|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| |  | | --- | | **Test Paper :14** | | **Paper Type     :** Aptitude - Numerical | | **Test Date        :**19  November  2010 | | **Test Location  :**RVRJC College of Engineering, Guntur. | | **Posted By        :**Anusha |   Hi Friends,  I am Anusha, from RVR&JC Guntur. TCS came to our college on 19-10-2010. They conduct selection process per each round. There is 4 rounds  1) Aptitude test. 2) Technical round 3) MR 4) HR  Before going to the TCS Aptitude test please write the mock tests which are provided by the TCS it gives boost to you.   For the Aptitude prepare the R.S. Aggarwal & Freshersworld.com TCS model papers. For Technical round be aware of basic funds of your core subjects and C, C++. If you crack the both aptitude & Technical round you are 75% selected. In MR they give any context situation how can you resolve it and also little much knowledge about current affairs thats enough. In HR prepare the interview Questions. Be confident in all the rounds. Don't be tenz the HRs are very cool & friendly.  Aptitude test:(35 Questions, 80 mins, online test)  Q1. Given a collection of points P in the plane, a 1-set is a point in P that can be separated from the rest by a line, .i.e the point lies on one side of the line while the others lie on the other side.  The number of 1-sets of P is denoted by n1(P). The minimum value of n1(P) over all configurations P of 5 points in the plane in general position(.i.e no three points in P lie on a line) is  a)3   b)5   c) 2   d)1 Ans: 5  Q2. The citizens of planet nigiet are 8 fingered and have thus developed their decimal system in base 8.  A certain street in nigiet contains 1000 (in base 8) buildings numbered 1 to 1000.  How many 3s are used in numbering these buildings?  a) 54 b) 64 c) 265 d) 192 Ans: 192 Some times base value is chang like: 9finger, 1 to 100(base 9)  Q3. Given 3 lines in the plane such that the points of intersection form a triangle with sides of length 20, 20 and 30, the number of points equidistant from all the 3 lines is a)1  b)3  c)4  d)0  Q4. Hare in the other. The hare starts after the tortoise has covered 1/5 of its distance and that too leisurely3. A hare and a tortoise have a race along a circle of 100 yards diameter. The tortoise goes in one direction and the. The hare and tortoise meet when the hare has covered only 1/8 of the distance. By what factor should the hare increase its speed so as to tie the race?  a) 37.80  b)8  c) 40  d) 5 Ans: 37.80  Q5. Here 10 programers, type 10 lines with in 10 minutes then 60lines can type within 60 minutes. How many programmers are needed?  a) 16 b) 6 c) 10 d) 60 Ans: 10  This type of Q's repeated 4times  for me but values are different.  Q6. Alok and Bhanu play the following min-max game. Given the expression N = 9 + X + Y - Z  Where X, Y and Z are variables representing single digits (0 to 9), Alok would like to maximize N while Bhanu  would like to minimize it. Towards this end, Alok chooses a single digit number and Bhanu substitutes this for a variable of her choice (X, Y or Z). Alok then chooses the next value and Bhanu, the variable to substitute the value. Finally Alok proposes the value for the remaining variable. Assuming both play to their optimal strategies, the value of N at the end of the game would be  a) 0 b) 27 c) 18 d) 20  The Q's  concept is same but the equation of N's is changing.  Q7. Alice and Bob play the following coins-on-a-stack game. 20 coins are stacked one above the other. One of them is a special (gold) coin and the rest are ordinary coins. The goal is to bring the gold coin to the top by repeatedly moving the topmost coin to another position in the stack.    Alice starts and the players take turns. A turn consists of moving the coin on the top to a position i below the top coin (0 = i = 20). We will call this an i-move (thus a 0-move implies doing nothing). The proviso is that an i-move cannot be repeated; for example once a player makes a 2-move, on subsequent turns neither player can make a 2-move. If the gold coin happens to be on top when it's a player's turn then the player wins the game. Initially, the gold coinis the third coin from the top. Then  a) In order to win, Alice's first move should be a 1-move. b) In order to win, Alice's first move should be a 0-move. c) In order to win, Alice's first move can be a 0-move or a 1-move. d) Alice has no winning strategy. Ans: d  Q8. For the FIFA world cup, Paul the octopus has been predicting the winner of each match with amazing success. It is rumored that in a match between 2 teams A and B, Paul picks A with the same probability as A's chances of winning. Let's assume such rumors to be true and that in a match between Ghana and Bolivia, Ghana the stronger team has a probability of 2/3 of winning the game. What is the probability that Paul will correctly pick the winner of the Ghana-Bolivia game?  a)1/9    b)4/9    c)5/9    d)2/3 Ans: 5/9  Q9. 36 people {a1, a2, ..., a36} meet and shake hands in a circular fashion. In other words, there are totally 36 handshakes involving the pairs, {a1, a2}, {a2, a3}, ..., {a35, a36}, {a36, a1}. Then size of the smallest set of people such that the rest have shaken hands with at least one person in the set is  a)12    b)11    c)13    d)18 Ans: 18  Q10. After the typist writes 12 letters and addresses 12 envelopes, she inserts the letters randomly into the envelopes (1 letter per envelope). What is the probability that exactly 1 letter is inserted in an improper envelope? a)1/12    b)0    c)12/212  d)11/12  Ans: b  Q11. A sheet of paper has statements numbered from 1 to 40. For each value of n from 1 to 40,  statement n says "At least and of the statements on this sheet are true." Which statements are true and which are false?  