Q46. Five men and five women are to be arranged in a row while seating in a party.
Quantity I: Number of ways of arranging 5 men and 5 women such that no two men or women are adjacent to each other.
Quantity II: Number of ways of arranging 5 men and 5 women such that all men sit together.
(a) Quantity I > Quantity II   (b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II   (d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q47. **Quantity I:** Value of 'a' if 's' is an acute angle and PR ‖ QT.
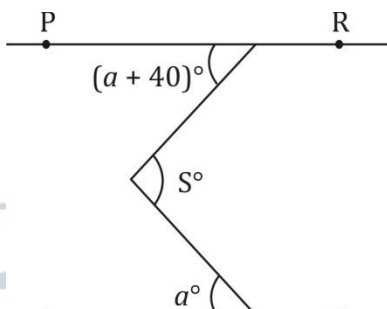
Quantity II: 25°
(a) Quantity I > Quantity II   (b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II   (d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Q48. There are 63 cards in a box numbered from 1 to 63. Every card is numbered with only 1 number.
Quantity I: Probability of picking up a card whose digits, if interchanged, result in a number which is 36 more than the number picked up.
Quantity II: Probability of picking up a card, the number printed on which is a multiple of 8 but not that of 16.
(a) Quantity I > Quantity II   (b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II   (d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Directions (49): Each of the following questions consists of 3 statements A, B and C. You have to determine that which of the following statement/statements are necessary to answer the questions:

Q49. If m and n are integers then is n completely divisible by 10?
A. The value of $(\frac{m}{10} + \frac{n}{10})$ is an integer value.
B. The value of $(\frac{m}{7} + \frac{n}{10})$ is an integer value.
C. value of n is greater than m.
(a) Any two of them   (b) A and B together
(c) Any of them   (d) All statements are required
(e) Data is not sufficient and it requires more information to

answer the given question.

Directions (50-54): Study the data given below and answer the following questions. The pie charts shown below shows the distance covered by a boat moving upstream and downstream in different days of a week. And the table shows the speed of stream in km/hr. in different days of a week.

Total distance covered upstream = 1800 km

Sunday 18%
Monday 15%
Tuesday 16%
Wednesday 14%
Thursday 12%
Friday 15%
Saturday 10%

Total distance covered downstream = 1500 km

Sunday 10%
Monday 16%
Tuesday 14%
Wednesday 15%
Thursday 12%
Friday 15%
Saturday 18%
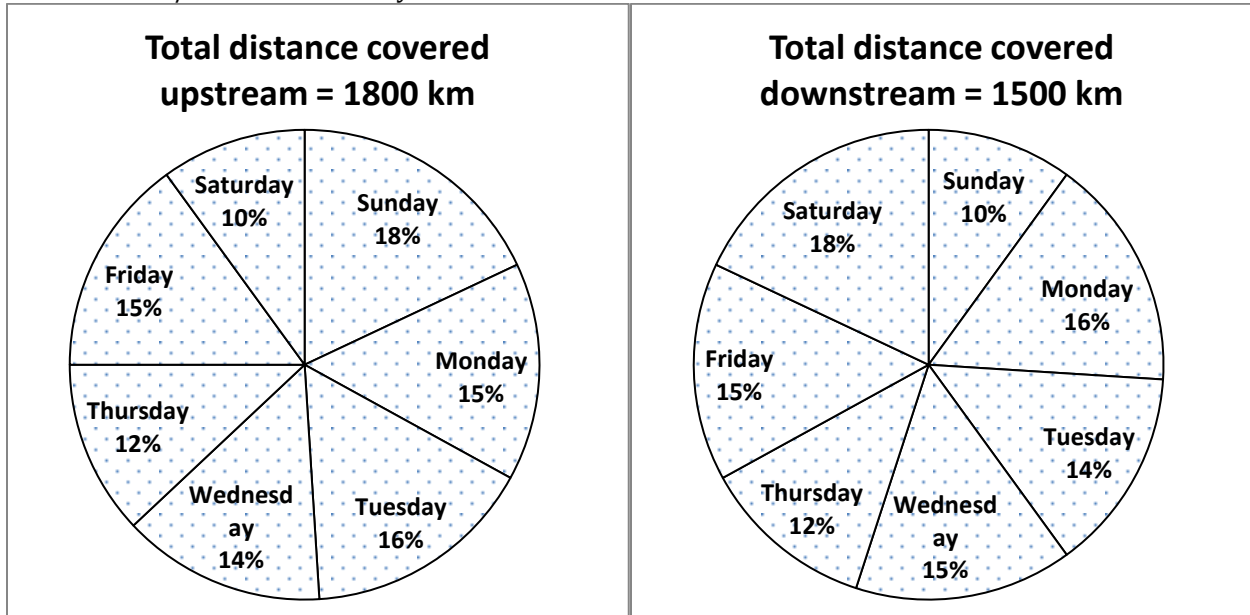
Day	Speed of stream (km/hr)
Monday	2
Tuesday	3
Wednesday	—
Thursday	1
Friday	2
Saturday	—
Sunday	4

