



Date : 16th Jan 2024

Quantitative Aptitude - Trains

English

Q:1 The length of the platform on which the man is standing is 375 m. Train crosses the man in 14 sec with the speed of 110 km/hr. What will be the time taken by the train to cross the platform?

1. 20.19 sec
2. 22.34 sec
3. 26.26 sec
4. 25.47 sec

Q:2 A train has a length of 124 m and it has to pass under the tunnel that is 2.9 km long in 2 minutes. What should be the speed of the train?

1. 29.8 m/sec
2. 25.2 m/sec
3. 31.4 m/sec
4. 35.6 m/sec

Q:3 A train crosses two platforms of length 230 m and 450 m in 9 sec and 15 sec respectively. What will be the length of the train?

1. 100 m
2. 120 m
3. 130 m
4. 150 m

Q:4 Train A and B are running from Indore to Kolkata with the speed of 95 kmph and 108 kmph respectively. Train A starts an hour and a half before Train B. What will be the time taken by Train B to cross Train A?

1. 9 hours
2. 8 hours
3. 15 hours
4. 11 hours

Q:5 Two cars were running at the speed of 25 km/h and 35 km/h respectively. If a train crosses these cars in time 4 sec and 6.5 sec respectively, what would be the speed of the train?

1. 51 km/h
2. 48 km/h
3. 44 km/h
4. 39 km/h

Q:6 Train A and B travelling opposite to each other meet at point. Train B already covered 98 km more than A when they meet. If the speed of Train A and B is 45 kmph and 60 kmph respectively, what will be the distance

between their starting point?

1. 682.5 km
2. 650.7 km
3. 670.8 km
4. 634.5 km

Q:7 A cart standing on the platform is crossed by the engine of the train in 78 seconds at the speed of 66 km/hr. If the length of the train was 98 m, what will be the starting distance between the cart and the end point of the train?

1. 1239.5 m
2. 1345.6 m
3. 1524.4 m
4. 1673.9 m

Q:8 The train moving at the speed of 72 km/h got broken down and after getting repaired it starts moving at the speed of 94 km/h. If the distance covered in 5 hours after repairing is x, how much time it will take to cover $4x/3$ before repairing?

1. 8.7 hours
2. 7.6 hours
3. 5.9 hours
4. 6.9 hours

Q:9 Train A leaves from P at 7 a.m. and reaches Q at 4 p.m. on the same day. Another Train B leaves Q at 8 a.m. and reaches P at 6 p.m. on the same day. At what time do they meet?

1. 4 : 13 p.m.
2. 1 : 13 p.m.
3. 12 : 13 p.m.
4. 2 : 13 p.m.

Q:10 If a train goes from starting to its destination at a speed of 78 km/hr, it reaches 15 minutes late, If the same train travels at the speed of 94 km/hr, it is 15 minutes early. What is the distance between the starting point and the destination?

1. 209 km
2. 229 km
3. 234 km
4. 256 km



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Answer Key

1. (3)	2. (2)	3. (1)	4. (4)	5. (1)
6. (1)	7. (3)	8. (1)	9. (3)	10. (2)

Answers and Solutions

Q:1 The correct answer is **Option 3** i.e. **26.26 sec**

Speed of train = 110 km/h

Time to cross a standing man = 14 sec

Length of platform = 375 meters

Distance = Speed \times Time

Speed of train = 110 km/h = $110(5/18)$ m/sec = 30.6 m/sec

The distance covered by a train to cross a standing object is the length of the train itself.

Length of the train = Speed(Time) = $30.6(14)$ = 428.4 m

When the train crosses the platform of length 375 m -

Total distance covered by train = $(375 + 428.4)$ m = 803.4 m

Time to cross the platform = $803.4/30.6$ = 26.26 sec

Q:2 The correct answer is **Option 2** i.e. **25.2 m/sec**

Length of the tunnel = 2.9 km = 2900 m

Time taken to cross the tunnel = 2 minutes = 120 sec

Distance = Speed \times Time

The length of the train = 124 m

Let the speed of the train be x m/sec

Total distance = 2900 m + 124 m = 3024 m

$\Rightarrow 3024 = 120x$

$x = 3024/120 = 25.2$ m/sec

Q:3 The correct answer is **Option 1** i.e. **100 m.**

Let the length of the train be x.

Speed of train = (length of platform + length of train)/time

According to question -

$\Rightarrow (230 + x)/9 = (450 + x)/15$

$\Rightarrow 3450 + 15x = 4050 + 9x$

$\Rightarrow 4050 - 3450 = 15x - 9x$

$\Rightarrow 6x = 600$

$\Rightarrow x = 100$ m

Q:4 The correct answer is **Option 4** i.e. **11 hours.**

Speed of train A = 95 km/h

Speed of train B = 108 km/h

Train A starts an hour before Train B.

