

TCS PLACEMENT PAPER 2012

Welcome to TCS Placement Paper 2012. Here you will find TCS Placement Paper Pattern and Download questions of TCS Placement Paper 2012 with Answers & Solutions.

TCS Placement Paper 2012:-

1. Which Is The Smallest No Divides 2880 And Gives A Perfect Square?

A.1 B.2 C.5 D.6

Ans: C

2. Two Bowls Are Taken, One Contains Water And Another Contains Tea Equal Amount . One Spoon Of Water From 1st Is Added To Second Bowl And Mixed Well, And A Spoon Of Mixture Is Taken From Second Bowl And Added To The 1st Bowl. Which Statement Will Hold Good For The Above?

{

Thought Process :

Water Bowl Tea Bowl

100 100

$90w + 10w = \text{Spoon Volume}$ $100\text{tea} + 10\text{water}$

$90w + (10 \cdot 10/11)\text{Tea} + 10/11 W$ $100t - (10 \cdot 10/11) T$

$+ 10w - 10/11w$

(1st Bowl's Water Volume Is Equal To 2nd Bowls Tea Volume)

3. Form 8 Digit Numbers From By Using 1, 2,3,4,5 With Repetition Is Allowed And Must Be Divisible By 4?

A.31250 B.97656 C.78125 D.97657

Ans: C

4. Rearrange And Categorize The Word 'Rapeteka'?

Ans: Bird

5. One Problem On $(785^3 - 235^3) / (785^2 + 785 \cdot 235 + 235^2)$

Ans: You Are Free To Carry A Calculator With You But You Should Not Use It To Solve This Kind Of Problem. Because It Is Simple:

$A^3 - b^3 / A^2 + ab + b^2$

Ans Is : A-b Here $785 - 235 = 550$ That's It.

6. In School There Are Some Bicycles And 4 Wheeler Wagons. One Tuesday There Are 190 Wheels In The Campus. How Many Bicycles Are There?

Ans: 15

Thought Process : $B \cdot 2 + w \cdot 4 = 190$ I.E. , $B + 2w = 95$ Now See U Can Not Solve 2 Unknowns From 1 Equation, So Just Plot Options Here To Get The Right Answer And Verify If You Are Getting Integers As Values Of B And W.

7. There Are Two Persons Paul And Jay .Paul Lies On Monday, Tuesday, Wednesday And The Remaining Days He Speaks Truth. Jay Lies On Thursday, Friday, Saturday And The Remaining Days He Speaks Truth. Once They Meet Each Other, In Their Conversation Paul Says That Yesterday Is The Day One Among Those I Lie. Jay Also Says That Yesterday I Also Lie. What Is That Day?

A) Sunday. B) Tuesday. C) Thursday. D) Wednesday

[Thought Process: Now This Day Cannot Be Sunday Because In Monday Paul Speaks Truth And Sunday

Everyone Tells Truth. So It Must Be Weekdays. Again, Tuesday Can Not Possible Because Monday And Tuesday Paul Speaks Truth. In Case Of Thrust Day, Paul Speaks Lie And Wednesday He Speaks True. And Joy Speaks Truth In Thursday And He Speak Lies In Wednesday. So, Thursday Is The Answer.

8. A Father Has 7 Penny's With Him And 1 Water Melon Is For 1p, 2chickoos For 1p, 3 Grapes Foe 1p. He Has Three Sons. How Can He Share The Fruits Equally?

Ans: 1 Watermelon, 2chickoos, 1grape

9. $(1/2)$ Of A Number Is 3 Times More Than The $(1/6)$ Of The Same Number?

Ans: 9

10. There Are Two Pipes A And B. If A Filled 10 Liters In Hour B Can Fills 20 Liters In Same Time. Likewise B Can Fill 10, 20, 40, 80, 160.... If B Filled In $(1/16)$ Th Of A Tank In 3 Hours, How Much Time Will It Take To Fill Completely?

Ans: 7 Hours

11. A certain pump can drain a full 375-gallon tank in 15 minutes. At this rate, how many more minutes would it take to drain a full 600-gallon tank?

(A) 9 (B) 15 (C) 18 (D) 24 (E) 25

12. If n is an even integer, which of the following must be an odd integer?

(A) $3n-2$ (B) $3(n+1)$ (C) $n-2$ (D) $n/3$ (E) n^2

13. Cindy has a collection of 80 records. If 40 percent of her records are jazz records, and the rest are blues records, how many blues records does she have?

(A) 32
(B) 40
(C) 42
(D) 48
(E) 50

14. Express 2,750,389 in scientific notation.

(A) 27.50389×10^5
(B) 275.0389×10^3
(C) 27.50389×10^6
(D) 0.2750389×10^7
(E) 2.750389×10^6

15. A rectangle and a triangle have equal areas. The length of the rectangle is 12 inches, and its width is 8 inches. If the base of the triangle is 32 inches, what is the length, in inches, of the altitude drawn to the base?

(A) 6
(B) 8
(C) 9
(D) 12
(E) 16

16. If the area of a triangle is 24 and its base is 6, what is the length of the altitude to that base?

(A) 3 (B) 6 (C) 8 (D) 10 (E) unknown

17. Lenny's average score after 3 tests is 88. What score on the 4th test would bring Lenny's average up to exactly 90?

(A) 92 (B) 93 (C) 94 (D) 95 (E) 96

18. If an integer is divisible by 6 and by 9, then the integer must be divisible by which of the following?

- A. 12
- B. 18
- C. 24
- D. 36
- E. 54

19. If Jeff and Jimmy have less than 22 dollars between them, and Jeff has 8 dollars, which of the following could be the number of dollars that Jimmy has?

I. 12 II. 14 III. 16

- A. I only
- B. III only
- C. I & III.
- D. I & II
- E. Neither I, II, nor III are correct

20. Stephanie drove at an average rate of 50 miles per hour for two hours and then increased her average rate by 50% for the next 3 hours. Her average rate of speed for the 5 hours was t miles per hour. What is the value of t ?

