|  |
| --- |
| Q1)  When six fair coins are tossed simultaneously, in how many of the outcomes will at most three of the coins turn up as heads? |

|  |  |  |
| --- | --- | --- |
|  | **A.** | 25 |
|  | **B.** | 41 |
|  | **C.** | 22 |
|  | **D.** | 42 |
|  | **E.** | 31 |

**Solution:**  
Option(**D**) is correct

The question requires you to find a number of the outcomes in which at most 33 coins turn up as heads.

i.e., 00 coins turn heads or 11 coin turns head or 22 coins turn heads or 33 coins turn heads.

The number of outcomes in which 00 coins turn heads is 6C0=1 outcome

The number of outcomes in which 11 coin turns head is 6C1=6 outcomes

The number of outcomes in which 22 coins turn heads is 6C2=15 outcomes

The number of outcomes in which 33 coins turn heads is 6C3=20 outcomes.

Therefore, total number of outcomes,

=1+6+15+20

=42 outcomes.

Q2)

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| After every get-together every person present shakes the hand of every other person.  If there were 105105 handshakes in all, how many persons were present in the party? |

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| --- | --- | --- |
|  | **A.** | 14 |
|  | **B.** | 13 |
|  | **C.** | 15 |
|  | **D.** | 16 |

**Solution:**  
Option(**C**) is correct

Let total number of persons present in the party be xx,

Then,

x(x−1)2=105

x=15

Q3)

|  |
| --- |
| In how many different ways can the letters of the word 'LEADING' be arranged in such a way that the vowels always come together? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 360 | | [**B.**](javascript:%20void%200;) | 480 | | [**C.**](javascript:%20void%200;) | 720 | | [**D.**](javascript:%20void%200;) | 5040 | | [**E.**](javascript:%20void%200;) | None of these | |

**Answer:** Option **C**

**Explanation:**

The word 'LEADING' has 7 different letters.

When the vowels EAI are always together, they can be supposed to form one letter.

Then, we have to arrange the letters LNDG (EAI).

Now, 5 (4 + 1 = 5) letters can be arranged in 5! = 120 ways.

The vowels (EAI) can be arranged among themselves in 3! = 6 ways.

https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Required number of ways = (120 x 6) = 720.

Q4)

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| --- |
| In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 159 | | [**B.**](javascript:%20void%200;) | 194 | | [**C.**](javascript:%20void%200;) | 205 | | [**D.**](javascript:%20void%200;) | 209 | | [**E.**](javascript:%20void%200;) | None of these |   **Answer:** Option **D**  **Explanation:**  We may have (1 boy and 3 girls) or (2 boys and 2 girls) or (3 boys and 1 girl) or (4 boys).   |  |  | | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Required number of ways | = (6C1 x 4C3) + (6C2 x 4C2) + (6C3 x 4C1) + (6C4) | |  | = (6C1 x 4C1) + (6C2 x 4C2) + (6C3 x 4C1) + (6C2) | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | = (6 x 4) + | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 6 x 5 | x | 4 x 3 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | + | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 6 x 5 x 4 | x 4 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | + | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 6 x 5 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | | 2 x 1 | 2 x 1 | 3 x 2 x 1 | 2 x 1 | | |  | = (24 + 90 + 80 + 15) | |  | = 209. | |

Q5)

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| In a mixture 60 litres, the ratio of milk and water 2 : 1. If this ratio is to be 1 : 2, then the quanity of water to be further added is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 20 litres | | [**B.**](javascript:%20void%200;) | 30 litres | | [**C.**](javascript:%20void%200;) | 40 litres | | [**D.**](javascript:%20void%200;) | 60 litres |   **Answer:** Option **D**  **Explanation:**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Quantity of milk = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 60 x | 2 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.giflitres = 40 litres. | | 3 |   Quantity of water in it = (60- 40) litres = 20 litres.  New ratio = 1 : 2  Let quantity of water to be added further be *x* litres.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Then, milk : water = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 40 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | . | | 20 + *x* |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Now, | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 40 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = | 1 | | 20 + *x* | 2 |   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif 20 + *x* = 80  https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif *x* = 60.  https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Quantity of water to be added = 60 litres. |

