Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

Time Speed Distance DI and Caselet Questions

Directions (1 – 3): Answer the questions based on the information given below.

Amravati express after travelling 125 km meet with an accident due to which it proceeds at 75% of its original speed and arrived at its destination 35 minutes late but had the accident had taken place 30 km further then the train would have arrived at its destination 25 minutes late. Amravati express crosses a pole with its original speed in 45 seconds and crosses Samjhauta express which is 20% longer than Amravati express and is coming from the opposite direction in 0.9 minutes.

1. What is the time taken by Amravati express to cover a distance of 270 km with its original speed?

a) 5.5 hours

b) 4.5 hours

c) 3.5 hours

d) 4 hours

e) None of these

2. Find the time taken by Samjhauta express to cover the total distance travelled by Amravati express?

a) 4.2 hours

b) 5.4 hours

c) 4.6 hours

d) 4.8 hours

e) None of these

3. Time taken by Samjhauta express to cross a platform is 1.584 minutes. Find the length of the platform.

a) 380 metres

b) 450 metres

c) 480 metres

d) 420 metres

e) None of these

Directions (4 – 6): Answer the questions based on the information given below.

Ankita, Ankit, Lavanya, Sushil and Loki are five friends who are participating in a Race of 96 km long along with many people who are also participating in the Race. After the Race starts, Ankit and Lavanya run at an average speed in the ratio of 5:7, respectively for the whole race. Ankita is 6.9 km behind the end point when Loki completed the Race. Loki covers one – fourth of the total distance at an average speed of 15 km/hr and the remaining distance is covered in two equal parts at an average speed of 3 km/hr and 5 km/hr more than his previous speed. Ankit covers $3/4^{th}$ of the total distance at a constant speed in 4.5 hours. Among the five friends,

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

none of them secured the first position in the Race. The person who secured the first position completes the Race at an average speed of 40 km/hr in 48 minutes less than the time taken by Sushil to complete the Race.

4. If the race is conducted among the friends then who will get second position and by how much approximate time will he miss the first position?

1) Sushil, 1.1 hours

2) Lavanya, 1.1 hours

3) Ankit, 2.8 hours

4) Loki, 0.42 hours

5) None of these

5. If speed of Lavanya is increased by 25% then find the time taken by her to complete the 70% of the race.

1) 2.4 hours

2) 2.6 hours

3) 2 hours

4) 2.2 hours

5) None of these

6. Among the five friends, if the friend who secured fifth position run with his average speed for the time taken by the friend who secured fourth position to complete the race while the friend who secured fourth position run with his average speed for the time taken by the friend who secured fifth position to complete the race, then find the difference between the distances covered by both of them.

a) 4.68 km

b) 7.48 km

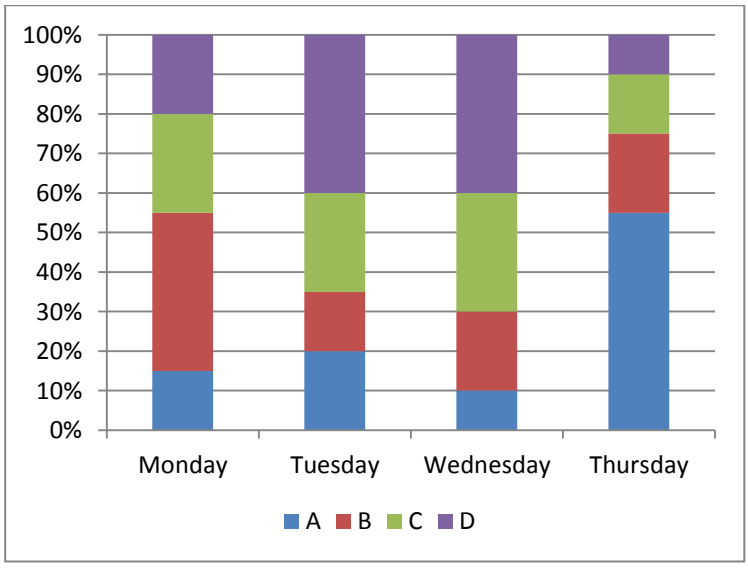
c) 5.88 km

d) 6.48 km

e) 8.66 km

Directions (7 – 9): Answer the questions based on the information given below.

The following bar graph shows the percentage distribution of the distance (in km) covered by 4 people; A, B, C and D on 4 days of the week. Every day each person travels for some distance by bus and some distance by train. Total distance travelled by all of them together on Monday, Tuesday, Wednesday and Thursday is 120 km, 80 km, 60 km and 100 km respectively.



7. The length of Train A is 30% of the difference between distance travelled by person A on Monday and Tuesday and length of Train B is 5% of the average of the distance travelled by person B on Wednesday and Thursday. If a train of length 400 m and speed 56 m/s can cross a platform in 25 seconds, the ratio of the speeds of Train A and Train B is 4:5 and Train B can cross that platform in 4 seconds less

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

time than Train A, what is the average of the speeds of Trains A and B?

a) 40 m/s

b) 45 m/s

c) 36 m/s

d) 54 m/s

e) 60 m/s

8. Person B on Monday travelled 8 km by bus and remaining by train. On Monday he travelled for 30 minutes in train and the speed of the bus is 25% of the speed of the train. If, his average speed on Tuesday was (3/8)th of average speed on Monday, and the time travelled by him in bus and train is in the ratio 1:2, what is the distance travelled by him in bus on Tuesday if the speed of the train is 25 km/hr?

a) 1.2 km

b) 1.5 km

c) 1.8 km

d) 2 km

e) 1 km

9. Person C travels 75% of the distance he travels on Monday by train and 60% of the distance he travels on Wednesday by train. The length of a platform is 14 km less than the sum of the distance travelled by person C by bus on Monday and Wednesday. The speed of a train of length 500 m is 20% more than Person C's average speed on Tuesday and person C travelled for (1/3) hour on Tuesday. In how much time can the train cross the platform?

a) 45 seconds

b) 1 minute

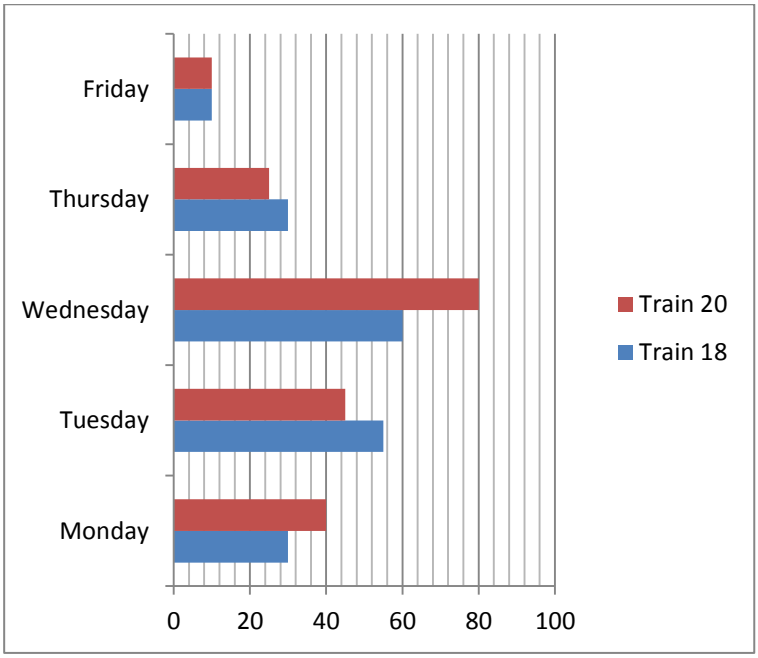
c) 1.5 minutes

d) 2 minutes

e) 30 seconds

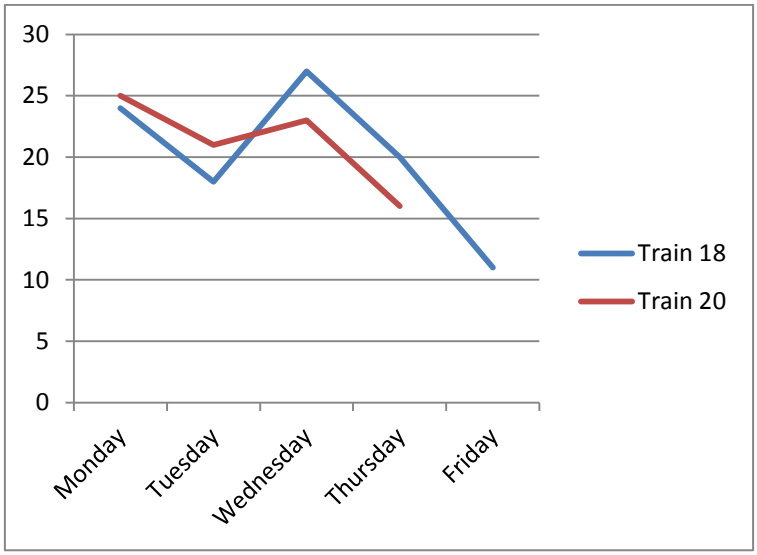
Directions (10 – 14): Study the given information carefully and answer the following question accordingly: -

The given bar graph shows the speed (in km/h) of two trains namely Train18 and Train20 while travelling on different days.



