APTITUDE QUESTIONS – 10.10.2020(Answer Key)

1. Yana and Gupta leave points x and y towards y and x respectively simultaneously and travel in the same route. After meeting each other on the way, Yana takes 4 hours to reach her destination, while Gupta takes 9 hours to reach his destination. If the speed of Yana is 48 km/hr, what is the speed of Gupta?

A. 82 kmph

B. 91 kmph

C. 45 kmph

D. 32 kmph

2. To get to a business meeting, John drove m miles in h hours, and arrived 1/2 hour early. At what rate should he have driven to arrive exactly on time?

A. 2m/(2h-1)

B. 2m-h/2h

C. m/2h

D. 2m/(2h+1)

3. A man can swim in still water at 4.5 km/h, but takes twice as long to swim upstream than downstream. The speed of the stream is?

A. 1 kmph

B. 5 kmph

C. 8 kmph

D. 3 kmph

4. A man travels three-fifths of distance AB at a speed of 3a, and the remaining at a speed of 2b, if he goes from A to B and back at a speed of 5c in the same time, then

A. 1/a + 1/b = 1/c

B. a + b = c

C. 1/a + 1/b = 2/c

D. 1/ab

5. George can do some work in 8 hours. Paul can do the same work in 10 hours while Hari can do the same work in 12 hours. All the three of them start working at 9 a.m. while George stops work at 11:00 a.m., the remaining two complete the work, approximately when will the work be finished?

A. 11:30 a.m.

B. 12:00 p.m.

C. 12:30 p.m.

D. 1:00 p.m.

6. A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/hr, what is the length of the platform?

A. 120m

B. 240m

C. 360m

D. 480m

7. The distance between two places A and B is 570 km. A train starts from A at 50 kmph at 6 am and another starts from B at 80 kmph at 7 am towards each other. At what time will they meet?

A. 11am

B. 3am

C. 2am

D. 7am

8. A boat takes a total time of three hours to travel downstream from P and Q and upstream back from Q to P. What is the speed of the boat in still water?

I. The speed of the river current is 1 km per hour.

II. The distance between P and Q is 4 km.

A. I alone sufficient while II alone not sufficient to answer

B. II alone sufficient while I alone not sufficient to answer

C. Either I or II alone sufficient to answer

D. Both I and II are not sufficient to answer

E. Both I and II are necessary to answer

9. In how many days can 10 women finish a work?

I. 10 men can complete the work in 6 days.

II. 10 men and 10 women together can complete the work in $3\frac{3}{7}$ days

III. If 10 men work for 3 days and thereafter 10 women replace them, the remaining work in completed in 4 days.

A. Any two of the three

B. I and II only

C. II and III only

D. I and III only

10. Working individually Piky, Quiky and Riky finish an assignment in 7, 8 and 11 days respectively. They work together on a project and are paid 1105 silver coins for it. Find the share of each of them in the earnings.

a. Piky = 440 coins; Quiky = 385 coins; Riky = 280 coins

b. Piky = 445 coins; Quiky = 375 coins; Riky = 285 coins

c. Piky = 446 coins; Quiky = 381 coins; Riky = 278 coins

d. Piky = 500 coins; Quiky = 400 coins; Riky = 205 coins

11. A jogger running at 8 kmph alongside a railway track in 260 metres ahead of the engine of a 140 metres long train running at 50 kmph in the same direction. In how much time will the train pass the jogger?

[A]. 3.6 sec

[B]. 18 sec

[C]. 34.3 sec

[D]. 72 sec

Explanation:

Speed of train relative to jogger = (50 - 8) km/hr = 42 km/hr.

$= \left(42 \text{ x } \frac{1000}{3600}\right) \text{m/sec}$

= 11.67m/sec.

Distance to be covered = (260 + 140) m = 400 m.

∴ Time taken = $\left(\frac{400}{11.67}\right)$ sec = 34.3 sec.

12. Gopal and Manoj undertake a piece of work for Rs 600. Gopal can do it in 30 days and Manoj can do it in 90 days. With the help of Sudha, they finish it in 15 days. How much Sudha should be paid for her contribution?

