Quiz Date: 31st March 2020
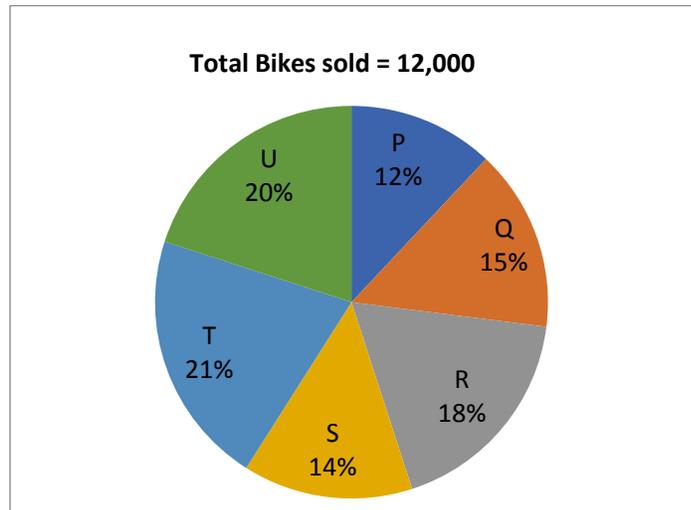
Directions (1-5): Pie-chart shown below shows percentages of bikes sold by six Hero dealers.
Table shows the ratio of three type of bikes out of total bikes sold by different dealers. Study the data carefully and answer the following questions:

Total Bikes sold = 12,000

Type of Bikes → Dealers ↓	Shine: Splendor: CT Deluxe
P	4 : 2 : 3
Q	3 : 4 : 3
R	7 : 4 : 4
S	6 : 8 : 7
T	3 : 6 : 5
U	5 : 4 : 6

Q1. What is the difference between the number of Shine bikes sold by dealers S and T together and the number of CT Deluxe bikes sold by dealers Q and U together?
(a) 360
(b) 420
(c) 540
(d) 480
(e) 440

Q2. The number of Shine and Splendor bikes together sold by dealer P is what percent of the number of Splendor and CT Deluxe bikes together sold by dealer S?
(a) 90%
(b) 80%
(c) 75%

(d) 60%
(e) 50%

Q3. What is the average number of Splendor bikes sold by dealers P, Q, S and T together?
(a) 670
(b) 710
(c) 690
(d) 650
(e) 720

Q4. What is the ratio of the number of Splendor and CT Deluxe bikes sold together by dealer Q to that by dealer T?
(a) 11 : 7
(b) 7 : 11
(c) 5 : 8
(d) 8 : 5
(e) 11: 13

Q5. Out of six dealers, which dealer sold the minimum number of CT Deluxe?
(a) Q
(b) R
(c) S
(d) T
(e) P

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Q6. Three taps P, Q, R when opened alternatively for 1 minute each, can fill a tank in 18 minutes. Time taken by P alone is 5 minutes more than time taken by Q and R take working together. Find the time taken by Q alone to fill the tank, if R is 20% less efficient than Q.
(a) 16 minutes
(b) 22 ½ minutes
(c) 18 minutes
(d) 15 minutes
(e) 27.5 minutes

Q7. There are three groups of children in a school i.e. A, B and C. In group A, there are $(x + 2)$ girls and x boy. In group B, there are 2 boys and 2 girls, whereas in group C, there are 1 girl

and 2 boys. One child is selected at random from each group. Find the value of x, if the probability of selecting 1 girl and 2 boys is $\frac{3}{8}$.
(a) 2
(b) 3
(c) 1
(d) 4
(e) 5

Q8. Present average age of A, B, C and D is 25 years. Sum of age of A and B is 150% of sum of age of C and D. Ratio of age of B to age of C is 3 : 5. Calculate 10 years later age of A, if B and D are of same age.
(a) 45 years
(b) 40 years
(c) 35 years
(d) 55 years
(e) 50 years

Q9. A square floor of the dimensions 72 cm × 72 cm has to be laid with rectangular tiles whose length and breadth are in the ratio 3 : 2. What is the difference between the maximum number of tiles and minimum numbers of tiles, given that the length and the breath are integers ?
(a) 858
(b) 864
(c) 868
(d) 872
(e) 952

