Book For

Institute of Banking Personnel Selection

IBPS PO/MT Aptitude Sample Paper Pdf Download

(1) What percentage of numbers from 1 to 70 have 1 or 9 in the unit's digit?

[A] 1

[B] 14

[C] 20

[D] 21

Answer : [C]

Explanation:
Clearly, the numbers which have 1 or 9 in the unit's digit, have squares that end in the digit 1. Such numbers from 1 to 70 are 1, 9, 11, 19, 21, 29, 31, 39, 41, 49, 51, 59, 61, 69.
Number of such number =14
$\therefore$ Required percentage = $\left(\frac{14}{70} \times 100\right)\% = 20\%$.

---

(2) 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] $45\frac{5}{11}\%$

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

[D] 55%

Answer : [B]

Explanation:
Number of runs made by running = 110 - (3 x 4 + 8 x 6)
= 110 - (60)
= 50.
$\therefore$ Required percentage = $\left(\frac{50}{110} \times 100\right)\% = 45\frac{5}{11}\%$

---

(3) 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:

$5\%\text{ of A} + 4\%\text{ of B} = \frac{2}{3}(6\%\text{ of A} + 8\%\text{ of B})$

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

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

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

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

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

∴ Required ratio = 4 : 3

---

(4) 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 = $\left(\frac{11628}{20400} \times 100\right)\%$ = 57%.

---

(5) Two tailors X and Y are paid a total of Rs. 550 per week by their employer. If X is paid 120 percent of the sum paid to Y, how much is Y paid per week?

[A] Rs. 200

[B] Rs. 250

[C] Rs. 300

[D] None of these

Answer : [B]

Explanation:
Let the sum paid to Y per week be Rs. z.
Then, z + 120% of z = 550.
$\Rightarrow z + \frac{120}{100}z = 550$

$\Rightarrow \frac{11}{5}z = 550$

$\Rightarrow z = \left(\frac{550 \times 5}{11}\right) = 250.$

---

(6) Three times the first of three consecutive odd integers is 3 more than twice the third. The third integer is:

[A] 9

[B] 11

[C] 13

[D] 15

Answer : [D]

Explanation:
Let the three integers be x, x + 2 and x + 4.
Then, $3x = 2(x + 4) + 3 \Leftrightarrow x = 11$.
∴ Third integer = x + 4 = 15.

---

(7) The difference between a two-digit number and the number obtained by interchanging the positions of its digits is 36. What is the difference between the two digits of that number?

[A] 3

[B] 4

[C] 9

[D] Cannot be determined

[E] None of these

Answer : [B]

Explanation:
Let the ten's digit be x and unit's digit be y.
Then, $(10x + y) - (10y + x) = 36$
$\Rightarrow 9(x - y) = 36$
$\Rightarrow x - y = 4$.

---

(8) If one-third of one-fourth of a number is 15, then three-tenth of that number is:

[A] 35

[B] 36

[C] 45

[D] 54

Answer : [D]

Explanation:
Let the number be x.
Then, $\frac{1}{3}$ of $\frac{1}{4}$ of $x = 15 \Leftrightarrow x = 15 \times 12 = 180$.

So, required number $= \left(\frac{3}{10} \times 180\right) = 54$.

---

(9) A number consists of two digits. If the digits interchange places and the new number is added to the original number, then the resulting number will be divisible by:

[A] 3

[B] 5

[C] 9

[D] 11

Answer : [D]

Explanation:
Let the ten's digit be x and unit's digit be y.
Then, number $= 10x + y$.
Number obtained by interchanging the digits $= 10y + x$.
$\therefore (10x + y) + (10y + x) = 11(x + y)$, which is divisible by 11.

---

(10) The product of two numbers is 9375 and the quotient, when the larger one is divided by the smaller, is 15. The sum of the numbers is:

[A] 380

[B] 395

[C] 400

[D] 425

Answer : [C]

Explanation:
Let the numbers be x and y.
x

Then, $xy = 9375$ and $\frac{x}{y} = 15$.

$$\frac{xy}{(x/y)} = \frac{9375}{15}$$

$\Rightarrow y^2 = 625.$
$\Rightarrow y = 25.$
$\Rightarrow x = 15y = (15 \times 25) = 375.$
$\therefore$ Sum of the numbers = $x + y = 375 + 25 = 400.$

---

(11) The length of the bridge, which a train 130 metres long and travelling at 45 km/hr can cross in 30 seconds, is:

[A] 200 m

[B] 225 m

[C] 245 m

[D] 250 m

Answer : [C]

Explanation:

$$\text{Speed} = \left(45 \times \frac{5}{18}\right)_{\text{m/sec}} = \left(\frac{25}{2}\right)_{\text{m/sec.}}$$

Time = 30 sec.
Let the length of bridge be x metres.

$$\text{Then, } \frac{130 + x}{30} = \frac{25}{2}$$

$\Rightarrow 2(130 + x) = 750$
$\Rightarrow x = 245$ m.

