Problems on Trains for Railway Exams

Problems on Trains for Railway Group-D (Level-1 Posts) /RPF Level Exams

1) Find the speed of train in kmph, if train covers 300 meter of distance in 20 seconds?

a) 15 kmph

b) 36 kmph

c) 54 kmph

d) 18 kmph

2) Find the distance covered by the train in 4 hours running at the speed of 20 mps;

a) 288 km

b) 488 km

c) 28 km

d) 2800m

3) Find the time taken by the train to cover the distance of 1500 meters at the speed of 15 mps;

a) 10 seconds

b) 1 minutes

c) 100 seconds

d) 10 minutes

4) Find the time taken by the 200 meter long train to cover a platform double of its length with the speed of 36 km/h ;

a) 60 seconds

b) 6 seconds

c) 6 minutes

d) 1 minutes

5) Find the speed of the train which covers 150 meters of platform in 50 seconds and the ratio between the length of platform to train is 3 : 2 ;

a) 20 kmph

b) 18 kmph

c) 15 kmph

d) None of these

6) A train of length 150 meter crosses a man in 30 seconds who is walking with the speed of 1 kmph in same direction what is the speed of the train?

a) 28.4 kmph

b) 48.4 kmph

c) 58.4 kmph

d) 68.4 kmph

7) A train of length 250 meter crosses a pole in 10 seconds then find the speed of train?

a) 36 kmph

b) 72 kmph

c) 90 kmph

d) 54 kmph

8) A man walking at the speed of 3 kmph was overtook by the train running with the speed of 39 kmph in 20 seconds then find the length of train?

a) 200 m

b) 300 m

c) 400 m

d) 100 m

9) A train of length 400 meters crosses a pole in time which is numerically equals to the speed of the train then find the speed of train?

a) 36 kmph

b) 72 kmph

c) 70 kmph

d) 54 kmph

10) If the time 't' taken by a train to cover 600 meter of distance with a certain speed 's' is in the ratio of 2 : 5 then find the speed?

a) 180 kmph

b) 80√6 kmph

c) 72√10 kmph

d) 90√6 kmph

11) Find the total distance covered by the train running with the speed of 54 kmph for 45 minutes?

a) 675 m

b) 650 m

c) 575 m

d) 475 m

12) Find the distance covered by the train running with the speed of 45 kmph crosses a man in 30 seconds;

a) 275 m

b) 375 m

c) 175 m

d) 475 m

13) If the speed of two train A and B is in the ratio of 4 : 5 and crosses each other in 18 seconds from opposite direction. The length of train A is 150 meter and that of B is 250 meter then finds the speed of slower train?

a) 35.55 kmph

b) 25.55 kmph

c) 45.55 kmph

d) 65.55 kmph

14) If the speed of two train A and B is in the ratio of 3 : 6 and crosses each other in 18 seconds. The length of train A is 50 meter and that of B is 70 meter then what is the speed of faster train?

a) 16 kmph

b) 18 kmph

c) 8 kmph

d) Cannot be determined

15) Train crosses a platform of 300 meter which is double of its length in 15 seconds the find its speed in kmph?

a) 48 kmph

b) 100 kmph

c) 90 kmph

d) 108 kmph

16) Two trains A and B with the speed 30 and 60 kmph respectively running in the opposite direction crosses each other in 10 seconds then find their lengths? Given that the ratio of their length is 3 : 2 .

a) 50m and 100m

b) 150m and 100m

c) 150m and 200m

d) 150m and 150m

17) Two trains A and B with the speed x and y kmph respectively running in the opposite direction crosses each other in 30 seconds then find their speed? Given x > y and their lengths are 150 meter and 300 meter.

a) 54mps

b) 54 kmph

c) 18 mps

d) Cannot be determined

18) If the length of trains A is 50% more than that of B is and they crosses each other in 20 seconds from opposite direction. If the sum of their speed is 90 kmph find their lengths?

a) 300m and 200m

b) 100m and 300m

c) 300m and 150m

d) Cannot be determined

19) If the time (t) taken by the train is 10 % of the speed of the train(s). If the distance covered by the train 440 meters then find the speed in mps?