a)The even numbered statements are true and the odd numbered are false. b)The first 26 statements are false and the rest are true. c)The first 13 statements are true and the rest are false. d)The odd numbered statements are true and the even numbered are false.  Ans:c  Q12. There are two boxes, one containing 10 red balls and the other containing 10 green balls. You are allowed to move the balls between the boxes so that when you choose a box at random and a ball at random from the chosen box, the probability of getting a red ball is maximized. This maximum probability is  a)1/2    b)14/19     c)37/38 d)3/4     Ans: 14/19  Q13. A circular dartboard of radius 1 foot is at a distance of 20 feet from you. You throw a dart at it and it  hits the dartboard at some point Q in the circle. What is the probability that Q is closer to the center of the circle than the periphery?  a) 0.75    b) 1    c) 0.5    d) 0.25 Ans: d  Q14. 9. A and B play a game of dice between them. The dice consist of colors on their faces (instead of numbers). When the dice are thrown, A wins if both show the same color; otherwise B wins. One die has 4 red face and 2 blue faces. How many red and blue faces should the other die have if the both players have the same chances of winning?  a) 3 red and 3 blue faces        b) 2 red and remaining blue c) 6 red and 0 blue        d) 4 red and remaining blue Ans: a  Q15. On planet zorba, a solar blast has melted the ice caps on its equator. 8 years after the ice melts, tiny plantoids called echina start growing on the rocks. echina grows in the form of a circle and the relationship between the diameter of this circle and the age of echina is given by the formula d = 4 \* sqrt (t – 8)for t = 8 Where the represents the diameter in mm and t the number of years since the solar blast.  Jagan recorded the time of some echina at a particular spot is 24 years then what is diameter?  a) 8 b) 16 c) 25 d) 21 Ans: 16  Q16. A sheet of paper has statements numbered from 1 to 40. For all values of n from 1 to 40, statement n says: 'Exactly n of the statements on this sheet are false.' Which statements are true and which are false?  a) The even numbered statements are true and the odd numbered statements are false.  b) The odd numbered statements are true and the even numbered statements are false.  c) All the statements are false.  d) The 39th statement is true and the rest are false. Ans: d  Q17. Alok and Bhanu play the following coins in a circle game. 99 coins are arranged in a circle with each coin touching two other coin. Two of the coins are special and the rest are ordinary. Alok starts and the players take turns removing an ordinary coin of their choice from the circle and bringing the other coins closer until they again form a (smaller) circle. The goal is to bring the special coins adjacent to each other and the first player to do so wins the game. Initially the special coins are separated by two ordinary coins O1 and O2. Which of the following is true?  a) In order to win, Alok should remove O1 on his first turn. b) In order to win, Alok should remove one of the coins different from O1 and O2 on his first turn. c) In order to win, Alok should remove O2 on his first turn. d) Alok has no winning strategy. Ans: d  Q18. Two pipes A and B fill at A certain rate B is filled at 10,20,40,80,. If 1/4 of B if filled in 21 hours what time it will take to get completely filled Ans: 23  Q19. Find average speed if a man travels at speed of 24kmph up and 36kmph down at an altitude of 200m.  Formula is 2xy/(x+y).  Q20. One grandfather has three grandchildren, two of their age difference is 3, eldest child age is 3 times youngest child’s age and eldest child’s age is two times of sum of other two children. What is the age of eldest child? Ans: 18  Q21. Ferrari is leading car manufacturer.\*Ferrari S.p.A.\* is an Italian sports car. It has enjoyed great success. If Mohan's Ferrari is 3 times faster than his old Mercedes wich gave him 35kmph if Mohan travelled 490 km in his ferrari the how much time(hours) he took? Easy one try it.  Q22. By using 1,2,3,4,5, how many 12 digit no. can be formed which is divisible by 4, repetation of no. is allowed? Ans: (5)^11  Q23. The cost 1 plum is 1 cent, 2 apples is 1 cent, 3 cashew is 1 cent. If father buys same amount of fruits for his 3 sons spending 7 cent then what amount of fruit each child will get?  Ans: 1plum, 2apples, 1cashew  Q24. There are some 2 wheelers and 4 wheelers parked total number of wheels present is 240 then how many 4 wheelers were there  Ans: For this question answer is deduced from the options.  Q25. One day Alice meets pal and byte in fairyland. She knows that pal  lies on Mondays, Tuesdays and Wednesdays and tells the truth on the other days of the week byte, on the other hand, lies  on Thursdays, Fridays and Saturdays, but tells the truth on the other days of the week. Now they make the following statements to Alice – pal. Yesterday was one of those days when I lie byte. Yesterday was one of those days when I lie too. What day is it?  a) Thursday   b) Tuesday   c) Monday d) Sunday Ans: a |