The following line chart shows the percentage of distance traveled by both the trains i.e., Train18 and Train20 on different days.

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam



10. If Train20 completes the journey on Tuesday in 4 hours, then what is the total distance travelled by Train20 in whole journey on all days (approx.)?

a) 1006 km

b) 1012 km

c) 1024 km

d) 1048 km

e) None of these

11. If Train18 travels 432 km on Wednesday, then what is the total time taken by Train18 to travel on Tuesday and Thursday together?

a) 20.4 hours

b) 19.2 hours

c) 18 hours

d) 18.5 hours

e) None of these

12. What is the total time taken by Train18 (approximately) during whole journey if it completes its journey on Friday in 5.5 hours?

a) 18 hours

b) 16.2 hours

c) 20.5 hours

d) 12 hours

e) None of these

13. If Train18 travelled 242 km on Friday and Train20 travelled 625 km on Monday. Then what will be the difference between time taken to complete their journey on Tuesday?

a) 2.7 hours

b) 1.7 hours

c) 0.7 hours

d) 3.7 hours

e) None of these

14. If Train20 completed its journey on Wednesday in 5.75 hours, then what is average of the distance travelled by it on Monday, Tuesday and Thursday?

a) 310 km

b) 278 km

c) 340 km

d) 370 km

e) None of these

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

Directions (15-19): Given below in the table showing data of a train travelling from Thane to Panvel via Airoli, Ghansoli, Nerul, Kharghar.

Stations	Speed (m/min)	Dist. between stations (km)	Time taken (min)
Thane to Airoli	1200	3.6	-
Airoli to Ghansoli	2000	-	-
Ghansoli to Nerul	-	6.5	5
Nerul to Kharghar	1500	4.25	-
Kharghar to Panvel	1000	-	-

15. What is the average of the speed of the train from Thane to Panvel?

a) 54 km/hr

b) 84 km/hr

c) 72 km/hr

d) 63 km/hr

e) None of these

16. From Airoli to Ghansoli, if the train takes twice the time it takes to travel from Thane to Airoli, then what is the distance between Airoli to Ghansoli?

a) 8 km

b) 12 km

c) 10 km

d) 18 km

e) None of these

17. If the total distance from Thane to Panvel is 42.85 km. Find the time taken to travel from Kharghar to Panvel? To solve this question you can use data from your previously solved questions of this comprehension.

a) 16.5 min

b) 12.45 min

c) 14 min

d) 16 min

e) None of these

18. By what percent time taken from station Ghansoli to Nerul is more/ less than the time taken from Nerul to Kharghar?

a) 54.23%

b) 67.48%

c) 70.57%

d) 76.68%

e) None of these

19. If due to some track problem, the train takes 3.5 more minutes to reach Panvel from Kharghar, then by approximately what percent the average speed of entire journey has changed?

a) 7.5%

b) 2.5%

c) 5.5%

d) 8.5%

e) None of these

Directions (20 – 24): Study the data given in the table carefully and answer the following questions: -

Table shows the starting time of five different trains in between two stations A and B. Considering all trains start at their correct time.

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

From A to B		From B to A	
Train	Starting Time	**Train**	Starting Time
ASR	7:00 AM	**ASR**	6 : 00 PM
PSB	8:00 AM	**PSB**	9 : 00 PM
AKL	11:00 AM	**AKL**	5 : 00 PM
PDV	2:00 PM	**PDV**	8:00 AM
GMT	5 : 00 PM	**GMT**	9:00 AM

20. If Speed of ASR is 40 km/hr and speed of PSB is 45 km/hr on a particular day travelling from A to B, Then PSB catches ASR, after travelling for _____ km distance?

a) 200 km

b) 360 km

c) 480 km

d) 300 km

e) None of these

21. If PSB starts from A with a speed of 70 km/hr and PDV starts from B with a speed of 80 km/hr. At the time of their meeting PDV has covered 200 km more than PSB. Find the distance between A and B.

a) 300 km

b) 1500 km

c) 2000 km

d) 1800 km

e) 3000 km

22. GMT travelling from B to A and AKL travelling from A to B. Time taken by GMT and AKL to reach their respective distance is 20 hours and 15 hours respectively. Find at what time they have crossed each other.(Value of distance between A and B should be taken from previous question)

a) 6:50PM

b) 7:00AM

c) 8:00PM

d) 5:30PM

e) None of these

23. While travelling from B to A, ASR travels with speed of 150 km/hr and PSB travels with a speed of 200 km/hr. How much distance PSB has travelled before their meeting?

a) 2100km

b) 1500km

c) 1800 Km

d) 2500KM

e) None of these

24. GMT starts from A and AKL starts from B. Their speeds are 200 km/hr and 250 km/hr respectively and distance between A and B is 3000km. At what time both trains cross each other?

a) 12:40 AM

b) 11:40 PM

c) 1:20 AM

d) 10:40 PM

e) None of these

Directions (25 – 26): A person starts from his home to his office at certain speed but after 2 hours he meet A

and after 1 hour he resumes his journey and becomes 1 hour 40 mins late due to reducing his speed to 3/4. If he would have met A after 70 km then he will be late by 1 hour 15mins.

25. Find the actual speed of a person.

a) 50 km/h

b) 56 km/h

c) 60 km/h

d) 66 km/h

e) 70 km/h

26. Find total distance from his home to office.

a) 258 km

b) 224 km

c) 200 km

d) 220 km

e) 250 km

Directions (27 – 29): Two places P and Q are 1200 km apart. Arun starts from point P with his car towards Q and covers the first 1/3rd of the distance at 50 km/hr, the second 1/3rd of the distance at 80 km/hr and last 1/3rd of the distance with 64 km/hr. At the same time, Kishor starts from point Q with his car towards P and covers the first 1/4th of the distance at 60 km/hr, the second 1/4th of the distance at 40 km/hr, the third 1/4th of the distance at 50 km/hr and last 1/4th of the distance with 75 km/hr.

27. If Arun and Kishor meet at point O and Arun takes t1 time to reach point Q after meeting and Kishor takes t2 time to reach point P after meeting, then find the ratio of t1 and t2.

a) 77 : 90

b) 97 : 136

c) 67 : 80

d) 93 : 127

e) None of these

28. If both Arun and Kishor started their journey at 8:00 AM then at what time they will meet between P and Q?

a) 7:00 PM

b) 6:50 PM

c) 7:10 PM

d) 6:40 PM

e) None of these

29. If the average speeds of Arun and Kishor for the whole journey are S1 and S2 then find the approximate difference of time taken by Arun and Kishor in covering a distance of 500 km with their average speeds.

a) 75 minutes

b) 72.5 minutes

c) 86.5 minutes

d) 82.5 minutes

e) 80 minutes

Directions (30 – 32): A train 'X' travels for four days in a week from Monday to Thursday and the distance covered by it in these four days are 245 km, 180 km, 280 km and 400 km respectively. The time taken by the train to cover these distances are 3.5 hours, 2.5 hours, 5 hours

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

and 4.5 hours respectively. Read the questions carefully and answer.

