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

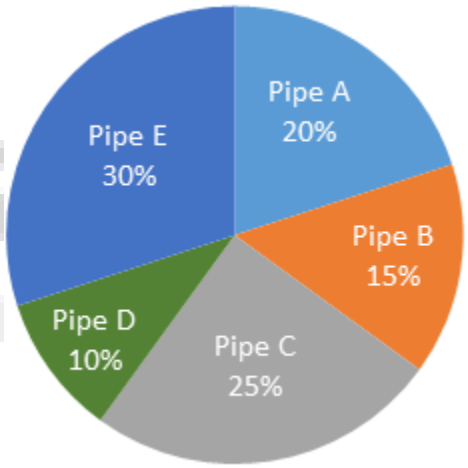
DI Pie Chart Quiz 36

Directions: Study the following pie chart carefully & answer the questions given below it.

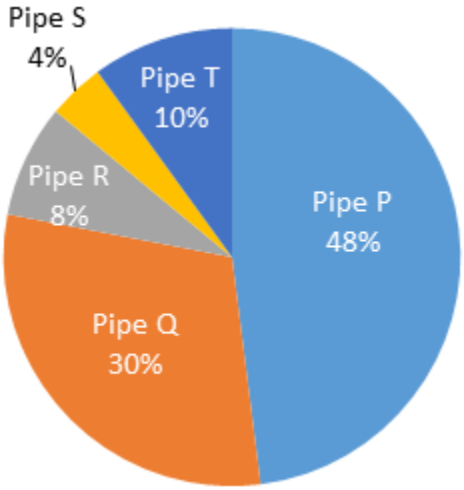
There are five inlet pipes (A, B, C, D, and E) and five outlet pipes (P, Q, R, S, and T) connected to a tank. The first pie-chart represents the percentage of the tank filled by each inlet pipe when all the inlet pipes are opened together and the second pie-chart represents the percentage of the tank emptied by each outlet pipe when all the outlet pipes are opened together.

Total capacity of the tank = 1200 litres
Time taken to fill the tank when all the inlet pipes are opened together = 3 minutes
Time taken to empty the tank when all the outlet pipes are opened together = 2.4 minutes

Percentage of the tank filled



Percentage of the tank emptied



1. Find the time taken to fill the tank if pipes A, B, D, R, and S are opened together.

A. 18 minutes B. 15 minutes C. 12 minutes D. 10 minutes E. 8 minutes

2. Find the ratio of the sum of the time taken by pipe C alone and time taken by pipe E alone to fill the tank to the sum of the time taken by pipe Q alone and time taken by T alone to empty the tank.

A. 13 : 17 B. 11 : 16 C. 8 : 15 D. 9 : 13 E. 10 : 19

3. The time taken by pipes B and C together to fill the tank is how many minutes more than the time taken by pipes A, D, and E together?

A. 3.5 minutes B. 1 minute C. 1.5 minutes D. 3 minutes E. 2.5 minutes

4. What will be the ratio of the time taken by pipes P and R together to empty the tank to the time taken by pipes Q, S, and T together to empty the tank?

A. 5 : 11 B. 11 : 8 C. 9 : 13 D. 11 : 14 E. 13 : 11

5. If all the inlet pipes and the outlet pipes are opened together then find the time taken to empty the full tank.

A. 10 minutes B. 12 minutes C. 5 minutes D. 4 minutes E. 20 minutes

Correct Answers:

1	2	3	4	5
D	B	E	D	B

Explanations :

1.

	Amount of water filled	Water filled per minute	Time taken to fill the tank alone(in minutes)
Pipe A	20% of 1200 = 240 litres	240/3 = 80 litres/minute	1200/80 = 15
Pipe B	15% of 1200 = 180 litres	180/3 = 60 litres/minute	1200/60 = 20
Pipe C	25% of 1200 = 300 litres	300/3 = 100 litres/minute	1200/100 = 12
Pipe D	10% of 1200 = 120 litres	120/3 = 40 litres/minute	1200/40 = 30
Pipe E	30% of 1200 = 360 litres	360/3 = 120 litre/minute	1200/120 = 10

	Amount of water emptied	Water emptied per minute	Time taken to empty the tank alone(in minutes)
Pipe P	48% of 1200 = 576 litres	576/2.4 = 240 litres/minute	1200/240 = 5
Pipe Q	30% of 1200 = 360 litres	360/2.4 = 150 litres/minute	1200/150 = 8
Pipe R	8% of 1200 = 96 litres	96/2.4 = 40 litres/minute	1200/40 = 30
Pipe S	4% of 1200 = 48 litres	48/2.4 = 20 litres/minute	1200/20 = 60
Pipe T	10% of 1200 = 120 litres	120/2.4 = 50 litres/minute	1200/50 = 24

$$\text{Reqd. time} = \frac{1200}{80 + 60 + 40 - 40 - 20} = \frac{1200}{120} = 10 \text{ minutes}$$

Hence, option D is correct.

2.