A. Rs 200
B. Rs 100
C. Rs 300
D. Rs 400

Gopal alone takes 30 days and Manoj alone takes 90 days to finish the work.
All together can finish in 15 days.
Let the total work done is LCM(15, 30, 90) = 90
Gopal's efficiency = 90/30 = 3
Manoj's efficiency = 90/90 = 1
Combined Efficiency = 90/15= 6
Sudha's efficiency = 6 – 3 -1 = 2
Sudha contributed 1/3 of the total work done.
So, she should be paid 1/3 of the total amount = 600/3 = **Rs 200**

13. A company undertake a project to build 4000 m long bridge in 800 days and hire 100 men for the project. After 200 days, he finds only 800 m of bridge has been completed. Find the (approx) number of extra men he hires to complete the project on time

A. 17 men
B. 33 men
C. 23 men
D. 45 men

Solution: Use here $\mathbf{M_1 D_1 / W_1 = M_2 D_2 / W_2}$
100 x 200/ 800 = [(100 + x) 600]/ 3200
20,000 /800= 60,000 + 600x/3200
80000 – 60000 = 600x
600x = 20,000
x= 33.33
x =**33 men** to hire to complete the project on time.

14.

An aeroplane covers a certain distance at a speed of 480 kmph in 10 hours. To cover the same distance in 4 ¾ hours, it must travel at a speed of:

A. 1200 kmph

B. 550 kmph

C. 720 kmph

D. 1010 kmph

Explanation:

Distance = (480 x 10) = 4800 km.

Speed = Distance/Time

Speed = 4800/(19/4) km/hr. [We can write 4 ¾ hours as 19/4 hours]

∴ Required speed = $\left(4800 \times \frac{4}{19}\right)_{km/hr}$ = 1010 km/hr.

15. In a boat race, a person rows a boat 12 km upstream and returns to the starting point in 4 hours. If the speed of the stream is 4 km / hr, find the speed of the boat in still water.

A. 8 km / hr
B. 16 km / hr
C. 4 km / hr
D. 18 km / hr

Solution : Let the speed of the boat in still water be B km / hr.
=> Speed upstream = (B – 4) km / hr
=> Speed downstream = (B + 4) km / hr
We know that Time = Distance / Speed
=> 12/(B-4) + 12/(B+4) = 4
=> 12 B + 48 + 12B – 48= 4 (B – 4) (B +4)
=> 24 B = 4(B – 4) (B +4)
=> 6 B = B^2 – 16
=> B^2 – 6 B – 16 = 0
=> (B + 2) (B – 8) = 0
=> B = 8 km / hr (Speed cannot be negative)

16. A can do a piece of work in 10 days while B alone can do it in 15 days. They work together for 5 days and the rest of the work is done by C in 2 days. If they get Rs 450 for the whole work, how should they divide the money? (Difficult)

(a) Rs 100. Rs 150, Rs 200
(b) Rs 80, Rs 170, Rs 200
(c) Rs 225, Rs 150, Rs 75
(d) Rs 200, Rs 50, Rs 200

Ans: B Rs 225, Rs 150, Rs 75

Soln:

In 5 days A does $\frac{5}{10} = \frac{1}{2}$ of the work;

In 5days B does $\frac{5}{15} = \frac{1}{3}$ of the work;

C does 1- $\left(\frac{1}{2} + \frac{1}{3}\right) = \frac{1}{6}$ of the work;

The amount gets divided in proportion to the work done

17. Three friends A, B and C are employed to make pastries in a bakery. Working individually, they can make 60, 30 and 40 pastries respectively in an hour. They decided to work together but due to lack of resources, they had to work on shifts of 30 minutes. Find the time taken to make 185 pastries. (Medium)

    (A) 4 hours
    (B) 3 hours 45 minutes
    (C) 4 hours 15 minutes
    (D) 5 hours

18. 600 men can make a road in 500 days. They start working together but after every hundred days, 50 men leave the work. Find the total time (in days) it takes to make the road. (Medium)

    (A) 600
    (B) 550
    (C) 650
    (D) 750

19. X and Y together earn Rs. 188 per day. Y and Z together earn Rs. 152 per day. X, Y and Z when working together earn Rs. 300 per day. How much does Y earn daily? (Simple)
    a. Rs. 43
    b. Rs. 56
    c. Rs. 45
    d. Rs. 40

20. A man complete a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.

A.220 km
B.224 km
C.230 km
D.234 km

Explanation:

$\frac{(1/2)x}{21} + \frac{(1/2)x}{24} = 10$

$\Rightarrow \frac{x}{21} + \frac{x}{24} = 20$

$\Rightarrow 15x = 168 \text{ x } 20$

$\Rightarrow x = \left(\frac{168 \text{ x } 20}{15}\right) = 224$ km.

