Opening both taps and leaks

1) Three pipes A, B and C can fill a cistern in 6 hours. After working at it together for 2 hours, C is closed and A and B fill it in 7 hours more. The time taken by C alone to fill the cistern is

a) 17 hours b) 16 hours
c) 14 hours d) 15 hours

2) A pipe can fill a tank with water in 3 hours. Due to leakage in bottom, it takes $3\frac{1}{2}$ hours to fill it . In what time the leak will empty the fully filled tank ?

a) $10\frac{1}{2}$ hours b) $6\frac{1}{2}$ hours
c) 12 hours d) 21 hours

3) A pump can fill a tank with water in 2 hours. Because of a leak in the tank it was taking $2\frac{1}{3}$ hours to fill the tank. The leak can drain all the water off the tank in :

a) 14 hours b) $4\frac{1}{3}$ hours
c) 8 hours d) 7 hours

4) Pipe A can fill a cistern in 6 hours and pipe B can fill it in 8 hours. Both the pipes are opened simultaneously, but after two hours, pipe A is closed. How many hours will B take to fill the remaining part of the cistern ?

a) 4 hrs b) $2\frac{2}{3}$ hrs
c) 2 hrs d) $3\frac{1}{3}$ hrs

5) A leak in the bottom of a tank can empty the full tank in 6 hours. An inlet pipe fills water at the rate of 4 liters a minute. When the tank is full, the inlet is opened and due to the leak, the tank is empty in 8 hours. Find the capacity of the tank.

a) 24 litres b) 10 litres
c) 5760 litres d) 96 litres

6) Pipe A can fill a tank in 4 hours and pipe B can fill it in 6 hours. If they are opened on alternate hours and if pipe A is opened first, in how many hours, the tank shall be full ?

a) $4\frac{2}{3}$ b) $3\frac{1}{4}$
c) $4\frac{1}{2}$ d) $3\frac{1}{2}$

7) A tank is fitted with two taps. The first tap can fill the tank completely in 45 minutes and the second tap can empty the full tank in one hour. If both the taps are opened alternately for one minute, then in how many hours the empty tank will be filled completely ?

a) 5 hours 53 minutes
b) 4 hours 48 minutes
c) 2 hours 55 minutes
d) 3 hours 40 minutes

8) A pipe can fill a cistern in 9 hours. Due to a leak in its bottom, the cistern fills up in 10 hours. If the cistern is full, in how much time will it be emptied by the leak ?

a) 100 hours b) 90 hours
c) 70 hours d) 80 hours

9) A cistern is normally filled in 8 hours but takes another 2 hours longer to fill because of a leak in its bottom. If the cistern is full, the leak will empty it in :

a) 40 hours b) 25 hours
c) 16 hours d) 20 hours

10) A pipe can fill a tank in 24 hrs. Due to a leakage in the bottom, it is filled in 36 hrs. If the tank is half full, how much time will the leak take to empty the tank?

a) 24 hrs b) 36 hrs
c) 48 hrs d) 72 hrs

11) A tap can fill a cistern in 40 minutes and a second tap can empty the filled cistern in 60 minutes. By mistake without closing the second tap, the first tap was opened. In how many minutes will the empty cistern be filled ?

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a) 120 b) 108
c) 72 d) 84

12) Three taps A, B and C can fill a tank in 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) $7\frac{1}{2}$ hours b) 7 hours
c) 6 hours d) $6\frac{1}{2}$ hours

13) A tap takes 36 hours extra to fill a tank due to a leakage equivalent to half of its inflow. The inflow can fill the tank in how many hours ?

a) 18 hrs b) 30 hrs
c) 36 hrs d) 24 hrs

14) Two pipes A and B can fill a cistern in $37\frac{1}{2}$ minutes and 45 minutes respectively. Both pipes are opened. The cistern will be filled just in half an hour, if the pipe B is turned off after:

a) 9 minutes b) 5 minutes
c) 15 minutes d) 10 minutes

15) A tank has two pipes. The first pipe can fill it in 4 hours and the second can empty it in 16 hours. If two pipes be opened together at a time, then the tank will be filled in

a) $5\frac{1}{3}$ hours b) 6 hours
c) $5\frac{1}{2}$ hours d) 10 hours

16) Two pipes A and B can fill a tank with water in 30 minutes and 45 minutes respectively. The water pipe C can empty the tank in 36 minutes. First A and B are opened. After 12 minutes C is opened. Total time (in minutes) in which the tank will be filled up is :

a) 24 b) 36
c) 30 d) 12

17) An empty tank can be filled by pipe A in 4 hours and by pipe B in 6 hours. If the two pipes are opened for 1 hour each alternately with first opening pipe A, then the tank will be filled in

a) $5\frac{1}{2}$ hours b) $4\frac{2}{3}$ hours
c) $1\frac{3}{4}$ hours d) $2\frac{3}{5}$ hours

18) Three pipes A, B and C can fill a tank in 6 hours. After working together for 2 hours, C is closed and A and B fill the tank in 8 hours. The time (in hours) in which the tank can be filled by pipe C alone is

a) 9 b) 8
c) 10 d) 12

19) A tap can fill a tank in 6 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken to fill the tank completely ?

a) 3 hours 45 minutes b) 3 hours 15 minutes
c) 4 hours d) 4 hours 15 minutes

20) Three pipes A, B and C can fill a tank in 6 hours. After working together for 2 hours, C is closed and A and B can fill the remaining part in 7 hours. The number of hours taken by C alone to fill the tank is

a) 16 b) 14
c) 10 d) 12

21) A tank has a leak which would empty the completely filled tank in 10 hours. If the tank is full of water and a tap is opened which admits 4 litres of water per minute in the tank, the leak takes 15 hours to empty the tank. How many litres of water does the tank hold ?

a) 7200 L b) 1200 L
c) 2400 L d) 4500 L

22) Two pipes, P and Q can fill a cistern in 12 and 15 minutes respectively. Both are opened together, but at

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the end of 3 minutes, P is turned off. In how many more minutes will Q fill the cistern ?

a) $8\frac{1}{4}$ minutes b) 8 minutes

c) 7 minutes d) $7\frac{1}{2}$ minutes

23) A tank can be filled with water by two pipes A and B together in 36 minutes. If the pipe B was stopped after 30 minutes, the tank is filled in 40 minutes. The pipe B can alone fill the tank in

a) 90 minutes b) 75 minutes

c) 45 minutes d) 60 minutes

24) Two pipes A and B can fill a tank in 6 hours and 8 hours respectively. If both the pipes are opened together, then after how many hours should B be closed so that the tank is full in 4 hours?

a) $\frac{8}{3}$ hrs b) 2 hrs

c) $\frac{2}{3}$ hrs d) 1hrs

25) A water tap fills a tub in 'p' hours and a sink at the bottom empties it in 'q' hours. If p < q and both tap and sink are open, the tank is filled in 'r' hours; then

a) r = p – q b) r = p + q

c) $\frac{1}{r} = \frac{1}{p} + \frac{1}{q}$ d) $\frac{1}{r} = \frac{1}{p} - \frac{1}{q}$

26) A tank can be filled by two pipes in 20 minutes and 30 minutes respectively. When the tank was empty, the two pipes were opened. After some time, the first pipe was stopped and the tank was filled in 18 minutes. After how much time of the start was the first pipe stopped?

a) 12 minutes b) 10 minutes

c) 5 minutes d) 8 minutes

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