30. If the average speed of the train X and another train Y is 75 km/hr on Monday, while the time of travelling of both the trains is same on that day. Then find the distance covered by train Y on Monday.

a) 280 km

b) 270 km

c) 260 km

d) 300 km

e) 320 km

31. In a week of the month, the speed of train X on Monday is increased by 20% and speed of train X on Tuesday is decreased by 25%. The speed of train X on Tuesday will be what approximate percent of the speed of train X on Monday for that week?

a) 68%

b) 64%

c) 70%

d) 72%

e) 60%

32. The distance to be covered by train X on Wednesday is increased by 25% and that on Thursday is decreased by 10% but the time taken remains same as before on both the days. Find the difference of speeds of train X on both the days.

a) 15 km/hr

b) 12 km/hr

c) 10 km/hr

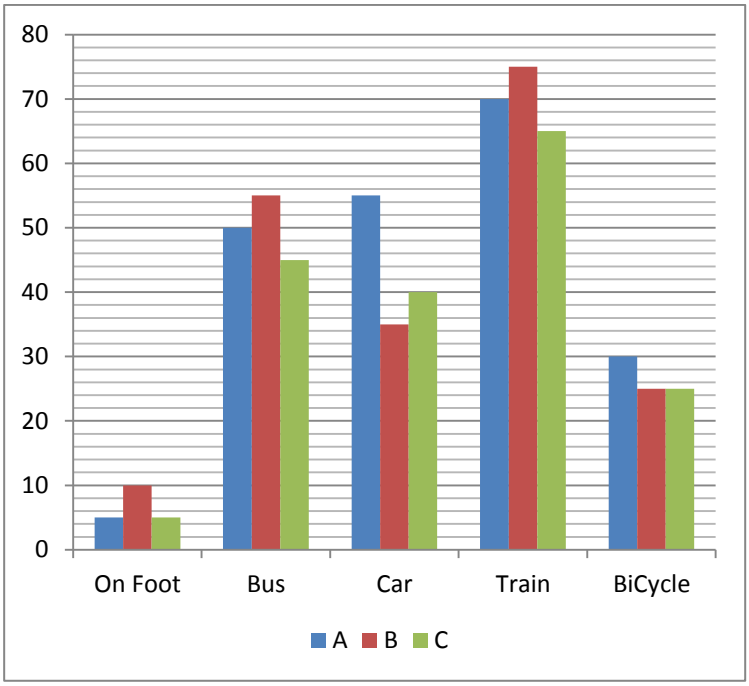
d) 8 km/hr

e) 20 km/hr

Directions (33 – 37): Study the following information carefully and answer the related questions.

Bar graph shows the speed(km/hr) of A, B and C while travelling with different vehicles.

Table shows the ratio of time taken by A, B and C to travel by different vehicles.



Vehicle	Ratio of time taken by A, B and C
On foot	2: 3: 1
Bus	6: 7: 5
Car	3: 2: 4
Train	7: 11: 9
Bicycle	2: 3: 2

33. If time taken by A to cover the distance by car is 9 hr and time taken by C to cover distance by train is 50% of time taken by him to cover the distance by car, total distance covered by A, B and C by train is

what percent more/less than distance covered by them by car when their speeds by car is increased by 20% and their speeds by train is increased by 10% respectively?

a) 6%

b) 8%

c) 12%

d) 15%

e) 21%

34. Sum of time taken by A to cover the distance by foot, car, bus, train and bicycle is 19 hours when the distance covered by him on foot, bicycle and car is 50%, 90% and 90% respectively of distance covered by him while travelling with bus, distance covered by him while travelling with train is 40% more than the distance covered by bus. What is the distance covered by A while travelling with train?

a) 90 km

b) 98 km

c) 115 km

d) 130 km

e) 140 km

35. Distance covered by C while travelling with car, bus and bicycle are 320 km, 450 km and 150 km. What is the difference between sum of distance covered by A and B while travelling with bus and sum of distance covered by B while travelling with car and bicycle?

a) 856 km

b) 963 km

c) 1005 km

d) 1103 km

e) 1245 km

36. The sum of distance covered by A while travelling on foot and by car is 165 km, the sum of distance covered by him on travelling with car and bicycle is 255 km and the sum of distance covered by him while travelling with bicycle and foot is 150 km. What is the ratio of sum of time taken by B to cover the distance by car and bicycle to the sum of time taken by C to cover the distance by car and bicycle?

a) 2: 1

b) 1: 2

c) 3: 5

d) 5: 4

e) None of these

37. If speed of car driven by A, B and C is increased by 20%, 20% and 25% respectively and new time taken by B to cover the distance by car is 10 hours, what is the sum of actual time taken by A, B and C for the same distance covered?

a) 40 hours

b) 42 hours

c) 45 hours

d) 50 hours

e) 55 hours

Directions (38 – 42): Radar graph given below shows the distance between Mumbai to five different cities (Lucknow, Delhi, Pune, Gorkhpur & Kanpur) in

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

kilometer and Table given below shows the speed of five different Rajdhani express (A, B, C, D & E) trains in km/hr.

Trains	Speed (in kmph)
A	80
B	—
C	120
D	—
E	150

NOTE: - Some data is missing you have to calculate the missing data according to question.

38. Time taken by train 'A' to travel from Kanpur to Mumbai and then Mumbai to Delhi is equal to the time taken by train C to travel from Mumbai to Lucknow and then Lucknow to Delhi. Find the distance between city Lucknow and city Delhi .

a) 5650 km

b) 5750 km

c) 5450 km

d) 5550 km

e) 5320 km

39. Find the approximate time train E takes to reach Kanpur from Lucknow, if Lucknow and city Kanpur is in north and in east direction of Mumbai respectively. (1 Mark)

a) 12 hours

b) 16 hours

c) 18 hours

d) 10 hours

e) 9 hours

40. Train B and train D start from Mumbai for Delhi and Pune respectively and they reached in equal time. If train B and train D starts from Delhi and Gorkhpur respectively at same time and move towards each other, then time taken by train B to cross train D is what percent of the time taken by train B to reach Delhi from Mumbai. [Distance between Delhi and Gorkhpur is 1500 km].

a) 25%

b) 20%

c) 30%

d) 40%

e) 50%

41. A thief stolen money and runs in train D from Mumbai to Kanpur and after six hours of running Mumbai police started to catch him and runs in train C. Due to this thief scare driver of train D so he increases the speed of train D by 100%. If the policeman can catch him at 3/5 th of the distance of city Kanpur from Mumbai. Find the initial speed of train D.

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

a) 190/7 km/hr

b) 349/7 km/hr

c) 390/7 km/hr

d) 300/7 km/hr

e) None of the above.

42. Train A and train B start from Mumbai for Lucknow. Train B reaches first at Lucknow and meets train A in between the way, which is 200 km from Lucknow. Find after how much time they will meet second time after first time meeting if both trains continue, their to and fro motion. (2 Mark)

a) 14 hours

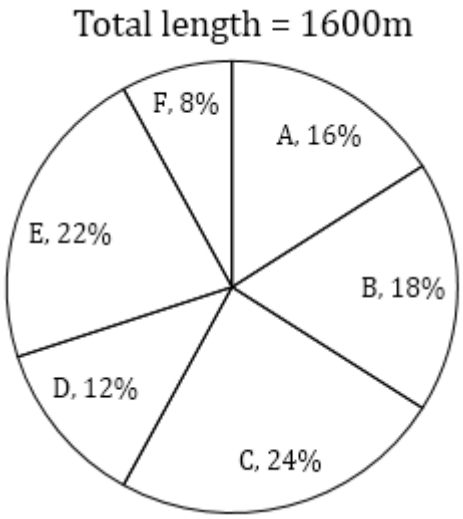
b) 15 hours

c) 16 hours

d) 12 hours

e) 10 hours

Directions (43 – 47): Pie chart given below shows length of six different trains and table given below shows ratio between speed of six trains on three different days. Study the data carefully and answer the following questions.