Q50. If the time taken by boat to travel upstream on Thursday is equal to the time taken by it to travel downstream on Monday and the speed of boat in still water on Monday is 16 kmph then find the speed of boat in still water on Thursday?
(a) 16.2 kmph   (b) 17.2 kmph   (c) 15.4 kmph
(d) 12.5 kmph   (e) None of these

Q51. If the time taken by boat to travel upstream on Monday is $\frac{45}{11}$ hrs. more than the time taken by it to travel downstream on the same day, then find the speed of boat in still water on Monday ?
(a) 22 kmph   (b) 18 kmph   (c) 20 kmph
(d) 19 kmph   (e) None of these

Q52. If the speed of boat in still water on Tuesday was 15 km/hr and the speed of boat in still water on Wednesday was $66\frac{2}{3}\%$ more than that of Tuesday and time taken to travel upstream on Wednesday is $\frac{9}{10}$ times than time taken by it to travel downstream on Tuesday, then find the speed of stream (in kmph) on Wednesday?
(a) 1.5   (b) 2.5   (c) 2
(d) 1   (e) None of these

Q53. The speed of boat in still water on Saturday was 21 km/hr. and that on Sunday was $28\frac{4}{7}\%$ less than that on Saturday, if the time taken by boat to travel upstream on Saturday is $1\frac{3}{16}$ *times* than time taken to travel downstream on Sunday, then find the time taken by the boat to cover a distance of 57.6 km upstream when the speed of stream is same as that of Saturday.

(a) 3 hrs.   (b) 2 hrs.   (c) 4 hrs.

(d) 2.5 hrs.   (e) None of these

Q54. If the time taken by boat to travel upstream on Sunday is 2 hours more than the time taken by it to travel downstream on Thursday and the speed of boat in still water on Thursday is 17 kmph, then find the upstream speed of boat on Sunday ?

(a) 27 kmph   (b) 22 kmph   (c) 20 kmph

(d) 25 kmph   (e) None of these

Direction (55-57)- There are three bags A, B and C. In each bag there are three types of colored balls Yellow, Green and Black.

In bag A, no. of yellow colored balls are y and no. of green colored balls are g. Number of green colored balls are 4 more than the number of yellow colored balls. When one ball is picked at random then the probability of getting black color ball is $\frac{5}{13}$. The value of y is $18\frac{2}{11}$% less then g.

In bag B, number of yellow colored balls is $22\frac{2}{9}$% more than that of bag A. If two balls are picked at random from bag B then the probability of getting both green color ball is $\frac{4}{37}$. Total number of balls in bag B is 75.

In bag C, the ratio of number of green colored balls and number of black colored balls is 7 : 5. Total number of green and black colored balls is 36. If one ball is picked at random then the probability of getting one yellow ball is $\frac{7}{13}$.

Q55. If x number of yellow balls from bag B are taken and placed into bag A and 20% of black balls from bag A are taken and placed into in bag B. If we pick one ball from bag B then the probability that the ball is of black color is $\frac{11}{26}$. Then find the value of x?

(a) 5   (b) 6   (c) 3

(d) 2   (e) None of these

Q56. If one ball picked at random from each of the bag A and bag B then find the probability that both of the balls are of the same color?

(a) $\frac{21\times47}{65\times75}$ (b) $\frac{22\times43}{65\times75}$ (c) $\frac{11\times17}{65\times75}$

(d) Can't be determined   (e) None of these

Q57. Difference between the number of green balls in bag A and bag C is how much percent more/less than the sum of the number of black balls in bag A and bag C together?

