# TSD, TRAINS, BOATS & STREAMS



## **RAM MOHAN PANDEY**

M.Sc. Mathematics, IIT Roorkee Educator | Mentor | Founder, **ungist** 

- More than 10 years of teaching experience
- Trained more than 15K Aspirants

# UPSC CSAT PYQs 2011-2024 for PRELIMS 2025





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### **Previous Year Questions**

#### Time, Speed and Distance

- 1. If a bus travels 160 km in 4 hours and a train travels 320 km in 5 hours at uniform speeds, then what is the ratio of the distances travelled by them in one hour ?
  - (a) 8:5 (b) 5:8
  - (c) 4:5 (d) 1:2

### [CSAT 2011]

- 2. Mr. Kumar drives to work at an average speed of 48 km/h. The time taken to cover the first 60% of the distance is 10 minutes more than the time taken to cover the remaining distance. How far is his office ?
  - (a) 30 km
  - (b) 40 km
  - (c) 45 km
    (d) 48 km

#### [CSAT 2012]

- 3. A thief running at 8 km/hr is chased by a policeman who speed is 10 km/hr. If the thief is 100 m ahead of the policeman, then the time required for the policemen to catch the thief will be
  - (a) 2 minutes
  - (b) 3 minutes
  - (c) 4 minutes
  - (d) 6 minutes

[CSAT 2013]

[CSAT 2013]

- 4. A person can walk a certain distance and drive back in six hours. He can also walk both ways in 10 hours. How much time will he take to drive both ways ?
  - (a) Two hours
  - (b) Two and a half hours
  - (c) Five and a half hours

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(d) Four hours

- 5. A worker reaches his factory 3 minutes late if his speed from his house to the factory is 5 km/hr. If he walks at a speed of 6 km/hr, then he reaches the factory 7 minutes early the distance of the factory from his house is
  - (a) 3 km
  - (c) 5 km

6.

(d) 6 km

(b) 4 km

[CSAT 2014]

- Two cars start towards each other, from two places A and B which are at a distance of 160 km. They start at the same time 08:10 am. If the speeds of the cars are 50 km and 30 km/h respectively, they will meet each other at
  - (a) 10 : 10 am
  - (b) 10 : 30 am
  - (c) 11:10 am
- (d) 11 : 20 am

### [CSAT 2014]

7. In a 500 metres race, B starts 45 meters ahead of A, but A wins the race while B is still 35 metres behind. What is the ratio of the speed of A to B assuming that both start at the same time ?

(a) 25 : 21	(b) 25 : 20
(c) $5:3$	(d) 5:7
	[CSAT 2015]

8. Two cities A and B are 360 km apart. A car goes from A to B with a speed of 40 km/hr and returns to A with a speed of 60 km/hr. What is the average speed of the car ?

- (a) 45 km/hr
- (b) 48 km/hr
- (c) 50 km/hr
- (d) 55 km/hr
- [CSAT 2015]

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- 9. A daily train is to be introduced between station A and station B starting from each end at 6 am and the journey is to be completed in 42 hours. What is the number of trains needed in order to maintain the shuttle service?
  - (a) 2 (b) 3
  - (c) 4 (d) 7 [CSAT 2016]
- 10. A and B walk around a circular park. They start at 8 am from the same point in the opposite directions. A and B walk at a speed of 2 rounds per hour and 3 rounds per hour respectively. How many times shall they cross each other after 8:00 am and before 9:30 am ?
  - (b) 6 (a) 7
  - (d) 8 [CSAT 2016] (c) 5
- 11. The figure drawn below gives the velocity graphs of two vehicles A and B. The straight line OKP represents the velocity of vehicle A at any instant, whereas the horizontal straight line CKD represents the velocity of vehicle B at any instant. In the figure, D is the point where perpendicular from P meets

the horizontal line CKD such that  $PD = \frac{1}{2}LD$ Velocity B K Velocity С Time L

- What is the ratio between the distances covered by vehicles A and B in the time interval OL?
- (a) 1:2
- (b) 2:3
- (c) 3:4
- (d) 1:1 [CSAT 2018]

