



Bipin Nambiar
(SBI PO 2018)



Shiraz Khan
(SBI Clerk 2018)



Kuldeep Yadav
(SBI PO 2018)



Rajat Saxena
(IBPS Clerk 2018)



Anupam Tyagi
(IBPS PO 2018)

FRIENDS!
WE USED **TESTZONE**
AND CRACKED BANK EXAMS

बैंक परीक्षाओ के लिए निश्चित
रूप से सर्वश्रेष्ठ मॉक
टेस्ट सीरीज

IT'S YOUR TURN NOW
TAKE A **FREE** MOCK TEST



Smartkeeda
The Question Bank

Time and Distance Questions for SBI PO Pre, IBPS PO Pre, SBI Clerk Mains and IBPS Clerk Mains Exams.

Direction: Read the following questions carefully and choose the right answer.

1. Divya started from her house at 6:30 AM and travelled some distance till 7:30 AM. After covering 75% of that distance further, she found that she had covered 75% of total distance. Find the fraction of the total distance travelled by her by 8:30 AM.

- A. $\frac{3}{7}$ B. $\frac{4}{7}$ C. $\frac{6}{7}$ D. $\frac{2}{3}$ E. $\frac{5}{9}$

2. Amit, Anil and Ajit ride from home to their common office with speeds in the ratio 5 : 4 : 3. If in total they take 94 minutes (sum of the individual time taken) to cover the individual distance (which is same for all), then find the time taken by 'Anil' to cover his distance.

- A. 30 min. B. 48 min. C. 24 min. D. 40 min. E. None of these

3. Ashok and Bimal runs on a 450 m long circular track at a speed of 12 m/s and 18 m/s respectively. They start at same time but run in opposite direction. Find the number of times, they would have met when Bimal covers 3240 meters.

- A. 12 B. 10 C. 14 D. 16 E. 18

4. Pankaj was travelling to point B from point A with speed of 45 km/hr. After 1 hour, Pratik also started to travel from point A to point B. Pratik reached the point B 30 minutes before Pankaj. If Pratik would have decreased his speed by 6 km/hr then both would have reached point B at the same time. Find the original speed of Pratik.

- A. 55 km/hr B. 60 km/hr C. 54 km/hr D. 64 km/hr E. 65 km/hr

5. Rahul travels every day from Powai to Juhu and back to Powai by train which takes 70 minutes for each journey. At a particular day the train starts 14 minutes late from Powai but reaches Juhu on time, while on return travel from Juhu due to some problem train reaches Powai 20 minutes late. If the average speed of the train on this particular day was 56km/h what is the general average speed of the train?

- A. 62 km/h B. 58.4 km/h C. 56 km/h D. 55.4 km/h E. None of these



6. Two friends A and B, with speed in the ratio 9 : 3, are running on track PQ. A starts from P towards Q and when he reaches point exactly in the middle of the track, B starts running from P towards Q. A reaches Q turns back and continues towards P and meets B at a distance of 155 m from Q. What is the total length of the track?

- A. 320 m B. 248 m C. 243 m D. 280 m E. None of these

7. A train goes 2210 km from Station A to station B and completes the journey in time. In return journey, due to some engine problem train starts 20 hrs late and to reach on time trains average speed is increased by 8km/hr. What was the original speed of train?

- A. 24 km/h B. 26 km/h C. 27 km/h D. 21 km/h E. None of these

8. A and B are cycling on a circular track of radius 441m. The speeds of A and B are in the ratio 7:4, and A alone can complete one round of the track in 99 seconds. A starts from a point P in clockwise direction and B starts from point Q in anti-clockwise direction and they meet after 55 seconds at point R. What is the length of the minor arc PQ on the track?

- A. 172 m B. 168 m C. 176 m D. 352 m E. None of these

9. Karan beats arjun by 420 m in a 1260 m race. Then they go to race on a slope where Karan starts from bottom of the slope and Arjun starts from top of the slope they run towards each other and when they meet Arjun has travelled 50m more than Karan. If the speed of any person on the slope, compared to normal speed, becomes 25% more in decline and 200/7% less in incline, what was the total length of the slope?

- A. 600 m B. 720 m C. 680 m D. 650 m E. None of these

10. A and B with speed in the ratio 5: 1 are running on a circular track with centre O. A and B start from a point P and run in same direction, whenever they meet B starts moving in the opposite direction but A continues in the same direction. If they meet for the third time at point T, what is the value of $\angle POT$?

