⇒ x = 230

∴ Discount percentage on table = $(300 - 230)/300 \times 100 = 23.33\%$

Hence, the discount offered on the table is 23.33%

13. Ans. C.

Let the work done by A, B and C in 1 day be a, b and c respectively

For first 2 days,

$6(a + b + c) = 37/100 \dots\dots(1)$

After C left the work, for remaining 9 days A and B worked

$9(a + b) = 63/100 \dots\dots(2)$

Further,

$4a = 3b \dots\dots(3)$

Solving equations (2) and (3),

$3(a + b) = 21/100$

$3a + 3b = 21/100$

$3a + 4a = 21/100$

$7a = 21/100$

a = 3%

b = 4%

B completes 4% of the work per day i.e. 4/100

Days taken to complete the entire work = $100/4 = 25$ days

14. Ans. A.

Total time taken by vikash for meeting point → 125 minutes

Time taken by Rahul for meeting point → 45 minutes

And they takes equal time so,

Time = $\sqrt{125 \times 45}$

T = 75 Minutes

15. Ans. D.

Let the cost price of horses be Rs.x and Rs.y.

∴ x + y = 86 (i)

$3x/4 + 4y/3 = 89$

$9x + 16y = 1068 \dots (ii)$

Multiplying (i) by 9,

$9x + 9y = 774 \dots\dots (iii)$

Subtracting (iii) from (ii), $7y = 294$.

∴ y = 42

Substituting the value of y in equation (i),

$x + 42 = 86$; ∴ x = 44

hence, option is d.

16. Ans. A.

Amount invested by A in a year

= $(10000 \times 3) + (3/4 \times 10000 \times 9)$

= 30000 + 67500 = 97500



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Amount invested by B in a year
 = (15000*3) + {(3/10 * 12000+15000)*9}
 = 45000+ 167400= 212400

Amount invested by C in a year
 = (30000*3) + {(7/10 * 12000+ 30000)*9}
 = 90000+ 345600
 = 435600

Ratio of sharing of profit
 = 97500:212400:435600
 = 325:708:1452

A's share of profit= 325*19880/2485 = Rs 2600

17. Ans. D.

Let, the marked price of the article be Rs. x

And, the cost price of the article be Rs. y

$$\text{So, } \frac{100-d}{100} \times x - y = \frac{4y}{5}$$

$$\text{So, } \frac{100-d}{100} \times x = \frac{9y}{5}$$

$$\text{So, } \frac{100-d}{100} = \frac{9y}{5x}$$

And,

$$\frac{100-d}{100} \times x - y - \left(\frac{90}{100} \times \frac{100-d}{100} \times x - y \right) = 288$$

$$= \frac{9y}{5x} \times x - y - \left(\frac{90}{100} \times \frac{9y}{5x} \times x - y \right) = 288$$

$$\frac{9y}{5} - \frac{81y}{50} = 288$$

$$\frac{90y - 81y}{50} = 288$$

$$\frac{9y}{50} = 288$$

$$y = 1600$$

Initially, the selling price of the article =
 180% of 1600 = Rs. 2880

Then, after second discount the selling price
 = 90% of 2880 = Rs. 2592

Profit = 2592 - 1600 = Rs. 992

Profit percentage = $\frac{992}{1600} \times 100 = 62\%$

So option (d) is the correct answer.

18. Ans. A.

Price * Consumption = Expenditure

let initial price and consumption be 100 each
 then expenditure = 100*100 = 10000

Now the price of rice is reduced by 25 % and
 a person increase his expenditure on rice by
 20 % and we have to find the consumption.

New price = 75

New Expenditure = 12000

New Consumption = expenditure / price =
 12000/75 = 160

* The percentage change in consumption is
 →60/100*100=60%

19. Ans. E.

Since, four years ago, the average age of 5
 friends = 25 years

So, the average present age of 5 friends =
 25 + 4 = 29 years

Let the present age of A, B, C, D and E are a,
 b, c, d and e years.