a) $10\sqrt{11}$ mps

b) $2\sqrt{11}$ mps

c) $20\sqrt{11}$ mps

d) Cannot be determined

20) If the time (t) taken by the train is 50 % of the speed of the train(s). If the distance covered by the train 300 meters then find the speed in mps?

a) $4\sqrt{55}$ mps

b) $2\sqrt{55}$ mps

c) $8\sqrt{55}$ mps

d) $4\sqrt{11}$ mps

21) A train with the speed of 38 kmph crosses a man in same direction walking with the speed of 2 kmph in 20 seconds then find the length of train?

a) 150m

b) 100m

c) 200m

d) 300m

22) A train with the speed of 50 kmph crosses a man in opposite direction walking with the speed of 4 kmph in 40 seconds then what is the length of train?

a) 150m

b) 300m

c) 600m

d) 60m

23) A trains running with the speed of 25 mps crosses a man walking with the speed of 5 mps in the same direction in 10 seconds find the length of train?

a) 200 m

b) 20 m

c) 2 km

d) 100 m

24) A trains running with the speed of 40 mps crosses a man walking with the speed of 4 mps in the opposite direction in 20 seconds find the length of train?

a) 180 m

b) 770 m

c) 800 m

d) 880 m.

25) A trains running with the speed of 's' kmph crosses a man walking with the speed of 1 kmph in the same direction in 10 seconds If the length of train is 200 meters then find 's'?

a) 70 mps

b) 72 mps

c) 73 mps

d) 54 mps

26) A trains running with the speed of 10 mps crosses a man walking with the speed of 'x' mps in the opposite direction in 10 seconds If the length of train is 250 meters then find 'x'?

a) 15 mps

b) 25 mps

c) 5 mps

d) None of these

27) The average speed of a car is three-fourth the average speed of a train. The train covers 320 km in 8 hours. How much distance will the car cover in 15 hours?

a) 350 km

b) 400 km

c) 450 km

d) Cannot be determined

28) A train of length (l) passes a standing man in 10 seconds and takes 15 seconds to cross a bridge then find the length of bridge? Given that the speed of train is 36 kmph.

a) 40 m

b) 50 m

c) 150 m

d) 250 m

29) A train 450 meter long running with the speed of 60 kmph crosses a bridge in 18 seconds then what is the length of bridge?

a) 150 m

b) 50 m

c) 250 m

d) 350 m

30) Two trains running in the opposite direction at the speed of 36 kmph and 72 kmph and their length is 150 meter and 'x' meter completely crosses each other in 15 seconds. Find value of 'x'?

a) 150 m

b) 300 m

c) 200 m

d) 100 m

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31) When two trains of length 100m and 200m running in same direction takes 15 seconds to completely cross each other. If the ratio of speed of trains is 3 : 5 then find their actual speed?

a) 30 mps and 50 mps

b) 7.5 mps and 10.5 mps

c) 12.5 mps and 17.5 mps

d) None of these

32) Two trains running in the opposite direction at the speed of 36 kmph and 48 kmph and their length is in ratio of 3 : 2 , the faster train completely passes a man sitting in slower train in 10 seconds. Find the length of faster train?

a) 300 m

b) 50 m

c) 100 m

d) 200 m

33) A train crosses a platform of length 200m and a man in 15 and 10 seconds respectively then find the speed of train?

a) 144 kmph

b) 108 kmph

c) 90 kmph

d) 72 kmph

34) A train of length 340m crosses a man in 17 seconds. If the train runs with(s + 5) mps speed then find the time taken by train to cross a bridge half of its length?

a) 24.04 sec.

b) 4.4 sec.

c) 4 sec.

d) 20.4 sec.