---

(12) Two trains are moving in opposite directions @ 60 km/hr and 90 km/hr. Their lengths are 1.10 km and 0.9 km respectively. The time taken by the slower train to cross the faster train in seconds is:

[A] 36

[B] 45

[C] 48

[D] 49

Answer : [C]

Explanation:
Relative speed = (60+ 90) km/hr

$$= \left(150 \times \frac{5}{18}\right)_{\text{m/sec}}$$

$$= \left(\frac{125}{3}\right)_{\text{m/sec.}}$$

Distance covered = (1.10 + 0.9) km = 2 km = 2000 m.

$$\text{Required time} = \left(2000 \times \frac{3}{125}\right)_{\text{sec}} = 48 \text{ sec.}$$

---

(13) A jogger running at 9 kmph alongside a railway track in 240 metres ahead of the engine of a 120 metres long train running at 45 kmph in the same direction. In how much time will the train pass the jogger?

[A] 3.6 sec

[B] 18 sec

[C] 36 sec

[D] 72 sec

Answer : [C]

Explanation:
Speed of train relative to jogger = (45 - 9) km/hr = 36 km/hr.

$= \left(36 \times \frac{5}{18}\right)$ m/sec

= 10 m/sec.
Distance to be covered = (240 + 120) m = 360 m.

---

(14) Two goods train each 500 m long, are running in opposite directions on parallel tracks. Their speeds are 45 km/hr and 30 km/hr respectively. Find the time taken by the slower train to pass the driver of the faster one.

[A] 12 sec

[B] 24 sec

[C] 48 sec

[D] 60 sec

Answer : [B]

Explanation:
Relative speed = = (45 + 30) km/hr

$= \left(75 \times \frac{5}{18}\right)$ m/sec

$= \left(\frac{125}{6}\right)$ m/sec.

We have to find the time taken by the slower train to pass the DRIVER of the faster train and not the complete train.
So, distance covered = Length of the slower train.
Therefore, Distance covered = 500 m.
$\therefore$ Required time = $\left(500 \times \frac{6}{125}\right)$ = 24 sec.

---

(15) A train overtakes two persons walking along a railway track. The first one walks at 4.5 km/hr. The other one walks at 5.4 km/hr. The train needs 8.4 and 8.5 seconds respectively to overtake them. What is the speed of the train if both the persons are walking in the same direction as the train?

[A] 66 km/hr

[B] 72 km/hr

[C] 78 km/hr

[D] 81 km/hr

Answer : [D]

Explanation:
4.5 km/hr = $\left(4.5 \times \frac{5}{18}\right)$ m/sec = $\frac{5}{4}$ m/sec = 1.25 m/sec, and

5.4 km/hr = $\left(5.4 \times \frac{5}{18}\right)$ m/sec = $\frac{3}{2}$ m/sec = 1.5 m/sec.

Let the speed of the train be x m/sec.
Then, $(x - 1.25) \times 8.4 = (x - 1.5) \times 8.5$
$\Rightarrow 8.4x - 10.5 = 8.5x - 12.75$
$\Rightarrow 0.1x = 2.25$
$\Rightarrow x = 22.5$
$\therefore$ Speed of the train = $\left(22.5 \times \frac{18}{5}\right)$ km/hr = 81 km/hr.