21. A takes twice as much time as B or thrice as much time as C to finish a piece of work. Working together, they can finish the work in 2 days. B can do the work alone in:

A. 4 days
B. 6 days
C. 8 days
D. 12 days

Explanation:

Suppose A, B and C take x, $\frac{x}{2}$ and $\frac{x}{3}$ days respectively to finish the work.

Then, $\left(\frac{1}{x} + \frac{2}{x} + \frac{3}{x}\right) = \frac{1}{2}$

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

$\Rightarrow x = 12.$

So, B takes (12/2) = 6 days to finish the work.

22. A 300 metre long train crosses a platform in 39 seconds while it crosses a signal pole in 18 seconds. What is the length of the platform?

A. 320 m
B. 350 m
C. 650 m
D. Data inadequate

Explanation:

Speed $= \left(\frac{300}{}\right)$ m/sec $= 50$m/sec.

18 3

Let the length of the platform be x metres.

Then, $\left(\begin{matrix} x + 300 \\ 39 \end{matrix}\right) = \begin{matrix} 50 \\ 3 \end{matrix}$

$\Rightarrow 3(x + 300) = 1950$

$\Rightarrow x = 350$ m.

23. The speed of a boat in still water in 15 km/hr and the rate of current is 3 km/hr. The distance travelled downstream in 12 minutes is:

A. 1.2 km
B. 1.8 km
C. 2.4 km
D. 3.6 km

Explanation:

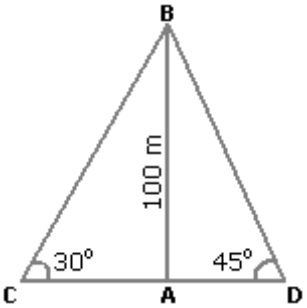
Speed downstream = (15 + 3) kmph = 18 kmph.

Distance travelled = $\left(18 \times \begin{matrix} 12 \\ 60 \end{matrix}\right)$ km = 3.6 km.

24. Two ships are sailing in the sea on the two sides of a lighthouse. The angle of elevation of the top of the lighthouse is observed from the ships are 30° and 45° respectively. If the lighthouse is 100 m high, the distance between the two ships is:

A. 173 m
B. 200 m
C. 273 m
D. 300 m

Let AB be the lighthouse and C and D be the positions of the ships.



Then, AB = 100 m, $\angle ACB = 30°$ and $\angle ADB = 45°$.

$\frac{AB}{AC} = \tan 30° = \frac{1}{3} \Rightarrow$ AC = AB x 3 = 1003 m.

$\frac{AB}{AD} = \tan 45° = 1 \Rightarrow$ AD = AB = 100 m.

$\therefore$ CD = (AC + AD)= (1003 + 100) m
= 100(3 + 1)
= (100 x 2.73) m
= 273 m.

25. A and B undertook to do a piece of work for RS 4500. A alone could do the work in the 8 days and B in 12 Days. With the assistance of C, they finished the work in 4 days. How should the money be divided? (Difficult)

A in 4 days does $4 \times \frac{1}{8}$ of the work i.e. $\frac{1}{2}$ of the work.

B in 4 days does $4 \times \frac{1}{12}$ of the work i.e. $\frac{1}{3}$ of the work.

C in 4 Days $\left\{1 - \left(\frac{1}{2} + \frac{1}{3}\right)\right\}$ of the work i.e. $\frac{1}{6}$ of the work.

Ans:

A's share : B's share : C's share $= \frac{1}{2} : \frac{1}{3} : \frac{1}{6} = 3:2:1$

A's share= RS $4500 \times \frac{3}{6}$ =Rs 2250: B's share = Rs $4500 \times \frac{2}{6} = Rs\ 1500$

C's Share =Rs $4500 \times \frac{1}{6} = Rs\ 750$