35) A train of length 200m crosses a man in 10 seconds. If the train runs with(s – 10) mps speed then find the time taken to cross a bridge half of its length?

a) 15 sec

b) 10 sec

c) 30 sec

d) 25 sec

36) A train passes a 250m long platform in 20 seconds and a pole in 10 seconds then what is the speed of train?

a) 90 kmph

b) 108 kmph

c) 72 kmph

d) 36 kmph

37) Two trains of length 150m and 250m completely crosses each other when running in same and opposite direction in 20 sec. and 10 sec. respectively. Find their speed?

a) 30 mps and 20 mps

b) 30 mps and 30 mps

c) 20 mps and 10 mps

d) 30 mps and 10 mps

38) Two trains of length 350m and 250m completely crosses each other when running in same and opposite direction in 10 sec. and 5 sec. respectively. Find the speed of faster train in kmph?

a) 35 kmph

b) 324 kmph

c) 315 kmph

d) None of these

39) A train of length 150m is completely crossed by a man in opposite direction having speed of 2 kmph in 10 seconds then what is the speed of train?

a) 197.2 kmph

b) 177.2 kmph

c) 187.2 kmph

d) None of these

40) A train of length 'x' meters completely overtake a man walking with the speed of 1 kmph in 20 seconds. If the speed of train is 45kmph then find the approx length of train?

a) 245 m.

b) 145 m.

c) 240 m.

d) 250 m.

41) If train A can cover 400 km in 9 hours while train B can cover 260 km distance in 13 hours then find the average speed of train A and B?

a) 20 kmph.

b) 30 kmph.

c) 10 kmph.

d) 45 kmph.

42) If train A can cover 100 km in 12 hours while train B can cover 200 km distance in 8 hours then find the average speed of train A , B and C?

a) 15 kmph

b) 25 kmph

c) 20 kmph

d) 5 kmph

43) If the time taken by train A and B to cover same distance is in the ratio of 4 : 3 then find the speed of train A if the speed of train B is 28mps?

a) 14 mps

b) 35 mps

c) 21 mps

d) 28 mps

44) Find the speed of train which takes 60 seconds to cross a bridge of length 400m and 10 seconds to cross a pole?

a) 28.8 kmph

b) 18.8 kmph

c) 8.8 kmph

d) 28 kmph

45) If the length of train is 150m and takes 60 seconds to cross a bridge and 10 seconds to cross a standing man then find the length of Bridge?

a) 150 m

b) 650 m

c) 750 m

d) 700 m

46) If a train runs at a speed of $3/4^{th}$ of its actual speed then it takes 2 hours more to reach its destination. Find the distance travelled by the train?

a) 24 kms

b) 14 kms

c) 12 kms

d) 20 kms

47) If a train takes 1/4th of its actual time when its speed it increased by 36 kmph to reach its destination. Find the distance travelled by the train?

a) 42 kms

b) 44 kms

c) 48 kms

d) 40 kms

48) If the ratio of speed of train A and Train B is 3 : 2 and takes 20 seconds and 10 seconds to completely cross each other in same and opposite directions respectively . If the ratio of their length is 5 : 4 then find the time taken by slow train to completely pass a pole?

a) Cannot be determined

b) 10 sec.

c) 20 sec.

d) None of these

49) If the ratio of speed of train A and Train B is 4 : 5 and takes 15 seconds to completely cross each other in same direction. If the ratio of their length is 2 : 1 then find the speed of slow train?

a) 18 kmph

b) 36 kmph

c) None of these

d) Cannot be determined

50) If the time taken ratio of two trains to cover same distance is 7 : 10 then find the ratio of their speeds?

a) 7 : 10

b) 17 : 20

c) 10 : 7

d) 20 : 17

ANSWERS

1) Answer: C

Solution:

According to the question,

S = Distance / Time

Speed = 300/20

Speed = 15 mps

Speed (kmph) = 15 × 18 / 5

Speed (kmph) = 54 kmph

2) Answer: A

Solution:

According to the question,

Speed = Distance / Time

Distance =4 x20 x 18/5

Distance (km) = 288 Km

3) Answer: C

Solution:

According to the question,

Speed = Distance / Time

15 = 1500/T

Time = 100 Seconds

4) Answer: A

Solution:

According to the question,

Speed = Length of train + Length of platform/ Time

(36×5)/18 =(200+400)/Time

Time = 60 Seconds

5) Answer: B

Solution:

According to the question,

Speed = Length of train + Length of platform/ Time

Here, 3 units = 150m

2 units = 100m

Speed =(150 +100)/50

Speed = 5 mps

Speed(in kmph) = 5 × 18 / 5 = 18 kmph

6) Answer: D

Solution:

