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## Problems on trains Questions for CDS, CLAT, Bank \& SSC Exams.

## Problems on Trains Quiz 2

Directions: Kindly study the following Questions carefully and choose the right answer:

1. A train of length 100 mtr takes 21.6 sec to cross the tunnel of length 200 mtr. what's the speed of the train?
A. $10 \mathrm{~km} / \mathrm{hr}$
B. $35 \mathrm{~km} / \mathrm{hr}$
C. $50 \mathrm{~km} / \mathrm{hr}$
D. $65 \mathrm{~km} / \mathrm{hr}$
2. A train passes a station 120 m long in 60 sec . at a speed of $72 \mathrm{~km} / \mathrm{hr}$. The time taken by the train to pass an electric perch is:
A. 12 sec
B. 34 sec
C. 54 sec
D. 64 sec
3. A train passes a platform in 40 sec and a woman standing on the platform in 30 sec. If the speed of the train is $108 \mathrm{~km} / \mathrm{hr}$, what is the length of the platform?
A. 100 m
B. 300 m
C. 900 m
D. 1020 m
4. A 240 meter long train passes a platform in 45 sec while it passes a signal board in 16 sec . What is the length of the platform?
A. 250 m
B. 175 m
C. 275 m
D. 435 m
5. A train moves past a terminal in 20 sec and a station 300 m long in $\mathbf{5 0} \mathbf{~ s e c}$. Its length is:
A. 100 m
B. 200 m
C. 300 m
D. 500 m
6. A train moves pass a police post and a flyover 420 m long in 9 sec and 30 sec respectively. what is the speed of the train ?
A. $72 \mathrm{~km} / \mathrm{hr}$
B. $104 \mathrm{~km} / \mathrm{hr}$
C. $116 \mathrm{~km} / \mathrm{hr}$
D. $136 \mathrm{~km} / \mathrm{hr}$
7. A train takes 16 sec to pass through a station 140 m long and 14 sec to pass through another station 100 m long. The length of the train is :
A. 40 m
B. 80 m
C. 120 m
D. 180 m
8. How many seconds will a 1050 meter long train take to cross a girl walking with a speed of $4 \mathrm{~km} / \mathrm{hr}$ in the direction of the moving train if the speed of the train is $58 \mathrm{~km} / \mathrm{hr}$ ?
A. 35 sec
B. 70 sec
C. 125 sec
D. 135 sec
9. A train 60 meter long is running with a speed of 48 kmph . In what time will it pass a man who is running at 6 kmph in the direction opposite to that in which the train is going?
A. 1 sec
B. 2 sec
C. 3 sec
D. 4 sec
10. Two trains 400 m and 350 m long are running on parallel rails at the rate of 19 kmph and 34 kmph respectively. In how much time will they cross each other? If they are running in the same direction?
A. 100 sec
B. 120 sec
C. 160 sec
D. 180 sec

## Correct Answers:

| $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ | $\mathbf{7}$ | $\mathbf{8}$ | $\mathbf{9}$ | $\mathbf{1 0}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| C | C | B | D | B | C | D | A | B | A |

## Explanations:

1. From the given equation:

Length of the train $=100 \mathrm{~m}$
Length of the tunnel $=200 \mathrm{~m}$
Total length $=100+200=300 \mathrm{~m}=$ total distance
And time taken to cross the tunnel $=21.6 \mathrm{sec}$
Speed $=\left(\frac{100+200}{21.6}\right) \mathrm{m} / \mathrm{sec}=\left(\frac{300}{21.6} \times \frac{18}{5}\right)=50 \mathrm{~km} / \mathrm{hr}$
Hence, option C is correct.
2. Given that:

Speed of the train $=\left(72 \times \frac{5}{18}\right) \mathrm{m} / \mathrm{sec}=20 \mathrm{~m} / \mathrm{sec}$.
Let the length of the train be x metres.
Then, $\frac{x+120}{20}=60 \Rightarrow x+120=1200 \Rightarrow x=1080$.

So, time taken by the train to pass an electric perch
$=\left(1080 \times \frac{1}{20}\right) \mathrm{sec}=54 \mathrm{sec}$.
Hence, option C is correct.
3.

