

Arithmetic Ability - AT&T Placement Paper

Q1. One ship goes along the stream direction 28 km and in opposite direction 13 km in 5 hrs for each direction. What is the velocity of stream?

- a. 1.5 kmph
- b. 2.5 kmph
- c. 1.8 kmph
- d. 2 kmph

ANS: a

Q2. A is twice as good a workman as B and together they finish a piece of work in 18 days. In how many days will A alone finish the work?

- a. 27
- b. 26
- c. 25
- d. 24

ANS: a

Q3. Ronald and Michelle have two children. The probability that the first child is a girl, is 50%. The probability that the second child is a girl, is also 50%. Ronald and Michelle tell you that they have a daughter. What is the probability that their other child is also a girl?

- a. $\frac{1}{2}$
- b. $\frac{1}{3}$
- c. $\frac{1}{4}$
- d. $\frac{1}{5}$

ANS: b

Q4. A piece of cloth cost Rs 35. If the length of the piece would have been 4m longer and each meter cost Re 1 less, the cost would have remained unchanged. How long is the piece?

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- a. 10
- b. 11
- c. 12

ANS: a

Q5. 1, 5, 14, 30, ?, 91

- a. 45
- b. 55
- c. 60
- d. 70
- e. None of these

ANS: b

Q6. A square is divided into 9 identical smaller squares. Six identical balls are to be placed in these smaller squares such that each of the three rows gets at least one ball (one ball in one square only). In how many different ways can this be done?

- a. 81
- b. 91
- c. 41
- d. 51

ANS: a

Q7. The cost of 16 packets of salt, each weighing 900 grams is Rs.28. What will be the cost of 27 packets, if each packet weighs 1Kg?

- a. Rs.52.50
- b. Rs.56
- c. Rs.58.50

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d. Rs.64.75

ANS: a

Q8. Joke is faster than Paul, Joke and Paul each walk 24 km. The sum of their speed is 7 Km per hour. And the sum of times taken by them is 14 hours. Then, Joke speed is

- a. 3 km/hr
- b. 4 km/hr
- c. 5 km/hr
- d.7 km/hr

Q9. A farmer has a rose garden. Every day he picks either 7, 6, 24 or 23 roses. When he plucks these number of flowers the next day 37, 36, 9 or 18 new flowers bloom. On Monday he counts 189 roses. If he continues on his plan each day, after some days what can be the number of roses left behind? (Hint: Consider number of roses remaining every day)

- a. 7
- b. 4
- c. 30
- d. 37

Q10. In a vessel, there are 10 litres of alcohol. An operation is defined as taking out five litres of what is present in the vessel and adding 10 litres of pure water to it. What is the ratio of alcohol to water after two operations?

- a. 1 : 5
- b. 2 : 3
- c. 1 : 6
- d. 3 : 2

Q11. Ravis salary was reduced by 25%. Percentage increase to be effected to bring the salary to the original level is

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- a. 20%
- b. 25%
- c. 33 1/3%
- d. 30%

ANS: c

Q12. 1, 2, 6, 24, _?

- a. 111
- b. 151
- c. 120
- d. 125

ANS: c

Q13. A man owns $\frac{2}{3}$ of the market research bureau business and sells $\frac{3}{4}$ of his shares for Rs.75000. What is the value of Business?

- a. 150000
- b. 13000
- c. 240000
- d. 34000

ANS: a

Q14. The product of two fractions is $\frac{14}{15}$ and their quotient is $\frac{35}{24}$. The greater fraction is

- a. $\frac{4}{5}$
- b. $\frac{7}{6}$
- c. $\frac{7}{5}$
- d. $\frac{7}{4}$

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ANS: a

Q15. A three digit number consists of 9, 5 and one more number. When these digits are reversed and then subtracted from the original number the answer yielded will be consisting of the same digits arranged yet in a different order. What is the other digit?

- a. 1
- b. 2
- c. 3
- d. 4

ANS: d

Q16. 7 Pink, 5 Black, 11 Yellow balls are there. Minimum number atleast to get one black and yellow ball is ---.

