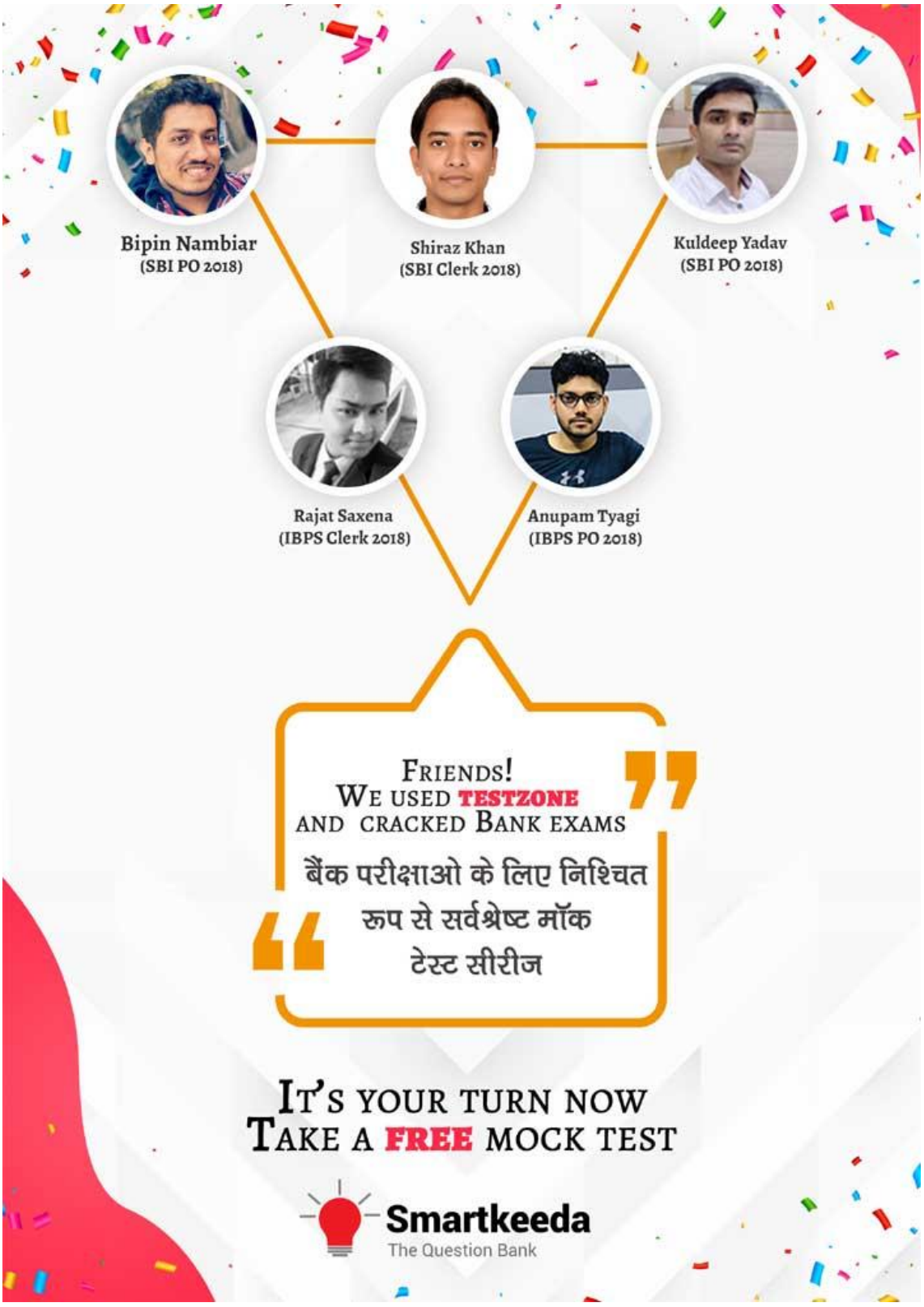
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(SBI PO 2018)
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The Question Bank

