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SBI PO Aptitude Sample Paper

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(1) In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?

[A] 30%

[B] 70%

[C] 100%

[D] 250%

Answer : [B]

Explanation:
Let C.P.= Rs. 100. Then, Profit = Rs. 320, S.P. = Rs. 420.
New C.P. = 125% of Rs. 100 = Rs. 125
New S.P. = Rs. 420.
Profit = Rs. (420 - 125) = Rs. 295.

$\therefore$ Required percentage = $\left(\dfrac{295}{420} \times 100\right)\%$ = $\dfrac{1475}{21}\%$ = 70% (approximately).

(2) 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).

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

$\Rightarrow$ 2000 - 100x = 25x
125x = 2000
$\Rightarrow$ x = 16.

(3) Alfred buys an old scooter for Rs. 4700 and spends Rs. 800 on its repairs. If he sells the scooter for Rs. 5800, his gain percent is:

[A]
$4\dfrac{4}{7}\%$

[B]
$5\dfrac{5}{11}\%$

[C] 10%

[D] 12%

Answer : [B]

Explanation:
Cost Price (C.P.) = Rs. (4700 + 800) = Rs. 5500.
Selling Price (S.P.) = Rs. 5800.
Gain = (S.P.) - (C.P.) = Rs.(5800 - 5500) = Rs. 300.

Gain % = $\left(\dfrac{300}{5500} \times 100\right)\%$ = $5\dfrac{5}{11}\%$

(4) 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:

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

Selling Price of 1 toy = Rs. 33
So, Gain = Rs. (33 - 31.25) = Rs. 1.75

∴ Profit % = $\left(\dfrac{1.75}{31.25} \times 100\right)\%$ = $\dfrac{28}{5}\%$ = 5.6%

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(5) On selling 17 balls at Rs. 720, there is a loss equal to the cost price of 5 balls. The cost price of a ball is:

[A] Rs. 45

[B] Rs. 50

[C] Rs. 55

[D] Rs. 60

Answer : [D]

Explanation:
(C.P. of 17 balls) - (S.P. of 17 balls) = (C.P. of 5 balls)
⟹ C.P. of 12 balls = S.P. of 17 balls = Rs.720.

⟹ C.P. of 1 ball = Rs. $\left(\dfrac{720}{12}\right)$ = Rs. 60.

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(6) A batsman scored 110 runs which included 3 boundaries and 8 sixes. What percent of his total score did he make by running between the wickets?

[A] 45%

[B]
$45\dfrac{5}{11}\%$

[C]
$54\dfrac{6}{11}\%$

[D] 55%

Answer : [B]

Explanation:
Number of runs made by running = 110 - (3 x 4 + 8 x 6)
= 110 - (60)
= 50.

∴ Required percentage = $\left(\dfrac{50}{110} \times 100\right)\%$ = $45\dfrac{5}{11}\%$

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(7) 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.

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

$\Rightarrow 25(x + 9) = 14(2x + 9)$
$\Rightarrow 3x = 99$
$\Rightarrow x = 33$
So, their marks are 42 and 33.

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(8) Two numbers A and B are such that the sum of 5% of A and 4% of B is two-third of the sum of 6% of A and 8% of B. Find the ratio of A : B.

[A] 2 : 3

[B] 1 : 1

[C] 3 : 4

[D] 4 : 3

Answer : [D]

Explanation:
5% of A + 4% of B = $\dfrac{2}{3}$ (6% of A + 8% of B)

$\Rightarrow \dfrac{5}{100}A + \dfrac{4}{100}B = \dfrac{2}{3}\left(\dfrac{6}{100}A + \dfrac{8}{100}B\right)$

$\Rightarrow \dfrac{1}{20}A + \dfrac{1}{25}B = \dfrac{1}{25}A + \dfrac{4}{75}B$

$\Rightarrow \left(\dfrac{1}{20} - \dfrac{1}{25}\right)A = \left(\dfrac{4}{75} - \dfrac{1}{25}\right)B$

$\Rightarrow \dfrac{1}{100}A = \dfrac{1}{75}B$

$\dfrac{A}{B} = \dfrac{100}{75} = \dfrac{4}{3}.$

$\therefore$ Required ratio = 4 : 3

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(9) In a certain school, 20% of students are below 8 years of age. The number of students above 8 years of age is $\dfrac{2}{3}$ of the number of students of 8 years of age which is 48. What is the total number of students in the school?

[A] 72

[B] 80

[C] 120

[D] 150

[E] 100

Answer : [E]

Explanation:
Let the number of students be x. Then,
Number of students above 8 years of age = (100 - 20)% of x = 80% of x.

$\therefore$ 80% of x = 48 + $\dfrac{2}{3}$ of 48

$\Rightarrow \dfrac{80}{100}x = 80$

$\Rightarrow x = 100.$

(10) Three candidates contested an election and received 1136, 7636 and 11628 votes respectively. What percentage of the total votes did the winning candidate get?

[A] 57%

[B] 60%

[C] 65%

[D] 90%

Answer : [A]

Explanation:
Total number of votes polled = (1136 + 7636 + 11628) = 20400.

∴ Required percentage = $\left(\dfrac{11628}{20400} \times 100 \right)$% = 57%.

