Quiz Date: 19th February 2020

Q1. A can do a piece of work in 24 days and A and B together can-do same piece of work in 16 days. Find out in how many days B can complete 2 times more work if B work with 50% more efficiency?
(a) 68 days
(b) 90 days
(c) 80 days
(d) 96 days
(e) 72 days

Q2. If time taken by A and B to complete a piece of work is in the ratio of 2:3. whereas A and B together can complete the same work in 9 days less than time taken by B to complete the same work, then find out the time taken by B to complete the same work alone?
(a) 8 days
(b) 16 days
(c) 15 days
(d) 7 days
(e) 14 days

Q3. Veer and Aayush together can complete a piece of work 6 days, Aayush and Maanik together can complete the same work in 7 days and Maanik and Veer together in 6 days. Find out the time taken by Maanik to complete the same piece of work?
(a) 14 days
(b) 16 days
(c) 12 days
(d) 10 days
(e) 15 days

Q4. Deepak is twice efficient as Mohit and Deepak can do a piece of work in 12 days. Mohit started the work and after x days Deepak joined him. They completed the work in next 6 days. What is the value of x?
(a) 1 day
(b) 2 day
(c) 8 days
(d) 5 days
(e) 6 days

Q5. 80 men can complete a work in 24 days. 32 men started for the same work and After x days, 48 men increased, in the work place. So, the remaining work is completed in 12 days. Find x.
(a) 24
(b) 28
(c) 30
(d) 36
(e) 42

Q6. The ratio of perimeter of triangle to the perimeter of rectangle be 2:1. Length of rectangle is 25% less than side of a square and ratio of length to breadth of rectangle is 3 : 2. If difference between perimeter of square and that of rectangle is 42 cm, then find perimeter of triangle?
(a) 120 cm
(b) 140 cm
(c) 121 cm
(d) 100 cm
(e) 96 cm

Q7. If the area of the base of a cylinder is 154 cm^2. Then find volume of cylinder if height of cylinder is 0.1 m?
(a) 1540 cm^3
(b) 1420 cm^3
(c) 1628 cm^3
(d) 1824 cm^3
(e) 1248 cm^3

Q8. If Pipes A and B can fill a tank in 12 min and 18 mins respectively and pipe C empties the tank in 36 mins. Find out the time taken by pipe A, B and C together to fill the same tank completely?
(a) 6 min
(b) 8 min
(c) 5 min
(d) 9 min
(e) 12 min

Q9. Two pipe A and B can fill a cistern in 12 hours and 16 hours respectively. Both Pipes opened simultaneously, due to a leakage in cistern it takes 8 hours to fill it. Find out the time taken by the leakage to empty the full cistern alone.
(a) 40 hours
(b) 42 hours
(c) 60 hours
(d) 50 hours
(e) 48 hours

Q10. The ratio of perpendicular and base of a right-angled triangle be 12:5 and its base is equal to the side of a square having area 100 cm^2. Find the perimeter of the triangle?
(a) 40 cm
(b) 56 cm
(c) 60 cm
(d) 72 cm
(e) 80 cm

Directions (11-15): - Paragraph given below gives information of income, expenditure and saving of three friends, read the paragraph carefully and answer the following questions.
Three friends Deepak, Ankit and Shivam spent money in the ratio 2:5:3 and ratio of saving of Deepak to Shivam and income of Ankit to Shivam is 10:7 and 3:2 respectively. Ankit's saving is 100% more than his expenditure and average saving of Shivam and Ankit is Rs. 8500. (Income = Expenditure + Saving)

Q11. If income and expenditure of Deepak is increases by 10% and 20%, find percentage increase in his saving?
(a) 10% increase
(b) 8% increase
(c) 4% decrease
(d) 1% decrease
(e) None of these.

Q12. Expenditure of Shivam is what percent of his income?
(a) 20%
(b) 60%
(c) 30%
(d) 15%
(e) 12%

Q13. What is the ratio of average saving of Deepak and Ankit to income of Shivam?
(a) 1:2
(b) 2:3
(c) 3:1
(d) 1:3
(e) 1:1

Q14. If Ankit spent 15% of his income on rent and 35% of his expenditure on food and rest he spent on other expenses, find how much he spent on other expenses?
(a) Rs. 1000
(b) Rs. 1750
(c) Rs. 2250
(d) Rs. 1500
(e) Rs. 750

Q15. What is average income of Deepak, Ankit and Shivam?