---

(16) Tea worth Rs. 126 per kg and Rs. 135 per kg are mixed with a third variety in the ratio 1 : 1 : 2. If the mixture is worth Rs. 153 per kg, the price of the third variety per kg will be:

[A] Rs. 169.50

[B] Rs. 170

[C] Rs. 175.50

[D] Rs. 180

Answer : [C]

Explanation:
Since first and second varieties are mixed in equal proportions.
So, their average price = Rs. $\left(\frac{126 + 135}{2}\right)$ = Rs. 130.50

So, the mixture is formed by mixing two varieties, one at Rs. 130.50 per kg and the other at say, Rs. x per kg in the ratio 2 : 2, *i.e.,* 1 : 1. We have to find x.
By the rule of alligation, we have:

Cost of 1 kg of 1st kind		Cost of 1 kg tea of 2nd kind
Rs. 130.50		Rs. x
	Mean Price Rs. 153	
$(x - 153)$		22.50

$\therefore \frac{x - 153}{22.50} = 1$

$\Rightarrow x - 153 = 22.50$
$\Rightarrow x = 175.50$

---

(17) A can contains a mixture of two liquids A and B is the ratio 7 : 5. When 9 litres of mixture are drawn off and the can is filled with B, the ratio of A and B becomes 7 : 9. How many litres of liquid A was contained by the can initially?

[A] 10

[B] 20

[C] 21

[D] 25

Answer : [C]

Explanation:
Suppose the can initially contains $7x$ and $5x$ of mixtures A and B respectively.
Quantity of A in mixture left = $\left(7x - \frac{7}{12} \times 9\right)$ litres = $\left(7x - \frac{21}{4}\right)$ litres.

Quantity of B in mixture left = $\left(5x - \frac{5}{12} \times 9\right)$ litres = $\left(5x - \frac{15}{4}\right)$ litres.

$\therefore \frac{\left(7x - \frac{21}{4}\right)}{\left(5x - \frac{15}{4}\right) + 9} = \frac{7}{9}$

$\Rightarrow \frac{28x - 21}{20x + 21} = \frac{7}{9}$

$\Rightarrow 252x - 189 = 140x + 147$
$\Rightarrow 112x = 336$
$\Rightarrow x = 3.$
So, the can contained 21 litres of A.

---

(18) A dishonest milkman professes to sell his milk at cost price but he mixes it with water and thereby gains 25%. The percentage of water in the mixture is:

[A] 4%

[B] $6\frac{1}{4}\%$

[C] 20%

[D] 25%

Answer : [C]

Explanation:
Let C.P. of 1 litre milk be Re. 1
Then, S.P. of 1 litre of mixture = Re. 1, Gain = 25%.
C.P. of 1 litre mixture = Re. $\left(\frac{100}{125} \times 1\right) = \frac{4}{5}$

By the rule of alligation, we have:

C.P. of 1 litre of milk		C.P. of 1 litre of water
Re. 1		0
	Mean Price Re. $\frac{4}{5}$	
$\frac{4}{5}$		$\frac{1}{5}$

$\therefore$ Ratio of milk to water = $\frac{4}{5} : \frac{1}{5} = 4 : 1$.

Hence, percentage of water in the mixture = $\left(\frac{1}{5} \times 100\right)\%$ = 20%.

---

(19) A jar full of whisky contains 40% alcohol. A part of this whisky is replaced by another containing 19% alcohol and now the percentage of alcohol was found to be 26%. The quantity of whisky replaced is:

[A] $\frac{1}{3}$

[B] $\frac{2}{3}$

[C] $\frac{2}{5}$

[D] $\frac{3}{5}$

Answer : [B]

Explanation:
By the rule of alligation, we have:

Strength of first jar		Strength of 2nd jar
40%		19%
	Mean Strength 26%	
7		14

So, ratio of 1st and 2nd quantities = 7 : 14 = 1 : 2
$\therefore$ Required quantity replaced = $\frac{2}{3}$

---

(20) The cost of Type 1 rice is Rs. 15 per kg and Type 2 rice is Rs. 20 per kg. If both Type 1 and Type 2 are mixed in the ratio of 2 : 3, then the price per kg of the mixed variety of rice is:

[A] Rs. 18

[B] Rs. 18.50

[C] Rs. 19

[D] Rs. 19.50

Answer : [A]

Explanation:
Let the price of the mixed variety be Rs. x per kg.
By rule of alligation, we have:

Cost of 1 kg of Type 1 rice		Cost of 1 kg of Type 2 rice
Rs. 15		Rs. 20
	Mean Price Rs. x	
$(20 - x)$		$(x - 15)$

$\therefore \frac{(20 - x)}{(x - 15)} = \frac{2}{3}$

$\Rightarrow 60 - 3x = 2x - 30$
$\Rightarrow 5x = 90$
$\Rightarrow x = 18.$