So, a + b + c + d + e = 29 x 5 = 145

Also, a + b = 60

Now, $\frac{d+10}{e+10} = \frac{17}{23}$

So, 23d + 230 = 17e + 170

So, 17e - 23d = 60

Also, five years later, the average age of C
 and D is 29.5 years

So, the average present age of C and D =
 29.5 - 5 = 24.5 years

So, c + d = 24.5 x 2 = 49

So, a + b + c + d + e = 29 x 5 = 145

So, 60 + 49 + e = 145

So, e = 36 years

From, 17e - 23d = 60

So, 17 x 36 - 23d = 60

So, d = 24 years

Let F's present age be f years

After including F, f is added to the ages of
 five friends

New average age = 29 - 0.5 = 28.5 years

So, a + b + c + d + e + f = 28.5 x 6 = 171
 145 + f = 171

So, f = 26 years

Present age of B, b = 26 + 2 = 28 years

So, a = 60 - 28 = 32 years

And, c = 49 - 24 = 25 years

Required difference = a - c = 32 - 25 = 7
 years

So option (e) is the correct answer.

20. Ans. E.

The ratio of the present ages of Sonam and
 Surekha is 5: 7

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Let the age of Sonam = $5x$
 So, the age of Surekha = $7x$
 Sonam is 4 years older than her cousin
 Abhay
 $Abhay = 5x - 4$
 The ratio between the ages of Surekha and
 Abhay is 5: 3

$$\frac{7x}{5x - 4} = \frac{5}{3}$$

 $21x = 25x - 20; x = 5$
 So, the age of Sonam = $5x = 25$
 And the age of Surekha = $7x = 35$
 So, the ages of Sonam and Surekha after 12
 years are 37 and 47 respectively.
 So, the ratio between the ages of Sonam and
 Surekha after 12 years = $37/47$
 So option (e) is the correct answer.

21. Ans. E.
 Efficiency of A is 1.5 time more than B,
 so, efficiency ratio of A: B = $(1+1.5) : 1 =$
 $2.5 : 1 = 5:2$
 efficiency ratio of A: C = $1 : 2 = 5:10$
 so efficiency ratio of A: B: C = $5:2:10$
 work completed by A & B in $7(1/2)$ days =
 $(5+2) \times 7(1/2) = 52(1/2)$ unit
 time taken by B & C to complete this work =
 $52(1/2) / (2+10) = 35/8 = 4(3/8)$ days

22. Ans. D.
 A and B can fill the tank in 36 minutes
 Let the time taken by pipe A to fill the tank =
 x minutes
 Ans, the time taken by pipe B to fill the tank
 = y minutes

$$\text{So, } \frac{1}{x} + \frac{1}{y} = \frac{1}{36}$$

$$\text{So, part filled in 30 minutes} = \frac{30}{36} = \frac{5}{6}$$

$$\text{Remaining part} = 1 - \frac{5}{6} = \frac{1}{6}$$

So, $\frac{1}{6}$ th part is filled by A alone in 10 minutes

So total time taken by A to fill the tank = 60 minutes

$$\text{And, time taken by B to fill} = \frac{1}{36} - \frac{1}{60} = \frac{10}{360} - \frac{6}{360} = \frac{4}{360} = \frac{1}{90}$$

So, pipe B can fill the tank in 90 minutes.
 So, option (d) is the correct answer.

23. Ans. B.
 Let the length of the train = L
 And, the length of the platform = P

$$\text{So, } 25 \times \frac{5}{18} = \frac{L+P}{18}$$

$$L+P = 125$$

$$\text{And, } 30 \times \frac{5}{18} = \frac{L}{12}$$

$$L = 100$$

$$P = 25$$

$$\text{Required difference} = 100 - 25 = 75$$

So, option (b) is the correct answer.

