DIWALI QUIZ

Quantitative Ability

PDF

DIWALI QUIZ

1. A player has an average of 46 in 14 innings. How many runs, he has scored in 15th inning so the average became 43?

A. 9
B. 1
C. 0
D. 6

Answer ||| B

Solution |||

Suppose he has scored x run in 15th inning.

Total run in 14 innings = 14x46 = 644

Total runs in 15 innings = 644 + x

$$\frac{644+x}{15}=43$$

$$x=43\times 15-644$$

$$x=1$$

He has scored 1 run in 15th inning.

2. If $7^{x+1} - 7^{x-1} = 48$, find x.

A. 0
B. 1
C. -1
D. 1/2

Answer ||| B

Solution |||

take 7^{x-1} as the common term. The equation then reduces to

$7^{x-1}(7^2-1) = 48$

$\rightarrow 7^{x-1}=1$

→ x-1=0

→ x=1

3.

Two students A and B has the ability to finish a research together in 30 days. They work together for 6 days and then A quits and B finishes the remaining research work in 32 more days. In how many days B do the whole research work alone?
A. 30
B. 32
C. 34
D. 40
E. 45

Answer ||| D

Solution ||| Time taken by (A + B) = 30 days
1 day's work by (A + B) = (1/30) w/d
Work done in 6 days = 6/30 = 1/5
Remaining work = 1 – 1/5 = 4/5
then A quits and B finishes the book in 32 more days
1 day's work by B = $\dfrac{4/5}{32} = \dfrac{1}{40} w/d$
∴Time taken by B to finish the task alone = 40 days.

4.Two trains 600 km apart start moving towards each other. If they start at same time then they meet in 10 hours but if one train starts after 4 hours late than the other train then they meet in 8 hours. What is the difference in speed of both trains.

A. 10 kmph
B. 20 kmph
C. Both travel with same speed
D. None of these
E. 30 kmph

Answer ||| C

Solution ||| Let the speed of trains be x kmph and y kmph
Then,

⇒ 10x + 10y = 600

⇒ x+ y =60 ......(i)

In 2nd condition, let train with y kmph start after 4 h

$\Rightarrow$ In 8 h train with x kmph travels = 8x km

And time for train having y kmph = 8+4 = 12 h

So, it travels 12y distance

$\Rightarrow$ 8x + 12y = 600 ....(ii)

Solving (i) and (ii)

Multiply i by 8 and subtract from ii

$\Rightarrow$ 12y – 8y = 600 – 480

$\Rightarrow$ y = 30 kmph

And,

$\Rightarrow$ x= 60 – y= 30 kmph

$\Rightarrow$ Thus, both trains travel with same speed and difference is zero.

5.10000 people voted in an election between two candidates. 14% of the votes were rejected and the winner won by 600 votes. What percent of the valid votes did the losing candidate get?

A. 46.5%
B. 43.8%
C. 48.9%
D. 42.4%

Answer ||| A

Solution |||

Since, 14% of votes were rejected, 86% of the votes were valid.

$\therefore$ total valid votes = 86% of 10000 = 8600

Let the losing candidate get x votes.

Hence, the winning candidate got (x + 600) votes.

$\therefore$ x + (x + 600) = 8600

X = 4000

Required percentage = $\left(\dfrac{4000}{8600}\right) \times 100$

= 46.5%

6.By selling 75 ball pens for Rs. 135 a retailer loses 25%. How many ball pen should he sell for Rs. 102 so as to make a profit of 25% is

A. 34
B. 43
C. 38
D. 45

Answer ||| A

Solution |||

C.P of 75 ball pens = $\dfrac{135 \times 100}{75}$ = Rs. 180

For a gain of 25%

$$SP = \dfrac{180 \times 125}{100} = Rs.\,225$$

Rs. 225 = 75 ball pens

$$Rs.\,102 = \dfrac{75}{225} \times 102 = \dfrac{102}{3} = 34$$

Option A is the correct response.

7.A man can row a certain distance downstream in 6 hours and return the same distance in 9 hours. If the stream flows at the rate of 3 km/hr then find the speed of man in still water.

A. 12 km/hr
B. 15 km/hr
C. 18 km/hr
D. 27 km/hr

Answer ||| B

Solution ||| Let the speed of man in still water be x km/h and the distance be D.

So, Upstream speed = (x – 3) km/hr

Downstream speed = (x + 3) km/hr

According to the question,

Distance covered upstream and downstream is constant.

So, (x – 3) × 9 = (x – 3) × 6

$\Rightarrow$ 3x – 9 = 2x + 6

$\Rightarrow$ x = 15 km/hr

8.The length and breadth of a square are increased by 40% and 20% respectively. Find the percentage increase in the area of the rectangle so formed with respect to that of the original square.

