Quiz Date: 7th March 2020

Direction (1-5): What will come in place of '?' in the following questions.

Q1. $\frac{3}{8}$ of $168 \times 15 \div 5 + ? = 549 \div 9 + 235$

(a) 163
(b) 199
(c) 107
(d) 126
(e) 136

Q2. $11 \times 3^4 + \frac{1}{?}$ of $385 - 1698 \div 6 = 685$

(a) 5
(b) 4
(c) 8
(d) 6
(e) 9

Q3. $(?)^2 - 364 \div 7 \times 6 + 289 = 26 \times (121 + 72)$

(a) 95
(b) 89
(c) 83
(d) 71
(e) None of these

Q4. $\frac{1}{(4913)^{\frac{1}{3}}}$ of $1411 + 583 \times ? = 16\frac{2}{3}\%$ *of* 14490

(a) 5
(b) 6
(c) 7
(d) 8
(e) 4

Q5. $14\frac{2}{7}\%$ of $27048 \div \sqrt{576} = (?)^{\frac{1}{2}}$

(a) 25571
(b) 25921
(c) 25252
(d) 25481
(e) 24481

Q6. The ratio of efficiency of Richa to that of Dipti is 3 : 5. If Richa and Raghu together can do the same work in 12 days and Raghu alone can complete it in 18 days then in how much time Dipti alone will complete the same work?

(a) 20 days
(b) 21.6 days
(c) 18 days

(d) 24.6 days
(e)25.6 days

Q7. The ratio of present ages of P, Q and R is 3 : 4 : 5. After 4 years, the average ages of all the three will be 24 years. What was the difference between ages of Q and R, 6 years before?
(a) 5 years
(b) 6 years
(c) 8 years
(d) 10 years
(e) 12 years

Q8. There is a 120 litre mixture of alcohol and water. The ratio of alcohol to water is 7 : 5. A shopkeeper mixes a certain amount of water in order to make the ratio of alcohol to water 5 : 6. Find the new quantity of water is what percentage of original quantity of water in the mixture?
(a) 168%
(b) 175%
(c) 160%
(d) 178%
(e) 172%

Q9. The cost price of a T.V is 72% of marked price of a fridge. The shopkeeper allows 25% discount on marked price of fridge and sells it at a profit of 20%. If cost price of the fridge is Rs. 5,000 then what is the cost price of T.V.?
(a) Rs. 5,000
(b) Rs. 6,460
(c) Rs. 5,760
(d) Rs. 5,680
(e)Rs. 6,870

Q10. A train can cross a tunnel in 24 seconds. Another train can cross the same tunnel in 40 seconds. If length of tunnel is 120 m and ratio of their speed is (faster to slower) 4 : 3 then after how much time both train will cross each other if both trains are running towards each other in opposite direction. (Length of faster train is 75% of that of slower train)
(a) 40 sec.
(b) 18 sec.
(c) 36 sec.
(d) 24 sec.
(e)32 sec.

Directions (11-15): In these questions, two equations numbered I and II are given. You have to solve both the equations and give answer
(a) $x \geq y$
(b) $x \leq y$
(c) $x < y$
(d) $x > y$
(e) x = y or Relationship between x and y cannot be established

Q11. I. $3x^2 - 11x + 10 = 0$
II. $2y^2 - 3y - 2 = 0$

Q12. I. $x^2 - 9x + 20 = 0$
II. $2y^2 - 13y + 18 = 0$

Q13. I. $x^2 - 3481 = 0$
II. $3y^2 = \sqrt[3]{216000}$

Q14. I. $5x^2 - 18x + 9 = 0$
II. $3y^2 + 5y - 2 = 0$

Q15. I. $x^2 - 19x + 84 = 0$
II. $y^2 - 25y + 156 = 0$

Solutions

S1. Ans.(c)
Sol. $\frac{63 \times 15}{5} + ? = 61 + 235$
$? = 296 - 189 = 107$

S2. Ans.(a)
Sol. $11 \times 81 + \frac{1}{?}$ of $385 - 283 = 685$

$\frac{1}{?}$of $385 = 685 + 283 - 891$

$? = \frac{385}{77} = 5$

S3. Ans.(d)

Sol. $(?)^2 - 312 + 289 = 5018$

$(?)^2 = 5041, ? = 71$

S4. Ans.(e)

Sol. $\frac{1411}{17} + 583 \times ? = 2415$

$? = \frac{2332}{583} = 4$

S5. Ans.(b)

Sol. $\frac{3864}{24} = (?)^{\frac{1}{2}}$

$161 = (?)^{\frac{1}{2}}, \ ? = (161)^2 = 25921$

S6. Ans (b)

Sol.