- A. 45° B. 120° C. 84° D. 72° E. None of these

CORRECT OPTIONS:

1	2	3	4	5	6	7	8	9	10
C	A	A	B	B	B	B	D	D	B



Explanations:

1. Let the distance covered by Divya in 1st hour be $4x$ km. So the speed of Divya is $4x$ kmph.

$$4x + 3x = 75\% \text{ of the total distance}$$

$$\text{i.e. } 7x = \frac{3}{4} \text{ of total distance}$$

$$\text{Total distance} = \frac{28x}{3} \text{ km}$$

$$\text{Distance travelled till 8:30 AM} = 4x \times 2 = 8x$$

$$\text{Fraction of the total distance covered} = \frac{8x}{(28x/3)} = \frac{6}{7}$$

Hence, option C is correct.

2. Ratio of the speeds is given by = $5 : 4 : 3$

For a given distance, speed and time are inversely proportional.

So, their respective time will be in the ratio of $1/5 : 1/4 : 1/3$ Multiplying with their LCM which is

60, we get the ratio as $12 : 15 : 20$

$$\text{Give: } 12x + 15x + 20x = 94$$

$$x = 2$$

$$\text{Time taken by Anil to cover the distance} = 2 \times 15 = 30 \text{ minutes}$$

Hence, option A is correct.

3. When Ashok and Bimal together cover 450 m distance, they meet and out of this Ashok covers :

$$= \frac{12}{12 + 18} \times 450 = 180$$

$$\text{Bimal covers } 450 - 180 = 270 \text{ m.}$$

So they meet, Bimal covers 270 m.

When Bimal covers 3240 meters, they would have meet

$$\frac{3240}{270} = 12 \text{ times}$$

Hence, option A is correct.

4. Let the original time taken by Pankaj to reach point B from point A = x hours

Then, original time taken by Pratik to reach point B from point A = $(x - 1.5)$ hours

Also

Let original speed of Pratik = y km/h

$$\text{and, } y \times (x - 1.5) = (y - 6) \times (x - 1)$$

$$\text{So, } 45 \times x = y \times (x - 1.5)$$

$$y \times (x - 1.5) = (y - 6) \times (x - 1)$$

$$yx - 1.5y = yx - 6x - y + 6$$

$$0.5y = 6x - 6$$

$$y = 12x - 12$$

$$\text{Therefore, } 45 \times x = (12x - 12) \times (x - 1.5)$$

$$45x = 12x^2 - 12x - 18x + 18$$

$$12x^2 - 75x + 18 = 0$$

$$4x^2 - 25x + 6 = 0$$

$$4x^2 - 24x - x + 6 = 0$$

$$4x(x - 6) - 1(x - 6) = 0$$

$$(4x - 1)(x - 6) = 0$$

$$x = \frac{1}{4}, 6$$

Since, $x = \frac{1}{4}$ is not possible

$$\text{So, } x = 6$$

Therefore, speed of Pratik = $12x - 12 = 60$ km/hr

Hence, option B is correct.

5. Powai-----Juhu

Let the general average speed = S and general time taken by train = T
 Journey from Powai to Juhu

General time = 70 minutes, Time taken = 56 minutes,

$$\text{So } T_1 = \frac{4}{5} \times T$$

As distance remains same and time becomes 4/5 of the original time, speed will become 5/4 of the original speed.

$$\text{So } S_1 = \frac{5}{4} \times S$$

In return journey time taken = 90 min, $T_2 = \frac{9}{7} \times T$,

so the speed will become 7/9 of original speed.

$$\text{So } S_2 = \frac{7}{9} \times S$$

$$S_{\text{average}} = 2 \times \frac{S_1 \times S_2}{S_1 + S_2}$$

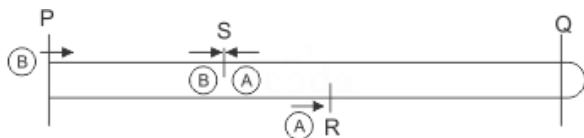
$$56 = 2 \times \frac{\frac{7S}{9} \times \frac{5S}{4}}{\left(\frac{7}{9} \times S + \frac{5}{4} \times S\right)}$$

$$56 = \frac{70}{73} \times S$$

$$S = 58.4 \text{ km/h}$$

Hence, option B is correct.

6.



When A reaches point R which is in the middle of the track, B starts from point P towards Q
 The distance covered after point that will be in the ratio of their speeds

$$\text{Therefore, } \frac{RQ + QS}{PS} = 9 : 3$$

$$RQ + QS + PS = 12 \text{ units}$$

$$RQ + QS + PS = \frac{3}{4} (2 \times PQ)$$

So, $PQ = 8$ units and as $PS = 3$ units, therefore $QS = 5$ units

$$QS = 155\text{m} = 5 \text{ units} \rightarrow 1 \text{ unit} = 31 \text{ m}$$

$$PQ = 8 \text{ units} = 8 \times 31 = 248 \text{ m}$$

Hence, option B is correct.

