Quiz Date: 28th May 2020

Q1. B is twice efficient as A and A can do a piece of work in 15 days. A started the work and after a few days B joined him. They completed the work in 11 days, from the starting. For how many days did they work together?
(a) 1 day
(b) 2 day
(c) 6 days
(d) 5 days
(e) 9 days

Q2. A, B, C and D purchased a restaurant for Rs. 56 lakhs. The contribution of B, C and D together is 460% of A alone, the contribution of A, C and D together is 366.66% that of B's contribution and the contribution of C is 40% that of A, B and D together. The amount contributed by D is
(a) 10 lakhs
(b) 12 lakhs
(c) 16 lakhs
(d) 18 lakhs
(e) None of these

Q3. If the selling price of a mat is five times the discount offered and if the percentage of discount is equal to the percentage profit, find the ratio of the discount offered to the cost price.
(a) 11 : 30
(b) 7 : 5
(c) 1 : 6
(d) 7 : 30
(e) None of these

Q4. Two equal sums were lent, one at the rate of 11% p.a. for five years and the other at the rate of 8% p.a. for six years, both under simple interest. If the difference in interest accrued in the two cases is Rs 1008. Find the sum.
(a) Rs 11,200
(b) Rs 5,600
(c) Rs 12,600
(d) Rs 14,400
(e) None of these

Q5. A can do some work in 24 days, B can do it in 32 days and C can do it in 60 days. They start working together. A left after 6 days and B left after working for 8 days. How many more days are required to complete the whole work?
(a) 30
(b) 25

(c) 22
(d) 20
(e) None of these

Q6. Aniruddh can finish a job in 20 days. Ritika and Sakshi can finish the same job in 10 days. If ratio of efficiency of Ritika and Sakshi is 1:3 respectively, then find the time taken by all three to complete the same job working together.
(a) $\frac{20}{3}$ days
(b) 5 days
(c) $\frac{17}{3}$ days
(d) $\frac{23}{3}$ days
(e) 6 days

Q7. Two containers contain honey and milk in the ratio 7:3 and 2:3 respectively. In what ratio should the contents of the containers be mixed such that the final ratio of honey and milk in the resultant solution becomes 23:17.
(a) 5 : 3
(b) 7 : 5
(c) 4 : 3
(d) 11 : 9
(e) 7 : 6

Q8. The curved surface area of a cylinder is equal to the curved surface area of a cone. If radius of both is equal and radius of cone is twice of its height, then find the ratio of height of cylinder to that of cone.
(a) 2: $\sqrt{5}$
(b) 1: 2
(c) $\sqrt{5}$: 2
(d) $\sqrt{3}$: 1
(e) $\sqrt{5}$: 3

Q9. Neha's present age is 20% of Simaran's present age. After some years, Neha's age will become 60% of Simaran's age at that time. By what percent will Simaran's age increase during this period?
(a) 100 %

(b) 120 %
(c) 80 %
(d) 90 %
(e) 125 %

Q10. In an examination, a student scores 4 marks for every correct answer and losses 1 mark for every wrong answer. A student attempted all the 200 questions and scored in all 200 marks. The number of questions, he answered correctly was:
(a) 82
(b) 80
(c) 68
(d) 60
(e) 75

Directions (11-15): What should come in place of question mark (?) in the following questions?

Q11. $?^2 = 512 \div 81 \div 72 \times 2916$
(a) 9
(b) 12
(c) 16
(d) 18
(e) 20

Q12. $\frac{9}{2} + \frac{11}{3} + \frac{17}{6} = ? + \frac{12}{5} + \frac{21}{10}$
(a) 6
(b) $6\frac{1}{2}$
(c) 7
(d) $6\frac{2}{3}$
(e) $7\frac{1}{2}$

Q13. $5^{?-2} = (5)^5 \div (25)^3 \times (125)^2 \div 625$
(a) –1
(b) 0
(c) 1
(d) 2
(e) 3

Q14. $? \times 65 \div 72 = 195 \times 352 \div 192$
(a) 369
(b) 396
(c) 594
(d) 297
(e) 376

Q15. $\sqrt[2]{256} \times (1728)^{\frac{1}{3}} = ? \times (4096)^{\frac{1}{4}}$
(a) 16
(b) 18
(c) 24
(d) 28
(e) 32

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Solutions

S1. Ans.(b)
Sol.
A does work in → 15 days
∴ B can do in → $\frac{15}{2}$ days
Now, Let B worked for x days.
A/q, $\frac{11}{15} + \frac{x \times 2}{15} = 1$
⇒ $2x + 11 = 15$
x = 2 days
So, they worked together for 2 days.

S2. Ans.(d)
Sol.
We can conclude
A: (B + C + D) = 100: 460 = 10: 46
⇒ A's contribution = 10 lakhs
& B: (A+C+D) = 100: 366.66
= 3: 11 = 12: 44
⇒ $B's\ contribution = 12\ lakh$
&C: (A + B + D) = 40: 100
= 2: 5 = 16: 40
⇒ $C's$ Contribution = 16 lakh
Hence, the contribution of D = 56 – (10 + 12 + 16) = 18 lakhs

S3. Ans.(d)
Sol.
Given

SP = 5 (Discount)

SP = 5 [MP – SP]

$\Rightarrow MP = \frac{6}{5} SP$ ..... (i)

Also,

%D = %P

$\frac{MP-SP}{MP} \times 100 = \frac{SP-CP}{CP} \times 100$ (Discount is always on MP)

$\frac{\frac{6}{5}SP - SP}{\frac{6}{5}SP} = \frac{SP - CP}{CP}$

$\Rightarrow \frac{1}{6} = \frac{SP - CP}{CP}$

$\Rightarrow 7CP = 6SP$

$\Rightarrow CP = \frac{6}{7} SP$ ...... (ii)

$\frac{D}{C} = \frac{\left(\frac{6}{5}SP - SP\right)}{\frac{6}{7}SP} = \frac{\frac{1}{5}SP}{\frac{6}{7}SP} = \frac{7}{30} = 7 : 30$

S4. Ans.(d)

Sol.