(11) The H.C.F. of two numbers is 23 and the other two factors of their L.C.M. are 13 and 14. The larger of the two numbers is:

[A] 276

[B] 299

[C] 322

[D] 345

Answer : [C]

Explanation:
Clearly, the numbers are (23 x 13) and (23 x 14).
∴ Larger number = (23 x 14) = 322.

(12) Three number are in the ratio of 3 : 4 : 5 and their L.C.M. is 2400. Their H.C.F. is:

[A] 40

[B] 80

[C] 120

[D] 200

Answer : [A]

Explanation:
Let the numbers be $3x$, $4x$ and $5x$.
Then, their L.C.M. = $60x$.
So, $60x = 2400$ or x = 40.
∴ The numbers are (3 x 40), (4 x 40) and (5 x 40).
Hence, required H.C.F. = 40.

(13) The ratio of two numbers is 3 : 4 and their H.C.F. is 4. Their L.C.M. is:

[A] 12

[B] 16

[C] 24

[D] 48

Answer : [D]

Explanation:
Let the numbers be $3x$ and $4x$. Then, their H.C.F. = x. So, $x = 4$.

So, the numbers 12 and 16.
L.C.M. of 12 and 16 = 48.

(14) The smallest number which when diminished by 7, is divisible 12, 16, 18, 21 and 28 is:

[A] 1008

[B] 1015

[C] 1022

[D] 1032

Answer : [B]

Explanation:
Required number = (L.C.M. of 12,16, 18, 21, 28) + 7

  = 1008 + 7
  = 1015

(15) The L.C.M. of two numbers is 48. The numbers are in the ratio 2 : 3. Then sum of the number is:

[A] 28

[B] 32

[C] 40

[D] 64

Answer : [C]

Explanation:
Let the numbers be $2x$ and $3x$.
Then, their L.C.M. = $6x$.
So, $6x = 48$ or $x = 8$.
∵ The numbers are 16 and 24.
Hence, required sum = (16 + 24) = 40.

(16) A sum fetched a total simple interest of Rs. 4016.25 at the rate of 9 p.c.p.a. in 5 years. What is the sum?

[A] Rs. 4462.50

[B] Rs. 8032.50

[C] Rs. 8900

[D] Rs. 8925

[E] None of these

Answer : [D]

Explanation:
$$\text{Principal} = \text{Rs.} \left(\frac{100 \times 4016.25}{9 \times 5} \right)$$

$$= \text{Rs.} \left(\frac{401625}{45} \right)$$

$$= \text{Rs. } 8925.$$

(17) How much time will it take for an amount of Rs. 450 to yield Rs. 81 as interest at 4.5% per annum of simple interest?

[A] 3.5 years

[B] 4 years

[C] 4.5 years

[D] 5 years

Answer : [B]

Explanation:
Time $= \left(\dfrac{100 \times 81}{450 \times 4.5} \right)_{\text{years}} = 4$ years.

(18) Reena took a loan of Rs. 1200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period, what was the rate of interest?

[A] 3.6

[B] 6

[C] 18

[D] Cannot be determined

[E] None of these

Answer : [B]

Explanation:
Let rate = R% and time = R years.
Then, $\left(\dfrac{1200 \times R \times R}{100} \right) = 432$

$\Rightarrow 12R^2 = 432$
$\Rightarrow R^2 = 36$
$\Rightarrow R = 6.$

(19) A sum of Rs. 725 is lent in the beginning of a year at a certain rate of interest. After 8 months, a sum of Rs. 362.50 more is lent but at the rate twice the former. At the end of the year, Rs. 33.50 is earned as interest from both the loans. What was the original rate of interest?

[A] 3.6%

[B] 4.5%

[C] 5%

[D] 6%

[E] None of these

Answer : [E]

Explanation:
Let the original rate be R%. Then, new rate = (2R)%.
Note:

Here, original rate is for 1 year(s); the new rate is for only 4 months i.e. $\dfrac{1}{3}$ year(s).

$\therefore \left(\dfrac{725 \times R \times 1}{100} \right) + \left(\dfrac{362.50 \times 2R \times 1}{100 \times 3} \right) = 33.50$

$\Rightarrow (2175 + 725)\, R = 33.50 \times 100 \times 3$
$\Rightarrow (2175 + 725)\, R = 10050$
$\Rightarrow (2900)R = 10050$
$\Rightarrow R = \dfrac{10050}{2900} = 3.46$

$\because$ Original rate = 3.46%

(20) A person borrows Rs. 5000 for 2 years at 4% p.a. simple interest. He immediately lends it to another person at $6\dfrac{1}{4}$ p.a for 2 years. Find his gain in the transaction per year.

[A] Rs. 112.50

[B] Rs. 125

[C] Rs. 150

[D] Rs. 167.50

Answer : [A]

Explanation:

Gain in 2 years = Rs. $\left[\left(5000 \times \dfrac{25}{4} \times \dfrac{2}{100}\right) - \left(\dfrac{5000 \times 4 \times 2}{100}\right)\right]$

= Rs. (625 - 400)

= Rs. 225.

∴ Gain in 1 year = Rs. $\left(\dfrac{225}{2}\right)$ = Rs. 112.50