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Staff Selection Commission



SSC CHSL Aptitude Sample Paper



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(1) A can do a work in 15 days and B in 20 days. If they work on it together for 4 days, then the fraction of the work that is left is :

[A]

$$\frac{1}{4}$$

[B]

$$\frac{1}{10}$$

[C]

$$\frac{7}{15}$$

[D]

$$\frac{8}{15}$$

Answer : [D]

Explanation:

$$\text{A's 1 day's work} = \frac{1}{15} ;$$

$$\text{B's 1 day's work} = \frac{1}{20} ;$$

$$\text{(A + B)'s 1 day's work} = \left(\frac{1}{15} + \frac{1}{20} \right) = \frac{7}{60}.$$

$$\text{(A + B)'s 4 day's work} = \left(\frac{7}{60} \times 4 \right) = \frac{7}{15}.$$

$$\text{Therefore, Remaining work} = \left(1 - \frac{7}{15} \right) = \frac{8}{15}.$$

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(2) 4 men and 6 women can complete a work in 8 days, while 3 men and 7 women can complete it in 10 days. In how many days will 10 women complete it?

[A] 35

[B] 40

[C] 45

[D] 50

Answer : [B]

Explanation:

Let 1 man's 1 day's work = x and 1 woman's 1 day's work = y .

$$\text{Then, } 4x + 6y = \frac{1}{8} \text{ and } 3x + 7y = \frac{1}{10}.$$

$$\text{Solving the two equations, we get: } x = \frac{11}{400}, y = \frac{1}{400}$$

$$\therefore \text{ 1 woman's 1 day's work} = \frac{1}{400}.$$

$$\Rightarrow \text{ 10 women's 1 day's work} = \left(\frac{1}{400} \times 10 \right) = \frac{1}{40}.$$

Hence, 10 women will complete the work in 40 days.

(3) A is 30% more efficient than B. How much time will they, working together, take to complete a job which A alone could have done in 23 days?

[A] 11 days

[B] 13 days

[C]

$20\frac{3}{17}$ days

[D] None of these

Answer : [B]

Explanation:

Ratio of times taken by A and B = 100 : 130 = 10 : 13.

Suppose B takes x days to do the work.

$$\text{Then, } 10 : 13 :: 23 : x \Rightarrow x = \left(\frac{23 \times 13}{10} \right) \Rightarrow x = \frac{299}{10}.$$

$$\text{A's 1 day's work} = \frac{1}{23};$$

$$\text{B's 1 day's work} = \frac{10}{299}.$$

$$\text{(A + B)'s 1 day's work} = \left(\frac{1}{23} + \frac{10}{299} \right) = \frac{23}{299} = \frac{1}{13}.$$

Therefore, A and B together can complete the work in 13 days.

(4) A and B can do a piece of work in 30 days, while B and C can do the same work in 24 days and C and A in 20 days. They all work together for 10 days when B and C leave. How many days more will A take to finish the work?

[A] 18 days

[B] 24 days

[C] 30 days

[D] 36 days

Answer : [A]

Explanation:

$$2(\text{A} + \text{B} + \text{C})\text{'s 1 day's work} = \left(\frac{1}{30} + \frac{1}{24} + \frac{1}{20} \right) = \frac{15}{120} = \frac{1}{8}.$$

$$\text{Therefore, (A + B + C)'s 1 day's work} = \frac{1}{2 \times 8} = \frac{1}{16}.$$

$$\text{Work done by A, B, C in 10 days} = \frac{10}{16} = \frac{5}{8}.$$

$$\text{Remaining work} = \left(1 - \frac{5}{8} \right) = \frac{3}{8}.$$

$$\text{A's 1 day's work} = \left(\frac{1}{16} - \frac{1}{24} \right) = \frac{1}{48}.$$

Now, $\frac{1}{48}$ work is done by A in 1 day.

$$\text{So, } \frac{3}{8} \text{ work will be done by A in } \left(48 \times \frac{3}{8} \right) = 18 \text{ days.}$$

(5) Twenty women can do a work in sixteen days. Sixteen men can complete the same work in fifteen days. What is the ratio between the capacity of a man and a woman?