Distance = Speed(Time)

Distance covered by Train A in 1.5 hour = $95(1.5)$ = 142.5 km

Relative speed = $108 - 95 = 13$ km/h [As running in the same direction]

Time taken by B to cross A = $142.5/13 = 10.96 \approx 11$ hours

Q:5 The correct answer is **Option 1** i.e. **51 km/h.**

Let the speed of the train be x km/h.

When the train crosses these cars it covers its own length.

Distance = Speed(Time)

Relative speed when train crosses 1st car = $(x - 25)$ km/h

Relative speed when train crosses 2nd car = $(x - 35)$ km/h

Time taken to cross 1st car = 4 sec = $4/3600$ h

Time taken to cross 2nd car = 6.5 sec = $6.5/3600$ h

According to question-

$\Rightarrow (x - 25)(4/3600) = (x - 35)(6.5/3600)$

$\Rightarrow 4x - 100 = 6.5x - 227.5$

$\Rightarrow 6.5x - 4x = 227.5 - 100$

$\Rightarrow 2.5x = 127.5$

$\Rightarrow x = 127.5/2.5 = 51$ km/h

Q:6 The correct answer is **Option 1** i.e. **682.5 km**

Speed of Train A = 45 km/h

Speed of Train B = 60 km/h

Train B covered 98 km more than A when they meet.

Distance = Speed(Time)

Let the time after which they meet be x hours.

According to question-

$\Rightarrow 60x - 45x = 98$

$\Rightarrow 15x = 98$

$\Rightarrow x = 6.5$ hours

Distance between starting point = (Distance covered by train A) + (Distance covered by train B) = $[(45 \times 6.5) + (60 \times 6.5)] = 292.5 + 390 = 682.5$ km

Q:7 The correct answer is **Option 3** i.e. **1524.4 m**

Speed of the train = 66 km/h = $66(5/18) = 18.3$ m/s

Time taken by the train to cross the cart = 78 sec

Length of the train = 98 m

Distance = speed(time)

Distance covered in 78 sec = $18.3(78) = 1427.4$ m

The starting distance of the cart from the end point of the train = $1427.4 + 98 = 1525.4$ m



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Q:8 The correct answer is **Option 1** i.e. **8.7 hours**

Speed of train after repairing = 94 km/hr

Speed of train before repairing = 72 km/hr

Distance covered by the train after repairing = x km

Time taken after repairing = 5 hours

Distance = Time(Speed)

Distance covered by the train after repairing = x km =
 $94(5) = 470$ km

Distance covered by the train before repairing = $4x/3 =$
 $4(470)/3 = 1880/3 = 626.7$ km

Time taken by the train before repairing = $626.7/72 =$
8.7 hours

Q:9 The correct answer is **Option 3** i.e. **12 : 13 p.m.**

Time taken by Train A to cover journey = 4 p.m. - 7 a.m. =
9 hours

Time taken by Train B to cover journey = 6 p.m. - 8 a.m. =
10 hours

Total distance from P to Q = LCM of 9, 10 = 90x km

Speed of Train A = 10x km/hr

Speed of Train B = 9x km/hr

Distance covered by Train A in an hours = 10x km

Remaining distance = $90x - 10x = 80x$ km

Time taken to meet each other = $80x/(10x + 9x) =$
 $80/19$ hrs = $4 \frac{4}{19}$ hrs = 4 hours 13 min

Time of meeting = 8 : 00 + 4 : 13 = 12 : 13 p.m.

Q:10 The correct answer is **Option 2** i.e. **229 km.**

Let the original speed of train be x.

Let the distance from starting point to destination be M.

Train goes from starting point to the destination at a
speed of 78 km/hr, it reaches 15 minutes late.

According to question -

$$\Rightarrow M/78 - M/x = 15/60$$

$$\Rightarrow M(1/78 - 1/x) = 1/4$$

$$\Rightarrow M[(x - 78)/78x] = 1/4$$

$$\Rightarrow M = 78x/4(x - 78)$$

Train goes from starting point to destination at a speed
of 94 km/hr, it is 15 minutes early.

$$\Rightarrow M/x - M/94 = 15/60$$

$$\Rightarrow M[(94 - x)/94x] = 1/4$$

$$\Rightarrow 78x(94 - x)/[4(x - 78)94x] = 1/4$$

$$\Rightarrow 4[78x(94 - x)] = [4(x - 78)94x]$$

$$\Rightarrow 7332x - 78x^2 = 94x^2 - 7332x$$

$$\Rightarrow 14664x = 172x^2$$

$$\Rightarrow x = 14664/172 = 85.26 \text{ km/hr}$$

The distance between the starting point and the
destination = $78x/4(x - 78) = 78(85.26)/4(85.26 - 78) =$
 $6650.28/4(7.26) = 6650.28/29.04 = 229$ km