Q10. Profit on selling 10 candles is equal to selling price of 3 bulbs while loss on selling 10 bulbs is equal to selling price of 4 candles. Also profit percentage is equal to the loss percentage and cost of a candle is half of the cost of a bulb. What is the ratio of selling price of a candle to the selling price of a bulb?
(a) 5 : 4
(b) 3 : 2
(c) 4 : 5
(d) 3 : 4
(e) 4 : 3

Directions (11-15): What approximate value should come in place of question mark (?)in the following questions?
Q11. $\frac{\left(\frac{12\times50}{99.98}\right)}{53.79} \times 100 = \frac{5.88}{54} \times 100.01 \times?$
(a) 3
(b) 6
(c) 4
(d) 1

(e) 5

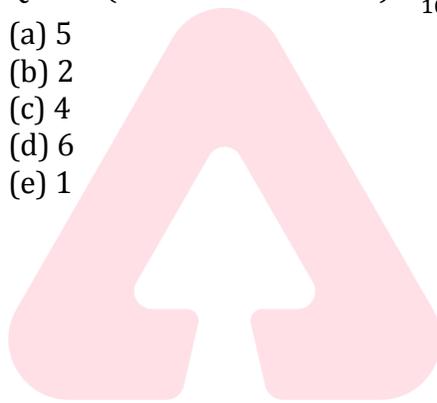Q12. $49 \times \frac{10}{6} \times \frac{100}{7} \times \frac{5}{35} \times \frac{7}{100} = 5 \times ?$
(a) 2
(b) 4
(c) 1
(d) 5
(e) 6

Q13. $(25.91 + 16.12)\% \text{ of } 5399 - (29.76 + 11.95)\% \text{ of } 2401 = ?$
(a) 1240
(b) 1200
(c) 1250
(d) 1280
(e) 1260

Q14. $(1903.76 + 2040.12) - \frac{?}{100} \times 66299 = 2618.11$
(a) 5
(b) 2
(c) 4
(d) 6
(e) 1

Q15. $850 \left(\frac{6}{5} \times 14.92 + \frac{5}{4} \times 19.98 \right) = ?$
(a) 27400
(b) 32400
(c) 36550
(d) 42300
(e) 45300

Solutions

S1. Ans.(d)
Sol.
Number of Shine bikes sold by dealers S and T together

$$= \left(\frac{6}{21} \times \frac{14}{100} + \frac{3}{14} \times \frac{21}{100} \right) \times 12000 = 480 + 540 = 1020$$

Number of CT Deluxe bikes sold by dealers Q and U together

$$= \left(\frac{3}{10} \times \frac{15}{100} + \frac{6}{15} \times \frac{20}{100} \right) \times 12000 = 540 + 960 = 1500$$

Required Difference = 1500 - 1020 = 480

S2. Ans.(b)
Sol.
Number of Shine and Splendor bikes together sold by dealer P = $\frac{6}{9}$ of 12% = 8%

Number of Splendor and CT Deluxe bikes together sold by dealer D = $\frac{15}{21}$ of 14% = 10%

Required Percentage = $\frac{8}{10} \times 100$ = 80%

S3. Ans.(c)
Sol.
Total number of Splendor bikes sold by dealers P, Q, S and T together

$$= \left(\frac{2}{9} \times \frac{12}{100} + \frac{4}{10} \times \frac{15}{100} + \frac{8}{21} \times \frac{14}{100} + \frac{6}{14} \times \frac{21}{100} \right) \times 12000 = 320 + 720 + 640 + 1080 = 2760$$

Required Average = $\frac{2760}{4}$ = 690

S4. Ans.(b)
Sol.
Splendor and CT Deluxe bikes sold together by dealer Q = $\frac{7}{10}$ of 15% = $\frac{21}{2}$%

Splendor and CT Deluxe bikes sold together by dealer T = $\frac{11}{14}$ of 21% = $\frac{33}{2}$%

Required Ratio = $\frac{21}{2}$% : $\frac{33}{2}$% = 7 : 11

S5. Ans.(e)
Sol.
Percentage of CT Deluxe bikes sold by:
Dealer P = $\frac{3}{9}$ of 12% = 4%

Dealer Q = $\frac{3}{10}$ of 15% = 4.5%

Dealer R = $\frac{4}{15}$ of 18% = 4.8%

Dealer S = $\frac{7}{21}$ of 14% = 4.67%

Dealer T = $\frac{5}{14}$ of 21% = 7.5%

Dealer U = $\frac{6}{15}$ of 20% = 8%

Hence, dealer P sold the minimum number of CT Deluxe bikes.