(a) 100%   (b) 95%   (c) 97.5%

(d) 102.5%   (e) None of these

Directions (58-62): There are five shop owners A, B, C, D and E. They are selling five different items given in the table.

In the table, Discount (as a percentage) is given on mark price of these five products by different sellers. Study the table and answer the following questions:

	Item I	Item II	Item III	Item IV
A	18%	32%	36%	—
B	22%	—	33%	40%
C	—	16%	14%	15%
D	28%	28%	16%	—
E	—	8%	—	7%

Note:

1. Some values are missing. You have to calculate these values as per data given in the questions.
2. Mark price of a particular item is same for all of the shop owners.

Q58. If the profit percentage of seller A after selling item II is s% and that of seller C for the same item is (2s - 4)% and the ratio of cost price of item II by seller A and seller C is 17 : 21 then find the value of s ?

(a) 2   (b) 3   (c) 4

(d) 5   (e) none of these

Q59. For seller D, between the selling price of item II and that of item III is 420 Rs. if the sum of the mark price of item II and item III by the same seller is 6000 then the Mark price (in Rs.) of item II is what percent more/less than that of item III by the same seller ? (Selling price of item II is greater than that of item III)

(a) 50%　　　　　　　(b) 40%　　　　　　　(c) 30%
(d) 35%　　　　　　　(e) 45%

Q60. Average SP of item II by seller A and B is Rs 3888, by seller B and C is Rs 4320. Find the SP (in Rs.) of item III by seller C.
(a) 4536　　　　　　　(b) 3656　　　　　　　(c) 5430
(d) 4150　　　　　　　(e) none of these

Q61. If the selling price of item I and item III by seller E are in the ratio of 5 : 6. If the seller earned a profit of 25% which is Rs. 750 on item I and 20% on item III then find the total profit (in Rs.) by selling item I and item III together by the same seller ?
(a) 750　　　　　　　(b) 2000　　　　　　　(c) 1750
(d) 1250　　　　　　　(e) 1500

Q62. Cost price of item III is 60 Rs. for all of the sellers and all of them marked the same product at $66\frac{2}{3}$% higher than the cost price, then to get a total profit of 80 Rs. by all of the five sellers after selling item III, what is the minimum discount should be provided by seller E on item III.
(a) 21%　　　　　　　(b) 19%　　　　　　　(c) 17%
(d) 25%　　　　　　　(e) None of these

Directions (63-64): A, B and C invested 900 Rs., 1600 Rs. and 700 Rs. respectively in a business venture. After end of the first quarter they invested additional amount in the ratio of 2 : 5 : 3. Then after end of the second quarter A, B and C invested additional amount in the ratio of 4 : 3 : 4.
Again after end of the 3rd quarter they invested additional amount in the ratio of 7 : 6 : 7.
They invested the whole amount for one year and the profit earned in the business is proportional to the investment and the period of investment

Q63. If they had invested additional amount at the end of each quarter in same ratio as they had invested after end of the first quarter then find the profit of B at the end of one year if the total profit at the end of the year is 125000
(a) 75000 Rs.　　　　　(b) 62500 Rs.　　　　(c) 125000 Rs.
(d) 37500 Rs.　　　　　(e) None of these

Q64. If the sum of the total amount invested by A and B in the year is 9000 Rs. and that of B and C is 10500 Rs. then find the total amount invested by all of them for only 2nd quarter ?
(a) 16500 Rs.　　　　　(b) 17000 Rs.　　　　(c) 17500 Rs.
(d) 18500 Rs.　　　　　(e) Can't be determine

Directions (65-66): Train A and train B are travelling towards each other from stations P and Q. Train A left station P at 9 : 45 am with a speed of 54 kmph. After half an hour train B left station Q with a speed of 66 kmph. Stations P & Q are situated at a distance of x kms and both trains met each other at 2 : 35 pm the same day.