SAT MODULES

- 12. Two persons, A and B are running on a circular track. At the start, B is ahead of A and their positions make an angle of 30° at the centre of the circle. When A reaches the point diametrically opposite to his starting point, he meets B. What is the ratio of speeds of A and B, if they are running with uniform speeds?
  - (a) 6 : 5 (c) 6:1

(b) 4:3 (d) 4:2 [CSAT 2018]

- 13. X, Y and Z are three contestants in a race of 1000 m. Assume that all run with different uniform speeds. X gives Y a start of 40 m and X gives Z a start of 64 m. If Y and Z were to compete in a race of 1000 m, how many meters start will Y give to Z?
  - (a) 20
  - (b) 25
  - (c) 30
  - (d) 35
- 14. Let x, y be the volumes; m, n be the masses of two metallic cubes P and Q respectively. Each side of Q is two times that of P and mass of Q is two times that of P. Let u = m/x and v = n/y. Which one of the following is correct?
  - (a) u = 4v(h) u = 9u

(b) 
$$u - 2v$$

(d) v = 4u

(c) v = u

#### [CSAT 2020]

[CSAT 2019]

- 15. A car travels from a place X to place Y at an average speed of v km/hr, from Y to X at an average speed of 2v km/hr, again from X to Y at an average speed of 3v km/hr and again from Y to X at an average speed of 4v km/hr. Then the average speed of the car for the entire journey
  - (a) is less than v km/hr
  - (b) lies between v and 2v km/hr
  - (c) lies between 2v and 3v km/hr
  - (d) lies between 3v and 4v km/hr

#### [CSAT 2020]

Probability

Quantitative Aptitude Number System **Ratio & Proportion** Percentage

P&C



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16. A person X from a place A and another person Y from a place B set out at the same time to walk towards each other. The places are separated by a distance of 15 km. X walks with a uniform speed of 1.5 km/h and Y walks with a uniform speed of 1 km/h in the first hour, with a uniform speed of 1.25 km/h in the second hour and with a uniform speed of 1.5 km/h in the third hour and so on.

Which of the following is/are correct ?

- 1. They take 5 hours to meet.
- 2. They meet midway between A and B.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2  $\,$
- (d) Neither 1 nor 2  $\checkmark$

[CSAT 2021]

17. Two friends X and Y start running and they run together for 50 m in the same direction and reach a point. X turns right and runs 60 m, while Y turns left and runs 40 m. Then X turns left and runs 50 m and stops, while Y turns right and runs 50 m and then stops. How far are the two friends from each other now ?

(a) 100 m

- (c) 60 m
- (d) 50 m [CSAT 2022]

(b) 90 m

- 18. X and Y run a 3 km race along a circular course of length 300 m. Their speeds are in the ratio 3 : 2. If they start together in the same direction, how many times would the first one pass the other (the start-off is not counted as passing) ?
  - (a) 2
  - (b) 3 (c) 4

(d) 5

[CSAT 2022]

- 19. A man started from home at 14:30 hours and drove to village, arriving there when the village clock indicated 15:15 hours. After staying for 25 minutes, he drove back by a different route of length 1.25 times the first route at a rate twice as fast reaching home at 16:00 hours. As compared to the clock at home, the village clock is
  - (a) 10 minutes slow (b) 5 minutes slow
  - (c) 10 minutes fast (d) 5 minutes fast

[CSAT 2022]

20. On one side of a 1.01 km long road, 101 plants are planted at equal distance from each other. What is the total distance between 5 consecutive plants ?

a) 40	m
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(c) 50 m

(b) 40.4 m (d) 50.5 m

[CSAT 2022]

ANSWER KEY											
1.	(b)	4.	(a)	7.	(a)	10. (a)	13. (b)	15. (b)	17. (a)	19. (d)	
2.	(b)	5.	(c)	8.	(b)	11. (c)	14. (a)	16. (c)	18. (b)	20. (b)	
3.	(b)	6.	(a)	9.	(c)	12. (a)					

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### **Previous Year Questions**





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