Train	Speed on Monday	:	Speed on Tuesday	:	Speed on Wednesday
A	2	:	3	:	2
B	3	:	4	:	5
C	4	:	6	:	5
D	4	:	4	:	7
E	6	:	9	:	5
F	4	:	5	:	3

43. On Wednesday, train 'B' crosses train 'D' coming from opposite direction in 6 seconds. If speed of train 'B' on Monday is 97.2 km/hour then in how much time train 'F' can cross train 'D' on Monday if train 'D' is coming from opposite direction and speed of train 'F' on Monday is 20 m/sec. (2 Mark)

a) 6 seconds

b) 8 seconds

c) 10 seconds

d) 12 seconds

e) 14 seconds

44. Train 'C' start from Delhi on Monday at 7:00 p.m and reach Kanpur on next day at 3:00 pm. In return journey on Tuesday, train 'C' start from Kanpur at 6

: 00 pm and reach Jaipur which is 180 km ahead of Delhi at 5 : 48 pm on Wednesday. Find the time taken by train 'C' to cross a pole on Monday?

a) 8 seconds

b) 16 seconds

c) 19.2 seconds

d) 14.4 seconds

e) 28.8 seconds

45. On Monday, train 'A' takes 2.5 hours more to cover 900 km distance than train 'C'. If train 'A' can cross a platform of length 128 in 12.8 seconds on Tuesday then find in how much time (in seconds) train 'C' can cross two poles 66 m apart from each other on Tuesday?

a) 12 seconds

b) 16 seconds

c) 20 seconds

d) 24 seconds

e) 30 seconds

46. Ratio between speed of train 'E' to train 'F" on Monday is 3 : 2. On Tuesday train 'E' cross train 'F' running in same direction in 24 seconds then find the time in which train 'E' can overtakes train 'F' on Wednesday?

a) 48 seconds

b) 24 seconds

c) 12 seconds

d) 36 seconds

e) 60 seconds

47. Ratio between time taken by train 'B' to train 'D' to cross a pole on Monday is 1 : 1. The time taken by train 'B' to cross a pole on Wednesday is what percent more/less than time taken by train 'D' to cross a pole on Monday? (2 Mark)

a) 30%

b) 40%

c) 50%

d) 60%

e) 70%

Directions (48 – 50): Study the table carefully and answer the given questions –

Buses	Speed (km/hr)	Distance between destinations (in kilometres)	Time Required (in hours)
P	78	1 and 2 = 702	
Q	96	2 and 3 =	3 ¼
R	126	3 and 4 =	4 5/9
S	214	4 and 5 =	5
T		5 and 6 = 360	7 1/2
U		6 and 7 = 722	3 4/5
V		7 and 8 = 440	5 ½

48. Bus W covered distance between 4 and 5 at speed of 107km/hr and distance between 5 and 6 at speed 90km/hr. What is the approximate average speed of journey ?

a) 104km/hr

b) 162km/hr

c) 132 km/hr

d) 123km/hr

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

e) 102km/hr

49. Bus P goes from 1 till 3 and Bus Q goes from 3 to 1 and they start at the same time . Approximately after how much time will they cross each other ?

a) 4.6Hr

b) 5.1 Hr

c) 6.2 Hr

d) 5.3 Hr

e) 5.8 Hr

50. Total distance from 1 to 8 ?

a) 4230

b) 4380

c) 4320

d) 4180

e) 3420

ANSWER AND EXPLANATION

1. Answer: B)

Let total distance be D km.

Let original speed of Amravati express be 4x km/min

Reduced speed = 0.75 × 4x = 3x km/min

Original time taken to reach the destination = (D – 125)/4x minutes

New time taken to reach the destination = (D – 125)/3x minutes

According to question,

(D – 125)/3x - (D – 125)/4x = 35

(D – 125) × (1/3x – 1/4x) = 35

(D – 125) × 1/12x = 35

D – 125 = 420x

D = 420x + 125……..(i)

If the accident had taken place 30 km further then

(D – 125 – 30)/3x – (D – 125 – 30)/4x = 25

(D – 155)/3x - (D – 150)/4x = 25

(D – 155) × 1/12x = 25

D – 155 = 300x

D = 300x + 155……(ii)

From equation (i) and (ii)

420x + 125 = 300x + 155

120x = 30

x = 0.25

D = 300 × 0.25 + 155 = 230 km

Speed of Amravati Express = 0.25 × 4 = 1 km/min = 1 × 60 = 60 km/h

Speed of Amravati express = 60 × 5/18 = 50/3 m/s

Length of Amravati express = 50/3 × 45 = 750 metres

Length of Samjhauta express = 1.2 × 750 = 900 metres

Let speed on Samjhauta express be ‘s’ m/s

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

So, (750 + 900)/(50/3 + s) = 0.9 × 60

1650/(50/3 + s) = 54

50/3 + s = 275/9

s = 275/9 – 50/3 = 125/9

s = 125/9 × 18/5 = 50 km/h

Speed of Samjhauta express = 50 km/h

Time taken by Amravati express to cover a distance of 270 km = 270/60 = 4.5 hours

2. Answer: C)

Let total distance be D km.

Let original speed of Amravati express be 4x km/min

Reduced speed = 0.75 × 4x = 3x km/min

Original time taken to reach the destination = (D – 125)/4x minutes

New time taken to reach the destination = (D – 125)/3x minutes

According to question,

(D – 125)/3x - (D – 125)/4x = 35

(D – 125) × (1/3x – 1/4x) = 35

(D – 125) × 1/12x = 35

D – 125 = 420x

D = 420x + 125……..(i)

If the accident had taken place 30 km further then

(D – 125 – 30)/3x – (D – 125 – 30)/4x = 25

(D – 155)/3x - (D – 150)/4x = 25

(D – 155) × 1/12x = 25

D – 155 = 300x

D = 300x + 155……(ii)

From equation (i) and (ii)

420x + 125 = 300x + 155

120x = 30

x = 0.25

D = 300 × 0.25 + 155 = 230 km

Speed of Amravati Express = 0.25 × 4 = 1 km/min = 1 × 60 = 60 km/h

Speed of Amravati express = 60 × 5/18 = 50/3 m/s

Length of Amravati express = 50/3 × 45 = 750 metres

Length of Samjhauta express = 1.2 × 750 = 900 metres

Let speed on Samjhauta express be ‘s’ m/s

So, (750 + 900)/(50/3 + s) = 0.9 × 60

1650/(50/3 + s) = 54

50/3 + s = 275/9

s = 275/9 – 50/3 = 125/9

s = 125/9 × 18/5 = 50 km/h

Speed of Samjhauta express = 50 km/h

Total distance travelled by Amravati express = 300 × 0.25 + 155 = 230 km

Desired time = 230/50 = 4.6 hours

3. Answer: D)

Let total distance be D km.

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

Let original speed of Amravati express be 4x km/min

Reduced speed = 0.75 × 4x = 3x km/min

Original time taken to reach the destination = (D – 125)/4x minutes

New time taken to reach the destination = (D – 125)/3x minutes

According to question,

(D – 125)/3x - (D – 125)/4x = 35

(D – 125) × (1/3x – 1/4x) = 35

(D – 125) × 1/12x = 35

D – 125 = 420x

D = 420x + 125……..(i)

If the accident had taken place 30 km further then

(D – 125 – 30)/3x – (D – 125 – 30)/4x = 25

(D – 155)/3x - (D – 150)/4x = 25

(D – 155) × 1/12x = 25

D – 155 = 300x

D = 300x + 155……(ii)

From equation (i) and (ii)

420x + 125 = 300x + 155

120x = 30

x = 0.25

D = 300 × 0.25 + 155 = 230 km

Speed of Amravati Express = 0.25 × 4 = 1 km/min = 1 × 60 = 60 km/h

Speed of Amravati express = 60 × 5/18 = 50/3 m/s

Length of Amravati express = 50/3 × 45 = 750 metres

Length of Samjhauta express = 1.2 × 750 = 900 metres

Let speed on Samjhauta express be ‘s’ m/s

So, (750 + 900)/(50/3 + s) = 0.9 × 60

1650/(50/3 + s) = 54

50/3 + s = 275/9

s = 275/9 – 50/3 = 125/9

s = 125/9 × 18/5 = 50 km/h

Speed of Samjhauta express = 50 km/h

Let length of platform = P

So, P + 900 = 1.584 × 60 × 125/9

P + 900 = 1320

P = 420

4. Answer: B)

Length of the Race = 96 km

Ratio of the speed of Ankit to Lavanya = 5:7

Distance covered by Loki at the speed of 15 km/hr = 24 km

Time taken to cover 24 km at the speed of 15 km/hr = 24 ÷ 15 = 1.6 hours

Remaining distance covered by Loki = 96 – 24 = 72 km

Total time taken by Loki to cover the remaining 72 km = (36 ÷ 18) + (36 ÷ 20)

= 2 + 1.8 = 3.8 hour

So, total time taken by Loki to complete the Race = 1.6 + 3.8 = 5.4 hours

Since, Ankita covers 6.9 km less when Loki completed the Race.

