Date Interpretation Table Chart Questions for SBI PO Pre, IBPS PO Pre, SBI Clerk Mains and IBPS Clerk Mains Exams.

DI Table Chart Quiz 83

Directions: Study the following table chart carefully and answer the questions given below:

The following table shows the variable time taken by different pipes to fill different tanks of various capacities.

	Tank A	Tank B	Tank C
Pipe 1	2.5 hrs	'x' hrs	15 hrs
Pipe 2	3.0 hrs	9 hrs	18 hrs
Pipe 3	4.5 hrs	'z' hrs	'y' hrs

1. A time of 'z' hrs was taken by a man to drive his car from his home to office. Whereas, he drove back at a speed of 49km/hr for 'x' hrs. Find the approximate speed of car during his drive from home to office?

A. 35 km/hr B. 45 km/hr C. 27 km/hr D. 21 km/hr E. 31 km/hr

2. While filling with pipe 3, a hole was drilled in tank A so that a leakage drained some water at the rate of 15m^3/hr. Now, if the tank was full in 5.4 hrs , then the rate of flow of in-let water is

A. 45 m^3/hr B. 90 m^3/hr C. 60 m^3/hr D. 120 m^3/hr E. None of these

3. A man claimed the stats for the Pipe 2- filling the tank B to be incorrect. According to him, the time recorded was 17% more than the actual time. Then, the difference in the fraction value of the new y/z and old x/y is

A. $\frac{232}{225}$ B. $\frac{232}{450}$ C. $\frac{838}{225}$ D. $\frac{464}{225}$ E. None of these

4. If Pipe 2 was used to fill cylindrical Tanks B & C of same heights, such that the ratio of water flow-rate used was 9:2. Then the ratio of the area of base of the two tanks is

A. 9 : 4 B. 3 : 2 C. 1 : 9 D. 9 : 1 E. None of these

Correct Answers:

1	2	3	4
C	B	D	A

Explanations:

1. For z, using proportions, for same flow rate in both tanks A & B for either pipe 2 & 3,

$$\frac{z}{9} = \frac{4.5}{3}$$

or, $z = 4.5 \times 3 = 13.5$ hrs

For x, using proportions, for same flow rate in both tanks B & C for either pipe 1 & 2 ,

$$\frac{x}{9} = \frac{15}{18}$$

or, $x = \frac{15}{2} = 7.5$ hrs

Then, let speed during home to office travel be 'q' km/hr.
Distance from home to office = (q km/hr) (z hrs) = (q km/hr) (13.5 hrs) = 13.5q km
Distance from office to home = (49 km/hr) (x hrs) = (49 km/hr) (7.5 hrs) = 367.5 km
Equating distances, we have,
Distance from home to office = Distance from office to home

$13.5q = 367.5$

$q = \frac{49 \times 7.5}{13.5} = 27$ km/hr (approximately)

Hence, option C is correct.

2. Let the rate of flow of in-let water be 'P' m^3/hr.
Original time required for Tank A to fill by pipe 3 = 4.5hrs
Then, capacity of tank = (flow rate) x (time taken to fill) = $4.5 \times P = (4.5P)m^3$
Also,
Effective rate of flow of water = $(P - 15)$ m^3/hr
Time required with leakage = 5.4 hrs
Capacity of tank = (flow rate) x (time taken to fill) = (P – 15) (5.4 hrs)
Equating the capacity of tank,
(4.5P) = (P – 15) (5.4)
(5.4 – 4.5) P= 5.4 × 15

$P = \frac{5.4 \times 15}{0.9} = 6 \times 15 = 90$ m^3/hr

Hence, option B is correct.

3. Time recorded for filling Tank B with pipe 2 = 9hrs

If this is 17% more than actual time (say, t hrs),

Then, t + (17% of t) = 9

1.16 t = 9

or, $t = \frac{9}{1.17} = \frac{900}{117} = \frac{100}{13}$ hrs

In table, 9hrs is replaced by (100/13)hrs.

For x, using proportions, for same flow rate in both tanks B & C for either pipe 1 & 2 ,

$\frac{x}{9} = \frac{15}{18}$

or, $x = \frac{15}{2}$ = 7.5hrs .....(i)

For y(remaining unaltered), using proportions, for same flow rate in both tanks A & C for either pipe 1 & 3,

$\frac{y}{15} = \frac{4.5}{2.5}$

or, $y = \frac{15 \times 45}{25}$ = 27hrs ...(ii)

For 'NEW' z, using proportions, for same flow rate in both tanks A & B for either pipe 2 & 3,

$\frac{z}{100/13} = \frac{4.5}{3}$

or, $z = 1.5 \times \frac{100}{13} = \frac{150}{13}$ hrs....(iii)

Then, (new y/z) – (old x/y) = $\frac{27}{150/13} - \frac{7.5}{27}$

$= \frac{117}{50} - \frac{5}{18} = \frac{(117 \times 9) - (5 \times 25)}{450}$

$= \frac{1053 - 125}{450} = \frac{928}{450} = \frac{464}{225}$

Hence, option D is correct.

4. Let the common factor be x. Then, water flow rate in tank B & C is 9x & 2x respectively.

Time required to fill tank B & C with pipe 2 = 9 hrs & 18 hrs respectively.

Then, Volume of Tank B = (water flow rate) (time) = (9x) (9hrs) = 81x

And, Volume of Tank C = (water flow rate) (time) = (2x) (18hrs) = 36x

So, $\frac{\text{Volume of Tank B}}{\text{Volume of Tank C}} = \frac{81x}{36x} = \frac{9}{4}$

Or, $\frac{\pi r B^2 h}{\pi r C^2 h} = \frac{rB^2}{rC^2} = \frac{9}{4}$

Ratio of area of base of tank b to tank C = $\pi r B^2 : \pi r C^2 = rB^2 : rC^2 = 9 : 4$

Hence, option A is correct.