Pipes and Cistern Questions for SBI Clerk Prelims 2020-21

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Pipes and Cistern Questions for SBI Clerk Prelims 2020-21

Pipes and Cistern

1. A tank is 3/5 full. If 28 litres of water is added to the tank, it becomes 5/6 full. The capacity of the tank is:

A.280 litres

B.320 litres

C.350 litres

D.420 litres

E.120 litres

2. Pipe A and pipe B fill the tank in 30 hours and 20 hours respectively. If pipe A and B together opened simultaneously and after 10 hours Pipe B closed, in how many hour will pipe A take to fill the remaining tank?

A.3 hours

B.5 hours

C.7 hours

D.8 hours

E.None of these

3. Three taps A, B and C can fill a tank 12, 15 and 20 hours respectively. If A is open all the time and B and C are open for one hour each alternatively, The tank will be full in?

A.23

B.14

C.7

D.6

E.2

4. A pipe can fill a tank with water in 3 hours. Due to leakage in bottom, it takes 3.5 hour to fill it. In what times the leak will empty the fully filled tank?

A.14

B.21

C.11

D.17

E.12

5. Pipe A can fill an empty tank in 6 hours and pipe B in 8 hours. If both the pipes are opened and after

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2 hours pipe, A is closed, how much time B will take to fill the remaining tank?

A.10/3

B.4/8

C.4/7

D.11/48

E.3/19

6. Two pipes can fill a tank in 30 min and 15 min respectively. When both pipe is open in how many the full tank will be filled?

A.66

B.50

C.62

D.95

E.10

7. Pipe A can fill a tank in 20 min and Pipe B can empty a tank in 30 min. In how many minute the tank will be filled when both pipes are opened?

A.51

B.78

C.47

D.60

E.39

8. In pipe X a tank can fill in 5 minute and anther tank Y can empty the tank in 10 minute. In how many minute the tank will be filled ¾ parts when both pipe is opened and tank already filled ½ part?

A.2.1

B.2.9

C.2.5

D.1.7

E.14

9. Pipe M fills a tank in 8 hour but due to leakage tank takes 2 hour more to fill. Find in how many hours the leakage will empty the full tank?

A.136

B.40

C.18.9

D.15.6

E.12.3

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10.A pipe fills ¾ part of a tank in 27 min. Then find in how many minute 2/3 part of the tank will be filled?

A.24

B.15

C.13

D.47

E.17

11. Two pipes fill the tank in 12 minute and 14 minute respectively. Another pipe empties the same tank in 7 minute. Find in how much part of the tank will fill when all three is opened for 7 minute?

A.5/12

B.1/01

C.1/99

D.1/14

E.1/12

12. Two pipes of a tank fill the tank in 12 and 15 minute respectively. Another pipe empties the full tank. When all the pipes are open the tank will fill in 10 minute. Then find how many minute the pipe empty the full tank?

A.37

B.45

C.38

D.20

E.39

13. A and B pipe of a tank fill in 6 hour, B and C pipe fill in 4 hour and C and A pipe fill in 3 hour. In how many minute pipe C alone fill the tank?

A.3/63

B.9/16

C.24/5

D.6.3

E.4.5

14. Two pipes of a tank fill the tank in 25 minute and 30 minute. Both the pipe is opened. Find after how many times 1st pipe will be closed so that tank will be filled in 15 minute?

A.36/7

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B.25/3

C.96/4

D.27/7

E.36

15. Pipe A is 6 times more efficient in than B. Pipe A fill the tank in 28 minute fine the in how many hours tank will filled when both the pipe is opened?

A.168/7

B.69/7

C.36/7

D.49/9

E.41

16. Pipe A, B and C fill the tank together in 36 minute. They are open for 12 minute after that Pipe C is closed and rest part in filled by pipe A and B in 48 minute. Find in how many hours C will fill the tank alone?

A.71.2

B.63.3

C.69.6

D.46

E.72

17. Two pipes can fill a tank in 9 hour and 12 hour respectively. When both pipes is open the tank fill in how many hours?

A.63/3

B.12.3

C.40.3

D.36/7

E.14.3

18. Pipe A, B and C fill a tank alone in 10,15 and 20 min respectively. All the pipe open for 3 min than pipe C is closed than find in how many min pipe A and B can fill the rest of the part?

A.12.3

B.22.5

C.2.1

D.3.3

E.3.36

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19. A Tank is empty by a pipe in 4 hour. When from another pipe 180 liter water per hour enter the tank then the tank empty in 6 hour. Find the capacity of the tank?

A.2113

B.2160

C.2800

D.1500

E.1414

20. Pipe M can fill a tank in 28 min. If 1/8 part of the amount of water enter in a tank per minute from pipe M is out from the leakage then find in how many min the tank will be filled?

A.56/5

B.10/3

C.14/6

D.10/3

E.11/3

21. Pipe A and pipe B can fill a tank in 45 min and 30 min respectively. Another pipe C can empty 9 liter water per minute. If tank will 90 min to fill when all the pipes is opened then find the capacity of the tank?