S6. Ans.(c)
Sol.
When P, Q and R are opened alternatively for 1 minutes each, time taken by them is 18 minutes. If all of them are opened simultaneously, they will fill tank 3 times faster. Hence time taken by each of them = $\frac{18}{3}$ = 6 minutes.

Tank filled by them in 1 minute when all of them are opened together = $\frac{1}{6}$

Let Q and R together takes x minutes

∴ P will take x + 5 minutes

Now

$\frac{1}{x} + \frac{1}{x+5} = \frac{1}{6}$

$\frac{2x+5}{x(x+5)} = \frac{1}{6}$

12x + 30 = x² + 5x

⇒ x = 10 minutes

Hence time taken by Q and R together is 10 minutes.

Given,

R is 20% less efficient than Q.

Let R takes 5K minutes

Q takes 4K minutes

Then

$\frac{1}{5K} + \frac{1}{4K} = \frac{1}{10}$

$\frac{9}{20K} = \frac{1}{10}$

K = $\frac{9}{2}$

∴ Q takes = $\frac{4 \times 9}{2}$ = 18 minutes

S7. Ans.(c)
Sol.
Possible cases
Girl Boy Boy   or   Boy Girls Boy   or   Boy Boy Girl

$\frac{3}{8} = \left(\frac{x+2}{2x+2} \times \frac{2}{4} \times \frac{2}{3} \right) + \left(\frac{x}{2x+2} \times \frac{2}{4} \times \frac{2}{3} \right) + \left(\frac{x}{2x+2} \times \frac{2}{4} \times \frac{1}{3} \right)$

$\Rightarrow \frac{(2x+2) \times 4 \times 3}{2 \times 8} = \left(\frac{2(x+2)}{3} + \frac{2x}{3} + \frac{x}{3} \right)$

$\Rightarrow \frac{(x+1)\times 9}{2} = 5x + 4$
$\Rightarrow 9x + 9 = 10x + 8$
$\Rightarrow x = 1$

S8. Ans.(d)
Sol.
If average age of A, B, C and D is 25 years, then total age of A, B, C and D is 100 years.
Also, if C + D = 2x
Then A + B = 3x   [A + B is 150% of C + D]
5x = 100
x = 20
A + B = 60 ...(i)
C + D = 40 ...(ii)
Now, in question ratio of B : C is given as 3 : 5.
This is also ratio of D : C, as B and D are of same age. From (ii)
We can calculate
C = 25 years
D = 15 years
& Hence B = 15 years
∴ A = 45 years
10 years later age of A is 45 + 10 + 55 years.

S9. Ans.(a)
Sol. Let length and breadth of tiles are $3x$ and $2x$
No. of tiles $= \frac{72\times 72}{6x^2} = \frac{864}{x^2}$
Maximum no. of tiles is when $x = 1$
or tiles = 864
minimum no. of tiles is when $x^2 = 144$ or $x = 12$
then no. of tiles $= \frac{864}{144} = 6$
required difference $= 864 - 6 = 858$

S10. Ans.(b)
Sol. Let CP of one candle $= x$
∴ C.P. of one blub $= 2x$
Let SP of one candle $= c$
& SP of one Bulb $= b$
According to question
$\frac{3b}{10x} \times 100 = \frac{4c}{10 \times 2x} \times 100$
$\Rightarrow \frac{c}{b} = \frac{3}{2}$

S11. Ans.(d)
Sol.

$$\frac{\left(\frac{12 \times 50}{100}\right)}{54} \times 100 \approx \frac{6}{54} \times 100 \times ?$$
$$? \approx 1$$

S12. Ans.(a)
Sol.
$$49 \times \frac{10}{6} \times \frac{100}{7} \times \frac{5}{35} \times \frac{7}{100} = 5 \times ?$$
$$\frac{70}{6} = 5 \times ?$$
$$? = \frac{7}{3} \approx 2$$

S13. Ans.(e)
Sol.
$$(26 + 16) \times \frac{5400}{100} - (30 + 12) \times \frac{2400}{100} = ?$$
? = 42 × 54 – 42 × 24 = 1260

S14. Ans.(b)
Sol.
⇒ 1904 + 2040 – ? × 663 = 2618
3944 – ? × 663 = 2618
? = 2

S15. Ans.(c)
Sol.
$$\Rightarrow 850 \left(\frac{6}{5} \times 15 + \frac{5}{4} \times 20\right) \approx ?$$
850 (18+ 25) ≈ ?
? ≈ 36550

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