Aptitude - Pipes & Cisterns Online Quiz

Following quiz provides Multiple Choice Questions (MCQs) related to **Pipes & Cisterns**. You will have to read all the given answers and click over the correct answer. If you are not sure about the answer then you can check the answer using **Show Answer** button. You can use **Next Quiz** button to check new set of questions in the quiz.

Q 1 - A tap can fill storage in 8 hours and another tap can discharge it in 16 hours. In the event that both the taps are open, the time taken to fill the tank will be:

A - 8 hours

B - 10 hours

C - 16 hours

D - 24 hours

Answer : C

Explanation

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Net part filled in 1 hr = (1/8 ? 1/16)= 1/16
Total time taken to fill the tank = 16 hrs.
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Hide Answer

Q 2 - A channels can fill a tank in x hours and another funnel can exhaust it in y (y>x) hours. In the event that both the funnels are open, in how long will the tank be filled?

A - (x-y) hours

B - (y-x) hours

C - xy/(x-y) hours

D - xy/(y-x) hours

Answer : D

Explanation

```
Work done by filling pipe in 1 hr = 1/x
Work done by emptying pipe in 1 hr = 1/y
Net filling work done by both in 1 hr = (1/x- 1/y) = (y-x)/xy
∴The tank will be filled in xy/(y-x) hrs.
```

Hide Answer

Q 3 - A funnel can discharge a tank in 40 minutes. A second pipe with distance across twice as much as that of the first is likewise joined with the tank to purge it. The two together can exhaust the tank in:

A - 8 min

B - 40/3 min

C - 30 min

D - 38 min

Answer : B

Explanation

```
A pipe with double diameter will take half time.
So, the second pipe can empty the full tank in 20 min.
Part emptied by both in 1 min. (1/40+ 1/20) = 3/40
Time taken to empty the full tank = 40/3 min.
```

Show Answer

Q 4 - Two channels can fill a tank in 15 hours and 12 hours separately and a third pipe can purge it in 4 hours. In the event that the channels are opened all together at 8 am, 9 am and 11am separately, the tank will be exhausted at

A - 11.40 am

B - 12.40 pm

C - 1.40 pm

D - 2.40 pm

Answer : D

Explanation

```
Let the tank be emptied in x hrs after 8 am.
Work done by A in x hrs, by B in (x-1) hrs and C in (x-3) hrs = 0
⇒x/15+ (x-1)/12- (x-3)/4 = 0 ⇒ 4x+5(x-1) - 15(x-3) = 0
⇒6x= 40 ⇒x= 20/3 hrs.
⇒x= 6 hrs. 40 min after 8 am
Hence the tank will be emptied at 14 hrs 40 min, i.e., 2:40 pm
```

Show Answer

Q 5 - Two pipes A and B can fill a reservoir in 6 minutes and 7 minutes separately. Both the funnels are opened then again for 1 minute each. In what the reality of the situation will become obvious eventually fill the storage?

A - 5 min

B - 17/3 min

C - 45/7 min

D - 5/4 min

Answer : C

Explanation

```
Part filled by A in 1st min and B in 2nd min =(1/6+ 1/7 )= 13/42
Part filled by (A+B) working alternately in 6 min. (1/2 * 13/42*6) = 13/14
Remaining part = (1-13/14) = 1/14
It is now A's turn.
1/6 part is filled in 1 min.
1/14 part is filled in (6*1/14) min = 3/7 min.
Total time taken = 45/7 min.
```

Hide Answer

Q 6 - A substantial tanker can be filled by two pipes A and B in an hour and 40 minutes separately. How long will it take to fill the tanker from unfilled state if B is utilized for a fraction of the time and A and B fill it together for the other half?

A - 15 min.

B - 20 min.

C - 27.5 min.

D - 30 min.

Answer : D

Explanation

```
Let the total time taken be x minute. Then,
(1/40*x/2) + (1/60+ 1/40) x/2= 1 ⇒ x/80 + x/48 = 1
⇒3x+ 5x= 240 ⇒8x= 240 ⇒x= 30
Hence, the required time is 30 minutes.
```

Hide Answer

Q 7 - A storage has a hole which would exhaust it in 8 hours. A tap is transformed on which concedes 6 liters a moment into the reservoir and it is currently purged in 12 hours. What number of liters does the reservoir hold?

A - 7580 ltr.

B - 7960 ltr.

C - 8290 ltr.

D - 8640 ltr.

Answer : D

Explanation

```
Part filled in 1 hour = (1/8- 1/12)= 1/24
Time taken to fill the cistern= 24 hours
Water moved in it 24 hours = (6*60*24) = 8640 liters.
Capacity of the cistern = 8640 liters.
```

Hide Answer

Q 8 - Two pipes A and B can ill a tank in 36 hours and 45 hours respectively. If both the pipes are opened simultaneously, how much time will be taken to fill the tank?

A - 10 hours

B - 15 hours

C - 18 hours

D - 20 hours

Answer : D

Explanation

```
T = xy/(x+y)
= (36*45)/(36+45)
= 1620/80
= 20 hours

Or,

Part filled by A in 1 hour = 1/36
Part filled by B in 1 hour = 1/45
Part filled by (A+B) in 1 hour = (1/36 + 1/45) = 1/20

∴ Both the pipes can fill the tank in 20 hours.
```

Hide Answer

Q 9 - A cistern has two pipes. One can fill it with water in 8 hours and the other can empty it in 5 hours. In how many hours will the cistern be emptied if the both the pipes are opened together when 3/4 of the cistern is already full of water.

A - 13.5 hours

B - 10 hours

C - 6 hours

D - 3.5 hours

Answer : B

Explanation

```
Part if cistern emptied in 1 hour = 1/5 - 1/8
= 3/40
3/40 part is emptied in hour.
∴ 3/4 part is emptied in 40/3 * 3/4 = 10 hour
```

Hide Answer

Q 10 - Two pipes can fill a tank in 12 hours and 15 hours respectively. A third pipe can empty it in 20 hours. If the tank is empty and all the three pipes are opened, then the tank will be full in (in hour) ?

A - 7

B - 9

C - 10

D - 14

Answer : C

Explanation

```
Part of tank filled by both the pipes in 1 hour = 1/12 + 1/15
= 3/20
Part of tank emptied by third pipe in 1 hour = 1/20
∴ Part of tank filled when all the pipes are opened simultaneously = 3/20 - 1/20
= 2/20
= 1/10
∴ Tank will be filled in 10 hours.
```

Hide Answer