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

DI Info Chart 25

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

There are seven pipes connected to a tank out of which four are inlet pipes i.e. A, C, E and F and three are outlet pipes i.e. B, D and G. Pipes B and E together can fill the empty tank in 90 hours. Pipe A is 50% more efficient than pipe D. Pipes E and F together can fill the empty tank in 36 hours. Pipe E is 10% less efficient than Pipe C. Pipes B and G together can empty the full tank in 36 hours. Pipes A and D together can fill the empty tank in 216 hours. Pipes B and F together can fill the empty tank in 180 hours.

1. What is the time (upto one decimal point) taken by all the inlet pipes to fill the tank completely?

A. 16 hours B. 16.6 hours C. 17 hours

D. 17.6 hours E. None of these

2. In how many hours, pipes A and F together can fill the tank?

A. 42 hours B. 36 hours C. 40 hours

D. 35 hours E. 45 hours

3. If all the outlet pipes are opened together, then find the time taken by them to empty the full tank?

A. 32 hours B. 27 hours C. 25 hours

D. 30 hours E. 24 hours

4. What is the time taken by pipes B, C and D together to fill the empty tank?

A. 240 hours B. 250 hours C. 256 hours

D. 270 hours E. 275 hours

5. If the pipes D and E are used as inlet pipes and A and C as outlet pipes. Find the approximate time required to fill the empty tank and empty the filled tank respectively?

A. 31 hours, 31 hours

B. 39 hours, 39 hours

C. 39 hours, 31 hours

D. 31 hours, 39 hours

E. None of these

Correct answer:

1	2	3	4	5
B	C	B	D	C

Explanation:

1. Let the capacity of the tank be LCM of (90, 216, 36 and 180) = 1080 litres

Amount of water to be filled by pipes B and E together in one hour

$= \frac{1080}{90} = 12$ litres

Amount of water to be filled by pipes F and E together in one hour

$= \frac{1080}{36} = 30$ litres

Amount of water to be filled by pipes B and F together in one hour

$= \frac{1080}{180} = 6$ litres

Amount of water to be filled by pipes B, F and E together in one hour

$= \frac{12 + 30 + 6}{2} = 24$ litres

Amount of water filled by F in one hour = 24 – 12 = 12 litres

Amount of water filled by E in one hour = 30 – 12 = 18 litres

Pipe E is 10% less efficient than C

Amount of water filled by C in one hour = 20 litres

Amount of water to be filled by pipes A and D together in one hour

$= \frac{1080}{216} = 5$ litres

Let, the amount of water taken out by pipe D in one hour = x litres

So, the amount of water filled by A in one hour = 1.5x litres

So, 1.5x – x = 5; x = 10 litres

So, the amount of water filled by A in one hour = 1.5x10 litres = 15 litres

So, the amount of water filled by A, C, E and F in one hour = 15 + 12 + 18 + 20 = 65

Time taken by pipes A, C, E and F together to fill the empty tank

$= \frac{1080}{65}$ = 16.6 hours

Hence, option B is correct.

2. Let the capacity of the tank be LCM of (90, 216, 36 and 180) = 1080 litres

Amount of water to be filled by pipes B and E together in one hour

$= \frac{1080}{90}$ = 12 litres

Amount of water to be filled by pipes F and E together in one hour

$= \frac{1080}{36}$ = 30 litres

Amount of water to be filled by pipes B and F together in one hour

$= \frac{1080}{180}$ = 6 litres

Amount of water to be filled by pipes B, F and E together in one hour

$= \frac{12 + 30 + 6}{2}$ = 24 litres

Amount of water filled by F in one hour = 24 – 12 = 12 litres

Amount of water to be filled by pipes A and D together in one hour

$= \frac{1080}{216} = 5$ litres

Let, the amount of water taken out by pipe D in one hour = x litres

So, the amount of water filled by A in one hour = 1.5x litres

So, 1.5x – x = 5; x = 10 litres

So, the amount of water filled by A in one hour = 1.5x10 litres = 15 litres

Amount of water to be filled by pipes A and F together in one hour = 12+15=27 litres

Time taken by pipes A and F together to fill the empty tank

$= \frac{1080}{27} = 40$ hours

Hence, option C is correct.