[A] 3 : 4

[B] 4 : 3

[C] 5 : 3

[D] Data inadequate

Answer : [B]

Explanation:

(20 x 16) women can complete the work in 1 day.

$$\therefore 1 \text{ woman's 1 day's work} = \frac{1}{320}$$

(16 x 15) men can complete the work in 1 day.

$$\therefore 1 \text{ man's 1 day's work} = \frac{1}{240}$$

$$\text{So, required ratio} = \frac{1}{240} : \frac{1}{320}$$

$$= \frac{1}{3} : \frac{1}{4}$$

$$= 4 : 3 \text{ (cross multiplied)}$$

(6) A vendor bought toffees at 6 for a rupee. How many for a rupee must he sell to gain 20%?

[A] 3

[B] 4

[C] 5

[D] 6

Answer : [C]

Explanation:

C.P. of 6 toffees = Re. 1

$$\text{S.P. of 6 toffees} = 120\% \text{ of Re. 1} = \text{Rs. } \frac{6}{5}$$

For Rs. $\frac{6}{5}$, toffees sold = 6.

$$\text{For Re. 1, toffees sold} = \left(6 \times \frac{5}{6}\right) = 5.$$

(7) The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, then the value of x is:

[A] 15

[B] 16

[C] 18

[D] 25

Answer : [B]**Explanation:**Let C.P. of each article be Re. 1 C.P. of x articles = Rs. x .S.P. of x articles = Rs. 20.Profit = Rs. $(20 - x)$.

$$\therefore \left(\frac{20 - x}{x} \times 100 = 25 \right)$$

$$\Rightarrow 2000 - 100x = 25x$$

$$125x = 2000$$

$$\Rightarrow x = 16.$$

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(8) A shopkeeper expects a gain of 22.5% on his cost price. If in a week, his sale was of Rs. 392, what was his profit?

[A] Rs. 18.20

[B] Rs. 70

[C] Rs. 72

[D] Rs. 88.25

Answer : [C]**Explanation:**

$$\text{C.P.} = \text{Rs.} \left(\frac{100}{122.5} \times 392 \right) = \text{Rs.} \left(\frac{1000}{1225} \times 392 \right) = \text{Rs.} 320$$

$$\therefore \text{Profit} = \text{Rs.} (392 - 320) = \text{Rs.} 72.$$

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(9) Sam purchased 20 dozens of toys at the rate of Rs. 375 per dozen. He sold each one of them at the rate of Rs. 33. What was his percentage profit?

[A] 3.5

[B] 4.5

[C] 5.6

[D] 6.5

Answer : [C]**Explanation:**

$$\text{Cost Price of 1 toy} = \text{Rs.} \left(\frac{375}{12} \right) = \text{Rs.} 31.25$$

Selling Price of 1 toy = Rs. 33

So, Gain = Rs. $(33 - 31.25) = \text{Rs.} 1.75$

$$\therefore \text{Profit \%} = \left(\frac{1.75}{31.25} \times 100 \right) \% = \frac{28}{5} \% = 5.6\%$$

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(10) 100 oranges are bought at the rate of Rs. 350 and sold at the rate of Rs. 48 per dozen. The percentage of profit or loss is:

[A]
 $14\frac{2}{7}\%$ gain

[B] 15% gain

[C]
 $14\frac{2}{7}\%$ loss

[D] 15 % loss

Answer : [A]

Explanation:

$$\text{C.P. of 1 orange} = \text{Rs. } \left(\frac{350}{100}\right) = \text{Rs. } 3.50$$

$$\text{S.P. of 1 orange} = \text{Rs. } \left(\frac{48}{12}\right) = \text{Rs. } 4$$

$$\therefore \text{Gain\%} = \left(\frac{0.50}{3.50} \times 100\right)\% = \frac{100}{7}\% = 14\frac{2}{7}\%$$

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(11) If $A = x\%$ of y and $B = y\%$ of x , then which of the following is true?

[A] A is smaller than B.

[B] A is greater than B

[C] Relationship between A and B cannot be determined.

[D] If x is smaller than y , then A is greater than B.