According to the question,

(S_t - S_m) = Length of train / Time

(S_t - 1)×5/18 = 150/30

Speed = 19 mps

Speed(in kmph) = 19 × 18 / 5 = 68.4 kmph

7) Answer: C

Solution:

According to the question,

Speed = length of train / Time

Speed = 250/10

Speed = 25 mps

Speed (in kmph) = 25 × 18 /5 = 90 kmph

8) Answer: A

Solution:

According to the question,

(S_t - S_m) = Length of train / Time

(39 - 3)×5/18 = L_t /20

Length of train = 200 meter

9) Answer: B

Solution:

According to the question,

Let speed = time = x.

Speed = length of train / Time

x = 400/x

x^2 = 400

x = 20

Speed = 20 mps

Speed (in kmph) = 20 × 18 /5 = 72 kmph

10) Answer: C

Solution:

According to the question,

Let speed = 5x

Time = 2x

Speed = length of train/Time

5x = 1600/2x

$10x^2 = 1600$

x = 4√10

Speed = 5 x 4√10= 20√10 mps

Speed (in kmph) = 20√10 ×18/5 = 72√10 kmph

11) Answer: A

Solution:

According to the question,

Speed = Distance/Time

54×5/18 = D/45

Distance = 675 m

12) Answer: B

Solution:

According to the question,

$(S_t - S_m)$ = Length of train/Time

(45 - 0)×5/18 = L_t /30

Length of train = Distance travelled = 375 meter

13) Answer: A

Solution:

According to the question,

$(S_A + S_B)$ = Length of train / Time

Let speed ratio be 4x and 5x.

(4x + 5x)×5/18 = (150 + 250)/18

x = 400/45 units

Slower train = 4x = 1600/45 = 35.55 kmph

14) Answer: C

Solution:

According to the question,

$(S_A + S_B)$ = Length of train / Time

Let speed ratio be 3x and 6x.

(3x + 6x)×5/18 = (50 + 70) /18

45x = 120 units

x = 24/9 units

Slower train = 3x = 8 kmph

15) Answer: D

Solution:

According to the question,

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

Speed = (300 + 150)/15

Speed = 30 mps

Speed (in kmph) = 30 × 18 /5 = 108 kmph

16) Answer: B

Solution:

According to the question,

$(S_A + S_B)$ = Length of train / Time

Let the length ratio be 3x and 2x.

(30 + 60)×5/18 =(3x + 2x) /10

x = 50 units.

The length will be 150m and 100m.

17) Answer: D

Solution: According to the question,

(S_A + S_B) = Length of train / Time

Let the speed be x + y.

(x + y)×5/18 =(150 + 300) /30

(x + y) = 54 units.

The sum of their speed is 54 mps but individual speed is not given so the answer will be cannot be determined.

18) Answer: A

Solution:

According to the question,

(S_A + S_B) = Length of train / Time

Let the length ratio be 3x and 2x.

Let the speed be x + y = 90 kmph.

90×5/18 = (3x + 2x) /20

x = 100 units

Their length will be 300m and 200m.

19) Answer: C

Solution:

According to the question,

Speed = Distance / Time

Let the time be x seconds.

So, Speed will be 10x mps

10x = 440/x

x = 2√11 units

Speed = 10x = 20√11 mps

20) Answer: A

Solution:

According to the question,

Speed = Distance / Time

Let the time be x seconds.

Speed = 2x mps

2x = 440/x

x = 2√55 units

Speed = 2x = 4√55 mps

21) Answer: C

Solution:

According to the question,

Let S_t and S_m be the speed of train and speed of man.

(S_t - S_m) = Length of train / Time

(38 - 2)×5/18 = L_t /20

Length of train = Distance travelled = 200 meter.

22) Answer: C

Solution:

According to the question,

Let S_t and S_m be the speed of train and speed of man.

(S_t + S_m) = Length of train / Time

(50 + 4)×5/18 = L_t /40

Length of train = Distance travelled = 600 meter

23) Answer: A

Solution:

According to the question,

Let S_t and S_m be the speed of train and speed of man.