Q6)

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| Two numbers are respectively 20% and 50% more than a third number. The ratio of the two numbers is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 2 : 5 | | [**B.**](javascript:%20void%200;) | 3 : 5 | | [**C.**](javascript:%20void%200;) | 4 : 5 | | [**D.**](javascript:%20void%200;) | 6 : 7 |   **Answer:** Option **C**  **Explanation:**  Let the third number be *x*.   |  |  |  |  | | --- | --- | --- | --- | | Then, first number = 120% of *x* = | 120*x* | = | 6*x* | | 100 | 5 |  |  |  |  |  | | --- | --- | --- | --- | | Second number = 150% of *x* = | 150*x* | = | 3*x* | | 100 | 2 |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Ratio of first two numbers = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 6*x* | : | 3*x* | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = 12*x* : 15*x* = 4 : 5. | | 5 | 2 | |

Q7)

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| A certain amount earns simple interest of Rs. 1750 after 7 years. Had the interest been 2% more, how much more interest would it have earned? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | Rs. 35 | | [**B.**](javascript:%20void%200;) | Rs. 245 | | [**C.**](javascript:%20void%200;) | Rs. 350 | | [**D.**](javascript:%20void%200;) | Cannot be determined | | [**E.**](javascript:%20void%200;) | None of these |   **Answer:** Option **D**  **Explanation:**  We need to know the S.I., principal and time to find the rate.  Since the principal is not given, so data is inadequate. |

Q8)

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| A person borrows Rs. 5000 for 2 years at 4% p.a. simple interest. He immediately lends it to another person at 6https://www.indiabix.com/_files/images/aptitude/1-div-1by4.gifp.a for 2 years. Find his gain in the transaction per year. |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | Rs. 112.50 | | [**B.**](javascript:%20void%200;) | Rs. 125 | | [**C.**](javascript:%20void%200;) | Rs. 150 | | [**D.**](javascript:%20void%200;) | Rs. 167.50 |   **Answer:** Option **A**  **Explanation:**   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Gain in 2 years | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-obracket-h1.gif | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 5000 x | 25 | x | 2 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | - | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 5000 x 4 x 2 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | https://www.indiabix.com/_files/images/aptitude/1-sym-cbracket-h1.gif | | 4 | 100 | 100 | | |  | = Rs. (625 - 400) | |  | = Rs. 225. |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Gain in 1 year = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 225 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = Rs. 112.50 | | 2 | |

Q9)

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| Rajeev buys good worth Rs. 6650. He gets a rebate of 6% on it. After getting the rebate, he pays sales tax @ 10%. Find the amount he will have to pay for the goods. |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | Rs. 6876.10 | | [**B.**](javascript:%20void%200;) | Rs. 6999.20 | | [**C.**](javascript:%20void%200;) | Rs. 6654 | | [**D.**](javascript:%20void%200;) | Rs. 7000 |   **Answer:** Option **A**  **Explanation:**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Rebate = 6% of Rs. 6650 = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 6 | x 6650 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = Rs. 399. | | 100 |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Sales tax = 10% of Rs. (6650 - 399) = Rs. | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 10 | x 6251 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = Rs. 625.10 | | 100 |   https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Final amount = Rs. (6251 + 625.10) = Rs. 6876.10 |

Q10)

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| If 20% of *a* = *b*, then *b*% of 20 is the same as: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 4% of *a* | | [**B.**](javascript:%20void%200;) | 5% of *a* | | [**C.**](javascript:%20void%200;) | 20% of *a* | | [**D.**](javascript:%20void%200;) | None of these |   **Answer:** Option **A**  **Explanation:**   |  |  |  | | --- | --- | --- | | 20% of *a* = *b*   https://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif | 20 | *a* = *b*. | | 100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif *b*% of 20 = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | *b* | x 20 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 20 | *a* x | 1 | x 20 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = | 4 | *a* = 4% of *a*. | | 100 | 100 | 100 | 100 | |