This means Ankita completed 89.1 km in 5.4 hours.

So, speed of Ankita = 89.1 ÷ 5.1 = 16.5 km/hr

Distance covered by Ankit = 3/4 × 96 = 72 km

Time taken by Ankit to cover 72 km = 4.5 hours

So, speed of Ankit = 72 ÷ 4.5 = 16 km/hr

Speed of Lavanya = 7/5 × 16 = 22.4 km/h

Let the speed of Sushil be x km/hr.

So, 96/x – 96/40 = 48/60

96 × (1/x – 1/40) = 48/60

2 × (40 – x)/40x = 1/60

120 – 3x = x

4x = 120

x = 30 km/h

Speed of Sushil = 30 km/hr

Time taken by Sushil to complete the Race = 96 ÷ 30 = 3.2 hours

Time taken by Lavanya to complete the Race = 96 ÷ 22.4 = 30/7 hours ~ 4.3 hours

Time taken by Ankit to complete the Race = 96 ÷ 16 = 6 hours

Time taken by Ankita to complete the Race = 96 ÷ 16.5 = 64/11 hours ~ 5.82 hours

Time taken by Loki to complete the Race = 5.4 hours

Second position will be secured by Lavanya and the desired difference of time = 4.3 – 3.2 = 1.1 hours

5. Answer: A)

Length of the Race = 96 km

Ratio of the speed of Ankit to Lavanya = 5:7

Distance covered by Loki at the speed of 15 km/hr = 24 km

Time taken to cover 24 km at the speed of 15 km/hr = 24 ÷ 15 = 1.6 hours

Remaining distance covered by Loki = 96 – 24 = 72 km

Total time taken by Loki to cover the remaining 72 km = (36 ÷ 18) + (36 ÷ 20)

= 2 + 1.8 = 3.8 hour

So, total time taken by Loki to complete the Race = 1.6 + 3.8 = 5.4 hours

Since, Ankita covers 6.9 km less when Loki completed the Race.

This means Ankita completed 89.1 km in 5.4 hours.

So, speed of Ankita = 89.1 ÷ 5.1 = 16.5 km/hr

Distance covered by Ankit = 3/4 × 96 = 72 km

Time taken by Ankit to cover 72 km = 4.5 hours

So, speed of Ankit = 72 ÷ 4.5 = 16 km/hr

Speed of Lavanya = 7/5 × 16 = 22.4 km/h

Let the speed of Sushil be x km/hr.

So, 96/x – 96/40 = 48/60

96 × (1/x – 1/40) = 48/60

2 × (40 – x)/40x = 1/60

120 – 3x = x

4x = 120

x = 30 km/h

Speed of Sushil = 30 km/hr

Time taken by Sushil to complete the Race = 96 ÷ 30 = 3.2 hours

Time taken by Lavanya to complete the Race = 96 ÷ 22.4 = 30/7 hours ~ 4.3 hours

Time taken by Ankit to complete the Race = 96 ÷ 16 = 6 hours

Time taken by Ankita to complete the Race = 96 ÷ 16.5 = 64/11 hours ~ 5.82 hours

Time taken by Loki to complete the Race = 5.4 hours

New speed of Lavanya = 1.25 × 22.4 = 28 km/h

Desired time = (0.70 × 96)/28 = 2.4 hours

6. Answer: C)

Length of the Race = 96 km

Ratio of the speed of Ankit to Lavanya = 5:7

Distance covered by Loki at the speed of 15 km/hr = 24 km

Time taken to cover 24 km at the speed of 15 km/hr = 24 ÷ 15 = 1.6 hours

Remaining distance covered by Loki = 96 – 24 = 72 km

Total time taken by Loki to cover the remaining 72 km = (36 ÷ 18) + (36 ÷ 20)

= 2 + 1.8 = 3.8 hour

So, total time taken by Loki to complete the Race = 1.6 + 3.8 = 5.4 hours

Since, Ankita covers 6.9 km less when Loki completed the Race.

This means Ankita completed 89.1 km in 5.4 hours.

So, speed of Ankita = 89.1 ÷ 5.1 = 16.5 km/hr

Distance covered by Ankit = 3/4 × 96 = 72 km

Time taken by Ankit to cover 72 km = 4.5 hours

So, speed of Ankit = 72 ÷ 4.5 = 16 km/hr

Speed of Lavanya = 7/5 × 16 = 22.4 km/h

Let the speed of Sushil be x km/hr.

So, 96/x – 96/40 = 48/60

96 × (1/x – 1/40) = 48/60

2 × (40 – x)/40x = 1/60

120 – 3x = x

4x = 120

x = 30 km/h

Speed of Sushil = 30 km/hr

Time taken by Sushil to complete the Race = 96 ÷ 30 = 3.2 hours

Time taken by Lavanya to complete the Race = 96 ÷ 22.4 = 30/7 hours ~ 4.3 hours

Time taken by Ankit to complete the Race = 96 ÷ 16 = 6 hours

Time taken by Ankita to complete the Race = 96 ÷ 16.5 = 64/11 hours ~ 5.82 hours

Time taken by Loki to complete the Race = 5.4 hours

Time taken by Sushil to complete the Race = 96 ÷ 30 = 3.2 hours (First)

Time taken by Lavanya to complete the Race = 96 ÷ 22.4 = 30/7 hours ~ 4.3 hours (Second)

Time taken by Ankit to complete the Race = 96 ÷ 16 = 6 hours (Fifth)

Time taken by Ankita to complete the Race = 96 ÷ 16.5 = 64/11 hours ~ 5.82 hours (Fourth)

Time taken by Loki to complete the Race = 5.4 hours (Third)

Distance covered by Ankita in 6 hours = 6 × 16.5 = 99 km

Distance covered by Ankit in 5.82 hours = 16 × 5.82 = 93.12 km

Desired difference = 99 – 93.12 = 5.88 km

(7 – 9): Common Explanation:

Person	Monday	Tuesday	Wednesday	Thursday	Total
A	(15/100) *120 = 18	(20/100) *80 = 16	(10/100) *60 = 6	(55/100) *100 = 55	95
B	(40/100) *120 = 48	(15/100) *80 = 12	(20/100) *60 = 12	(20/100) *100 = 20	92
C	(25/100) *120 = 30	(25/100) *80 = 20	(30/100) *60 = 18	(15/100) *100 = 15	83
D	(20/100) *120 = 24	(40/100) *80 = 32	(40/100) *60 = 24	(10/100) *100 = 10	90
Total	120	80	60	100	360

7. Answer: B)

Length of Train A = (30/100)*(18 - 16) = 0.6 km = 600 m

Length of Train B = (5/100)*(12 + 20)/2 = 0.8 km = 800 m

Length of the platform = 56*25 - 400 = 1000 m

Let the speeds of trains A and B be 4k m/s and 5k m/s

So, (1000 + 600)/4k - (1000 + 800)/5k = 4

400/k - 360/k = 4

40/k = 4

k = 10

Average of the speeds of Trains A and B = (4k + 5k)/2 = 45 m/s

8. Answer: D)

Distance travelled by person B in train = 48 - 8 = 40 km

speed of the train = 40/(1/2) = 80 km/hr

Speed of the bus = (25/100)*80 = 20 km/hr

Time travelled in bus = 8/20 = 0.4 hr

Average speed of person B on Monday

= Total distance travelled/Total time taken

= 48/(0.5 + 0.4)

= 160/3 km/hr

Average speed of person B on Tuesday

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

= (160/3)*(3/8) = 20 km/hr

Time for which person B travelled on Tuesday = 12/20 = 0.6 hr = 36 minutes

Time for which he travelled in train on Tuesday = (2/3)*36 = 24 minutes

Distance travelled by him in train = 25*24/60 = 10 km

Distance travelled by him in bus = 12 - 10 = 2 km

9. Answer: B)

sum of the distance travelled by person C by bus on Monday and Wednesday = (25/100)*30 + (40/100)*18 = 14.7 km

Length of the platform = 14.7 - 14 = 0.7 km = 700 m

Average speed of person C on Tuesday = 20/(1/3) = 60 km/hr

Speed of the train = (120/100)*60 = 72 km/hr = 20 m/s

Time taken by the train to cross the platform = (500 + 700)/20

= 60 seconds

= 1 minute

10. Answer: D)

Let the total distance travelled by Train20 = Y km

Distance travelled on Tuesday by Train20 = 55 × 4 = 220 km

Y × 21/100 = 220

Y = 220 × 100/21

⇒ Y = 1048 km (approx.)