(S_t - S_m) = Length of train / Time

(25 - 5) = L_t /10

Length of train = Distance travelled = 200 meter.

24) Answer: D

Solution: According to the question,

Let S_t and S_m be the speed of train and speed of man.

(S_t + S_m) = Length of train / Time

(40 + 4) = L_t /20

Length of train = Distance travelled = 880 meter.

25) Answer: C

Solution: According to the question,

Let S_t and S_m be the speed of train and speed of man.

(S_t - S_m) = Length of train / Time

(s - 1)×5/18 = 200 / 10

Speed of train(s) = 73 mps.

26) Answer: A

Solution: According to the question,

Let S_t and x be the speed of train and speed of man.

(10 + x) = Length of train / Time

(10 + x) = 250 / 10

Speed of man(x) = 15 mps.

27) Answer: C

Solution:

Average speed of train =320/8=40 km/hr

Average speed of bus= (3/4) x 40 =30 km/hr

Distance cover by car in 15 hours= 30 x 15 =450 km

28) Answer: B

Solution:

According to the question,

Let S_t be the speed of train.

S_t = Length of train / time

36 × 5/18 = Length of train / 10

Length of train = 100m.

S_t = (Length of train + length of bridge) / Time

36 × 5/18 =(100 + length of bridge) / 15

Length of bridge = 50 meter.

29) Answer: A

Solution:

According to the question,

Let S_t be the speed of train = 60 kmph.

S_t = (Length of train + length of bridge)/Time

60 × 5/18 = (450 + length of bridge)/18

Length of bridge = 150 meter.

30) Answer: B

Solution:

According to the question,

Let S_A = 36 kmph and S_B = 72 kmph.

Let length of train B = x meter

(S_A + S_B) = (Length of Train$_A$ + Length of train$_B$)/Time

108 × 5/18 = (150 + x)/15

Length of bridge = 300 meter

31) Answer: A

Solution:

According to the question,

Let S_A = 3x and S_B = 5x

Length of train A and Train B = 100 meter and 200 meter

(5x-3x) = (100 + 200)/15

2x = 300/15

x = 10 units

S_A = 3x = 30 mps

S_B = 5x = 50 mps

32) Answer: C

Solution:

According to the question,

Let S_A = 36 kmph and S_B = 54 kmph

Length of train A and Train B = 3x and 2x meter

(36 + 54)×5/18 = (3x + 2x) / 10

5x = 250

x = 50 units.

Length of faster train = 2x = 100 meter.

33) Answer: A

Solution:

According to the question,

Let S_t be the speed of train.

Let (l) be the length of train.

S_t = Length of train / time

S_t = l / 10…….(1)

S_t =(Length of train + length of platform) / Time

S_t =(200 + l) / 15……(2)

From eq(1) and eq(2)

Length of bridge = 400 meter.

Putting in eq(1)

S_t = 40 mps.

Speed of train = 40 × 18/5 = 144 kmph.

34) Answer: D

Solution:

According to the question,

Let S_t be the speed of train.

Let (l) be the length of train.

S_t = Length of train / time

S_t = 340/17

S_t = 20 mps.

(s + 5) = (Length of train + length of bridge)/Time

25 = (340 +170) / t……(2)

Time taken by train = 20.4 seconds

35) Answer: C

Solution:

According to the question,

Let S_t be the speed of train.

Let (l) be the length of train = 200m

S_t = Length of train / time

S_t = 200/10

S_t = 20 mps

(S - 10) = (Length of train + length of bridge)/Time

10 = (200 +100)/t……(2)

Time taken by train = 30 seconds.

36) Answer: A

Solution:

According to the question,

Let S_t be the speed of train.

Let (l) be the length of platform = 250m

S_t = Length of train / time

S_t = l / 10……(1)

S_t = (Length of train + length of platform) / Time

S_t = (l +250) / 20……(2)

From eq (1) and eq (2)

Length of train = 250 meter.

From eq (1)

S_t = 25 mps

Speed of train = 25 × 18 / 5 = 90 kmph.