Q11)

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| --- |
| In a 100 m race, A can give B 10 m and C 28 m. In the same race B can give C: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 18 m | | [**B.**](javascript:%20void%200;) | 20 m | | [**C.**](javascript:%20void%200;) | 27 m | | [**D.**](javascript:%20void%200;) | 9 m |   **Answer:** Option **B**  **Explanation:**  A : B = 100 : 90.  A : C = 100 : 72.   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | B : C = | B | x | A | = | 90 | x | 100 | = | 90 | . | | A | C | 100 | 72 | 72 |   When B runs 90 m, C runs 72 m.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | When B runs 100 m, C runs | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 72 | x 100 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifm | = 80 m. | | 90 |   https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif B can give C 20 m. |

Q12)

|  |
| --- |
| A runs 1https://www.indiabix.com/_files/images/aptitude/1-div-2by3.gif times as fast as B. If A gives B a start of 80 m, how far must the winning post be so that A and B might reach it at the same time? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 200 m | | [**B.**](javascript:%20void%200;) | 300 m | | [**C.**](javascript:%20void%200;) | 270 m | | [**D.**](javascript:%20void%200;) | 160 m |   **Answer:** Option **A**  **Explanation:**   |  |  |  | | --- | --- | --- | | Ratio of the speeds of A and B = | 5 | : 1 = 5 : 3. | | 3 |   Thus, in race of 5 m, A gains 2 m over B.  2 m are gained by A in a race of 5 m.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 80 m will be gained by A in race of | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 5 | x 80 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gifm | = 200 m. | | 2 |   https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Winning post is 200 m away from the starting point. |

Q13)

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| --- |
| 835, 734, 642, 751, 853, 981, 532 |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 751 | | [**B.**](javascript:%20void%200;) | 853 | | [**C.**](javascript:%20void%200;) | 981 | | [**D.**](javascript:%20void%200;) | 532 |   **Answer:** Option **A**  **Explanation:**  In each number except 751, the difference of third and first digit is the middle one. |

Q14)

|  |
| --- |
| On 8th Dec, 2007 Saturday falls. What day of the week was it on 8th Dec, 2006? |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | Sunday | | [**B.**](javascript:%20void%200;) | Thursday | | [**C.**](javascript:%20void%200;) | Tuesday | | [**D.**](javascript:%20void%200;) | Friday |   **Answer:** Option **D**  **Explanation:**  The year 2006 is an ordinary year. So, it has 1 odd day.  So, the day on 8th Dec, 2007 will be 1 day beyond the day on 8th Dec, 2006.  But, 8th Dec, 2007 is Saturday.  https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif 8th Dec, 2006 is Friday. |

Q15)

|  |
| --- |
| Three numbers which are co-prime to each other are such that the product of the first two is 551 and that of the last two is 1073. The sum of the three numbers is: |
| |  |  | | --- | --- | | [**A.**](javascript:%20void%200;) | 75 | | [**B.**](javascript:%20void%200;) | 81 | | [**C.**](javascript:%20void%200;) | 85 | | [**D.**](javascript:%20void%200;) | 89 |   **Answer:** Option **C**  **Explanation:**  Since the numbers are co-prime, they contain only 1 as the common factor.  Also, the given two products have the middle number in common.  So, middle number = H.C.F. of 551 and 1073 = 29;   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | First number = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 551 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = 19;    Third number = | https://www.indiabix.com/_files/images/aptitude/1-sym-oparen-h1.gif | 1073 | https://www.indiabix.com/_files/images/aptitude/1-sym-cparen-h1.gif | = 37. | | 29 | 29 |   https://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif Required sum = (19 + 29 + 37) = 85. |