[E] None of these

Answer : [E]

Explanation:

$$x\% \text{ of } y = \left(\frac{x}{100} \times y\right) = \left(\frac{y}{100} \times x\right) = y\% \text{ of } x$$

$\therefore A = B.$

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(12) Two students appeared at an examination. One of them secured 9 marks more than the other and his marks was 56% of the sum of their marks. The marks obtained by them are:

[A] 39, 30

[B] 41, 32

[C] 42, 33

[D] 43, 34

Answer : [C]

Explanation:

Let their marks be $(x + 9)$ and x .

$$\text{Then, } x + 9 = \frac{56}{100}(x + 9 + x)$$

$$\Rightarrow 25(x + 9) = 14(2x + 9)$$

$$\Rightarrow 3x = 99$$

$$\Rightarrow x = 33$$

So, their marks are 42 and 33.

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(13) If 20% of $a = b$, then $b\%$ of 20 is the same as:

[A] 4% of a

[B] 5% of a

[C] 20% of a

[D] None of these

Answer : [A]

Explanation:

$$20\% \text{ of } a = b \Rightarrow \frac{20}{100}a = b.$$

$$\therefore b\% \text{ of } 20 = \left(\frac{b}{100} \times 20 \right) = \left(\frac{20}{100}a \times \frac{1}{100} \times 20 \right) = \frac{4}{100}a = 4\% \text{ of } a.$$

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(14)

A student multiplied a number by $\frac{3}{5}$ instead of $\frac{5}{3}$.

What is the percentage error in the calculation?

[A] 34%

[B] 44%

[C] 54%

[D] 64%

Answer : [D]

Explanation:

Let the number be x .

$$\text{Then, error} = \frac{5}{3}x - \frac{3}{5}x = \frac{16}{15}x.$$

$$\text{Error}\% = \left(\frac{16x}{15} \times \frac{3}{5x} \times 100 \right)\% = 64\%.$$

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(15) Rajeev buys good worth Rs. 6650. He gets a rebate of 6% on it. After getting the rebate, he pays sales tax @ 10%. Find the amount he will have to pay for the goods.

[A] Rs. 6876.10

[B] Rs. 6999.20

[C] Rs. 6654

[D] Rs. 7000

Answer : [A]

Explanation:

$$\text{Rebate} = 6\% \text{ of Rs. } 6650 = \text{Rs. } \left(\frac{6}{100} \times 6650 \right) = \text{Rs. } 399.$$

$$\text{Sales tax} = 10\% \text{ of Rs. } (6650 - 399) = \text{Rs. } \left(\frac{10}{100} \times 6251 \right) = \text{Rs. } 625.10$$

$$\therefore \text{Final amount} = \text{Rs. } (6251 + 625.10) = \text{Rs. } 6876.10$$

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(16) In a division sum, the remainder is 0. As student mistook the divisor by 12 instead of 21 and obtained 35 as quotient. What is the correct quotient ?

[A] 0

[B] 12

[C] 13

[D] 20

Answer : [D]**Explanation:**

$$\text{Number} = (12 \times 35)$$

$$\text{Correct Quotient} = 420 \div 21 = 20$$

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(17) The largest 5 digit number exactly divisible by 91 is:

[A] 99921

[B] 99918

[C] 99981

[D] 99971

[E] None of these

Answer : [B]**Explanation:**

$$\text{Largest 5-digit number} = 99999 \quad 91) \quad 99999 \quad (1098 \quad 91 \quad \text{---} \quad 899 \quad 819 \quad \text{----} \quad 809 \quad 728 \quad \text{---}$$

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(18) $35 + 15 \times 1.5 = ?$

[A] 85

[B] 51.5

[C] 57.5

[D] 5.25

[E] None of these

Answer : [C]**Explanation:**

$$\text{Given Exp.} = 35 + 15 \times \underline{3} = 35 + \underline{45} = 35 + 22.5 = 57.5$$

(19) What is the unit digit in 7^{105} ?

[A] 1

[B] 5

[C] 7

[D] 9

Answer : [C]

Explanation:

Unit digit in $7^{105} =$ Unit digit in $[(7^4)^{26} \times 7]$

But, unit digit in $(7^4)^{26} = 1$

\therefore Unit digit in $7^{105} = (1 \times 7) = 7$

(20) $8796 \times 223 + 8796 \times 77 = ?$

[A] 2736900

[B] 2638800

[C] 2658560

[D] 2716740

[E] None of these

Answer : [B]

Explanation:

$8796 \times 223 + 8796 \times 77 = 8796 \times (223 + 77)$ [Ref: By Distributive Law]

$$= (8796 \times 300)$$

$$= 2638800$$