- A. 55 mph
- B. 60 mph
- C. 65 mph
- D. 70 mph
- E. 75 mph

21. How many complete tanks of water, each with a capacity of 3 cubic meters, are needed to fill an empty cylindrical tank whose height is 3 meters and whose base has a radius of 2 meters?

A) 12 B) 13 C) 14 D) 15 E) 16

22. Any serious policy discussion about acceptable levels of risk in connection with explosions is not well served if the participants fail to use the word "explosion" and use the phrase "energetic disassembly" instead. In fact, the word "explosion" elicits desirable reactions, such as a heightened level of attention, whereas the substitute phrase does not. Therefore, of the two terms, "explosion" is the one that should be used throughout discussions of this sort.

Which of the following is an assumption on which the argument above depends?

- (A) In the kind of discussion at issue, the advantages of desirable reactions to the term "explosion" outweigh the drawbacks, if any, arising from undesirable reactions to that term.
- (B) The phrase "energetic disassembly" has not so far been used as a substitute for the word "explosion" in the kind of discussion at issue.
- (C) In any serious policy discussion, what is said by the participants is more important than how it is put into words.
- (D) The only reason that people would have for using "energetic disassembly" in place of "explosion" is to render impossible any serious policy discussion concerning explosions.
- (E) The phrase "energetic disassembly" is not necessarily out of place in describing a controlled rather than an accidental explosion

23. A certain shade of gray paint is obtained by mixing 3 parts of white paint with 5 parts of black paint. If 2 gallons of the mixture is needed and the individual colors can be purchased only in one-gallon or half-gallon cans, what is the least amount of paint, in gallons, that must be purchased in order to measure out the portions needed for the mixture?

(A) 2 (B) $2\frac{1}{2}$ (C) 3 (D) $3\frac{1}{2}$ (E) 4

24. To buy a computer system, a customer can choose one of 4 monitors, one of 2 keyboards, one of 4 computers and one of 3 printers. Determine the number of possible systems that a customer can choose from.

(A) 96 (B)98 (C)98.5 (D) 94 (E)100

25. A student can select one of 6 different mathematics books, one of 3 different chemistry books and one of 4 different science books. In how many different ways can a student select a book of mathematics, a book of chemistry and a book of science?

A) 14 (B)12 (C)72 (D) 74 (E)76

Category	IT
SubCategory	Placement Papers
Location	Mumbai
Company	TCS

About TCS

Tata Consultancy Services - TCS is the pioneer of software services in India and is headquartered in Mumbai. With over 45,000 consultants working from offices and development centers spread all over the country, TCS works with global and Indian companies to create real business results. Apart from the development centers, TCS has centers of excellence and innovation labs that strengthen TCS' ability to deliver innovative business solutions.

Working at TCS - Why Should i Join TCS?

The work environment at TCS is built around the belief of growth beyond boundaries. Some of the critical elements that define our work culture are global exposure, cross-domain experience, and work-life balance. Each of these elements goes much deeper than what it ostensibly conveys.

The TCS employer brand positioning builds on our strengths and communicates TCS as an organization that offers its employees a complete Global IT Career by highlighting the three main value propositions:Global exposure, Freedom to work across domains, Work life balance.

2011 TCS TECHNICAL INTERVIEW QUESTION

- What does static variable mean?
- What is a pointer?
- What is a structure?
- What are the differences between structures and arrays?
- In header files whether functions are declared or defined?
- What are the differences between malloc() and calloc()?
- What are macros? what are its advantages and disadvantages?
- Difference between pass by reference and pass by value?
- What is static identifier?

- Where are the auto variables stored?
- Where does global, static, local, register variables, free memory and C Program instructions get stored?
- Difference between arrays and linked list?
- What are enumerations?
- What is a class?
- What is an object?
- What is the difference between an object and a class?
- What is the difference between class and structure?
- What is public, protected, private?
- What are virtual functions?
- What is friend function?
- What is a scope resolution operator?
- What do you mean by inheritance?
- What is abstraction?
- What is a data structure?
- What does abstract data type means?
- Evaluate the following prefix expression " ++ 26 + - 1324" (Similar types can be asked)
- Convert the following infix expression to post fix notation $((a+2)*(b+4)) - 1$ (Similar types can be asked)
- How is it possible to insert different type of elements in stack?
- Stack can be described as a pointer. Explain.
- Write a Binary Search program
- What is the difference between an Abstract class and Interface?
- What is user defined exception?
- What do you know about the garbage collector?
- What is the difference between java and c++?
- In an HTML form I have a button which makes us to open another page in 15 seconds. How will you do that?
- What is the difference between process and threads?
- What is update method called?
- Have you ever used HashTable and Directory?
- What are statements in Java?
- What is RMI?
- Explain about RMI Architecture?
- What are Servlets?
- What is the use of servlets?
- Explain RMI Architecture?
- How will you pass values from HTML page to the servlet?
- How do you load an image in a Servlet?
- What is purpose of applet programming?
- How will you communicate between two applets?
- What are the basic functions of an operating system?
- Explain briefly about, processor, assembler, compiler, loader, linker and the functions executed by them.
- What are the difference phases of software development? Explain briefly?
- Differentiate between RAM and ROM?
- What is DRAM? In which form does it store data?
- What is cache memory?
- What is hard disk and what is its purpose?
- Differentiate between Compiler and Interpreter?
- What are the different tasks of Lexical analysis?
- What are the different functions of Syntax phase, Scheduler?