37) Answer: D

Solution:

According to the question,

Let S_A = x mps and S_B = y mps

Length of train A and Train B = 150 m and 250 meter

When travelling in opposite direction

(x + y) = 400/10

(x + y) = 40 ……(1)

When travelling in same direction.

(x – y)= 400/20

(x – y) = 20 ……(2)

Solving eq (1) and eq (2)

x = 30 mps and y = 10 mps

38) Answer: B

Solution:

According to the question,

Let S_A = x mps and S_B = y mps

Length of train A and Train B = 350m and 250 meter

When travelling in opposite direction.

(x + y) = (600)/5

(x + y) = 120 ……(1)

When travelling in same direction.

(x – y) = 600/10

(x – y) = 60 ……(2)

Solving eq (1) and eq (2)

x = 90 mps and y = 30 mps

Speed of faster train = 90 × 18 / 5 = 324 kmph

39) Answer: C

Solution:

According to the question,

Let S_t and S_m be the speed of train and speed of man.

(S_t + S_m) = Length of train / Time

(s + 2)×5/18 = 150 / 10

Speed of train(s) = 52 mps

Speed of train (in kmph) = 187.2 kmph

40) Answer: A

Solution:

According to the question,

Let S_t and S_m be the speed of train and speed of man.

Let the length of train = (l) meter.

(S_t - S_m) = Length of train / Time

(45 - 1)×5/18 = l / 20

Length of train(s) = 245 meter.

41) Answer: B

Solution:

Average speed = total distance / total time……(1)

Average speed = (400 + 260)/(13 + 9)

Average speed = 660/22

Average speed = 30 kmph

42) Answer: A

Solution:

Average speed = total distance / total time……(1)

Average speed =(100 + 200) /(12 + 8)

Average speed =(300)/(20)

Average speed = 15 kmph.

43) Answer: C

Solution:

According to the condition,

	A		B
Time	4	:	3
Speed	3	:	4

Speed of B = 28 mps

4 units = 28 mps

1 unit = 7 mps

3 unit = 21 mps

44) Answer: A

Solution:

According to the question,

Let speed of train = S mps.

Let length of train = l meter.

Speed of train = length of train / Time

S = l/10…… (1)

Speed of train = (length of train + length of bridge)/Time

S = (l + 400)/60 …… (2)

l = 80 meter

Speed of train = 8 mps.

Speed of train = 8 × 18 / 5

Speed of train = 28.8 kmph.

45) Answer: C

Solution:

According to the question,

Let speed of train = S mps

Let length of Bridge = l meter

Speed of train = length of train / Time

S = 150/10…… (1)

S = 15 mps

Speed of train = (length of train + length of bridge) / Time

15 = (l + 150)/60 ……(2)

l = 750 meter

46) Answer: A

Solution:

According to the condition,

	A		B
Speed	3	:	4
Time	4	:	3

Difference of Time = 1 units.

1 unit = 2 hours.

Distance = speed × Time

Distance = 4 × 3 × 2 = 24 kms

47) Answer: C

Solution:

According to the condition,

	A		B
Time	4	:	1
Speed	1	:	4

Difference of speed = 3 units.

3 unit = 36 kmph.

1 unit = 12 kmph

Distance = speed × Time

Distance = 4 × 1 × 12 = 48 kms.

48) Answer: A

Solution:

According to the question,

Let the speed ratio of two trains be 3x and 2x.

Let the ratio of their lengths be 5y and 4y.

Speed = Distance / Time

1) when travelling in opposite directions.

5x = 9y / 10 ……..(1)

2) when travelling in Same directions.

x = 9y / 20 ……..(2)

Hence both units will get cancelled so the answer will be cannot be determined.

49) Answer: D

Solution:

According to the question,

Let the speed ratio of two trains be 4x and 5x.

Let the ratio of their lengths be 2y and y.

Speed = Distance / Time

1) when travelling in Same directions.

x = 3y / 15……..(1)

Hence, we don't have any value given here so the answer will be cannot be determined.

50) Answer: C

Solution:

According to the question,

We know that when distance is same. Then,

Speed α(1 / time) ……..(1)

Ratio of Time = 7 : 10

So the ratio of Speeds = 10 : 7