Q65. Calculate the difference in the original time taken as given above in condition to meet train A and B and the time taken by train B to catch train A if the train A had started in same direction as that of B. Train B had started 2 hrs after train A while going in same direction.
(a) 45 hrs. 40 min.　　(b) 24 hrs. 20 min.　　(c) 55 hrs. 30 min.
(d) 49 hrs. 45 min.　　(e) None of these

Q66. What is the ratio of relative speed of both the trains while travelling towards the same direction and while travelling towards opposite direction ?
(a) 10 : 1　　　　　　　(b) 9 : 2　　　　　　　(c) 1 : 10
(d) 10 : 3　　　　　　　(e) None of these

Q67. **Quantity I:** Area of quadrilateral BFDE, given ABCD is a rectangle having AB = 10 cm & BC = 12 cm.
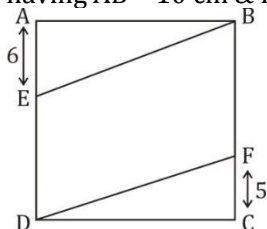
Quantity II: 15 cm²

(a) Quantity I > Quantity II   (b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II   (d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

S68. A, B and C entered into a partnership. A invested Rs. 3000 at the start. B invested $33\frac{1}{3}\%$ more than that invested by A and C invested the average of the investment made by A and B. After 4 months, A withdrew 40% of his amount, B doubled his amount and C increased his amount by 20%. After another 5 months, B got away from partnership and A doubled his amount while C maintained his amount. Profit at the end of year was Rs. 677000 and profit was shared in the ratio of their investment and time.

Quantity I: Profit earned by C.

Quantity II: Average of profit earned by A, B and C together.

(a) Quantity I > Quantity II   (b) Quantity I < Quantity II
(c) Quantity I ≥ Quantity II   (d) Quantity I ≤ Quantity II
(e) Quantity I = Quantity II or No relation

Directions (69-70): Each of A, B, C and D need a unique time to do a certain work. A can do the work in x days and B can do the work in $2x$ days. A started the work and do it for $22\frac{2}{9}$ days then he is replaced by B and B completed remaining work in same time as C and D together can complete the whole work.

The ratio of the efficiency of C and D is 4 : 5. If C and D work for alternative days starting from C then they can do the total work in $44\frac{1}{2}$ days.

Q69. Find the value of x

(a) $66\frac{2}{3}$ (b) $33\frac{1}{3}$ (c) $16\frac{2}{3}$

(d) $14\frac{2}{7}$ (e) none of these

Q70. If E and F together work for 24 days then they are replaced by A and B respectively then they can do the remaining work in 20 days. If the efficiency of E and F is 5 : 4, If E and F together complete the whole work then find the difference between the work done by E alone and the total work done by F alone ?

(a) $\frac{1}{9}$ (b) $\frac{1}{7}$ (c) $\frac{2}{7}$
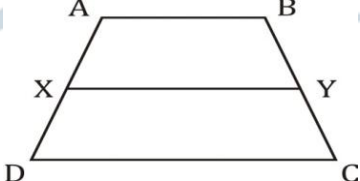
(d) $\frac{1}{3}$ (e) $\frac{3}{4}$

Directions (71-75): A, B, C, D and E are five persons employed to complete a job X. Line graph shows the data regarding the time taken by these persons to complete the job X. Table 2 shows the actual time for which every one of them worked on the job X.
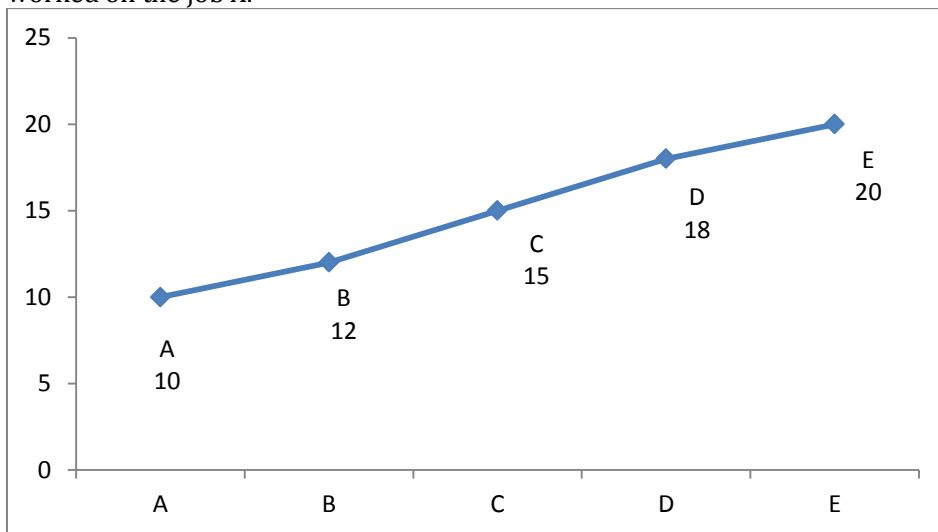
Person	Time (in Days)
A	2
B	–
C	3
D	–
E	2

Note 1: All the persons worked on the job X for 'whole number' days.
Note 2: Two jobs Y and Z are similar to job X and require same effort as required by job X.