Q1. Given a collection of points P in the plane, a 1-set is a point in P that can be separated from the rest by a line, .i.e the point lies on one side of the line while the others lie on the other side.   
The number of 1-sets of P is denoted by n1(P). The minimum value of n1(P) over all configurations P of 5 points in the plane in general position(.i.e no three points in P lie on a line) is  
  
a)3   b)5   c) 2   d)1  
  
Q2. The citizens of planet nigiet are 8 fingered and have thus developed their decimal system in base 8.   
A certain street in nigiet contains 1000 (in base 8) buildings numbered 1 to 1000.   
How many 3s are used in numbering these buildings?  
  
a) 54 b) 64 c) 265 d) 192  
  
Q3. Given 3 lines in the plane such that the points of intersection form a triangle with sides of length 20, 20 and 30, the number of points equidistant from all the 3 lines is  
a)1  b)3  c)4  d)0  
  
Q4. Hare in the other. The hare starts after the tortoise has covered 1/5 of its distance and that too leisurely3. A hare and a tortoise have a race along a circle of 100 yards diameter. The tortoise goes in one direction and the. The hare and tortoise meet when the hare has covered only 1/8 of the distance. By what factor should the hare increase its speed so as to tie the race?  
  
a) 37.80  b)8  c) 40  d) 5  
  
Q6. Alok and Bhanu play the following min-max game. Given the expression  
N = 9 + X + Y - Z  
  
Where X, Y and Z are variables representing single digits (0 to 9), Alok would like to maximize N while Bhanu   
would like to minimize it. Towards this end, Alok chooses a single digit number and Bhanu substitutes this for a variable of her choice (X, Y or Z). Alok then chooses the next value and Bhanu, the variable to substitute the value. Finally Alok proposes the value for the remaining variable. Assuming both play to their optimal strategies, the value of N at the end of the game would be  
  
a) 0 b) 27 c) 18 d) 20  
  
  
Q7. Alice and Bob play the following coins-on-a-stack game. 20 coins are stacked one above the other. One of them is a special (gold) coin and the rest are ordinary coins. The goal is to bring the gold coin to the top by repeatedly moving the topmost coin to another position in the stack.

