Quiz Date: 15th May 2020

Q1. Three filling pipes P, Q and R can fill an empty tank in 16 hr, 24 hr and 32 hr respectively. They start felling together the tank. After 4 hours pipe R gets closed and other two pipes continue to fill the tank. In how much time the tank will be filled?
(a) 8.4 hr
(b) 7.2 hr
(c) 9.4 hr
(d) 4.4 hr
(e) 8 hr

Q2. In how many different ways can the letters of the word DESIGN be arranged so that the vowels are at the two ends?
(a) 48
(b) 72
(c) 36
(d) 24
(e) 60

Q3. 8 men and 4 women together can complete a piece of work in 6 days. The work done by a man in one day is double the work done by a woman in one day. If 8 men and 4 women started working and after 2 days 4 men left and 4 new women joined, in how many more days will the work be completed?
(a) 5 days
(b) 8 days
(c) 6 days
(d) 4 days
(e) 9 days

Q4. If the compound interest on a sum for 2 years at 12 ½ % per annum is Rs. 510, the simple interest on the same sum at the same rate for the same period of time is:
(a) Rs. 400
(b) Rs. 480
(c) Rs. 450
(d) Rs. 460
(e) Rs. 420

Q5. A man can row 6 km/hr in still water. If the speed of the current is 2 km/hr, he takes 4 hours more in upstream than in the downstream to cover a certain distance. The distance is:
(a) 30 km
(b) 24 km
(c) 20 km
(d) 32 km
(e) 36 km

Q6. A train 300 meters long is running at a speed of 25 metre per second. It will cross a bridge of 200 metre long in
(a) 5 seconds
(b) $41\frac{2}{3}$ seconds
(c) 20 seconds
(d) 25 seconds
(e) 30 seconds

Q7. A person sells a table at a profit of 10%. If he had bought the table at 5% less cost and sold for Rs. 80 more, he would have gained 20%. The original cost price of the table is
(a) Rs. 3,200
(b) Rs. 2,500
(c) Rs. 2,000
(d) Rs. 200
(e) Rs. 2800

Q8. A man takes twice as long to row a distance against the stream as to row the same distance in favour of the stream. The ratio of the speed of the boat (in still water) and the stream is:
(a) 2 : 1
(b) 3 : 1
(c) 3 : 2
(d) 4 : 3
(e) 1 : 3

Q9. The ratio of number of balls in bags x, y is 2 : 3. Five balls are taken from bag y and 3 balls are dropped in bag x. Number of balls are equal in each bag now. Number of balls in each bag now is
(a) 45
(b) 19
(c) 30
(d) 25
(e) 24

Q10. In a certain examination, the number of those who passed was 4 times the number of those who failed. If there had been 35 fewer candidates and 9 more had failed, the ratio of passed and failed candidates would have been 2 : 1, then find the total number of candidates initially.
(a) 135
(b) 155
(c) 145
(d) 150
(e) 160

Q11. Seema sold a mobile phone at the cost of Rs. 1,950 at a loss of 25%. At what cost will she have to sell it to get a profit of 30%
(a) Rs. 3,300
(b) Rs. 2,600
(c) Rs. 3,535
(d) Rs. 3,380
(e) None of these

Q12. The sum of the squares of two consecutive positive odd numbers is 514. What is the larger number ?
(a) 13
(b) 15
(c) 17
(d) 19
(e) 21

Q13. A and B are two numbers. Six times square of B is 540 more than square of A. The ratio of A and B is 3 : 2. Find the number B?
(a) 12
(b) 18
(c) 14
(d) 21
(e) 24

Q14. If a train 280-metre-long runs at the speed of 7.4 m/second, how much time will it take to cross a platform 460 meter long ?
(a) 95 sec.
(b) $62\frac{6}{37}$ sec.
(c) 98 sec.
(d) 99 sec.
(e) 100 sec.

Q15. If numerator and denominator are increased by 20% and 30% respectively the fraction becomes 9/13 .What was the original fraction?
(a) 3/5

(b) 2/5
(c) 4/7
(d) 3/4
(e) None of these

Solutions

S1. Ans.(a)
Sol.
Ratio of efficiency of pipes P, Q and R respectively
$= \frac{1}{16} : \frac{1}{24} : \frac{1}{32}$
$= 6 : 4 : 3$
Let total work = 96 units
∴ work done in 4 h = (6 + 4 + 3) × 4 = 52 units
Remaining work = 96 − 52 = 44 units
∴ Required time = $4 + \frac{44}{10} = 8.4$ hours

S2. Ans.(a)
Sol.
Required no. of ways
$= {}^{2}P_{2} \times {}^{4}P_{4} = 48$

S3. Ans.(a)
Sol.
A man does work equal to two women in a day.
Hence,
16w + 4w → 6 days
1w → $\frac{6}{20}$ days
In 2 days, work done by 20 women = 1/3
Work remaining = 2/3
Now,
20w → 1 → 6 days
20w → $\frac{2}{3}$ → $6 \times \frac{2}{3}$ days
16w → $\frac{2}{3}$ → $6 \times \frac{2}{3} \times \frac{20}{16} = 5$ days

S4. Ans.(b)
Sol.