A.1122

B.1911

C.1711

D.1411

E.202.5

22. Pipe M fills a tank in 15 hour but due to leakage tank will fill in 20 hour. Find in how many hours the leakage will empty the full tank?

A.11

B.12

C.41

D.60

E.718

23. A pipe fills ¾ part of a tank in 27 min. Then find in 15 minute how much part of the tank will be filled?

A.10/3

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B.22/36

C.5/12

D.26.3

E.22

24. Three Pipes A, B and C can fill the tank in 12 hours, 15 hours and 30 hours respectively. Pipe A and B started fill the tank and after 6 hours pipe C also opened. In how many hours the tank is filled completely?

A.6(6/11) hours

B.5(7/11) hours

C.4(6/11) hours

D.3(7/11) hours

E.None of these

25. Pipe A is 10 times more efficient in than B. Pipe B fill the tank in 60 minute fine the in how many hours tank will filled when both the pipe is opened?

A.10.8

B.12.3

C.11/85

D.14/6

E.60/11

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Pipes and Cistern – Answer and Explanation

Q1) Answer: E

Let the capacity of the tank be x litres.

Then, (5x/6 - 3x/5) = 28

=> (25x - 18x) / 30 = 28

= > 7x / 30 = 28

=> 7x = 840

=> x = 120

Q2) Answer: B

LCM of (30, 20) = 60

Pipe A done the work in a hour = 2 units

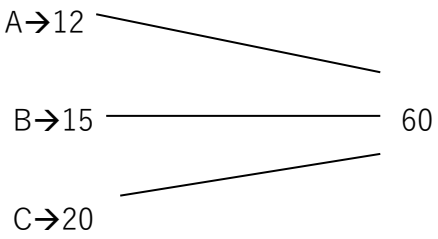
Pipe B done the work in a hour = 3 units

A + B together fill the tank in 10 hours = 5 * 10 = 50 units

Remaining units of work = 60 – 50 = 10 units

A lone fill the remaining tank in = 10/2 = 5 hours

Q3) Answer c



So efficiency of pipe A is 5, Pipe B is 4, and Pipe C is 3

1st hour A and B opened, 5+4=9 unit will fill.

2nd hour A and C opened, 5+3=8 unit will fill.

In two hour total 9+8=17 unit will fill.

In 6 hour total 17*3=51 unit will fill.

Next hour 51+9=60 unit will fill

So total 6+1=7 hour time need to fill the tank

Q4) Answer b

Tank fill tank in 3 hour

Tank fill in 1 hour 1/3 part

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Tank fill in 1 hour 1/3.5 part when there is a leakage

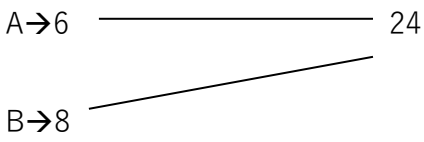
in tank

So, the leakage in 1 hour empty=1/3-

1/3.5=.5/10.5=1/21

So leakage empties the full in 21 hour.

Q5) Answer a



So efficiency of pipe A is 4, Pipe B is 3

So total efficiency is 4+3=7

In 2 hours =14 unit of will be filled

Left part=24-14=10 unit

Tank will be filled in=10/3 hours

Q6) Answer e

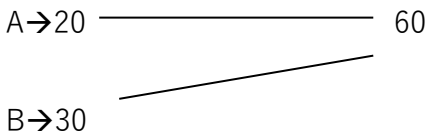
2nd→15

So efficiency of 1s is 1 Pipe B is 2

So total efficiency is 3

Tank will be filled in=30/3=10 minute

Q7) Answer d

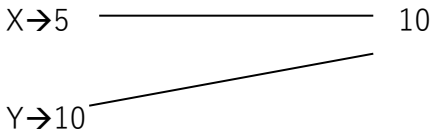


So efficiency of pipe A is 3, Pipe B is -2

So total efficiency is 3-2=1

Tank will be filled in=60/1=60 minute

Q8) Answer c



So efficiency of pipe A is +2, Pipe B is -1

So total efficiency is 2-1=1

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½ part of tank already filled so unfilled part=1/2*10=5 unit

¾ part of tank is=10*3/4=7.5 unit

So 7.5-5=2.5 unit have to fill.

Tank will be filled in=2.5/1=2.5 minute

Q9) Answer b

Pipe M fill tank in 8 hour

Tank fill in 1 hour 1/8 part

Pipe M fill tank in 8+2=10 hour when there is a leakage.

Tank fill in 1 hour 1/10 part when there is a leakage in tank

So, the leakage in 1 hour empty=1/8-1/10=5-4/40=1/40

So leakage empties the full in 40 hour.

Q10) Answer a

¾ part fill in 27 min

1 part fill in36 min

2/3 part fill in 2/3*36=24 min

Q11) Answer e

1st→12

2nd→14 ——— 84

3rd→ 7

So efficiency of 1st pipe is 7 , 2nd Pipe is 6 and 3rd pipe is -12

Total efficiency is7+6-12=1

So in 7 min total 7 unit will fill

7/84=1/12 part will fill in 7 minute.

