AIIMS Logical Reasoning Pipes and Cistern 2023 Part 1 NET, IAS, State-SET (KSET, WBSET, MPSET, etc.), GATE, CUET, Olympiads etc.

1. Two pipes A and B can fill a cistern in 20 and 30 minutes respectively, and a third pipe C can empty it in 40 minutes. How long will it take to fill the cistern if all the three are opened at the same time?

A. $19\frac{1}{7}$ min

B. $15\frac{1}{7}$ min

C. $17\frac{1}{7}$ min

D. $7\frac{1}{7}$ min

Answer: C

2. Two pipes A and B can separately fill a tank in 2 minutes and 15 minutes respectively. Both the pipes are opened together but 4 minutes after the start the pipe A is turned off. How much time will it take to fill the tank?

A. 9 min

B. 10 min

C. 11 min

D. 12 min

Answer: B

3. Two pipes P and Q can fill a cistern in 12 and 15 minutes respectively. Both are opened together, but at the end of 3 minutes the first is turned off. How much longer will the cistern take to fill?

A. $9\frac{1}{4}$ min

B. $11\frac{1}{4}$ min

C. $7\frac{1}{4}$ min

D. $8\frac{1}{2}$ min

Answer: B

4. A cistern has a leak which would empty the cistern in 20 minutes. A tap is turned on which admits 4 liters a minute into the cistern, and it is emptied in 24 minutes. How many liters does the cistern hold?

A. 480 liters

B. 600 liters

C. 720 liters

D. 800 liters

Answer: A

5. Two taps can separately fill a cistern 10 minutes and 15 minutes respectively and when the waste pipe is open, they can together fill it in 18 minutes. The waste pipe can empty the full cistern in?

A. 7 min

B. 13 min

C. 23 min

D. 9 min

Answer: D

6. A cistern is filled by a tap in $3\frac{1}{2}$ hours. Due to leak in the bottom of the cistern, it takes half an hour longer to fill the cistern. If the cistern is full how long will it take the leak to empty it?

A. 7 hours

B. 8 hours

C. 14 hours

D. 28 hours

Answer: D

7. Two pipes A and B can fill a tank in 4 and 5 hours respectively. If they are turned up alternately for one hour each, the time taken to fill the tank is?

A. 2 hrs 15 min

B. 4 hrs 24 min

C. 5 hrs

D. 3 hrs

Answer: B

8. Two pipes A and B can fill a cistern in 12 and 15 minutes respectively. Both are opened together but after 3 minutes A is turned off. After how much more time will the cistern be filled?

A. $3\frac{1}{4}$ min

B. $5\frac{1}{4}$ min

C. $8\frac{1}{4}$ min

D. $9\frac{1}{4}$ min

Answer: C

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

A. 16 hrs

B. 20 hrs

C. 40 hrs

D. 25 hrs

Answer: C

10. Two pipes A and B can separately fill a tank in 12 and 15 minutes respectively. A third pipe C can drain off 45 liters of water per minute. If all the pipes are opened, the tank can be filled in 15 minutes. What is the capacity of the tank?

A. 480 liters

B. 540 liters

C. 600 liters

D. 675 liters

Answer: B

11. 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 per minute. When the tank is full in inlet is opened and due to the leak the tank is empties in 8 hours. The capacity of the tank is?

A. 5260 liters

B. 5760 liters

C. 5846 liters

D. 6970 liters

Answer: B

12. Two pipes A and B can separately fill a cistern in 10 and 15 minutes respectively. A person opens both the pipes together when the cistern should have been was full he finds the waste pipe open. He then closes the waste pipe and in another 4 minutes the cistern was full. In what time can the waste pipe empty the cistern when fill?

A. 7 min

B. 8 min

C. 9 min

D. 10 min

Answer: B

13. An outlet pipe can empty $\frac{2}{3}rd$ of a cistern in 12 minutes. In 8 minutes, what part of the cistern will be emptied?

A. $\frac{4}{9}$

B. $\frac{2}{3}$

C. $\frac{4}{7}$

D. $\frac{1}{6}$

Answer: A

14. Two pipes can separately fill a tank in 20 and 30 hours respectively. Both the pipes are opened to fill the tank but when the tank is full, a leak develops in the tank through which one-third of water supplied by both the pipes goes out. What is the total time taken to fill the tank?

A. 18 hrs

B. 16 hrs

C. 15 hrs

D. 12 hrs

Answer: B

15. Two pipes function simultaneously the reservoir will be filled in 12 hours. One pipe fills reservoir 10 hours faster than the other. How many hours does the faster pipe take to fill the reservoir?

A. 25 hrs

B. 28 hrs

C. 20 hrs

D. 35 hrs

Answer: C