TCS PLACEMENT PAPER – JANUARY 2011

Written Test:-

- (1/2) of a number is 3 more than the (1/6) of the same number?
 - 6
 - 7
 - 8
 - 9
- There are two water tanks A and B, A is much smaller than B. While water fills at the rate of 1 liter every hour in A, it gets filled up like, 10, 20, 40, 80, 160..in tank B. (At the end of first hour, B has 10 liters, second hour it has 20 liters and so on). If tank B is 1/32 filled of the 21 hours, what is total duration of hours required to fill it completely?
 - 26
 - 25
 - 5
 - 27
- Smita was making a cube with dimensions $5*5*5$ using $1*1*1$ cubes. What is the number of cubes needed to make a hollow cube looking of the same shape?
 - 98
 - 104
 - 100
 - 61
- A lady has fine gloves and hats in her closet- 25blue, 7 red, and 9 yellow. The lights are out and it is totally dark. In spite of the darkness, she can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color?
- A game is played between 2 players and one player is declared as winner. All the winners from first round are played in second round. All the winners from second round are played in third round and so on. If 8 rounds are played to declare only one player as winner, how many players are played in first round?
 - 256
 - 512
 - 64
 - 128
1. There is 7 friends (A1, A2, A3....A7).If A1 have to have shake with all without repeat. How many handshakes possible?
 - 6
 - 21
 - 28
 - 7
- On planet korba, a solar blast has melted the ice caps on its equator. 9 years after the ice melts, tiny planetoids called echina start growing on the rocks. Echina grows in the form of circle, and the relationship between the diameter of this circle and the age of echina is given by the formula $d = 4*\sqrt{(t-9)}$ for $t \geq 9$ where d represents the diameter in mm and t the number of years since the solar blast. Jagan recorded the radius of some echina at a

particular spot as 7mm. How many years back did the solar blast occur?

- a) 17
- b) 21.25
- c) 12.25
- d) 14.05

8. Ferrari S.P.A is an Italian sports car manufacturer based in Maranello, Italy. Founded by Enzo Ferrari in 1928 as Scuderia Ferrari, the company sponsored drivers and manufactured race cars before moving into production of street-legal vehicles in 1947 as Ferrari S.P.A. Throughout its history, the company has been noted for its continued participation in racing, especially in Formula One where it has employed great success. Rohit once bought a Ferrari. It could go 4 times as fast as Mohan's old Mercedes. If the speed of Mohan's Mercedes is 35 km/hr and the distance traveled by the Ferrari is 490 km, find the total time taken for Rohit to drive that distance.

- a) 20.72
- b) 5.18
- c) 238.25
- d) 6.18

9. A sheet of paper has statements numbered from 1 to 70. For all values of n from 1 to 70. Statement n says 'At least 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 are false.
- b) The odd numbered statements are true and the even numbered are false.
- c) The first 35 statements are true and the last 35 are false.
- d) The first 35 statements are false and the last 35 are false.

10. 3 persons a, b, c were there A always says truth lies on Monday, Tuesday, & Wednesday. but C lies on Thursday, Friday & Saturday. one day A said "that B & C said to A that" B said "yesterday was one of the days when I lie", C said that "yesterday was one of the days when I lie too". then which day was that?

- a) Sunday
- b) Thursday
- c) Saturday
- d) Tuesday

11. By using 1,2,3,4,5, how many 5 digit no. can be formed which is divisible by 4, repetition of no. is allowed??

12. 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 ($0 \leq i \leq 20$). 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 coin is the third coin from the top. Then:-

- A) In order to win, Alice's first move should be a 0-move.
- B) In order to win, Alice's first move can be a 0-move or a 1-move.
- C) In order to win, Alice's first move should be a 1-move.
- D) Alice has no winning strategy.

13. 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 $\frac{2}{3}$ of winning the game. What is the probability that Paul will correctly pick the winner of the

Ghana-Bolivia game?

- A) 4/9
- B) 1/9
- C) 2/3
- D) 5/3

14. 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

15. 10 suspects are rounded by the police and questioned about a bank robbery. Only one of them is guilty. The suspects are made to stand in a line and each person declares that the person next to him on his right is guilty. The rightmost person is not questioned. Which of the following possibilities are true?

- A. All suspects are lying or the leftmost suspect is innocent.
- B. All suspects are lying and the leftmost suspect is innocent .

- A) B only
- B) Neither A nor B
- C) A only
- D) Both A and B

16. The IT giant Tirnop has recently crossed a head count of 150000 and earnings of \$7 billion. As one of the forerunners in the technology front, Tirnop continues to lead the way in products and services in India. At Tirnop, all programmers are equal in every respect. They receive identical salaries and also write code at the same rate. Suppose 12 such programmers take 12 minutes to write 12 lines of code in total. How long will it take 72 programmers to write 72 lines of code in total?

17. 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

18. 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?

19. In a school, for a student out of 100 he got 74 of average for 7 subjects and he got 79 marks in the 8th subject. what is the average of all the subject?

- a)76.251 b)80.25 c)74.265 d)74.625

20. 3 persons a,b,c were there A always says truth,B lies on Monday,tuesday,& Wednesday.but C lies on thursday,friday & saturday .one day A said"that B & C said to A that" B said "yesterday way one of the days when I lies",C said that"yesterday way one of the days when I lies too".then which day was that?

- a)Sunday b)Thursday c)Saturday d)Tuesday

21. Which is the smallest no which divides 2880 and gives a perfect square?

- a)4 b)9 c)3 d)5

22. How many 9 digit numbers are possible by using the digits 1,2,3,4,5 which are divisible by 4 if the repetition is allowed?

a)57 b)56 c)59 d)58

23. how many 13 digit numbers are possible by using the digits 1,2,3,4,5 which are divisible by 4 if repetition of digits is allowed?

24. By using 1,2,3,4,5,how many 5 digit no. can be formed which is divisible by 4,repetaion of no. is allowed??

25. Form 8 digit numbers from by using 1, 2,3,4,5 with repetition is allowed and must be divisible by4?

26. How many of 14 digit numbers we can make with 1,2,3,4,5 that are divisible by 4. Repetitions allowed.

27. Six friends decide to share a big cake. Since all of them like the cake, they begin quarreling who gets to first cut and have a piece of the cake. One friend suggests that they have a blindfold friend choose from well shuffled set of cards numbered one to six. You check and find that this method works as it should simulating a fair throw of a die. You check by performing multiple simultaneous trials of picking the cards blindfold and throwing a die. You note that the number shown by the method of picking up a card and throwing a real world die, sums to a number between 2 and 12. Which total would be likely to appear more often – 8,9 or 10?

a) 8 b)All are equally likely c)9 d)10

28. 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 $n_1(P)$. The minimum value of $n_1(P)$ 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

29. Jagan recorded the radius of some echina at a particular spot as 12mm. How many years back did the solar blast occur?