Amount of water filled	Water filled per minute	Time taken to fill the tank alone(in minutes)	
Pipe A	20% of 1200 = 240 litres	240/3 = 80 litres/minute	1200/80 = 15
Pipe B	15% of 1200 = 180 litres	180/3 = 60 litres/minute	1200/60 = 20
Pipe C	25% of 1200 = 300 litres	300/3 = 100 litres/minute	1200/100 = 12
Pipe D	10% of 1200 = 120 litres	120/3 = 40 litres/minute	1200/40 = 30
Pipe E	30% of 1200 = 360 litres	360/3 = 120 litre/minute	1200/120 = 10

	Amount of water emptied	Water emptied per minute	Time taken to empty the tank alone(in minutes)
Pipe P	48% of 1200 = 576 litres	576/2.4 = 240 litres/minute	1200/240 = 5
Pipe Q	30% of 1200 = 360 litres	360/2.4 = 150 litres/minute	1200/150 = 8
Pipe R	8% of 1200 = 96 litres	96/2.4 = 40 litres/minute	1200/40 = 30
Pipe S	4% of 1200 = 48 litres	48/2.4 = 20 litres/minute	1200/20 = 60
Pipe T	10% of 1200 = 120 litres	120/2.4 = 50 litres/minute	1200/50 = 24

Sum of the time taken by pipe C alone and time taken by pipe E alone to fill the tank = 12 + 10 = 22 minutes

Sum of the time taken by pipe Q alone and time taken by T alone to empty the tank = 8 + 24 = 32 minutes

Required ratio = 22 : 32 = 11 : 16

Hence, option B is correct.

3.

	Amount of water filled	Water filled per minute	Time taken to fill the tank alone(in minutes)
Pipe A	20% of 1200 = 240 litres	240/3 = 80 litres/minute	1200/80 = 15
Pipe B	15% of 1200 = 180 litres	180/3 = 60 litres/minute	1200/60 = 20
Pipe C	25% of 1200 = 300 litres	300/3 = 100 litres/minute	1200/100 = 12
Pipe D	10% of 1200 = 120 litres	120/3 = 40 litres/minute	1200/40 = 30
Pipe E	30% of 1200 = 360 litres	360/3 = 120 litre/minute	1200/120 = 10

	Amount of water emptied	Water emptied per minute	Time taken to empty the tank alone(in minutes)
Pipe P	48% of 1200 = 576 litres	576/2.4 = 240 litres/minute	1200/240 = 5
Pipe Q	30% of 1200 = 360 litres	360/2.4 = 150 litres/minute	1200/150 = 8
Pipe R	8% of 1200 = 96 litres	96/2.4 = 40 litres/minute	1200/40 = 30
Pipe S	4% of 1200 = 48 litres	48/2.4 = 20 litres/minute	1200/20 = 60
Pipe T	10% of 1200 = 120 litres	120/2.4 = 50 litres/minute	1200/50 = 24

Time taken by pipes B and C together to fill the tank $= \frac{1200}{60 + 100} = \frac{1200}{160} = 7.5$ minutes

Time taken by pipes A, D and E together to fill the tank $= \frac{1200}{80 + 40 + 120} = \frac{1200}{240} = 5$ minutes

So, pipes B and C together takes 2.5 minutes more than pipes A, D, and E together

Hence, option E is correct.

4.

	Amount of water filled	Water filled per minute	Time taken to fill the tank alone(in minutes)
Pipe A	20% of 1200 = 240 litres	240/3 = 80 litres/minute	1200/80 = 15
Pipe B	15% of 1200 = 180 litres	180/3 = 60 litres/minute	1200/60 = 20
Pipe C	25% of 1200 = 300 litres	300/3 = 100 litres/minute	1200/100 = 12
Pipe D	10% of 1200 = 120 litres	120/3 = 40 litres/minute	1200/40 = 30
Pipe E	30% of 1200 = 360 litres	360/3 = 120 litre/minute	1200/120 = 10

	Amount of water emptied	Water emptied per minute	Time taken to empty the tank alone(in minutes)
Pipe P	48% of 1200 = 576 litres	576/2.4 = 240 litres/minute	1200/240 = 5
Pipe Q	30% of 1200 = 360 litres	360/2.4 = 150 litres/minute	1200/150 = 8
Pipe R	8% of 1200 = 96 litres	96/2.4 = 40 litres/minute	1200/40 = 30
Pipe S	4% of 1200 = 48 litres	48/2.4 = 20 litres/minute	1200/20 = 60
Pipe T	10% of 1200 = 120 litres	120/2.4 = 50 litres/minute	1200/50 = 24

The time taken by pipes P and R together to empty the tank = $\frac{1200}{240 + 40} = \frac{30}{7}$ minutes

The time taken by pipes Q, S, and T together to empty the tank = $\frac{1200}{150 + 20 + 50} = \frac{60}{11}$ minutes

Reqd. ratio = $\frac{30}{7} : \frac{60}{11} = 11 : 14$

Hence, option D is correct.

5.

	Amount of water filled	Water filled per minute	Time taken to fill the tank alone(in minutes)
Pipe A	20% of 1200 = 240 litres	240/3 = 80 litres/minute	1200/80 = 15
Pipe B	15% of 1200 = 180 litres	180/3 = 60 litres/minute	1200/60 = 20
Pipe C	25% of 1200 = 300 litres	300/3 = 100 litres/minute	1200/100 = 12
Pipe D	10% of 1200 = 120 litres	120/3 = 40 litres/minute	1200/40 = 30
Pipe E	30% of 1200 = 360 litres	360/3 = 120 litre/minute	1200/120 = 10

	Amount of water emptied	Water emptied per minute	Time taken to empty the tank alone(in minutes)
Pipe P	48% of 1200 = 576 litres	576/2.4 = 240 litres/minute	1200/240 = 5
Pipe Q	30% of 1200 = 360 litres	360/2.4 = 150 litres/minute	1200/150 = 8
Pipe R	8% of 1200 = 96 litres	96/2.4 = 40 litres/minute	1200/40 = 30
Pipe S	4% of 1200 = 48 litres	48/2.4 = 20 litres/minute	1200/20 = 60
Pipe T	10% of 1200 = 120 litres	120/2.4 = 50 litres/minute	1200/50 = 24

Units of water emptied in one minute = (240 + 150 + 40 + 20 + 50) – (80 + 60 + 100 + 40 + 120) = 500 – 400 = 100 units

Reqd. time = $\frac{1200}{100}$ = 12 minutes

Hence, option B is correct.