11. Answer: B)

Let total distance travelled by Train18 = x km

⇒ x × 27/100 = 432

⇒ x = 1600 km

Total time taken by Train18 to travel by Tuesday and by Thursday :

(1600 × 18)/(45 × 100) + (1600 × 2)/(25 × 100)

⇒ 6.4 + 12.8

⇒ 19.2 hours

12. Answer: B)

Let total distance travelled by Train18 during his whole journey = X km

Now distance travelled by Train18 Friday = 10 × 5.5 = 55 km

According to question –

X × 11/100 = 55

⇒ X = 500 km

Distance travelled by Train18 on Monday = 500 × 24/100 = 120 km

Time taken by Train18 to Travel on Monday = 120/40 = 3 hours

Distance travelled by Train18 on Tuesday = 500 × 18/100 = 90 km

Time taken by Train18 by travelling Tuesday = 90/45 = 2 hours

Distance travelled by Train18 by Wednesday = 500 × 27/100 = 135 km

Time taken by Train18 by travelling Wednesday = 135/80 = 1.7 hours

Distance travelled by Train18 on Thursday = 500 × 20/100 = 100 km

Time taken by Train18 to travel on Thursday = 100/25 = 4 hours

Required time = 5.5 + 3 + 2 + 1. 7 + 4 = 16.2 hours = 16.2 hours

13. Answer: C)

Let total distance travelled by Train18 = X km

And total distance travelled by Train20 = Y km

According to question –

X × 11/100 = 242

⇒ X = 2200 km

And,

Y × 25/100 = 625

⇒ Y = 2500 km

Distance travelled on Tuesday by Train18

= 2200 × 18/100 = 396 km

Time taken by Train18 to complete journey on Tuesday

= 396/45 = 8.8 hours

Distance travelled on Tuesday by Train20

= 2500 × 21/100 = 525 km

Time taken by Train20 to complete journey on Tuesday

= 525/55 = 9.5 hours

Required difference = 9.5 – 8.8 = 0.7 hours

14. Answer: A)

Let total distance travelled by Train20 = Y km

Now, distance travelled on Wednesday by Train20 = 60 × 5.75 = 345 km

According to question -

Y × 23/100 = 345

⇒ Y = 1500 km

Distance travelled on Monday by Train20

= 1500 × 25/100 = 375 km

Distance travelled on Tuesday by Train20

= 1500 × 21/100 = 315 km

Distance travelled on Thursday by Train20

= 1500 × 16/100 = 240 km

Required average = (375 + 315 + 240)/3 = 310 km

15. Answer: B)

Average = (1200 + 2000 + 1300 + 1500 + 1000) /5 = 1400 m/min

⇒ 84 km/hr.

16. Answer: B)

Time taken from Thane to Airoli = (3.60 × 1000) /1200 = 3 min

Time taken from Airoli to Ghansoli = 3 × 2 = 6 min

Distance = 2,000 × 6 ⇒ 12,000 = 12 km

17. Answer: A)

Total distance = 3.60 + 12 + 6.5 + 4.25 + d = 42.85

⇒ d = 16.5 km.

⇒ Time = 16500/1000 = 16.5 min

18. Answer: D)

Time taken from Nerul to Kharghar = 4.25(km)/1500(m/min) = 2.83

Required percentage = (5 – 2.83) /2.83 × 100 = 76.68%

19. Answer: B)

Speed from Kharghar to Panvel = 16500/(16.5 + 3.5) = 825 (from previous question)

Average speed = (1200 + 2000 + 1300 + 1500 + 825) /5

⇒ 6825/5 = 1365

Required percentage = (1400 – 1365) /1400 × 100 = 2.5%.

20. Answer: B)

Both trains are moving in same direction

ASR starts at 7:00 AM and PSB starts at 8:00 AM

Distance travelled by ASR in 1 hour = 40 × 1 = 40 km

Relative speed of PSB with respect to ASR = 45 – 40 = 5 km/hr

Time taken to catch ASR = 40/5 = 8 hour

∴ Distance travelled by PSB before catching ASR = 45 × 8 = 360 km

21. Answer: E)

We can that both train starts at some time but in opposite direction.

Let the time after which they meet = x hr

Distance travelled by PSB in x hr = 70x

Distance travelled by PDV in x hr = 80x

Total distance between A and B = 70x + 80x = 150x

According to the question PDV has covered 200 km more than PSB

80x – 70x = 200

10x = 200

x = 20

∴ Distance between A and B = 150 × 20 = 3000 km

22. Answer: A)

Distance between A and B = 3000 km

Speed of GMT = 3000/20 = 150 km/hr

Speed of AKL = 3000 / 15 = 200 km/hr

Distance travelled by GMT in two hours = 150 × 2 = 300 km

Remaining distance = 3000 – 300 = 2700 km

Relative speed = 150 + 200 = 350

Meeting time = 2700/350 = 7-hour 50 min (approx.)

∴ They will meet at 11:00 + 7 hr 50 min = 6:50 PM

23. Answer: C)

Distance travelled by ASR in 3 hours = 3 × 150 = 450 km

Relative speed = 200 – 150 = 50 km/hr

Meeting time = 450/50 = 9 hours

∴ Distance travelled by PSB before meeting = 200 × 9 = 1800 km

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

24. Answer: B)

Relative speeds = 200 + 250 = 450 km/hr

Distance between A and B = 3000 km

Time taken = 3000/450 = 6 hours 40 min

∴ They will meet at = 5:00 + 6 hr 40 min = 11: 40 PM

25. Answer: B)

When he met A, he was late by 1hr 40 mins. But actually he was late only for 40 mins as for 1hr he was waiting there.

If he would have met A after 70 Km later then, actually he would be late by 15 mins only.

Let the actual speed of the person be 4s

⇒ Reduce speed = (3/4) × 4s = 3s

We know that, same distance covered with different speed say s_1 and s_2 is given by,

⇒ Distance = $\{(s_1 \times s_2)/(s_1 - s_2)\} \times t$, where t is time difference in hours

Here,

⇒ Time difference = 40 - 15 = 25 minutes = (25/60) hours

⇒ Distance = {(4s × 3s)/(4s - 3s)} × (25/60)

⇒ 70 = {(4s × 3s)/s} × (25/60)

⇒ s = 14 Km/h

⇒ Actual speed = 4s = 4 × 14 = 56 Km/h

26. Answer: B)

From previous question, Actual speed was 56 km/h

⇒ Reduced speed = (3/4) × 56 = 42 km/h

Now, if he would have met A after 70 Km after then, he would be 15 mins late So,

⇒ Distance from where he was 15 mins late = {(56 × 42) / (56 – 42)} × (15/60) = {(56 × 42)/14} × (1/4) = 42 km

⇒ Total distance = Distance covered in 2hr + 70 km + Distance covered from where he was 15 mins late,

⇒ (56 × 2) + 70 + 42 = 112 + 70 + 42 = 224 km

27. Answer: B)

We need to find the total time taken by both Arun and Kishor to reach their respective destinations

Time taken by Arun to reach point Q from P = (400/50) + (400/80) + (400/64)

⇒ 8 + 5 + 6.25

⇒ 19.25 hours = 77/4 hours

Time taken by Kishor to reach point P from Q = (300/60) + (300/40) + (300/50) + (300/75)

⇒ 5 + 7.5 + 6 + 4

⇒ 22.5 hours = 45/2 hours

Since Arun and Kishor meet at point O after (67/6) hours

⇒ Time taken by Arun to reach point Q from O = t_1 = 77/4 – 67/6 = 97/12 hours

And

⇒ Time taken by Kishor to reach point P from O = t_2 = 45/2 – 67/6 = 136/12 hours

∴ $t_1 : t_2$ = 97 : 136

28. Answer: C)

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

Arun covers the first 1/3rd of the distance i.e. 400 km from P to R at 50 km/hr

⇒ Time taken = 400/50 = 8 hours

Kishor covers the first 1/4th of the distance i.e. 300 km from Q to S at 60 km/hr and next 300 km from S to T at 40 km/hr.