- (a) 17
- (b) 21.25
- (c) 12
- (d) 12.06

Ans. c

30. Ferrari S.P.A is an Italian sports car manufacturer based in Maranello, Italy. Founded by Enzo Ferrari in 1928 as Scuderia Ferrari, the company sponsored drivers and manufactured race cars before moving into production of street-legal vehicles in 1947 as Feraari S.P.A. Throughout its history, the company has been noted for its continued participation in racing, especially in Formula One where it has employed great success. Rohit once bought a Ferrari. It could go 4 times as fast as Mohan's old Mercedes. If the speed of Mohan's Mercedes is 46 km/hr and the distance traveled by the Ferrari is 953 km, find the total time taken for Rohit to drive that distance.

- (a) 20.72
- (b) 5.18
- (c) 238.25
- (d) 6.18

Ans. b

31. A sheet of paper has statements numbered from 1 to 70. For all values of n from 1 to 70. Statement n says 'At least 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 are false.
- (b) The odd numbered statements are true and the even numbered are false.

- (c) The first 35 statements are true and the last 35 are false.
(d) The first 35 statements are false and the last 35 are false.

Ans. c

Note: For this type of Questions, follow this:

At least- 1st half are true, Last half are false

Exactly- Last second one is true or (N-1)th Statement is true

Almost- All are true.

32. There are two water tanks A and B, A is much smaller than B. While water fills at the rate of one liter every hour in A, it gets filled up like 10, 20, 40, 80, 160 in tank B. (At the end of first hour, B has 10 liters, second hour it has 20, and so on). If tank B is $\frac{1}{32}$ filled after 21 hours, what is the total duration required to fill it completely?

- (a) 26 hrs
(b) 25 hrs
(c) 5 hrs
(d) 27 hrs

Ans. a

33. There are two water tanks A and B, A is much smaller than B. While water fills at the rate of one liter every hour in A, it gets filled up like 10, 20, 40, 80, 160... in tank B. (At the end of first hour, B has 10 liters, second hour it has 20, and so on). If tank B is $\frac{1}{16}$ filled after 4 hours, what is the total duration required to fill it completely?

- (a) 8hrs
(b) 25 hrs
(c) 5 hrs
(d) 27 hrs

Ans. a

34. Unnecessary data. A lady has fine gloves and hats in her closet- 18 blue- 32 red, 10 white, 25 yellow, 55 purple, 30 orange. The lights are out and it is totally dark inspite of the darkness. She can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color of blue, red, yellow?

- (a) 59
(b) 8
(c) 50
(d) 42

Ans. a(32+25+2)

Note: For this type of questions:

Bigger+Middle+1 (Suppose 18, 32, 25 =32+25+1), If you do not find answer in options, choose the one closer tho the answer you got.

35. The IT giant Tirnop has recently crossed a head count of 150000 and earnings of \$7 billion. As one of the forerunners in the technology front, Tirnop continues to lead the way in products and services in India. At Tirnop, all programmers are equal in every respect. They receive identical salaries and also write code at the same rate. Suppose 12 such programmers take 12 minutes to write 12 lines of code in total. How long will it take 72 programmers to write 72 lines of code in total?

- (a) 6
(b) 18
(c) 72
(d) 12

Ans. d

Note: $N1T1/W1=N2T2$, W=No. of Lines, N=No. of PRGMRS, T=Time

36. The citizens of planet nigiet are 6 fingered and have thus developed their decimal system in base 6. 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) 256
- (b) 54
- (c) 192
- (d) 108

Ans. d

Note: First find no. 3s in 1000 (Decimal only), Definitely you will get 300, Now convert 300 into 300 base 6 by this $3*6^2+0*6^1+0*6^0$

37. 12 people $\{a_1, a_2, \dots, a_{12}\}$ meet and shake hands in a circular fashion. In other words, there are totally 36 handshakes involving the pairs, $\{a_1, a_2\}$, $\{a_2, a_3\}$, ..., $\{a_{11}, a_{12}\}$, $\{a_{12}, a_1\}$. 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) 4
 - (c) 18
 - (d) 11
- Ans. B (N/3)

38. Alice and Bob play the following coins-on-a-stack game. 100 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 ($0 \leq i < 100$). 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.

- A. Alice has no winning strategy.
- B. Initially, the gold coins the third coin from the top. Then
- C. In order to win, Alice's first move should be a 0-move.
- D. In order to win, Alice's first move should be a 1-move.

Ans. D

39. n people meet and shake hands. The maximum number of handshakes possible if there is to be no "cycle" of handshakes is (A cycle of handshakes is a sequence of k people a_1, a_2, \dots, a_k ($k > 2$) such that the pairs $\{a_1, a_2\}$, $\{a_2, a_3\}$, ..., $\{a_{k-1}, a_k\}$, $\{a_k, a_1\}$ shake hands).

- (a) 7
- (b) 6
- (c) 9
- (d) 8

Ans. c $n(n-1)/2$

40. Amal bought 5 pens, 7 pencils and 4 erasers. Rajan bought 6 pens, 8 erasers and 14 pencils for an amount which was half more than what Amal had paid. What % of the total amount paid by Amal was paid for pens?

- a) 37.5%
- b) 62.5%
- c) 50%
- d) None of these

TCS PLACEMENT PAPER – DECEMBER 2010

Written Test:-

Q 1: There are two water tanks A and B, A is much smaller than B. While water fills at the rate of 1 liter every hour in A, it gets filled up like, 10, 20, 40, 80, 160.....in tank B. $\frac{1}{8}$ th of the tank B is filled in 22 hours. What is the time to fill the tank fully?

- a) 26
- (b) 25
- (c) 5
- (d) 27

Ans: $22 + \log_2 8 = 22 + 4 = 26$

Note: The question arise more than 1 time.