24. Ans. E.

Amount of acid in 20 ml of first solution =
 $20a$

Amount of acid in 30 ml of second solution =
 $30b$

Amount of acid in the resulting solution = 9.2
 $\times 50 = 460$

$$2x+3y=46$$

Amount of acid in 70 ml of first solution =
 $70a$

Amount of acid in 140 ml of second solution
 = $140b$

Amount of acid in the resulting solution =
 $210 \times 9 \frac{1}{3}$

$$a+2b=28$$

$$b = 10, a=8$$

$$a+b=18$$

So option (e) is the correct answer.

25. Ans. E.

Height of the cone = x cm

Slant height of the cone = $(x+1)$ cm

Given, curved surface area of the cone =

$$1107 \text{ cm}^2$$

$$= \pi r(x+1) = 1107$$

$$= r(x+1) = 369$$

Total surface area of the cone = Curved
 surface area of the cone + area of the
 circular base of cone

$$1350 = 1170 + \text{of } \pi r^2$$

$$\pi r^2 = 243$$

$$3r^2 = 243$$

$$r=9 \text{ cm}$$



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$$r(x + 1) = 369$$

$$9(x + 1) = 369$$

$$(x + 1) = \frac{369}{9}$$

$$(x + 1) = 41$$

$$x = 40$$

So option (e) is the correct answer.

26. Ans. C.

Let, the total monthly income be Rs. 'x'

Amount spent on rent = Rs. 0.2x

Remaining monthly income = Rs. 0.8x

Amount spent on food = 0.25 x 0.8x = 0.2x

Amount deposited on savings account = Rs. 0.48x

$$\text{So, } 0.2x + 0.2x + a + 0.48x = x$$

$$a = 0.12x$$

$$a = 12\% \text{ of } x$$

$$\text{Now, } 8294.4 = \frac{0.48x \times 7.2 \times 5}{100}$$

$$= 829440 = 17.28x$$

$$x = \text{Rs. } 48000$$

$$\text{So, } a = 12\% \text{ of } x$$

$$= \text{Rs. } 5760$$

So option (c) is the correct answer.

27. Ans. A.

Let the current ages be y and 3y

Their ages after 5 years $\rightarrow y+5$ & $3y+5$

$$\rightarrow (y+5)/(3y+5) = 3/4 \rightarrow y = 1$$

So, their current ages are 1 & 3 years and after 10 years the average age be 12 years.

28. Ans. B.

$$40 \times 40 + 5 \times (p+8) = 45 \times (p+16)$$

$$1600 + 5p + 40 = 45p + 720$$

$$p = 23$$

29. Ans. B.

It is given that the ratio of the investment of A and B is 5:7

Let the initial investment of A and B $5x$ and $7x$

Therefore, A: B: C =

$$(5x \times 12) : (7x \times 12) : (7x \times 6)$$

$$= 60 : 84 : 42$$

$$= 10 : 14 : 7$$

Hence (II) is the correct option.

30. Ans. B.

Let C.P. be 100. Then, S.P. is Rs.119 (as profit percentage is 19).

This SP of Rs. 119 has been obtained after a discount of 15% on the marked price, i.e. SP is 85% of the marked price.

$$\therefore \text{Marked price} = \frac{119}{0.85} = \text{Rs}140$$

Since CP = Rs.100 and the Marked price is Rs 140, we can conclude that Savita has marked his product 40% over the cost price.

31. Ans. E.

Given, pipe A can fill the tank in 40 minutes.

Pipe B is 7 times as fast as pipe A.

Time taken by pipe B to fill the tank = $40/7$ minutes

Tank overflows when it fills completely for the 1st time.

In 1 min, part of tank filled by pipe A and B

$$\text{together} = 1/40 + 7/40 = 8/40 = 1/5$$

Thus, they will fill the tank in 5 mins.

None of the options match, answer is E.