Speed of the train $=\left(108 \times \frac{5}{18}\right)=30 \mathrm{~m} / \mathrm{sec}$.
Length of the train $=$ Distance travelled to cross the woman $\times$ Time taken $=(30 \times 30) \mathrm{m}=900 \mathrm{~m}$. Let the length of the platform be $x$ meters.
Then, $\frac{(x+900)}{40}=30 \Rightarrow x+900=1200 \Rightarrow x=300 \mathrm{~m}$.

Hence, option B is correct.
4. From the information given:

Speed of the train $=\frac{\text { Distance travelled to cross the signal }}{\text { Time taken }}$
$=\left(\frac{240}{16}\right) \mathrm{m} / \mathrm{sec}=15 \mathrm{~m} / \mathrm{sec}$

Let the length of the platform be x meters.
Then, $\frac{x+240}{45}=15 \Rightarrow x+240=675 \Rightarrow x=435 \mathrm{~m}$.
Hence, option D is correct.
5. Let the length of the train be $x$ meters and its speed be $\mathrm{y} \mathrm{m} / \mathrm{sec}$.

Then, $\frac{x}{y}=20 \Rightarrow y=\frac{x}{20}$
Now, as in both the cases speed is equal:
So, $\frac{x+300}{50}=\frac{x}{20}$
$\Rightarrow 2 x+600=5 x \Leftrightarrow 3 x=600 \Rightarrow x=200 \mathrm{~m}$.
Hence, option B is correct.
6. Let the length of the train be $x$ meters and its speed by $\mathrm{y} / \mathrm{sec}$.

Then, $\frac{x}{y}=9 \Rightarrow x=9 y$.
Now, $\frac{x+420}{30}=y \Leftrightarrow 30 y=x+420 \Rightarrow 30 y=9 y+420$.
$\Rightarrow 21 \mathrm{y}=420 \Rightarrow \mathrm{y}=20$.
Speed $=20 \mathrm{~m} / \mathrm{sec}=\left(20 \times \frac{18}{5}\right)=72 \mathrm{~km} / \mathrm{hr}$.
Hence, option A is correct.
7. Let the length of the train be $x$ meters.

Now, as in both the cases the speed of the train is same.
So, $\frac{x+140}{16}=\frac{x+100}{14} \Rightarrow 14 x+1960=16 x+1600$.
$\Rightarrow 2 x=360 \Rightarrow 180 \mathrm{~m}$.
So, the length of the $x=180 \mathrm{~m}$.
Hence, option D is correct.
8. Speed of train relative to the girl $=(58-4)=54 \mathrm{~km} / \mathrm{hr}$ $\Rightarrow\left(54 \times \frac{5}{18}\right) \mathrm{m} / \mathrm{sec} \Rightarrow 15 \mathrm{~m} / \mathrm{sec}$.

So. time taken to pass the girl $=\left(1050 \times \frac{1}{15}\right) \Rightarrow 70 \mathrm{sec}$.
Hence, option B is correct.
9. Speed of train relative to $\mathrm{man}=(48+6) \mathrm{km} / \mathrm{hr}=54 \mathrm{~km} / \mathrm{hr}$.
$\Rightarrow\left(54 \times \frac{5}{18}\right)=15 \mathrm{~m} / \mathrm{sec}$.
So, time taken to pass the man $=\left(60 \times \frac{1}{15}\right) \mathrm{sec}=4 \mathrm{sec}$.
Hence, option D is correct.
10. Relative speed $=(34-19)=15 \mathrm{kmph}$ (As the trains are moving in same direction)
$\Rightarrow\left(15 \times \frac{5}{18}\right) \mathrm{m} / \mathrm{sec}=\left(\frac{25}{6}\right) \mathrm{m} / \mathrm{sec}$.
Total distance covered $=$ Sum of the lengths of trains $=750 \mathrm{~m}$.
So, time taken to pass the man $=\left(750 \times \frac{6}{25}\right) \mathrm{sec} \Rightarrow 180 \mathrm{sec}$.
Hence, option D is correct.

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