Ques 2: A sheet of paper has statements numbered from 1 to 70. For all values of n from 1 to 70. Statement n says 'At least 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 are false.
- (b) The odd numbered statements are true and the even numbered are false.
- (c) The first 35 statements are true and the last 35 are false.
- (d) The first 35 statements are false and the last 35 are false.

Ans. c

Note: For this type of Questions, follow this:

- At least- 1st half are true, Last half are false
- Exactly- Last second one is true or (N-1)th Statement is true
- Almost- All are true.

Ques 3: Unnecessary data. A lady has fine gloves and hats in her closet- 18 blue- 32 red , 10 white , 25 yellow, 55 purple, 30 orange. The lights are out and it is totally dark in spite of the darkness. She can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color of blue, red, yellow?

- (a) 59
- (b) 8
- (c) 50
- (d) 42

Ans: $a(32+25+2)$

Note: For this type of questions:

Bigger+Middle+1 (Suppose 18, 32, 25 = $32+25+1$), If you do not find answer in options, choose the one closer those the answer you got.

Ques4: The IT giant Tirnop has recently crossed a head count of 150000 and earnings of \$7 billion. As one of the forerunners in the technology front, Tirnop continues to lead the way in products and services in India. At Tirnop, all programmers are equal in every respect. They receive identical salaries and also write code at the same rate. Suppose 12 such programmers take 12 minutes to write 12 lines of code in total. How long will it take 72

programmers to write 72 lines of code in total?

For this type question you should follow d step of basic math that will helpful you get enough time from that.

12 prog 12 line 12 min
1 prog 12 line 12*12
1 1 12*12/12
72 1 12*12/(12*72)
72 72 12*12*72/(12*72)

Ans:12

Note: This question appears 3 times in our question but app is different please follow basic rule think it it is very very easy.

Ques 5: 12 people $\{a_1, a_2, \dots, a_{12}\}$ meet and shake hands in a circular fashion. In other words, there are totally 36 handshakes involving the pairs, $\{a_1, a_2\}, \{a_2, a_3\}, \dots, \{a_{11}, a_{12}\}, \{a_{12}, a_1\}$. 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) 4
(c) 18
(d) 11
Ans. B (N/3)

Ques 6: 10 suspects are rounded by the police and questioned about a bank robbery. Only one of them is guilty. The suspects are made to stand in a line and each person declares that the person next to him on his right is guilty. The rightmost person is not questioned. Which of the following possibilities are true?

A. All suspects are lying.
B. leftmost suspect is innocent.
C. leftmost suspect is guilty

(a) A only
(b) A or C
(c) A or B
(d) B only

Ans. c

Note: Remember it I don't know the logic

Ques 7: Alok and Bhanu play the following min-max game. Given the expression $N = 15 + X*(Y - Z)$ 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?

Ans. $15+18=33$

Note: For this type of questions:

$x+y-z=11$
 $x-y-z=2$
 $x*(y+z)=18$

Ques 8: How many four digit numbers can be formed using the digits 1, 2, 3, 4, 5 (but with repetition) that are divisible by 4? Can you help Alok find the answer?

(a) 100
(b) 125
(c) 75
(d) 85

Ans.: $5^n - 1 = 5^4 - 1 = 125$, n= no of digits

Ques 9)The age of the two friends were in the ration of 6:5.If the sum of their ages is 66.Then after how many years their ratio will become 7:6?

a)11 b)6 c)10 d)12

Ques 10) The age of the two friends were in the ration of 2:3.If the sum of their ages is 55.Then after how many years their ratio will become 4:5?

a)11 b)33 c)22 d)44

Ques 11)A volume of 10936 l water is in a container of sphere.How many semisphere of volume 4l each will be required to tranfer all the water into the small semispheres?

a)2812 b)8231 c)2734 d)4222

Ques 12)A person ismanufacturing a house.He bought 20 ropes of wire which has a density of 300 Kg/m³.The height of the building to be constructed is 40 m.If the capacity of the current passed in the wire is 20 A and the voltage capacity is 80 Volts.Then what will be the opposing force to the current if the wire is used ?

a)2 b)4 c)8 d)1600

Ques 13)A horse chases a pony 2 hours after the pony runs.Horse takes 3 hours to reach the pony.If the average speed of the horse is 81Kmph.Then what is the average speed of the pony?

a)46.4 b)51 c)53.4 d)48.6

Ques 14)The difference between two no is 9 and the product of the two is 14.What is the square of their sum?

a)120 b)130 c)137 d)145

Ques 15) On planet korbha, a solar blast has melted the ice caps on its equator. 9 years after the ice melts, tiny planetoids called echina start growing on the rocks. Echina grows in the form of circle, and the relationship between the diameter of this circle and the age of echina is given by the formula $d = 4\sqrt{t-9}$ for $t \geq 9$ where d represents the diameter in mm and t the number of years since the solar blast.Jagan recorded the radius of some echina at a particular spot as 7mm. How many years back did the solar blast occur?

a) 17 b)21.25 c)12.25 d)14.05

Ques 16)A man goes 50Km north , then turned left walked 40Km, then turned right ? In which direction he is?

a)North b)South c)East d)West

Ques 16)In T.Nagar the building were numbered from 1 to 100.Then how many 4's will be present in the numbers?

a)18 b)19 c)20 d)21

Ques 17)In T.Nagar the building were numbered from 1 to 100.Then how many 6's will be present in the numbers?

a)18 b)19 c)20 d)21

Ques 18)In T.Nagar the building were numbered from 1 to 100.Then how many 1's will be present in the numbers?

a)18 b)19 c)20 d)21

Ques 19)In T.Nagar the building were numbered from 1 to 100.Then how many 0's will be present in the numbers?

a)18 b)19 c)20 d)11

Ques 20) Ferrari S.P.A is an Italian sports car manufacturer based in Maranello, Italy. Founded by Enzo Ferrari in 1928 as Scuderia Ferrari, the company sponsored drivers and manufactured race cars before moving into production of street-legal vehicles in 1947 as Ferrari S.P.A. Throughout its history, the company has been noted for its continued participation in racing, especially in Formula One where it has employed great success .Rohit once bought a Ferrari.

