PIPES AND CISTERN

1. A pipe can fill a cistern in 25 hours. Find the part of tank filled in 5 hours.
   (1) $\frac{1}{25}$ (2) $\frac{1}{5}$ (3) $\frac{1}{10}$
   (4) Data inadequate (5) None of these
2. A pipe can empty a cistern in 27 hours. Find the time in which $\frac{2}{3}$ part of the cistern will be emptied.
   (1) 9 hours (2) 12 hours (3) 15 hours
   (4) 18 hours (5) None of these
3. A tap can fill a cistern in 8 hours and another can empty it in 16 hours. If both the taps are opened simultaneously, the time (in hours) to fill the tank is:
   (1) 8 (2) 10 (3) 16
   (4) 24 (5) None of these
4. A fill pipe can fill $\frac{3}{5}$ of cistern in 21 minutes. In how many minutes, it can fill $\frac{3}{7}$ of the cistern.
   (1) 12 minutes (2) 18 minutes (3) 15 minutes
   (4) 17 minutes (5) None of these
5. A pipe can empty a tank in 15 hrs and another pipe can empty it in 10 hours. If both the pipes are opened simultaneously, find the time in which a full tank is emptied.
   (1) 8 hrs (2) 6 hrs (3) 4 hrs
   (4) 5 hrs (5) None of these
6. Two pipes A and B can fill a tank in 30 minutes and 15 minutes respectively. If both the pipes are opened simultaneously, how much time will be taken to fill the tank?
   (1) 10 minutes (2) 12 minutes (3) 8 minutes
   (4) 9 minutes (5) None of these
7. There is a leak in the bottom of a cistern. When the cistern is thoroughly repaired, it would be filled in 12 minutes. It now takes 18 minutes longer. If the cistern is full, how long would the leak take to empty the cistern?
   (1) 20 minutes (2) 24 minutes (3) 26 minutes
   (4) 30 minutes (5) None of these
8. Tap A can fill a water tank in 25 minutes, tap B can fill the same tank in 40 minutes and tap C can empty the tank in 30 minutes. If all the three taps are opened together, in how many minutes will the tank be completely filled up or emptied?
   (1) $3\frac{2}{13}$ (2) $15\frac{5}{13}$ (3) $8\frac{2}{13}$
   (4) $31\frac{11}{19}$ (5) None of these
9. Two pipes A and B can fill a cistern in 24 minutes and 30 minutes respectively. There is also an outlet C. If all the three pipes are opened together, the tank is full in 20 minutes. How much time will be taken by C to empty the full tank?
   (1) 30 min (2) 40 min (3) 45 min
   (4) 1 hour (5) None of these
10. In what time would a cistern be filled by three pipes whose diameters are 1 cm, 3 cm, 4 cm, running together, when the largest alone fill it in 26 minutes, the amount of water flowing in by each pipe being proportional to the square of its diameter?
    (1) 20 minutes (2) 24 minutes (3) 16 minutes
    (4) 12 minutes (5) None of these
11. Two pipes A and B can fill a tank in 36 minutes and 48 minutes respectively. If both the pipes are opened simultaneously, after how much time should B be closed so that the tank is full in 27 minutes?
    (1) 10 min (2) 12 min (3) 14 min
    (4) 16 min (5) None of these
12. Two pipes P and Q would fill a cistern in 12 and 16 minutes respectively. Both pipes being opened, find when the first pipe must be turned off so that the cistern may be just filled in 8 minutes.
    (1) 15 minutes (2) 8 minutes (3) 6 minutes
    (4) 10 minutes (5) None of these
13. If two pipes function simultaneously, the reservoir is filled in 6 hrs. One pipe fills the reservoir 5 hours faster than the other. How many hours does the faster pipe take to fill the reservoir?
    (1) 20 hours (2) 10 hours (3) 15 hours
    (4) 12 hours (5) None of these
14. Three pipes A, B and C can fill a cistern in 36 minutes. After working together for 12 minutes, C is closed and A and B fill the cistern in 48 minutes. Then find the time in which the cistern can be filled by pipe C.
    (1) 72 minutes (2) 60 minutes (3) 48 minutes
    (4) 64 minutes (5) None of these
15. Three pipes A, B and C can fill a cistern in 18 minutes. After working together for 6 minutes, C is closed and A and B fill the cistern in 24 minutes. Then find the time in which the cistern can be filled by pipe C.
    (1) 30 minutes (2) 24 minutes (3) 36 minutes
    (4) 45 minutes (5) None of these

16. Three pipes A, B and C are connected to a tank. A and B together can fill the tank in 60 minutes, B and C together in 40 minutes and C and A together in 30 minutes. In how much time will each pipe fill the tank separately?