Let sum be Rs P

ATQ,

$1008 = \frac{P \times 11 \times 5}{100} - \frac{P \times 8 \times 6}{100}$

On solving, P = Rs. 14,400

S5. Ans.(c)

Sol.

A – 24

B – 32

C – 60

Let total work be 480 units (LCM)

So, efficiency of A, B and C are 20, 15 and 8 units/day respectively.

Work done in 6 days = 258 units by A, B and C.

Work done in next 2 days = 46 units by B & C

∴ Remaining work = 480 – 258 – 46 = 176 unit

∴ Extra time taken by C = $\frac{176}{8} = 22 \; days$

S6. Ans.(a)

Sol.

Suppose, Aniruddh does x units per day,

And Ritika & Sakshi do y and 3y units per day respectively.

Then,

ATQ,

2x = y + 3y

or, 2x = 4y

or, x = 2y

Time taken by all of them = $\frac{\text{Total work}}{\text{units/day}}$

$= \frac{20 \times x}{(x+y+3y)}$

$= \frac{20 \times 2y}{2y+y+3y}$

$= \frac{40y}{6y}$

$= \frac{20}{3}$ days.

Alternate

Let total work be 20 units (LCM)

so, efficiency of Aniruddh and Ritika & Sakshi together are 1 and 2 units/day respectively.

Required time $= \frac{20}{3} \, days$

S7. Ans.(b)
Sol.

$$\frac{7}{10} \quad\searrow\quad \frac{2}{5}$$
$$\frac{23}{40}$$
$$\frac{7}{40} \quad\nearrow\quad \frac{5}{40}$$
$$7 : 5$$

S8. Ans.(c)
Sol. Let, height of cylinder be H and that of cone be h.

And radius of both be r.

ATQ,

2πrH = πrℓ

or, 2H = $\sqrt{r^2 + h^2}$

or, 4H² = r² + h²

we know, r = 2h

4H² = 4h² + h²

Or, $4H^2 = 5h^2$

Or, $\dfrac{H^2}{h^2} = \dfrac{5}{4}$

Or, $\dfrac{H}{h} = \dfrac{\sqrt{5}}{2}$

S9. Ans.(a)
Sol.
Let Simaran's present age is 5x yrs.

Then Neha's present age is $\dfrac{20}{100} \times 5x = x$ yrs.

After some years, Let Simaran's age be = 5y yrs.

Then, Neha's age be = $\dfrac{60}{100} \times 5y = 3y$ yrs.

Now,

5x – x = 5y – 3y

or, 4x = 2y

or, y = 2x

Simaran's present age = 5x

Simaran's age after some years = 5y = 5 × 2x = 10x

% increase = $\dfrac{10x-5x}{5x} \times 100 = 100\%$

S10. Ans.(b)
Sol. Let the number of correct answers be 'x'.

Number of wrong answers be $200 - x$

$4x - (200 - x) = 200$

$5x = 400, x = 80$

S11. Ans.(c)
Sol.

$?^2 = \dfrac{512 \times 2916}{81 \times 72}$

$?^2 = 256$

? = 16

S12. Ans.(b)
Sol.

$\dfrac{9}{2} + \dfrac{11}{3} + \dfrac{17}{6} = ? + \dfrac{12}{5} + \dfrac{21}{10}$

$4 + \dfrac{1}{2} + 3 + \dfrac{2}{3} + 2 + \dfrac{5}{6} = ? + 2 + \dfrac{2}{5} + 2 + \dfrac{1}{10}$

$9 + \dfrac{3 + 4 + 5}{6} = ? + 4 + \dfrac{4 + 1}{10}$

$9 + 2 = ? + 4 + \dfrac{1}{2}$

$11 - 4 - \dfrac{1}{2} = ?$

$$\Rightarrow \ ? = 6\frac{1}{2}$$

S13. Ans.(e)
Sol.

$$5^{?-2} = \frac{5^5}{25^3} \times \frac{125^2}{625}$$

$$5^{?-2} = \frac{5^5}{(5^2)^3} \times \frac{(5^3)^2}{5^4} = \frac{5^5 \times 5^6}{5^6 \times 5^4}$$

$$5^{?-2} = 5^1$$

? – 2 = 1

? = 3

S14. Ans.(b)
Sol.

$$? \times \frac{65}{72} = \frac{195 \times 352}{192}$$

$$? = \frac{195 \times 352 \times 72}{192 \times 65}$$

?= 396

S15. Ans.(c)
Sol.

$$\sqrt[2]{256} \times (1728)^{\frac{1}{3}} = ? \times (4096)^{\frac{1}{4}}$$

$$16 \times (12^3)^{\frac{1}{3}} = ? \times (8^4)^{\frac{1}{4}}$$

$$? = \frac{16 \times 12}{8} = 24$$

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