Let P be the sum

$$P\left[1+\frac{25}{200}\right]^2 - P = 510$$

$$P \times \left(\frac{9}{8}\right)^2 - P = 510$$

$$P \times \frac{81}{64} - P = 510$$

$$\frac{17P}{64} = 510$$

$$P = 64 \times 30 = 1920$$

$$SI = \frac{1920 \times 2 \times 25}{100 \times 2} = 480$$

S5. Ans.(d)

Sol.

Speed of man in still water

= 6 km/h

Speed of current

= 2 km/h

Let Distance = D

Upstream time = Downstream time + 4

$$\frac{D}{4} = \frac{D}{8} + 4$$

$$\frac{D}{4} = \frac{D+32}{8}$$

$$\frac{D}{1} = \frac{D+32}{2}$$

D = 32

∴ Distance = 32 km.

S6. Ans.(c)

Sol.

$$\text{Time} = \frac{D}{S} = \frac{300+200}{25} = 20 \text{ sec.}$$

S7. Ans.(c)
Sol.

Let, C.P. of table = x
Person Sells table at a profit of 10%
⇒ S.P. = 1.1x
ATQ,

$$\frac{120}{100}\left[\frac{95}{100}\right] \times x = 1.1x + 80$$

$1.14x - 1.1x = 80$
$0.04x = 80$
$x = 2{,}000$

S8. Ans.(b)
Sol.

Let speed of boat in still water = v
Speed of stream = s
ATQ,
$(v - s) \times 2 = (v + s)$
$\Rightarrow 2v - 2s = v + s$
$\Rightarrow v = 3s$
$\Rightarrow v : s = 3 : 1$

S9. Ans.(b)
Sol.

Let no. of balls in bag X = 2a
No. of balls in bag Y = 3a
ATQ,
$3a - 5 = 2a + 3$
$\Rightarrow a = 8$
$\therefore$ No. of balls in each bag now
$= 24 - 5$
$= 19$

S10. Ans.(b)
Sol.
Let total no. students who failed = x
Total students who passed = 4x
ATQ,
Total students = 5x – 35
Total failed students = x + 9
∴ Total passed students
= 5x – 35 – x – 9
= 4x – 44

$$\therefore \frac{4x-44}{x+9}=\frac{2}{1}$$

⇒ 4x – 44 = 2x + 18
⇒ x = 31
∴ Total students = 155

S11. Ans.(d)
Sol.
Let the CP of the mobile phone be Rs. x.

$$\therefore \frac{x \times 75}{100} = 1950$$

$$\Rightarrow x = \frac{1950 \times 100}{75} = \text{Rs. } 2600$$

∴ Required selling price

$$= \frac{2600 \times 130}{100} = \text{Rs. } 3380$$

S12. Ans.(c)
Sol.
From the options,
$15^2 + 17^2 = 255 + 289 = 514$
Or,
Let the numbers are $(x-1) and\ (x+1)$
ATQ,
$(x-1)^2 + (x+1)^2 = 514$
$2x^2 + 2 = 514$
$x^2 = 256$
$x = 16$
Numbers are 15 and 17

S13. Ans.(a)
Sol.

$A = 3x$; $B = 2x$

$\therefore 6 \times B^2 - A^2 = 540$

$\Rightarrow 6 \times 4x^2 - 9x^2 = 540$

$\Rightarrow 15x^2 = 540$

$\Rightarrow x^2 = \frac{540}{15} = 36$

$\Rightarrow x = \pm 6$

$\therefore B = 2x = 2 \times 6 = 12$

S14. Ans.(e)
Sol.

Total length to be covered
= 280 + 460 = 740 metre

$\therefore$ Time taken $= \frac{740}{7.4} = 100$ second

S15. Ans.(d)
Sol.

Let the original fraction be $\frac{x}{y}$.

According to question,

$$\frac{\frac{120}{100}x}{\frac{130}{100}y} = \frac{9}{13}$$

$$\Rightarrow \frac{12x}{13y} = \frac{9}{13} \Rightarrow \frac{x}{y} = \frac{9}{13} \times \frac{13}{12}$$

$$\therefore \frac{x}{y} = \frac{3}{4}$$