Let total work = 36 (LCM of 12 & 18)

∴ Per day work of (Richa + Raghu) = $\frac{36}{12}$ = 3 unit

And, per day work of Raghu = $\frac{36}{18}$ = 2 unit

∴ Per day work of Richa = 3 – 2 = 1 unit

∴ Time taken by Richa alone = $\frac{36}{1}$ = 36 days

∴ Requised answer = $\frac{3}{5}$ × 36

= 21.6 days

S7. Ans (a)

Sol.

Let ages of P, Q and R be 3x, 4x and 5x respectively.

∴ ATQ, $\frac{3x+4+4x+4+5x+4}{3}$ = 24

⇒ 4x + 4 = 24

⇒ x = 5

∴ Required answer = (5 × 5 – 6) – (4 × 5 – 6)

= 19 – 14

= 5 years

S8. Ans (a)
Sol.
Initial amount of alcohol = $\frac{7}{12}$ × 120 = 70 litre
Initial amount of water = 120 – 70 = 50 litre
Let x litre water is added
∴ $\frac{70}{50+x} = \frac{5}{6}$
⇒ x = 84 – 50 = 34 litres
∴ Required % = $\frac{50+34}{50}$ × 100
= 168%

S9. Ans (c)
Sol.
S.P of fridge = $\frac{120}{100}$ × 5000 = 6000 rupee
∴ M.P. of fridge = $\frac{100}{75}$ × 6000
= Rs. 8,000
∴ C.P. of T.V = $\frac{72}{100}$ × 8000
= Rs. 5,760

S10. Ans (d)
Sol.
Let length of slower train = x meters
∴ Let length of faster train = $\frac{75x}{100}$ = 0.75x m
ATQ,
⇒ $\frac{\left(\frac{120+0.75x}{24}\right)}{\left(\frac{120+x}{40}\right)} = \frac{4}{3}$
⇒ 480 + 4x = 600 + 3.75x

$\Rightarrow x = \frac{120}{0.25} = 480$ m

$\therefore$ Required time $= \frac{480+0.75\times480}{\frac{600}{40}+\frac{480}{24}}$

($\frac{600}{40}$: Speed of slower train; $\frac{480}{24}$: Speed of faster train)

$= \frac{840}{35} = 24$ sec.

S11. Ans.(e)

Sol.

I. $3x^2 - 11x + 10 = 0$

$\Rightarrow 3x^2 - 6x - 5x + 10 = 0$

$\Rightarrow (x-2)(3x-5) = 0$

$\Rightarrow x = 2, \frac{5}{3}$

II. $2y^2 - 3y - 2 = 0$

$\Rightarrow 2y^2 - 4y + y - 2 = 0$

$\Rightarrow (y-2)(2y+1) = 0$

$\Rightarrow y = 2, -\frac{1}{2}$

No relation

S12. Ans.(e)

Sol.

I. $x^2 - 9x + 20 = 0$

$\Rightarrow (x-4)(x-5) = 0$

$\Rightarrow x = 4, 5$

II. $2y^2 - 13y + 18 = 0$

$\Rightarrow 2y^2 - 4y - 9y + 18 = 0$

$\Rightarrow (y-2)(2y-9) = 0$

$\Rightarrow y = 2, \frac{9}{2}$

No relation

S13. Ans.(e)

Sol.

I. $x = \pm 59$ | II. $3y^2 = 60$ $\Rightarrow y = \pm\sqrt{20}$

$\therefore$ No relation exists.

S14. Ans.(d)

Sol. I. $5x^2 - 18x + 9 = 0$

$\Rightarrow 5x^2 - 15x - 3x + 9 = 0$

$\Rightarrow (x-3)(5x-3)=0$
$\Rightarrow x=3,\frac{3}{5}$
II. $3y^2+5y-2=0$
$\Rightarrow 3y^2+6y-y-2=0$
$\Rightarrow (y+2)(3y-1)=0$
$\Rightarrow y=\frac{1}{3},-2$
$x>y$

S15. Ans.(b)
Sol. I. $x^2-19x+84=0$
$\Rightarrow (x-12)(x-7)=0$
$\Rightarrow x=12,7$
II. $y^2-25y+156=0$
$\Rightarrow (y-12)(y-13)=0$
$\Rightarrow y=12,13$
$y\geq x$