- a. 17
- b. 13
- c. 15
- d. 19

ANS: a

Q17. A can have a piece of work done in 8 days, B can work three times faster than the A, C can work five times faster than A. How many days will they take to do the work together

- a. 3 days
- b. $\frac{8}{9}$ days
- c. 4 days
- d. None of the above

ANS: b

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Q18. A man sells two buffaloes for Rs. 7,820 each. On one he gains 15% and on the other, he loses 15%. His total gain or loss in the transaction is

- a. 2.5% gain
- b. 2.25% loss
- c. 2% loss
- d. 5% loss
- e. None of these

ANS: b

Q19. Arun makes a popular brand of ice cream in a rectangular shaped bar 6cm long, 5cm wide and 2cm thick. To cut costs, the company had decided to reduce the volume of the bar by 19%. The thickness will remain same, but the length and width will be decreased by some percentage. The new width will be

- a. 5.5
- b. 4.5
- c. 7.5
- d. 6.5

Q20. B alone can do piece of work in 10 days. A alone can do it in 15 days. If the total wages for the work is Rs 5000, how much should B be paid if they work together for the entire duration of the work?

- a. 2000
- b. 4000
- c. 5000
- d. 3000

Q21. In a single throw with two dice, find the probability that their sum is a multiple either of 3 or 4.

- a. $\frac{1}{3}$
- b. $\frac{1}{2}$

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- c. $\frac{5}{9}$
- d. $\frac{17}{36}$

Q22. $2ab5$ is a four digit number divisible by 25. If a number formed from the two digits ab is a multiple of 13, then ab is

- a. 52
- b. 45
- c. 10
- d. 25

Q23. Anusha, Banu and Esha run a running race of 100 meters. Anusha is the fastest followed by Banu and then Esha. Anusha, Banu and Esha maintain constant speeds during the entire race. When Anusha reached the goal post, Banu was 10m behind. When Banu reached the goal post Esha was 10m behind. How far was behind Anusha when the latter reached the goal post?

- a. 70
- b. 81
- c. 90
- d. 80

Q24. The average temperature of Tuesday, Wednesday and Thursday was 37 C. The average temperature of Wednesday and Thursday and Friday was 38 C. If the temperature on Friday was 39 C. Find the temperature on Tuesday.

- a. 37.33
- b. 38.33
- c. 36
- d. None of the above

Q25. On a 26 question test, 5 points were deducted for each wrong answer and 8 points were added for right answers. If all the questions were answered how many were correct if the score was zero?

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- a. 10
- b. 11
- c. 13
- d. 12

Q26. Solid cube of $6 * 6 * 6$. This cube is cut into to 216 small cubes. $(1 * 1 * 1)$ the big cube is painted in all its faces. Then how many of cubes are painted at least 2 sides?

- a. 56
- b. 45
- c. 23
- d. 28

ANS: a

Q27. To 15 lts of water containing 20% alcohol, we add 5 lts of pure water. What is % alcohol?

- a. 20%
- b. 34%
- c. 15%
- d. 14%

ANS: c

Q28. A man can row upstream at 8 kmph and downstream at 13 kmph. The speed of the stream is?

- a. 2.5 kmph
- b. 4.2 kmph
- c. 5 kmph
- d. 10.5 kmph

ANS: a

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Q29. A boy has Rs 2. He wins or loses Re. 1 at a time. If he wins he gets Re. 1 and if he loses the game he loses Re 1. He can loose only 5 times. He is out of the game if he earns Rs 5. Find the number of ways in which this is possible?

- a. 14
- b. 23
- c. 16
- d. 12
- e. 10

ANS: c

Q30. Daal is now being sold at Rs. 20 a kg. During last month its rate was Rs. 16 per kg. By how much percent should a family reduce its consumption so as to keep the expenditure fixed?

- a. 20 %
- b. 40 %
- c. 3%
- d. 2%

ANS: a

Q31. Rajesh calculated his average over the last 24 tests and found it to be 76. He finds out that the marks for three tests have been inverted by mistake. The correct marks for these tests are 87, 79 and 98. What is the approximate percentage difference between his actual average and his incorrect average?

