**CHAPTER-18**

**RACES**

**IMPORTANT FACTS-**

**Races:** A contest of speed in running, riding, driving, sailing or rowing is called race

**Course:** The ground or path on which contests are made is called a race course.

**Dead Heat** **Race:** If all the persons contesting a race reach the goal exactly at the same time, then the race is said to be a dead heat race.

Suppose A and B are two contestants in a race. If before the start of the race, A is at the starting point and B is ahead of A by 12 meters, then we say that 'A gives B, a start of 12 meters. '

To cover a race of 100 meters in this case, A will have to cover 100 meters while B will have to cover only (100 - 12) = 88 meters. i

In a 100 m race, 'A can give B 12 m' or 'A can give B a start of 12 m' or 'A beats 12 m' means that while A runs 100 m, B runs (100 - 12) = 88 m.

**Example:** In a km race*,* A beats Bby 28 meters or 7 seconds. Find A's timeoverthe course.

**Answer:** B covers 28 m in 7 seconds.

:. B's time over the course = (278 x 1000) sec = 250 seconds.

:. A*'s* time over the course = (250 - 7) sec = 243 sec = 4 min. 3 sec.

**Example:** A runs 1 ¾ times as fast as B. if A gives B a start of 84 m, bow far must winning post be so that A and B might reach it at the same time?

**Answer:** Ratio of the rates of A and B = 7/4: 1 = 7: 4.

So, in a race of 7 m, A gains 3m over B.

3 m are gained by A in a race of 7 m.

84 m are gained by A in a race of (7/3 x 84) m = 196 m.

Winning post must be 196 m away from the starting point.

**Example:** A can run 1 km in 3 min. 10 sec. and B can cover the same distance in 3 min. 20 sec. By what distance can A beat B?

**Answer:** Clearly, A beats B by 10 sec.

Distance covered by B in 10 sec. = (1000 x 10) m = 50 m.

200

Therefore, A beats B by 50 meters.

**Example:** In a 100 m race, A runs at 8km per hour. If A gives B a start of 4 m and still him by 15 seconds, what is the speed of B?

**Answer:** Time taken by A to cover 100 m = (60 X 60 / 8000) x 100 sec = 45 sec.

B covers (100 - 4) m = 96 m in (45 + 15) sec = 60 sec.

B's speed = (96 x 60 x 60) km/hr = 5.76 km/hr.

60 x 1000

**Example:** A, Band C are three contestants in a km race. If A can give B a start of 40 m and A can give C a start of 64m how many meter’s start can B give C?

**Answer:** While A covers 1000 m, B covers (1000 - 40) m = 960 m and

C covers (1000 - 64) m or 936 m.

When B covers 960 m, C covers 936 m.

**Example:** In a game of 80 points; A can give B 5 points and C 15 points. Then how many points B can give C in a game of 60?

**Sol.**  A: B = 80: 75, A: C = 80: 65.

B/C = (B/ A X A/C) = (75 / 80 X 80 / 65) = 15/13 = 60 /52 = 60: 5

Therefore, In a game of 60, B can give C 8 points.