(a) Rs. 11333.33
(b) Rs. 12333.33
(c) Rs.11366.67
(d) Rs.12366.67
(e) None of these

Solutions

S1. Ans. (d)
Sol.
Let total work be 48 unit (lcm of numbers)
So, efficiency of A = $\frac{48}{24} = 2\ unit/day$
efficiency of B = $\frac{48}{16} = 3\ unit/day$
required time = $\frac{3\times48}{1\times\frac{3}{2}} = 96\ days.$

S2. Ans. (c)
Sol.
Since the ratio of time taken by A and B to complete the same work in the ratio of 2:3.
So, the ratio of efficiency of A and B is in the ratio of 3:2.
Let the efficiency of A and B be 3x and 2x unit respectively.
And Total Work = W
ATQ,
$\frac{W}{3x+2x} + 9 = \frac{W}{2x}$
$\frac{3W}{10x} = 9$
Total Work = 30x.
Required result = $\frac{30x}{2x} = 15\ days.$

S3. Ans. (a)
Sol.
Let total work be 42 unit.
Efficiency of Veer + Aayush = $\frac{42}{6} = 7\ unit$
Efficiency of Aayush + Maanik = $\frac{42}{7} = 6\ unit$

Efficiency of Maanik + Veer = $\frac{42}{6} = 7\ unit$

So, total efficiency of Veer, Aayush and Maanik together = $(7 + 6 + 7) \times \frac{1}{2} = 10\ unit$

Required time = $\frac{42}{10-7} = 14\ days$.

S4. Ans.(e)

Sol.

Deepak does work in → 12 days

∴ Mohit can do in → 24 days

Now, Let Mohit worked for x days.

ATQ,

$\frac{x}{24} + 6(\frac{1}{24} + \frac{1}{12}) = 1$

x = 6 days

S5. Ans. (c)

sol.

ATQ,

80 × 24 = 32x + 80 × 12

$x = \frac{80 \times 12}{32}$

x= 30 days.

S6. Ans(b)

Sol.

Let side of square be '4x' cm

So, length of rectangle = $4x \times \frac{3}{4} = 3x\ cm$

And, breadth of rectangle = 2x cm

ATQ –

$4 \times 4x - 2(3x + 2x) = 42$

6x = 42

x = 7 cm

Perimeter of triangle =2 × perimeter of rectangle = 2 ×2(21 + 14) = 140 cm

S7. Ans.(a)

Sol.

Radius of base of cylinder = $\sqrt{\frac{154}{22} \times 7}$

$= 7$ cm

Volume of cylinder $= \frac{22}{7} \times 7 \times 7 \times 10$

= 1540 cm^3

S8. Ans. (d)

Sol.

Efficiency of Pipe A to fill the tank = $\frac{1}{12}\ unit$

Efficiency of Pipe B to fill the tank = $\frac{1}{18}\ unit$
Efficiency of Pipe C to empty the tank = $\frac{1}{36}\ unit$
Required time = $\frac{1}{\frac{1}{12}+\frac{1}{18}-\frac{1}{36}}$
= 9 min.

S9. Ans (e)
Sol. Let the total capacity of the cistern be 48 units (LCM)
So, the efficiency of pipe A = 4 units/hr
The efficiency of pipe B = 3 units/hr
So, the efficiency of A , B and leakage = $\frac{48}{8} = 6$ units/hr
The efficiency of leakage = 4+3-6 =1 unit/ hr.
Required time = 48/1= 48 hours

S10. Ans.(c)
Sol.
Side of the square=10 cm
Perpendicular side of the triangle= 24 cm
Hypotenuse of the triangle=$\sqrt{100+576} = \sqrt{676} = 26\ cm$
Perimeter of the triangle= 10+24+26 = 60 cm

S(11-15): let expenditure of Deepak, Ankit and Shivam are Rs. 2x, 5x and 3x respectively
Saving of Ankit = $5x \times \frac{200}{100} = Rs.10x$
Let saving of Deepak and Shivam are Rs.10y and 7y respectively.
Income of Ankit = $10x + 5x = Rs.15x$
Income of Shivam = $Rs.(3x + 7y)$
ATQ
$10x + 7y = 2 \times 8500$
$10x + 7y = 17000$ ..... (i)
And $\frac{15x}{3x+7y} = \frac{3}{2}$
$30x = 9x + 21y$
$x = y$ ..... (ii)
Using (i) and (ii)
$x = 1000\ and\ y = 1000$

Name	Income	Expenditure	Saving
Deepak	12000	2000	10000
Ankit	15000	5000	10000
Shivam	10000	3000	7000

S11. Ans(b)
Sol. New saving of Deepak = $12000 \times \frac{110}{100} - 2000 \times \frac{120}{100}$
$= 13200 - 2400$
$= 10800$

Required percentage = $\frac{10800-10000}{10000} \times 100 = 8\%$

S12. Ans(c)
Sol. required percentage = $\frac{3000}{10000} \times 100 = 30\%$

S13. Ans(e)
Sol. Required ratio = $\frac{1}{2} \times (10000 + 10000): 10000$
= 10000:10000
= 1:1

S14. Ans(a)
Sol. Expenditure on other expenses = $5000 - 15000 \times \frac{15}{100} - 5000 \times \frac{35}{100} = Rs.1000$

S15. Ans(b)
Sol. Required average = $\frac{1}{3} \times (12000 + 10000 + 15000)$
= $\frac{37000}{3}$
= Rs.12333.33