ANS: No Change

Incorrect value is: 78, 97, 89

correct values are: 87, 79, 98

Difference between correct and incorrect value is= $9 + 9 - 18 = 0$

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Q32. In a class 80% have passed English, 70% passed Hindi 10% did not passed either. If 144 students passed both, what is the total strength of the class?

ANS: 240.

Q33. Out of 55 eggs 5 are defective. What is % of defective eggs?

ANS: 9/11%

Q34. If a person walks at $\frac{4}{5}$ th of his usual speed he reaches 40 min late. If he walks at his usual speed how much time does he travels?

ANS: 160 min or 2 hr 40 min

Q35. $\frac{1}{8}$ is divided by s , if s is increased by 2 times, what is the result?

ANS: increases two times.

Q36. The cost price of a cow and a horse is Rs 3 lakhs. The cow is sold at 20% profit and the horse is sold at 10% loss. Overall gain is Rs 4200. What is the cost price of the cow?

Q37. If all the numbers between 11 and 100 are written on a piece of paper, how many times will the number 4 be used?

Q38. A manufacturer of chocolates makes 6 different flavors of chocolates. The chocolates are sold in boxes of 10. How many different boxes of chocolates can be made?

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Q39. A circle circumscribes three unit circles that touch each other. What is the area of the larger circle? Note that p is the ratio of the circumference to the diameter of a circle (3.14159265).

Q40. There are 5 boxes in a cargo. The weight of the 1st box is 200 kg, the weight of the 2nd box is 20% higher than the third box, whose weight is 25% higher than the 1st box weight. The 4th box which weighs 350 kg is 30% lighter than the 5th box. Find the difference in average weight of the 4 heaviest boxes and the four lightest boxes.

Q41. If twenty four men and sixteen women work on a day, the total wages to be paid is 11,600. If twelve men and thirty seven women work on a day, the total wages to be paid remains the same. What is the wages paid to a man for a days work?

Q42. How many different 9 digit numbers can be formed from the number 223355888 by re-arranging its digits so that the odd digits occupy even position?

ANS: Odd places are 4 and these are occupied by 3355. So this can be done in $4! / (2! 2!) = 6$

There are 5 even numbers which have to be placed at 5 odd places. So $5! / (2! 3!) = 10$ ways

so total number of ways of arranging all these numbers are $10 * 6 = 60$ ways

Q43. Seven different objects must be divided among three persons. In how many ways this can be done if at least one of them gets exactly one object.

ANS: Division of $m+n+p$ objects into three groups is given by $(m+n+p)! / m! * n! * p!$

But $7 = 1 + 3 + 3$ or $1 + 2 + 4$ or $1 + 1 + 5$

So The number of ways are $(7)! / 1! * 3! * 3! * 12! + (7)! / 1! * 2! * 4! + (7)! / 1! * 1! * 5! * 12! = 70 + 105 + 21 = 196$

Q44. The crew of a rowing team of 8 members is to be chosen from 12 men (M1, M2,----, M12) and 8 women (W1, W2,----, W8), such that there are two rows, each row occupying one the two sides of the boat and that each side must have 4

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members including at least one women. Further it is also known W1 and M7 must be selected for one of its sides while M2, M3 and M10 must be selected for other side. What is the number of ways in which rowing team can be arranged.

ANS:

We need two person for one side and 1 women for the another side. We select that women in 7 ways. Now that second side people can sit in $7 \times 4!$ ways.

Now for the first side we need two people from the remaining 14. So this can be done in ${}^{14}C_2$ ways and this side people can sit in ${}^4C_2 \times 4!$ ways.

Again the first group may take any of the two sides. So total ways are $2 \times 7 \times 4! \times {}^{14}C_2 \times 4!$

Q45. George while driving along the highway saw road markers which are at equal distances from each other. He crosses the markers every 20 seconds. If he increases his speed by x meters per second, he crosses the markers at every 15 seconds. But if he increases his speed by y meters per second, he crosses the marker at every 10th second. If $y - x = 40$ meters per second, then what is the distance between two markers.

ANS: Let speed be $=z$ m/s then Distance= $20z$ m

$$(z+x)15=20z; (z+y)10=20z$$

Also given that $y - x = 40$

solving we get $20z=1200$.