It could go 4 times as fast as Mohan's old Mercedes. If the speed of Mohan's Mercedes is 35 km/hr and the distance traveled by the Ferrari is 490 km, find the total time taken for Rohit to drive that distance.

20.72 b) 5.18 c) 238.25 d) 6.18

Ques 21) A sheet of paper has statements numbered from 1 to 70. For all values of n from 1 to 70. Statement n says 'At least 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 are false.
- b) The odd numbered statements are true and the even numbered are false.
- c) The first 35 statements are true and the last 35 are false.
- d) The first 35 statements are false and the last 35 are false.

Ques 22) A man goes north 37km.turns left goes 2km.turns right goes 17km.turns right goes 2km. find distance b/w starting ending point.

a) 54 b) 27 c) 81 d) 67

Ques 23) If there are 30 cans out of them one is poisoned if a person tastes very little he will die within 14 hours so if there are mice to test and 24 hours to test, how many mices are required to find the poisoned can?

a) 3 b) 2 c) 6 d) 1

Ques 24) If a and b are mixed in 3:5 ration and b and c are mixed in 8:5 ration if the final mixture is 35 liters, find the amount of b?

A) 13.34 b) 15.73 c) 16.73 d) 9.45

Ques 25) If we subtract a number with y , we get 4 increase of number, once it got divided by y itself... Find that number??

A) 13 b) 12 c) 14 d) 11

Ques 26) It is the class with the seating arrangement in 4 rows and 8 columns. When the teacher says 'start' the girl who is sitting in first row and first column will say 1, then the next girl sitting behind her will say 4, the next girl sitting behind that girl will say 7, in a particular order each girl is telling a number, the following girls told 10, 13 next turn is yours what u will say?

a) 15 b) 17 c) 14 d) 16

Ques 27) It is dark in my bedroom and I want to get two socks of the same color from my drawer, which contains 24 red and 24 blue socks. How many socks do I have to take from the drawer to get at least two socks of the same color?

A) 2 b) 3 c) 48 d) 25

Ques 28) If the Valentine's Day in 2005 falls on Monday, then on which day will the Valentine's Day fall on 2010?

A) Saturday b) Thursday c) Wednesday d) Sunday

Ques 29). A person run from A to B.He took $\frac{1}{4}$ of the time less to reach B when compare to run at normal Speed.Then how many percentage he has increased his speed?

a)40 b)44.4 c)33.3 d)22.2

Ques 30). An athlete decides to run the same distance in $\frac{1}{4}$ th less time that she usually took. By how much percent will she have to increase her average speed?

a)40 b)44.4 c)33.3 d)22.2

Ques 31). In a building there are 5 rooms.Each having a equal area .The length of the room is 4m and breadht is 5 m.The height of the rooms are 2m.If 17 bricks are needed to make a square meter then how many bricks are needed

to make the floor of a particular room?

a)320 b)380 c)340 d)300

Ques 32). One man want to build a wall .The length and breadth of the wall are 20 and 30 respectively. He need 35 bricks for one square centimeter then how many bricks he need?

a)21,500 b)30,000 c)21,000 d)20,000

Ques 33). In a hotel we can order two types of varities,but we can make 6 more variteis in home.One can choose the four varities with two from hotel as must.Find how many ways one can order.

a)14 b)15 c)56 d)28

Ques 34). If a pipe can fill the tank within 6hrs.But due to leak it takes 30 min more.Now the tank is full then how much time will it take to empty the tank throught the leak.?

a)78 b)56 c)66 d)59

Ques 35).The bacteria has the probability of split into 3 and probability to die is $\frac{1}{3}$ rd of the total bacteria.Let the probability is P.Some of them survived with probability $\frac{1}{5}$.Then which among the following relation is true?

a) $P=\frac{1}{3}+\frac{1}{5} \cdot 3$ b) $P=\frac{1}{5} \cdot (\frac{1}{8}-3)$

Ques 36). There is a bacteria which has the probability of die $\frac{1}{3}$ of its total number or it may tripled. Find out the probability

A. $P=\frac{1}{3}+(\frac{2}{3} \cdot p^3)$ B. $P=\frac{2}{3}+(\frac{2}{3} \cdot p^3)$ C. $P=\frac{2}{3}+(\frac{1}{3} \cdot p^3)$ D $P=\frac{2}{3}+(\frac{2}{3} \cdot p^3)$

Ques 37) In T.Nagar the building were numbered from 1 to 100.Then how many 4's will be present in the numbers?

a)18 b)19 c)20 d)21

Ques 38)Amrith told to Anand in front of a Photo that "He is the son of my father's son".Find who is in the picture if amrith have no brothers and sisters.

a)Amrith himself b)Amrith's Uncle c)Amrith's Father d)Amrith's son

Ques 39) One person has no siblings and says," the guy in the photo is the only son of my father 's son". What is the relation of the guy to the person?

Ques 40) One grand father has 3 grand children two of the age difference is 3.Eldest child age is 3 times the youngest childs age and the eldest child age is two year more than the sum of other two children. Find what is the age of the elders child?

a)18 b)22 c)30 d)10.