⇒ Total distance covered in 8 hours = 60 × 5 + 40 × 3 = 420 km

Now after 8 hours, the distance between them remained = (1200 – 400 – 420) = 380 km

This distance of 380 km from R to T would be covered by Arun at 80 km/hr and by Kishor at 40 km/hr.

⇒ Time after which they will meet between R and T = 380/(40 + 80) = 19/6 hours

⇒ Total time from starting after which they will meet = 8 + 19/6 = 67/6 hours = 11 hours 10 minutes

Since they started their journey at 8:00 AM

∴ Time at which they will meet = 7:10 PM

29. Answer: D)

We need not to find the average speed

We need to find the total time taken by both Arun and Kishor to reach their respective destinations.

Time taken by Arun to reach point Q from P = (400/50) + (400/80) + (400/64)

⇒ 8 + 5 + 6.25 = 19.25 hours = 77/4 hours

Arun takes 77/4 hours to cover 1200 km distance

⇒ Time taken by Arun to cover 500 km = (500/1200) × (77/4) = 8 hours approximately

Time taken by Kishor to reach point P from Q = (300/60) + (300/40) + (300/50) + (300/75)

⇒ 5 + 7.5 + 6 + 4 = 22.5 hours = 45/2 hours

Kishor takes 45/2 hours to cover 1200 km distance

⇒ Time taken by Kishor to cover 500 km = (500/1200) × (45/2) = 9.375 hours

∴ Difference of the time = 9.375 – 8 = 1.375 hours = 82.5 minutes

30. Answer: A)

Speed of train X on Monday = 245/3.5 = 70 km/hr

Since the average speed of the train X and another train Y is 75 km/hr on Monday

⇒ Speed of train Y on Monday = 150 – 70 = 80 km/hr

Since the time of travelling of both the trains is same on that day i.e. 3.5 hours

∴ Distance covered by train Y on Monday = 80 × 3.5 = 280 km

31. Answer: B)

Normal speed of train X on Monday = 245/3.5 = 70 km/hr

Normal speed of train X on Tuesday = 180/2.5 = 72 km/hr

Since the speed of train X on Monday is increased by 20% and speed of train X on Tuesday is decreased by 25%

⇒ Increased speed of train X on Monday = 70 × 1.2 = 84 km/hr

Decreased speed of train X on Tuesday = 72 × 0.75 = 54 km/hr

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

∴ Required percentage = [54/84] × 100 = 64.28 64%

32. Answer: C)

Given that the distances covered by train X on Wednesday and Tuesday are 280 km and 400 km

Since distance to be covered by train X on Wednesday is increased by 25%

⇒ Increased distance to be covered by train X on Wednesday = 280 × 1.25 = 350 km

Since distance to be covered by train X on Thursday is decreased by 10%

⇒ Decreased distance to be covered by train X on Thursday = 400 × 0.9 = 360 km

Since the time taken remains same as before on both the days

⇒ Given that train X takes 5 hours on Wednesday and 4.5 hours on Thursday

⇒ Speed of train X on Wednesday = 350/5 = 70 km/hr

⇒ Speed of train X on Thursday = 360/4.5 = 80 km/hr

∴ Required difference = 80 – 70 = 10 km/hr

33. Answer: A)

Time taken by A to cover the distance by car = 9 hour

Total time taken by A, B and C to cover the distance by car = 9 x 9/3 = 27 hours

Time taken by B to cover the distance by car = 2 x 27/9 = 6 hours

Time taken by C to cover the distance by car = 4 x 27/9 = 12 hours

Speed of car driven by A = (120/100) x 45 = 54 km/hr

Speed of car driven by B = (120/100) x 35 = 42 km/hr

Speed of car driven by C = (120/100) x 40 = 48 km/hr

Distance covered by A by car = 54 x 9 = 486 km

Distance covered by B by car = 42 x 6 = 252 km

Distance covered by C by car = 48 x 12 = 576 km

Total distance covered by car = 486 + 252 + 576 = 1314 km

Time taken by C to cover the distance by train = (50/100) x 12 = 6 hours

Total time taken by A, B and C to cover the distance by train = 6 x 27/9 = 18 hours

Time taken by A to cover the distance by train = 7 x 18/27 = 14/3 hours

Time taken by B to cover the distance by train = 11 x 18/27 = 22/3 hours

New speed of A by train = (110/100) x 70 = 77 km/hr

New speed of B by train = (110/100) x 75 = 82.5 km/hr

New speed of C by train = (110/100) x 65 = 71.5 km/hr

Distance covered by A by train = 77 x 14/3 = 359.33 km

Distance covered by B by train = 82.5 x 22/3 = 605 km

Distance covered by C by train = 71.5 x 6 = 429 km

Total distance covered by train = 359.33 + 605 + 429 = 1393.33 km

Percentage = ((1393.33 - 1314)/1314)x 100 = 6%

34. Answer: E)

Total time taken by A = 19 hours

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

Let d is the distance covered by A on travelling with bus. Then,

Distance covered on foot = (50/100) x d = d/2

Distance covered by car = distance covered by bicycle = (90/100) x d = 9d/10

Distance covered by train = (140/100) x d = 7d/5

Therefore, 19 = d/10 + d/50 + 9d/450 + 7d/350 + 9d/300

d = 100 km

Distance covered by train = 7d/5 = 7 x 100/5 = 140 km

35. Answer: C)

For C:

Time taken by car = 320/40 = 8 hours

Time taken by bus = 450/45 = 10 hours

Time taken by bicycle = 150/25 = 6 hours

Total time taken by A, B and C to cover the distance by car = 8 x 9/4 = 18 hours

Total time taken by A, B and C to cover the distance by bus = 10 x 18/5 = 36 hours

Total time taken by A, B and C to cover the distance by bicycle = 6 x 7/2 = 21 hours

For A:

Time taken by bus = 6 x 36/18 = 12 hours

For B:

Time taken by car = 2 x 18/9 = 4 hours

Time taken by bus = 7 x 36/18 = 14 hours

Time taken by bicycle = 3 x 21/7 = 9 hours

Distance covered by A and B while travelling with bus = 50 x 12 + 55 x 14 = 1370 km

Distance covered by B while travelling with car and bicycle = 35 x 4 + 25 x 9 = 365 km

Difference = 1370 - 365 = 1005 km

36. Answer: E)

Let a, b and c are distance covered by A on travelling with foot, car and bicycle respectively. Then,

a + b = 165 km

b + c = 255 km

a + c = 150 km

b - a = 255 - 150 = 105 km

b = 105 + a

a + 105 + a = 165

a = 30 km

b = 105 + 30 = 135 km

c = 150 - 30 = 120 km

Time taken by A to cover distance by car = 135/45 = 3 hours

Time taken by A to cover the distance by bicycle = 120/30 = 4 hours

Total time taken by A, B and C to cover the distance by car = 3 x 9/3 = 9 hours

Total time taken by A, B and C to cover the distance by bicycle = 4 x 7/2 = 14 hours

Time taken by B to cover distance by car = 2 x 9/9 = 2 hours

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

Time taken by B to cover the distance by bicycle = 3 x 14/7 = 6 hours

Time taken by C to cover distance by car = 4 x 9/9 = 4 hours

Time taken by C to cover the distance by bicycle = 2 x 14/7 = 4 hours

Sum of time taken by B to cover the distance by car and bicycle = 2 + 6 = 8 hours

Sum of time taken by C to cover the distance by car and bicycle = 4 + 4 = 8 hours

Ratio = 8: 8 = 1: 1

37. Answer: E)

New speed of car driven by A = (120/100) x 45 = 54 km/hr

New speed of car driven by B = (120/100) x 35 = 42 km/hr

New speed of car driven by C = (125/100) x 40 = 50 km/hr

New time taken by B to cover the distance by car = 10 hours

New total time taken by A, B and C to cover the distance by car = 10 x 9/2 = 45 hours

New time taken by A to cover the distance by car = 3 x 45/9 = 15 hours

New time taken by C to cover the distance by car = 4 x 45/9 = 20 hours

Distance covered by A = 54 x 15 = 810 km

Distance covered by B = 42 x 10 = 420 km

Distance covered by C = 50 x 20 = 1000 km

Actual time taken by A = 810/45 = 18 hours

Actual time taken by B = 420/35 = 12 hours

Actual time taken by C = 1000/40 = 25 hours

Sum = 18 + 12 + 25 = 55 hours

38. Answer: B)

Total distance travel by train A
$= 1500 + 3000 = 4500$ km
Total Time taken by train A $= \frac{4500}{80} = 56.25$ hour
Time taken by train C from Mumbai to Lucknow
$= \frac{1000}{120} = \frac{50}{6}$ hours
Time taken by train C from Lucknow to Delhi
$= 56.25 - \frac{50}{6}$
$= \frac{287.5}{6}$ hours
Distance between Lucknow to Delhi
$= \frac{287.5}{6} \times 120 = 5750$ km