(1) 80 min, 240 min, 48 min

(2) 40 min, 120 min, 24 min

(3) 60 min, 250 min, 64 min

(4) 65 min, 240 min, 64 min

(5) None of these

17. Three pipes A, B and C are connected to a tank. A and B together can fill the tank in 12 hrs, B and C together in 20 hrs and C and A together in 15 hrs. In how much time will each pipe fill the tank separately?

(1) 10 hrs, 15 hrs, 30 hrs

(2) 20 hrs, 15 hrs, 60 hrs

(3) 20 hrs, 30 hrs, 60 hrs

(4) 20 hrs, 30 hrs, 45 hrs

(5) None of these

18. Two pipes can separately fill a tank in 10 hrs and 15 hrs respectively. Both the pipes are opened to fill the tank but when the tank is $\frac{1}{6}$ full a leak develops in the tank through which $\frac{1}{6}$ of the water supplied by both the pipes leak out. What is the total time taken to fill the tank?

(1) 7 hrs (2) 5 hrs (3) 6 hrs

(4) 9 hrs (5) None of these

19. Two pipes can separately fill a tank in 30 hrs and 45 hrs respectively. Both the pipes are opened to fill the tank but when the tank is $\frac{2}{3}$ full a leak develops in the tank through which $\frac{2}{3}$ of the water supplied by both the pipes leak out. What is the total time taken to fill the tank?

(1) 25 hrs (2) 30 hrs (3) 35 hrs

(4) 38 hrs (5) None of these

20. A cistern is normally filled in 4 hrs but takes 1 hr. longer to fill because of a leak in its bottom. If the cistern is full, the leak will empty it in ____hr.

(1) 10 hrs (2) 20 hrs (3) 15 hrs

(4) 12 hrs (5) None of these

21. If three taps are opened together, a tank is filled in 6 hrs. One of the taps can fill it in 5 hrs and another in 7½ hrs. How does the third tap work?

(1) 6 hours, fill pipe (2) 8 hours, waste pipe

(3) 6 hours, waste pipe (4) 8 hours, fill pipe

(5) None of these

22. Two pipes A and B can separately fill in 7½ and 5 minutes respectively and a waste pipe C can carry off 14 litres per minutes. If all the pipes are opened when the cistern is full, it is emptied in 1 hour. How many litres does the cistern hold?

(1) 40 litres (2) 30 litres (3) 325 litres

(4) 45 litres (5) None of these

23. Two pipes A and B can separately fill in 30 and 20 minutes respectively and a waste pipe C can carry off 6 litres per minute. If all the pipes are opened when the cistern is full, it is emptied in 60 minutes. How many litres does the cistern hold?

(1) 10 litres (2) 30 litres (3) 60 litres

(4) 45 litres (5) None of these

24. There are 10 filling pipes each capable of filling a cistern alone in 6 minutes and 6 emptying pipes each capable of emptying a cistern alone in 8 minutes. All pipes are opened together and as a result, tank fills 22 litres of water per minute. Find the capacity of the tank.

(1) 48 litres (2) 36 litres (3) 24 litres

(4) 16 litres (5) None of these

25. There are 6 filling pipes each capable of filling a cistern alone in 16 minutes and 4 emptying pipes each capable of emptying a cistern alone in 20 minutes. All pipes are opened together and as a result, tank fills 14 lites of water per minute. Find the capacity of the tank.

(1) 60 litres (2) 80 litres (3) 75 litres

(4) 45 litres (5) None of these

26. There are 3 filling pipes each capable of filling a cistern alone in 8 minutes and 2 emptying pipes each capable of emptying a cistern alone in 10 minutes. All pipes are opened together and as a result, tank fills 7 litres of water per minute. Find the capacity of the tank.

(1) 20 litres (2) 25 litres (3) 40 litres

(4) 30 litres (5) None of these

27. There are 12 filling pipes each capable of filling a cistern alone in 32 minutes and 8 emptying pipes each capable of emptying a cistern alone in 40 minutes. All pipes are opened together and as a result, tank fills 28 litres of water per minute. Find the capacity of the tank.

(1) 160 litres (2) 120 litres (3) 100 litres

(4) 80 litres (5) None of these

28. Two pipes can fill a cistern in 10 and 15 hours respectively. The pipes are opened simultaneously and it is found that due to leakage in the bottom, 2 hrs extra are taken for the cistern to be filled up. If the cistern is full, in what time would the leak empty it?