TCS PLACEMENT PAPER – NOVEMBER 2010

Written Test:-

1. $(\frac{1}{2})$ of a number is 3 more than the $(\frac{1}{6})$ of the same number?

a) 6 b)7 c)8 d)9

2. There are two water tanks A and B, A is much smaller than B. While water fills at the rate of 1 liter every hour in A, it gets filled up like, 10, 20, 40,80, 160.....in tank B. (At the end of first hour, B has 10 liters, second hour it has 20

liters and so on). If tank B is $\frac{1}{32}$ filled of the 21 hours, what is total duration of hours required to fill it completely?

a) 26 B)25 c)5 d)27

3. persons standing in queue with different age group, after two years their average age will be 43 and seventh person joined with them. Hence the current average age has become 45. Find the age of seventh person?

a) 43 b)69 c)52 d)31

4. In the reading room of a library, there are 23 reading spots. Each reading spot consists of a round table with 9 chairs placed around it. There are some readers such that in each occupied reading spot there are different numbers of readers. If in all there are 36 readers, how many reading spots do not have even a single reader?

a)8 b)none c)16 d)15

5. A man jogs at 6 mph over a certain journey and walks over the same route at 4 mph. What is his average speed for the journey?

a) 2.4 mph b) 4.8 mph c) 4 mph d) 5 mph

6. $(40 \cdot 40 \cdot 40 - 31 \cdot 31 \cdot 31) / (40 \cdot 40 + 40 \cdot 31 + 31 \cdot 31) = ?$

a)8 b)9 c)71 d)51

7. $((4x+3y)+(5x+9y))/(5x+5y) = ?$ as $(x/2y) = 2$

a)8 b)none c)16 d)15

8. A girl has to make pizza with different toppings. There are 8 different toppings. In how many ways can she make pizzas with 2 different toppings?

a)16 b)56 c)112 d)28

9. 3, 22, 7, 45, 15, ?, 31

a)91 b)151 c)90 d)5

10. Simple question but big one on average age.sth like a, b, c weighted separately 1st a, b, c ,then a& b, then b & c ,then c & a at last abc, the last weight was 167,then what will be the average weight of the 7 reading?

a)95 b)95.428 c)95.45 d)94

11. A toy train produces 10 different sounds when it moves around a circular toy track of radius 5 m at 10 m per min. However, the toy train is defective and it now produces only 2 different tunes at random. What are the odds that the train produces for consecutive music tones of the same type?

a) 1 in 16 B)1 in 4 c)1 in 8 d)1 in 32

12. A triangle is made from a rope. The sides of the triangle are 25 cm, 11 cm and 31 cm. What will be the area of the square made from the same rope?

a)280.5625 b)240.5625 c)280.125 d)240

13. What is the distance between the z-intercept from the x-intercept in the equation $ax+by+cz+d=0$

14. What is the distance of the z-intercept from the x-intercept in the equation $ax+by+cz=d$ (I do not remember the values of a, b, c, d).

15. A scientist was researching on animal behavior in his lab. He was very interested in analyzing the behavior of bear. For some reason he travelled 1mile in north direction & reached at North Pole. There he saw a bear. He then followed the bear around 1 hr with a speed of 2km/hr in east direction. After that he travelled in south direction & reached at his lab in 2 hrs. Then what is the color of the bear?

a)white b)black c)gray d)brown

16. Out of 7 children the youngest is boy then find the probability that all the remaining children are boys

a)1/64 b)1/32 c)1/128 d)1/256

17. Usha bought a linen cloth and rope to build a tent. If the rope is 153 m long and it is to be cut into pieces of 1m length, then how many cuts are to be made to cut the ropes into 153 pieces?

a)153 b)152 c)154 d)155

18. Spores of a fungus, called late blight, grow and spread infection rapidly. These pathogens were responsible for the Irish potato famine of the mid-19th century. These seem to have attacked the tomato crops in England this year. The tomato crops have reduced and the price of the crop has risen up. The price has already gone up to \$45 a box from \$27 a box a month ago. How much more would a vegetable vendor need to pay to buy 27 boxes this month over what he would have paid last month?

a) \$27 b)\$ 18 c)\$45 d)\$ 486

19. A Person buys a horse for 15 ponds, after one year he sells it for 20 pounds. After one year, again he buys the same horse at 30 pounds and sells it for 40 pounds. What is the profit for that person?

20. John buys a cycle for 31 dollars and given a cheque of amount 35 dollars. Shop Keeper exchanged the cheque with his neighbor and gave change to John. After 2 days, it is known that cheque is bounced. Shop keeper paid the amount to his neighbor. The cost price of cycle is 19 dollars. What is the profit/loss for shop keeper?

a)loss 23 b)gain 23 c)gain 54 d)Loss 54

21. A lady has fine gloves and hats in her closet- 18 blue, 32 red, and 25 yellow. The lights are out and it is totally dark. In spite of the darkness, she can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color?

a)50 b)8 c)60 d)42

22. Sangakara and Ponting selects batting by using a dice, but dice is biased. So to resolve, Ponting takes out a coin. What is the probability that coin shows correct option?

a)1/2 b)1/6 c)1/12 d)6/10

23. In a family there are some boys and girls. All boys told that they are having equal no of brothers and sisters and girls told that they are having twice the no. of brothers than sisters. How many boys and girls present in a family?

a)4 boys and 3 girls b)3 boys and 4 girls c)2 boys and 5 girls d)5 boys and 2 girls

24. 10men and 10 women are there, they dance with each other, is there possibility that 2 men are dancing with same women and vice versa?

a)22 b)20 c)10 d)none

25. Middle- earth is a fictional land inhabited by hobbits, elves, dwarves and men. The hobbits and elves are peaceful creatures that prefer slow, silent lives and appreciate nature and art. The dwarves and the men engage in physical games. The game is as follows. A tournament is one where out of the two teams that play a match, the one that loses get eliminated. The matches are played in different rounds, where in every round; half of the teams get eliminated from the tournament. If there are 8 rounds played in knock out tournament, how many matches were played?

a)257 b)256 c)72 d)255

26. A game is played between 2 players and one player is declared as winner. All the winners from first round are played in second round. All the winners from second round are played in third round and so on. If 8 rounds are played to declare only one player as winner, how many players are played in first round?

a)256 b)512 c)64 d)128

27. Metal strip of width 'x' cm. 2 metal strips are placed one over the other, then the combine length of 2 strips is 'y'. If 'z' strips are placed in that manner. What is the final width of that arrangement?