32. Ans. C.

$$\text{Water present in solution} = 3 \times 24/8 = 9$$

$$\text{Wine present in solution} = 5 \times 24/8 = 15$$

Let x liters of cold drink to be added cold drink is to be 70% of new solution, so water is to be 30% of new solution. So

$30/100$ of new solution = Water present in new solution

$$30/100 * (24+x) = 9$$

$$\text{So, } x = 6 \text{ liters}$$

33. Ans. B.

$$3 \text{ days work} = 37\%$$

Remaining 63% done by (X+Y) in 7 day

$$(X+Y)'s \text{ 1 day work} = 9\%$$

$$X \text{ one day work} = 4\%$$

$$Y \text{ one day work} = 5\%$$

$$Z's \text{ 3 days work} = 37\% - 27\% = 10\%$$

$$\text{highest per day work of } Y = 5\%$$

So fastest is Y and complete work in 20 days.

34. Ans. B.

$$SP = 6500$$

$$\text{Loss} = 20\%$$

$$\text{Hence, } 0.8CP = 6500$$

$$CP = 8125$$

$$\text{To gain a profit of } 20\%, SP = 8125 \times 1.2 = 9750$$

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Alternate approach:

$$\text{Price} = 6500 \times \frac{100}{80} \times \frac{120}{100}$$

Price = ₹9750

35. Ans. A.

(A + B + C) can fill a tank in = 9 hours

∴ (A + B + C) can fill in 1 hour = 1/9

(1)

∴ (A + B + C) can fill in 3 hours = 3/9 = 1/3

∴ Remaining volume of tank = 1 - 1/3 = 2/3

∴ (A + B) can fill 2/3 in = 12 hours

∴ (A + B) can completely fill the tank in = 12

× 3/2 = 18 hours

∴ (A + B) can fill in 1 hour = 1/18

(2) From (2) - (1) we get,

C alone can fill in 1 hour

$$= \frac{1}{9} - \frac{1}{18} = \frac{2-1}{18} = \frac{1}{18}$$

∴ C alone can fill the tank in = 18 hours

36. Ans. B.

Let the total no. of employees be x.

According to the question, we can write,

$$x \times (70/100) \times (60/100) = 4200$$

$$\Rightarrow x = 420000/42$$

$$\Rightarrow x = 10000.$$

∴ The total no. of employees = 10000.

37. Ans. B.

Weight of 17 boxes = 17 × 92 = 1564kg.

Since, If 18 new boxes are added, the new

average increases by 3 kg. Therefore,

Total weight of (18 + 17) = 35 boxes = 35 × (92 + 3) = 3325kg

∴ Weight of 18 boxes = 3325 - 1564 = 1761kg

∴ The required average weight of 18 boxes = 1761/18 = 97.8 kg

Hence, option B is correct.

38. Ans. C.

Given, Ram is twice as fast as Aman and Aman is thrice as fast as Rohit in doing a work.

Let the number of days in which Rohit can finish the work be 'a' days.

Number of days in which Aman finishes the work = a/3

Number of days in which Ram finishes the work = (a/3)/2 = a/6

In 1 day, Rohit finishes 1/a part, Aman finishes 3/a part and Ram finishes 6/a part of the work.

Given, working together they can finish the work in 10 days.

$$1/a + 3/a + 6/a = 1/10$$

$$\Rightarrow 10/a = 1/10$$

$$\Rightarrow a = 100 \text{ days}$$

In 1 day, Aman and Rohit working together finish part of work = 1/a + 3/a = 4/a = 1/25

Number of days in which Aman and Rohit

finish the work = 25 days

39. Ans. B.

Let Karu have Rs X, Than Goru = 2X/5 and

Papu = 2X/5 * 1/4 = X/10

According to question

$$X/10 - 200 = 600$$

$$X = \text{Rs } 8000 \text{ ans.}$$

40. Ans. A.

portion of the tank filled in 10 minutes

$$= 10(1/40 + 1/60) = 10 \times \frac{1}{24} = \frac{5}{12}$$

Portion of the tank which is yet to be filled =

$$1 - \frac{5}{12} = \frac{7}{12}$$

Time taken by p₂ to fill 7/12th of the tank

$$= \frac{7}{12} \times 60 = 35 \text{ min}$$



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