39. Answer: A)

Distance between Lucknow and Kanpur
$= \sqrt{1000^2 + 1500^2} = \sqrt{1000000 + 2250000}$
$= \sqrt{3250000} = 500\sqrt{13} km$
Approximate time taken by train E
$= \frac{500\sqrt{13}}{150} \approx 12$ hours

40. Answer: C)

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

Let speeds of train B and train D be a km/hr and b km/hr respectively.
ATQ—
$\Rightarrow \frac{3000}{a} = \frac{2000}{b}$
$\Rightarrow \frac{a}{b} = \frac{3}{2}$
Let speed of train B and train D be 3x km/hr and 2x km/hr respectively
Distance between Delhi and Gorkhpur = 1500 km
Time taken to cross each other = $\frac{1500}{5x} = \frac{300}{x}$
Time taken by train B to reach Delhi from Mumbai = $\frac{3000}{3x} = \frac{1000}{x}$
Required% = $\frac{300\times100}{1000}$ = 30%

41. Answer: D)

Distance at policeman catch the thief
$\frac{1500\times3}{5} = 900$ km
Time taken by train C to cover this distance = $\frac{900}{120}$ = 7.5 hour
Let initial speed of train D = s km/hr
So, ATQ
$6s + 7.5(2s) = 900$
$6s + 15s = 900$
$21s = 900$
$s = \frac{300}{7}$ km/hr

42. Answer: E)

Distance between Mumbai and Lucknow = 1000 km
Distance covered by train B before first meeting = 1200 km
Distance covered by train A before first meeting = 800 km
Speed of train A = 80 km/hr
$\Rightarrow Time\ for\ first\ meeting = \frac{800}{80} = 10\ hours$

Speed of train B = $\frac{1200}{10} = 120\ km/hr$
When train A reaches Lucknow, distance covered by train B = $\frac{200}{80} \times 120 = 300\ km$
Time taken by train B to reach Mumbai = $\frac{500}{120} = \frac{25}{6} hr$
Distance covered by train A' in $\frac{25}{6} hour = \frac{25}{6} \times 80 = \frac{1000}{3} km$
Distance between train B and train A = $1000 - \frac{1000}{3} = \frac{2000}{3}$
Time to meet = $\frac{\frac{2000}{3}}{120+80} = \frac{10}{3} hour$
$Total\ time = \frac{200}{80} + \frac{25}{6} + \frac{10}{3} = 10\ hours$

43. Answer: B)

Length of train B = $\frac{18}{100} \times 1600 = 288$m
Length of Train D = $\frac{12}{100} \times 1600 = 192$m
Length of Train F = $\frac{8}{100} \times 1600 = 128$m
Speed of train B on Monday = $97.2 \times \frac{5}{18} = 27$ m/sec
Speed of train 'B' on Wednesday = $\frac{27}{3} \times 5 = 45\ m/sec$
ATQ,
288 + 192 = (45 +y)×6
where y is the speed of train 'D' on Wednesday
⇒ y = 80 – 45 = 35 m/sec
Speed of train 'D' on Monday = $\frac{35}{7} \times 4 = 20$ m/sec
Time required to cross train F = $\frac{192+128}{20+20} = 8$ seconds

44. Answer: E)

Let speed of train 'C' on Monday, Tuesday and Wednesday be 4x, 6x and 5x respectively.

Train 'C' travel 5 hours on Monday and 15 hours on Tuesday.

∴ Total distance = 5 × 4x + 15 × 6x

= 110x

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

On the same day i.e, Tuesday, train 'C' start from Kanpur. It travels 6 hours on Tuesday and 17.8 hours on Wednesday.

∴ total distance travel = 6 × 6x + 17.8 × 5x

= 36x + 89x

= 125x

ATQ, 125x = 110x + 180
⇒ 15x = 180
⇒ x = 12
speed of train 'C' on Monday
= 12 × 4 = 48 km/hour = $\frac{40}{3}$ m/sec
Length of train 'C' = $\frac{24}{100} \times 1600 = 384$
Required time = $\frac{384}{40} \times 3 = 28.8$ sec

45. Answer: A)

Let, speed of train 'A' and train 'C' on Monday be '4x' and '4y' respectively

ATQ,

$2.5 = \frac{900}{4x} - \frac{900}{4y}$
$2.5 = 225\left[\frac{1}{x} - \frac{1}{y}\right]$
xy = 90 (y – x)
length of train 'A' = $\frac{16}{100} \times 1600 = 256$
speed of train 'A' on Tuesday = $\frac{256+128}{12.8} = \frac{384}{12.8}$
= 30 m/sec
⇒ Speed of train 'A' on Monday = $\frac{30}{3} \times 2 = 20$ m/sec = 72 km/hr
⇒ 4x = 72
⇒ x = 18
xy = 90(y – x)
y = 5(y – 18)
⇒ y = 22.5
Speed of train 'C' on Monday = 4y
= 4 × 22.5
= 90 km/hr
Speed of train 'C' on Tuesday = $\frac{90}{4} \times 6$
= 135 km/hr
= 37.5 m/sec
Length of train 'C' = $\frac{24}{100} \times 1600 = 384$
Required time = $\frac{384+66}{37.5} = 12$ seconds

46. Answer: A)

Length of train 'E' = $\frac{22}{100} \times 1600 = 352$
Length of train 'F' = $\frac{8}{100} \times 1600 = 128$
Let speed of train 'E' and train 'F' on Monday be 6x and 4y respectively.
$\Rightarrow \frac{6x}{4y} = \frac{3}{2} \Rightarrow \frac{x}{y} = \frac{1}{1}$
Let speed of train 'E' on Tuesday = 9x
So speed of train 'F' on Tuesday = 5y = 5x
ATQ,
9x – 5x = $\frac{352+128}{24} = 20$
⇒ 4x = 20
⇒ x = 5
Speed of train 'E' on Wednesday = 5 × 5 = 25 m/sec
Speed of train 'F' on Wednesday = 3 × 5 = 15 m/sec
Required time = $\frac{352+128}{25-15} = \frac{480}{10} = 48$ seconds

47. Answer: B)

Let, speed of train 'B' on Monday, Tuesday & Wednesday be 3x, 4x & 5x respectively.

And speed of train 'D' on Monday, Tuesday & Wednesday be 4y. 4y & 7y respectively.

Length of train 'B' = $\frac{18}{100} \times 1600 = 288$
Length of train 'D' = $\frac{12}{100} \times 1600 = 192$
ATQ,
$\frac{\frac{288}{3x}}{\frac{192}{4y}} = \frac{1}{1}$
$\Rightarrow \frac{3}{2} \times \frac{4y}{3x} = \frac{1}{1}$
$\Rightarrow \frac{y}{x} = \frac{1}{2}$
⇒ x = 2y
Time taken by train 'B' on Wednesday to cross pole = $\frac{288}{5x} = \frac{57.6}{x}$

Expected DI and Caselet based on Time Speed Distance Questions for Upcoming Bank Mains Exam

Time taken by train 'D' on Monday to cross a pole $= \frac{192}{4y} = \frac{96}{x}$

Required % $= \frac{\left(\frac{96}{x} - \frac{57.6}{x}\right) \times 100}{\frac{96}{x}}$

$= \frac{38.4}{96} \times 100$

$= 40\%$

48. Answer: E)

Distance between 4 to 5 = 214×5 = 1070

Time taken from 4 to 5 = 1070/107 = 10hr

Distance between 5 to 6 = 360

Time taken from 5 to 6 = 360/90 = 4 hr

Average speed = (1070+360)/(10+4) = 102km/hr approx

49. Answer: E)

Distance between 1 to 3 = 702 + 96 . (3 ¼)

702+312 = 1014

Relative speed = 78+96= 174km/hr

Time taken = 1014/174 = 5.8 hr

50. Answer: D)

Required Distance = 702+312+574+1070+360+722+440 = 4180 km