Q71. A and C worked on job Y working alternatively for 10 days. B and D then worked together for 'x' days. If $\frac{1}{36}$ of the job was still remained, then find the value of 'x' ?
(a) 2 days   (b) $1\frac{1}{4}$ days   (c) $1\frac{1}{3}$ days
(d) $1\frac{1}{7}$ days   (e) 1 day

Q72. E worked on job 'Z' for 5 days and the remaining job was completed by A, B and D who worked on alternate days starting with A followed by B and D in that order. Find the no. of days B worked for ?
(a) 2   (b) 4   (c) 9
(d) 3   (e) None of these

Q73. If A, C and E worked on job Z for 2 days each and the remaining job was done by B and D. If the ratio of no. days for which B and D worked is in ratio 20 : 21, then find the number of days for which B worked ?
(a) 50 days   (b) $4\frac{1}{2}$ days   (c) $5\frac{1}{2}$ days
(d) 4 days   (e) None of these

Q74. If the ratio of number of days for which B and D worked on job X 4 : 3, then find the difference between number of days for which B and D worked ?
(a) 2   (b) 3   (c) 1
(d) 4   (e) None of these

Q75. If C worked on job Y with $\frac{5}{4}$ times his given efficiency and was assisted by B every 3rd day, then find the time taken by C to complete the job Y?
(a) 13 days   (b) $12\frac{1}{6}$ days   (c) $13\frac{1}{2}$ days
(d) None of these   (e) 12 days

Q76. ABCD is a trapezoid. PQRS and MLKJ are two rhombus. Diagonal of PQRS are 6 cm and 8 cm. One of the angle of MLKJ is 120 degree and the diagonal bisecting that angle measures 15 cm. Side of PQRS = AB, side of MLKJ = CD. Find XY (median of trapezoid)

(a) 5 cm   (b) 10 cm   (c) 15 cm
(d) 20 cm   (e) None of these

Q77. A vessel contains 2.5 liters of water and 10 liters of milk 20% of the contents of the vessel are removed. To the remaining contents, x liters of water is added to reverse the ratio of water and milk. Then y liter of milk is added again to reverse the ratio of water and milk. Find y.
(a) 100   (b) 110   (c) 120
(d) 130   (e) None of these

Directions (78-80): Each of the following questions consist of 3 statements A,B and C. You have to determine that which of the following statement/statements are necessary to answer the questions:

Q78. A, B and C entered into a partnership. If the profit earned in the business is proportional to the investment and the period of investment then What is the profit of B if all of them invested the amount for one year and total profit is Rs. x.
A. A invested Rs. 1500 more than that of C.
B. A invested 2 times more than that of B. C invested 3 times more than that of A.

C. B invested 200 percent more than that of A and 100% less than that of C.
(a) Any two of them
(b) Either B or C alone
(c) Any of them
(d) All statements are required
(e) None of these

Q79. 6 men and 9 women and 5 children can do a work in 14 days. In how many days can 12 men and 3 women and 5 children do the same work?
A. 20 men and 30 women can do the same work in 5 days.
B. Work done by 2 men is equal to 3 women.
C. 6 children can do two-thirds of the same work in 28 days.
(a) Any one of them
(b) Only C
(c) C and either A or B
(d) Any two of them
(e) Only either A or B

Q80. Rajnish buys 30 books and 65 pens. If price of each book is more than price of each pen then what money does he have to pay for this?
A. At a profit of 20% he sells all the objects for Rs 3828.
B. The CP of one book and one pen is Rs 90.
C. The difference between sum and difference of buying price of one pen and one book is Rs 28.
(a) Only A alone or B alone is sufficient
(b) B and C together are sufficient
(c) A alone or B and C together are sufficient
(d) All together are necessary
(e) All even together are not sufficient