A. 56%
B. 57.5%
C. 65%
D. 68%
E. None of the above

Answer ||| D

Solution ||| Let length = 100 m and breadth = 100 m
Area of square = 100^2 = 10000 m^2
New length = 140 m, New breadth = 120 m
New area = (140×120) m^2 = 16800 m^2
Increase in area = 16800 – 10000 = 6800 m^2
Increase percentage $= \left(\dfrac{6800}{10000} \times 100\right)\% = 68\%$

9.Find the remainder when 7^{65} is divided by 16808.

A. 16807
B. 6
C. 7^{13}
D. None of these

Answer ||| A

Solution |||

$$\frac{7^{65}}{16808} = \frac{\left(7^5\right)^{13}}{16808}$$

$$= \frac{(16807)^{13}}{16808} = \frac{(16808-1)^{13}}{16808} = (-1)^{13} = -1$$

Hence, the remainder when 7^{65} is divided by 16808 is equal to -1 or $16808 - 1 = 16807$.

10. A alloy of 50 kg having the silver and gold in the ratio of 2:3 is mixed with another alloy of 150 kg having silver and gold in the ratio of 4:5. Find the ratio of gold and silver in new alloy:

A. 8:15
B. 5:7
C. 7:9
D. 13:17

Answer ||| D

Solution ||| Quantity of silver containing first alloy $= \frac{2}{5} \times 50 = 20$ kg

Quantity of gold containing first alloy $= \frac{3}{5} \times 50 = 30$ kg

Quantity of silver containing second alloy $= \frac{4}{9} \times 150 = \frac{200}{3}$ kg

Quantity of gold containing second alloy $= \frac{5}{9} \times 150 = \frac{250}{3}$ kg

So, ratio in new mixture $= \left(20 + \frac{200}{3}\right) : \left(30 + \frac{250}{3}\right)$

$= 260 : 340$
$= 13 : 17$

11. Atul and Amit enter into a partnership with capitals in the ratio of 7 : 9 and at the end of 7 months, Atul withdraws. If they receive profits in the ratio of 7 : 18 then find how long Amit's capital was used?

A. 8 months
B. 9 months
C. 11 months
D. 14 months

Answer ||| D

Solution |||

Investment of A : B = 7 : 9

P = A × t

Atul's profit : Amit's profit = 7 × 7 : 9 × x

= 49 : 9x

Ratio of profit $\dfrac{49}{9x} = \dfrac{7}{18}$

x = 14 months.

12. Ravi borrowed Rs.20000 from a bank at 2% rate of interest per annum and immediately rent it at 5% rate to Amit. After two years he collected the amount from Amit and settled his loan to bank. What is the amount gained by him in this transaction?

A. 1000
B. 1100
C. 1200
D. 2000

Answer ||| C

Solution |||

We know that-

$$\text{Simple Interest} = \frac{P \times R \times T}{100}$$

Where P is Principal amount, R is rate of interest, T is time duration of the loan

Interest received by Ravi by lending to Amit money-

$$= \frac{20000 \times 5 \times 2}{100}$$

$$= 2000$$

Interest received by Bank by lending to Amit money

$$= \frac{20000 \times 2 \times 2}{100}$$

$$= 800$$

Profit in interest rate= Money lend – Money Repayed

$$= 2000 - 800$$

$$= 1200$$

13.The sum of seven consecutive numbers is 168. What is the sum of the first and the last number?

A. 58
B. 49
C. 48
D. 4
E. 57

Answer ||| C

Solution ||| Sum of seven consecutive number = (x+x+1+x+2+x+3+x+4+x+5+x+6) = 168
7x + 21 = 168
7x = 168 -21 = 147
X=21
First number = 21 and last number = x+6=27
Sum = 21 + 27 = 48

14.A milk man has a mixture of milk in which ratio of milk and water is 5:3. He sells 160 liters of mixture and then he adds up 35 liters of pure water. Now the ratio of milk and water is 5:4. What was the original quantity of mixture?

A. 160 L
B. 880 L
C. 55 L
D. 440 L
E. None of these

Answer ||| D

Solution |||

Let initially he had 5x+3x = 8x litres of milk.
New ratio after removal of 160 liter mixture and addition of 35 liter pure water is.
[5x-100] : [3x-60 +35] = [5x-100] : [3x-25] = 5 : 4
Solving ⟹ x = 55. So, Original quantity of mixture = 8x = 440 liters

15. The digits at unit's place of the number $(1460)^2 + (1461)^2 + (1464)^2 + (1463)^2$ is :

A. 6
B. 4
C. 3
D. 5

Answer ||| A

Solution |||

Unit's digit in $(1460)^2 = 0$

Unit's digit in $(1461)^2 = 1$

Unit's digit in $(1464)^2 = 6$

Unit's digit in $(1463)^2 = 9$

Hence, required digit = unit's digit in (0 + 1 + 6 + 9) = 6.

Option A is correct.