7. Distance = 2210 km

Let Original speed = k, so the return speed = k + 8

Time difference between the two journeys = 20 hrs

$$\frac{2210}{k} - \frac{2210}{k+8} = 20$$

$$k^2 + 8k - 884 = 0$$

Solving we get k = 26 km/h

Hence, option B is correct.

8.

$$\text{Length of the track} = 2 \times \frac{22}{7} \times 441 = 2772\text{m}$$

A completes one round in 99 seconds

$$\text{So, speed of A} = \frac{2772}{99} = 28 \text{ m/sec}$$

Ratio of speed of A : B = 7 : 4

So, speed of B = 16 m/s

As they run towards each other, their relative speed will be (28 + 16) = 44 m/s

They meet after 55 sec

The distance covered by them in these 55 seconds = 44 × 55 = 2420 m

So, the length of major arc PRQ = 2420 m and therefore length of minor arc PQ = (2772 – 2420) = 352 m

Hence, option D is correct.



9. Karan beats Arjun by 420 m in a 1260 m race

So the ratio of their speeds will be equal to the ratio of distance covered

$$\frac{S(\text{Karan})}{S(\text{Arjun})} = \frac{1260}{840} = \frac{126}{84}$$

Let their speeds be $126k$ and $84k$

On the slope Karan goes upwards and Arjun goes downward

$$\text{Speed of Karan on slope} = 28 \frac{4}{7} \% \text{ less than original} = \frac{5}{7} \times 126k = 90k$$

$$\text{Speed of Arjun on slope} = 25\% \text{ more than original} = \frac{5}{4} \times 84k = 105k$$

Let the distance travelled by them on slope be $90kx$ and $105kx$,

Total distance travelled by them = $195kx$

The difference between the distance travelled = 50 m

$$105kx - 90kx = 50$$

$$15kx = 50 \rightarrow kx = \frac{50}{15}$$

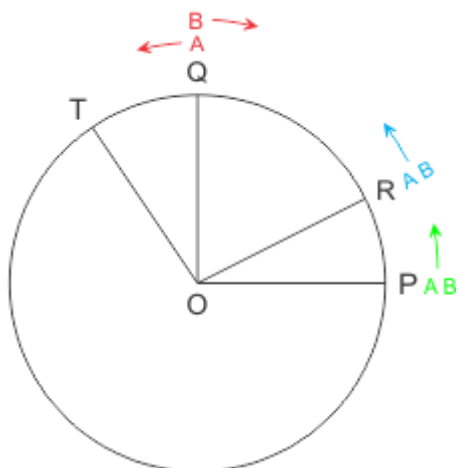
$$195kx = \frac{195 \times 50}{15} = 650 \text{ m}$$

So, the total length of the slope is 650 m

Hence, option D is correct.



10.



From point P, A and B move in same direction and they meet for the first time at point Q.

When they meet at Q,

A has completed one round plus distance PQ, while B has travelled only distance PQ.

So the difference between their distances travelled is one complete round or 360°

Let speeds of A and B be $5k$ and $1k$

Difference between their distances travelled is $5k - 1k = 4k$

The difference of the angle covered by them will also be in the ratio of the distance travelled by them

As A covers $360^\circ + \angle POQ$, and angle covered by B = $\angle POQ$

$$\frac{\angle POQ}{\angle POQ} + 360^\circ = \frac{1}{5}$$

$$\angle POQ = 360^\circ \times \frac{1}{4} = 90^\circ$$

From point Q, A goes in same direction but B goes in opposite direction.

When they meet for the second time at point R they together complete 1 round or 360°

So, angle covered by B,

$$\angle QOR = 360^\circ \times \frac{1}{6} = 60^\circ$$

From point R, A continues in the same direction and B starts moving in the opposite direction.

When they meet for the third time at point T

Again, the angle covered by B,

$$\angle ROT = 360^\circ \times \frac{1}{4} = 90^\circ$$

So, the angle made by B's final position can be found by

$$\angle POT = \angle POQ - \angle QOR + \angle ROT = 90^\circ - 60^\circ + 90^\circ = 120^\circ$$

Hence, option B is correct.



SmartKeeda

The Question Bank

Presents

TestZone

India's least priced Test Series platform

JOIN

ALL BANK EXAMS

2020-2021 Test Series

@ Just

₹ 599/-

300+ Full Length Tests

- Brilliant Test Analysis
- Excellent Content
- Unmatched Explanations

JOIN NOW