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Q12) Answer d

1st→12

2nd→15 ——— 60

Efficiency of 1st pipe is 5 and 2nd pipe is 4.

Let the efficiency 3rd pipe is –x

According to the question,

10(5+4-x)=60

Or, x=9-6=3

So , 3rd pipe empty the tank in 60/3=20 minute

Q13) Answer c

A+B→6

B+C→4 ——— 24

C+A→3

Total efficiency of A and B is 4, B and C is 6 and C and A is 8

Total efficiency is=18/2=9

Efficiency of C is=9-4=5

Total time take and by C to fill the tank is=24/5 hours

Q14) Answer b

1st→25

2nd→30 ——— 150

Efficiency of 1st pipe is 6 and 2nd pipe is 5.

2nd pipe open for 15 min, so in 15 min 2nd pipe fill

15*5=75 unit

1st pipe open for=75/6=25/3 minute

Q15) Answer a

Efficient of pipe A is 6x and pipe B is x

So A take x minute to fill and B take 6x minute to fill

time

So, x=28

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6x=6*28=168 minute

In 1 minute both pipe fill=1/28+1/168=7/168

Total time taken to fill the tank is=168/7 minute

Q16) Answer e

In 12 min pipe A,B and C fill 12/36=1/3 part

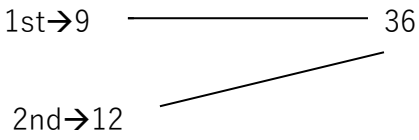
Rest part 1-1/3=2/3 part A and B fill in 48 minute

A and B fill the full tank in =72 minute

C can fill in 1 minute is=1/36-1/72=2-1/72=1/72

So C alone can fill the tank in 72 minute.

Q17) Answer d

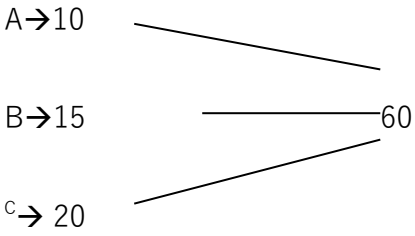


So efficiency of 1s is 4 Pipe B is 3

So total efficiency is 7

Tank will be filled in=36/7 hours

Q18) Answer c



So efficiency of 1st pipe is 6, 2nd Pipe is 4 and 3rd pipe is 3

Total efficiency is 6+4+3=13

So in 3 min total 13*3=39 unit will fill

Rest part is=60-39=21

21 unit A and B fill in=21/10=2.1 minute

Q19) Answer b

When only out let pipe open tank empty in 4 hour

So in 1 hour empty 1/4 part

When inlet and out let both open then tank empty in 6 hour.

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So, In 1 hour empty 1/6 part.

So , inlet pipe in 1 hour fill =1/4-1/6=3-2/12=1/12

So in 12 hour inlet pipe fill the tank so capacity of tank is=12*180=2160 litre

Q20) Answer a

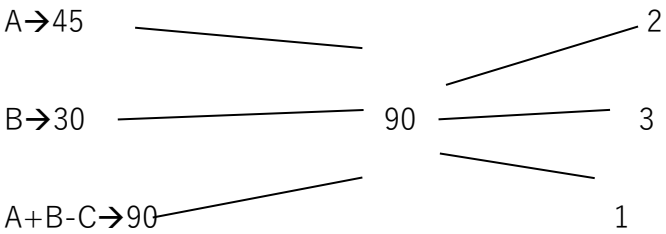
In 1 minute water fill trough M is 1/28

1/8 part water out through leakage

So in 1 minute tank fill=1/8-1/28=7-2/56=5/56

So tank will fill in =56/5 minute

Q21) Answer e



So efficiency of C

(2+3)-C=1 ,C=5-1=4

So C alone empty the tank in 90/4=22.5 min

So capacity of the tank is=22.5*9=202.5 liters

Q22) Answer d

Tank fill tank in 15 hour

Tank fill in 1 hour 1/15 part

Tank fill in 1 hour 1/20 part when there is a leakage in tank

So, the leakage in 1 hour empty=1/15-1/20=1/60

So leakage empties the full in 60 hour.

Q23) Answer c

In ¾ part fill in 27 min

1 part fill in 36 min

So in 15 min tank will fill 15/36=5/12 part

Q24) Answer: A

$(x + 6)/12 + (x + 6)/15 + x/30 = 1$

$5x + 30 + 4x + 24 + 2x = 60$

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11x = 6

x = 6/11

Total time = 6 + 6/11 = 6(6/11) hours

Q25) Answer E

Efficient of pipe A is 10x and pipe B is x

So A take x minute to fill and B take 10x minute to fill

time

So, 10x=60

So, x=6

In 1 minute both pipe fill=1/6+1/60=11/60

Total time taken to fill the tank is=60/11 minute