(1) 20 hrs (2) 21 hrs (3) 24 hrs

(4) 28 hrs (5) None of these

29. Two pipes can fill a cistern in 30 and 15 hours respectively. The pipes are opened simultaneously and it is found that due to leakage in the bottom, 5 hrs extra are taken for the cistern to be filled up. If the cistern is full, in what time would the leak empty it?
(1) 60 hrs (2) 45 hrs (3) 35 hrs
(4) 30 hrs (5) None of these

30. A cistern has a leak which would empty it in 4 hours. A tap is turned on which admits 3 litres a minute into the cistern, and it is now emptied in 6 hours. How many litres does the cistern hold?
(1) 360 litres (2) 1080 litres (3) 2160 litres
(4) 2260 litres (5) None of these

31. A cistern has a leak which would empty it in 10 hours. A tap is turned on which admits 2 litres per hr. into the cistern, and it is now emptied in 15 hours. How many litres does the cistern hold?
(1) 50 litres (2) 60 litres (3) 45 litres
(4) 360 litres (5) None of these

32. One filling pipe A is 5 times faster than second filling pipe B. If B can fill a cistern in 36 minutes, then find the time when the cistern will be full if both fill pipes are opened together.
(1) 6 minutes (2) 8 minutes (3) 4 minutes
(4) 12 minutes (5) None of these

33. One fill pipe A is 4 times faster than second fill pipe B and takes 15 minutes less than the fill pipe B. When will the cistern be full if both fill pipes are opened together?
(1) 4 min (2) 6 min (3) 9 min
(4) 12 min (5) None of these

34. 8 taps are fitted to a water tank. Some of them are water taps to fill the tank and the remaining are outlet taps used to empty the tank. Each water tap can fill the tank in 12 hours and each outlet tap can empty it in 36 hours. On opening all the taps, the tank is filled in 3 hours. Find the number of water taps.
(1) 5 (2) 4 (3) 3
(4) 2 (5) None of these

35. 16 taps are fitted to a water tank. Some of them are water taps to fill the tank and remaining are outlet taps used to empty the tank. Each water tap can fill the tank in 6 hours and each outlet tap can empty it in 18 hours. One opening all the taps, the tank is filled in 1½ hours. Find the number of empty taps.
(1) 7 (2) 9 (3) 6
(4) 8 (5) None of these

36. 9 taps are fitted to a water tank. Some of them are water taps to fill the tank and the remaining are outlet taps used to empty the tank. Each water tap can fill the tank in 9 hours and each outlet tap can empty it in 9 hours. On opening all the taps, the tank is filled in 9 hours. Find the number of water taps.
(1) 4 (2) 5 (3) 6
(4) Can't be determined (5) None of these

37. One fill pipe A takes 4 minutes more to fill the cistern than two fill pipes A and B opened together to fill it. Second fill pipe B takes 9 minutes more to fill cistern than two fill pipes A and B opened together to fill it. When will the cistern be full if both pipes are opened simultaneously.
(1) 4 minutes (2) 6 minutes (3) 5 minutes
(4) 7 minutes (5) None of these

38. Two fill taps A and B can separately fill a cistern in 10 and 20 minutes respectively. They started to fill a cistern together but fill tap A is turned off after few minutes and fill tap B fills the rest part of cistern in 8 minutes. After how many minutes, was tap A turned off?
(1) 3 min (2) 4 min (3) 5 min
(4) 2 min (5) None of these

39. A bath can be filled by the cold water pipe in 10 minutes and by the hot water pipe in 15 minutes. A person leaves the bathroom after turning on both pipes simultaneously and returns at the moment when the bath should be full. Finding, however, that the waste pipe has been open, he now closes it. In 4 minutes more the bath is full. In what time would the waste pipe empty it?
(1) 9 min (2) 8 min (3) 12 min
(4) 6 min (5) None of these

40. A, B, C are pipes attached to a cistern. A and B can fill it in 20 and 30 minutes respectively, while C can empty it in 15 minutes. If A, B, C be kept open successively for 1 minute each, how soon will the cistern be filled?
(1) 167 min (2) 160 min (3) 166 min
(4) 164 min (5) None of these

PIPES AND CISTERN

1. (2)	**2.** (3)	**3.** (3)	**4.** (3)	**5.** (2)	**6.** (1)	**7.** (1)	**8.** (4)	**9.** (2)	**10.** (3)
11. (2)	**12.** (2)	**13.** (2)	**14.** (1)	**15.** (3)	**16.** (1)	**17.** (3)	**18.** (1)	**19.** (2)	**20.** (2)
21. (3)	**22.** (1)	**23.** (3)	**24.** (3)	**25.** (2)	**26.** (3)	**27.** (1)	**28.** (3)	**29.** (4)	**30.** (3)
31. (2)	**32.** (1)	**33.** (4)	**34.** (1)	**35.** (2)	**36.** (2)	**37.** (2)	**38.** (2)	**39.** (1)	**40.** (1)