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The Question Bank

DI Info Chart Questions for IBPS PO Pre, IBPS Clerk, LIC AAO, SBI PO Pre and SBI Clerk Exams

DI Info Chart 26

Directions: Study the following information carefully and answer the questions given beside.

There are five Taps of different capacities - T1, T2, T3, T4 and T5.

T1: It takes 10 minutes to fill the 20% of the tank.

T2: It takes 15 minutes to fill the 10% of the tank.

T3: It takes 45 minutes to fill the 15% of the tank.

T4: It takes 30 minutes to fill the 30% of the tank.

T5: It takes 35 minutes to fill the 25% of the tank.

1. A tank has 3 taps. T1 and T2 to fill the tank and third Tap to make it empty. The 3rd tap is takes 60 minutes to empty 75% of the tank. All the 3 taps are opened in the beginning. After 14 minutes, 3rd tap is closed. In how much time, will the rest of the tank be full?

A. 30.0625 minutes B. 15.125 minutes C. 45.0312 minutes

D. 60 minutes E. None of these

2. Taps T3 and T4 are filling the tank while a 3rd tap can empty the full tank in 50 minutes. T3 and T4 are kept open for 10 minutes in the beginning and then 3rd tap is also opened. In how much time will the tank be emptied?

A. 28 minutes B. 25 minutes C. 21 minutes

D. 20 minutes E. 16 minutes

3. Taps T1 and T5 are used to fill the tank. There is a 3rd tap in the bottom of tank to empty it. If all the three taps are simultaneously opened, then the tank is full in 50 minutes. In how much time, the 3rd Tap alone can empty the tank?

A. 130 minutes B. 120 minutes C. 140 minutes

D. 60 minutes E. None of these

4. Two taps T3 and T4 can fill a tank and a waste tap can empty in 150 minutes. All the 3 taps working together can fill the tank in 150 minutes. The capacity of the tank is:

A. 180 units B. 300 units C. 250 units

D. 340 units E. None of these

5. A large tanker can be filled by two taps T2 and T3. How many minutes will it take to fill the tanker from empty state if T2 is used for half the time and T3 and T2 fill it together for the other half?

A. 60 minutes B. 45 minutes C. 30 minutes

D. 15 minutes E. None of these

Correct answer:

1	2	3	4	5
A	D	C	B	E

Explanation:

1. Time taken by T1 to fill 20% = 10 minutes

Hence, T1 fills 100% = 50 minutes

Time taken by T2 to fill 10% = 15 minutes

Hence, T2 fills 100% = 150 minutes

Time taken by Empty tap to empty 75% = 60 minutes

Hence, empty Tap empties 100% = 80 minutes

Let total capacity of the tank = LCM (50, 150, 80) = 1200 units

Capacity of T1 = $\frac{1200}{50}$ = 24 units

Capacity of T2 = $\frac{1200}{150}$ = 8 units

Capacity of empty tap = $\frac{1200}{80}$ = 15 units

Filled tank in 1 minute = 24 + 8 – 15 = 17 units

Filled tank in 14 minutes = 14 × 17 = 238 units

Rest units = 1200 – 238 = 962 units

Capacity of T1 + T2 = 24 + 8 = 32 units

Time taken by T1 and T2 = $\frac{962}{32}$ = 30.0625 minutes

Hence, option A is correct.

2. T3 taken time to fill 15% = 45 minutes

Hence, T3 fills 100% = 300 minutes

T4 takes time to fill 30% = 30 minutes

Hence, T4 fills 100% = 100 minutes

Empty tap empties 100% = 50 minutes

Let total capacity of the tank = LCM (300, 100, 50) = 300 units

Capacity of T3 = $\frac{300}{300}$ = 1 units

Capacity of T4 = $\frac{300}{100}$ = 3 units

Capacity of empty tap = $\frac{300}{50}$ = 6 units

Tank filled in 10 minutes = 10 × 1 + 10 × 3 = 40 units

Work by T3 + T4 + Empty = 1 + 3 – 6 = -2 units

Tank emptied in = $\frac{40}{2}$ = 20 minutes

Hence, option D is correct.

3. Time taken by T1 to fill 20% = 10 minutes

Hence, T1 fills 100% = 50 minutes

Time taken by T5 to fill 25 % = 35 minutes

Hence, T5 fills 100% = 140 minutes

Let empty tap empties 100% in y minutes

Let total capacity of tank = LCM (50, 140) = 700 units

Capacity of T1 = $\frac{700}{50}$ = 14 units

Capacity of T5 = $\frac{700}{140}$ = 5 units

Capacity of empty tap = $\frac{700}{y}$ units

Tank filled in 1 minute = $\frac{19 - 700}{y}$ unit

Tank filled in 50 minutes = $50 \times \frac{19 - 700}{y}$ unit

$50 \times \frac{19 - 700}{y} = 700$

$19y - 700 = 14y$

$y = 140$ minutes

Hence, option C is correct.

4. T3 taken time to fill 15% = 45 minutes

Hence, T3 fills 100% = 300 minutes

Time taken by T4 to fill 30% = 30 minutes

Hence, T4 fills 100% = 100 minutes

Let capacity of the tank = LCM (150, 100) = 300 units

Capacity of T3 = $\frac{300}{300}$ = 1 units

Capacity of T4 = $\frac{300}{100}$ = 3 units

Capacity of Empty tap = $\frac{300}{150}$ = 2 units

Tank filled in 1 minute = 1 + 3 – 2 = 2 units

Tank filled in 150 minutes = 300 units

So, the capacity of the tank = 300 units

Hence, option B is correct.

5. Time taken by T2 to fill 10% = 15 minutes

Hence T2 fills 100% = 150 minutes

Time taken by T3 to fill 15% = 45 minutes

Hence T3 fills 100% = 300 minutes

Let capacity of tank = LCM(150, 300) = 300 units

Capacity of T2 = $\frac{300}{150}$ = 2 units

Capacity of T3 = $\frac{300}{300}$ = 1 unit

Let the total time = t

(T2 + T3)'s capacity = 2 + 1 = 3 units

$\frac{2 \times t}{2} + \frac{3 \times t}{2} = 300$

5t = 600

t = 120 minutes

Hence, option E is correct.