Alice starts and the players take turns. A turn consists of moving the coin on the top to a position i below the top coin (0 = i = 20). We will call this an i-move (thus a 0-move implies doing nothing). The proviso is that an i-move cannot be repeated; for example once a player makes a 2-move, on subsequent turns neither player can make a 2-move. If the gold coin happens to be on top when it's a player's turn then the player wins the game. Initially, the gold coinis the third coin from the top. Then  
  
a) In order to win, Alice's first move should be a 1-move.  
b) In order to win, Alice's first move should be a 0-move.  
c) In order to win, Alice's first move can be a 0-move or a 1-move.  
d) Alice has no winning strategy.  
  
Q8. For the FIFA world cup, Paul the octopus has been predicting the winner of each match with amazing success. It is rumored that in a match between 2 teams A and B, Paul picks A with the same probability as A's chances of winning. Let's assume such rumors to be true and that in a match between Ghana and Bolivia, Ghana the stronger team has a probability of 2/3 of winning the game. What is the probability that Paul will correctly pick the winner of the Ghana-Bolivia game?  
  
a)1/9    b)4/9    c)5/9    d)2/3  
  
Q9. 36 people {a1, a2, ..., a36} meet and shake hands in a circular fashion. In other words, there are totally 36 handshakes involving the pairs, {a1, a2}, {a2, a3}, ..., {a35, a36}, {a36, a1}. Then size of the smallest set of people such that the rest have shaken hands with at least one person in the set is  
  
a)12    b)11    c)13    d)18  
  
  
Q11. A sheet of paper has statements numbered from 1 to 40. For each value of n from 1 to 40,   
statement n says "At least and of the statements on this sheet are true." Which statements are true and which are false?  
  
a)The even numbered statements are true and the odd numbered are false.  
b)The first 26 statements are false and the rest are true.  
c)The first 13 statements are true and the rest are false.  
d)The odd numbered statements are true and the even numbered are false.  
  
  
Q12. There are two boxes, one containing 10 red balls and the other containing 10 green balls. You are allowed to move the balls between the boxes so that when you choose a box at random and a ball at random from the chosen box, the probability of getting a red ball is maximized. This maximum probability is  
  
a)1/2    b)14/19     c)37/38 d)3/4      
  
Q13. A circular dartboard of radius 1 foot is at a distance of 20 feet from you. You throw a dart at it and it  
hits the dartboard at some point Q in the circle. What is the probability that Q is closer to the center of the circle than the periphery?  
  
a) 0.75    b) 1    c) 0.5    d) 0.25  
  
  
Q16. A sheet of paper has statements numbered from 1 to 40. For all values of n from 1 to 40, statement n says: 'Exactly n of the statements on this sheet are false.' Which statements are true and which are false?  
  
a) The even numbered statements are true and the odd numbered statements are false.   
b) The odd numbered statements are true and the even numbered statements are false.   
c) All the statements are false.   
d) The 39th statement is true and the rest are false.  
  
Q17. Alok and Bhanu play the following coins in a circle game. 99 coins are arranged in a circle with each coin touching two other coin. Two of the coins are special and the rest are ordinary. Alok starts and the players take turns removing an ordinary coin of their choice from the circle and bringing the other coins closer until they again form a (smaller) circle. The goal is to bring the special coins adjacent to each other and the first player to do so wins the game. Initially the special coins are separated by two ordinary coins O1 and O2. Which of the following is true?  
  
a) In order to win, Alok should remove O1 on his first turn.  
b) In order to win, Alok should remove one of the coins different from O1 and O2 on his first turn.  
c) In order to win, Alok should remove O2 on his first turn.  
d) Alok has no winning strategy.