3. Let the capacity of the tank be LCM of (90, 216, 36 and 180) = 1080 litres

Amount of water taken out by pipes B and G together in one hour

$= \frac{1080}{36} = 30$ litres

Amount of water to be filled by pipes A and D together in one hour

$= \frac{1080}{216} = 5$ litres

Let, the amount of water taken out by pipe D in one hour = x litres

So, the amount of water filled by A in one hour = 1.5x litres

So, 1.5x – x = 5; x = 10 litres

So, the amount of water taken out by D in one hour = 10 litres

Amount of water taken out by pipes B, D and G together in one hour = 10 + 30 = 40 litres

So, the time taken by pipes B, D and G together to empty the full tank

$= \frac{1080}{40} = 27$ hours

Hence, option B is correct.

4. Let the capacity of the tank be LCM of (90, 216, 36 and 180) = 1080 litres

Amount of water to be filled by pipes B and E together in one hour

$= \frac{1080}{90} = 12$ litres

Amount of water to be filled by pipes F and E together in one hour

$= \frac{1080}{36} = 30$ litres

Amount of water to be filled by pipes B and F together in one hour

$= \frac{1080}{180} = 6$ litres

Amount of water to be filled by pipes B, F and E together in one hour

$= \frac{12 + 30 + 6}{2} = 24$ litres

Amount of water filled by B in one hour = 30 – 24 = 6 litres

Amount of water filled by E in one hour = 24 – 6 = 18 litres

Amount of water to be filled by pipes C in one hour

$= \frac{18}{0.90} = 20$ litres

Amount of water to be filled by pipes A and D together in one hour

$= \frac{1080}{216} = 5$ litres

Let, the amount of water taken out by pipe D in one hour = x litres

So, the amount of water filled by A in one hour = 1.5x litres

So, 1.5x – x = 5; x = 10 litres

So, the amount of water filled by D in one hour = 10 litres

Amount of water to be filled by pipes B, C and D together in one hour = 20 – 10 – 6 = 4 litres

Time taken by pipes B, C and D together to fill the empty tank

$= \frac{1080}{4} = 270$ hours

Hence, option D is correct.

5. Let the capacity of the tank be LCM of (90, 216, 36 and 180) = 1080 litres

Amount of water to be filled by pipes B and E together in one hour

$= \frac{1080}{90} = 12$ litres

Amount of water to be filled by pipes F and E together in one hour

$= \frac{1080}{36} = 30$ litres

Amount of water to be filled by pipes B and F together in one hour

$= \frac{1080}{180} = 6$ litres

Amount of water to be filled by pipes B, F and E together in one hour

$= \frac{12 + 30 + 6}{2} = 24$ litres

Amount of water filled by F in one hour = 24 – 12 = 12 litres

Amount of water filled by E in one hour = 30 – 12 = 18 litres

Pipe E is 10% less efficient than C

Amount of water filled by C in one hour = 20 litres

Let, the amount of water taken out by pipe D in one hour = x litres

So, the amount of water filled by A in one hour = 1.5x litres

So, 1.5x – x = 5; x = 10 litres

So, the amount of water filled by A in one hour = 1.5x10 litres = 15 litres

And, amount of water filled by C in one hour = 20 litres

And, amount of water taken out by A and C = 35 litres

Therefore, time required to empty the filled tank

$= \frac{1080}{35} = 31$ hours

Also, the amount of water filled by D and E in one hour= 28 litres

Therefore, time required to fill the empty tank

$= \frac{1080}{28} = 39$ hours

Hence, option C is correct.