28. There is 7 friends (A1, A2, A3....A7).If A1 have to have shake with all without repeat. How many handshakes possible?

a)6 b)21 c)28 d)7

29. 49 members attended the party. In that 22 are males, 17 are females. The shake hands between males, females, male and female. Total 12 people given shake hands. How many such kinds of such shake hands are possible?

a)122 b)66 c)48 d)128

30. B is taller than j and 3 pillars. P is shorter than B and 2 pillars is j shorter/taller than P?

a)yes b)no c)may be d)can't find

31. There are 1000 pillars for a temple. 3 friends Linda, Chelsey, Juli visited that temple. (Some unrelated stuff) Linda is taller than Chelsea and taller than 2 of 1000 pillars. Julia is shorter than Linda. Find the correct sentence?

- a) Linda is shorter among them
- b) Chelsea is taller than Julia
- c) Chelsea is shorter than Julia
- d) Cannot determine who is taller among Chelsea and Julia

32. Entry ticket to an exhibition ranges from 1p to 31p. You need to provide exact change at the counter. You have 31p coin. In how many parts will u divide 31p so that u will provide the exact change required and carry as less coins as possible?

a)4 b)5 c)6 d)7

33. Peter and Paul are two friends. The sum of their ages is 35 years. Peter is twice as old as Paul was when Peter was as old as Paul is now. What is the present age of Peter?

a)8 b)20 c)16 d)15

34. 20 men handshake with each other without repetition. What is the total number of handshakes made?

a)190 b)210 c)150 d)250

35. 10 people are there, they are shaking hands together, how many hand shakes possible, if they are in no pair of cyclic sequence.

a)45 b)9 c)12 d)10

36. If there are 2 wheelers and 4 wheelers parked in a school located at the heart of the city, find the number of 4 wheelers parked there if there were 20 two wheelers parked there

a)48 b)50 c)52 d)64

37. If there are 2 wheelers and 4 wheelers parked in a school located at the heart of the city, find the number of 4 wheelers parked there if there were 58 wheels are parked there

a)10 b)33 c)22 d)none

38. A man whose age is 45 yrs has 3 sons named John, Jill, jack. He went to a park weekly twice. He loves his sons very much. On a certain day he found the shop keepers selling different things. An apple cost 1penny, 2chocolate costs 1penny & 3 bananas cost 1 penny. He has bought equal number of apple, chocolate & banana for each son. If the total amount he invest is 7 penny then how many he has bought from each piece for his son?

a)1app,1cho,1 banana b)1 app,2cho,3 banana c)1app,2cho,1banana

39. One person had three children. He had 7 pennies. Find the distribution of the fruits among the three children. A melon costs 1 penny, 2 oranges cost 1 penny and 3 grapes cost 1 penny

a)2 melons, 1 orange, 1 grape b) 2 melons, 2 orange, 1 grape c) 1 melons, 2 orange, 1 grape.

40. The age of the two friends were in the ration of 6:5.If the sum of their ages is 55.Then after how many years their ratio will become 8:7?

a)11 b)7 c)10 d)12

TCS PLACEMENT PAPER – OCTOBER 2010

Written Test:-

Q. 1. In Madras, temperature at noon varies according to $-t^2/2 + 8t + 3$, where t is elapsed time. Find how much temperature more or less in 4pm to 9pm.

Ans. At 9pm 7.5 more

Sol) In equation first put $t=9$,
we will get 34.5.....(1)
now put $t=4$,
we will get 27.....(2)
so ans= $34.5-27$
 $=7.5$

Q. 2. A person had to multiply two numbers. Instead of multiplying by 35, he multiplied by 53 and the product went up by 540. What was the raised product?

- a) 780
- b) 1040
- c) 1590
- d) 1720

Sol) $x*53-x*35=540 \Rightarrow x=30$ therefore, $53*30=1590$ Ans

Q. 3. How many positive integer solutions does the equation $2x+3y = 100$ have?

- a) 50
- b) 33
- c) 16
- d) 35

Sol) There is a simple way to answer this kind of Q's given $2x+3y=100$, take l.c.m of 'x' coeff and 'y' coeff i.e. l.c.m of 2,3 ==6 then divide 100 with 6 , which turns out 16 hence answer is 16 short cut formula--- constant / (l.cm of x coeff and y coeff)

Q. 4 The total expense of a boarding house are partly fixed and partly variable with the number of boarders. The charge is Rs.70 per head when there are 25 boarders and Rs.60 when there are 50 boarders. Find the charge per head when there are 100 boarders.

- a) 65
- b) 55

- c) 50
d) 45

Sol)

Let a = fixed cost and k = variable cost and n = number of boarders
 total cost when 25 boarders $c = 25 \cdot 70 = 1750$ i.e. $1750 = a + 25k$
 total cost when 50 boarders $c = 50 \cdot 60 = 3000$ i.e. $3000 = a + 50k$
 solving above 2 eqns, $3000 - 1750 = 25k$ i.e. $1250 = 25k$ i.e. $k = 50$
 therefore, substituting this value of k in either of above 2 eqns we get
 $a = 500$ ($a = 3000 - 50 \cdot 50 = 500$ or $a = 1750 - 25 \cdot 50 = 500$)
 so total cost when 100 boarders $= c = a + 100k = 500 + 100 \cdot 50 = 5500$
 so cost per head $= 5500/100 = 55$

Q. 5 Amal bought 5 pens, 7 pencils and 4 erasers. Rajan bought 6 pens, 8 erasers and 14 pencils for an amount which was half more than what Amal had paid. What % of the total amount paid by Amal was paid for pens?

- a) 37.5%
b) 62.5%
c) 50%
d) None of these

Sol)

Let, 5 pens + 7 pencils + 4 erasers = x rupees
 so 10 pens + 14 pencils + 8 erasers = $2 \cdot x$ rupees
 also mentioned, 6 pens + 14 pencils + 8 erasers = $1.5 \cdot x$ rupees
 so $(10-6) = 4$ pens = $(2-1.5)x$ rupees
 so 4 pens = $0.5x$ rupees \Rightarrow 8 pens = x rupees
 so 5 pens = $5x/8$ rupees = $5/8$ of total (note x rupees is total amt paid by Amal)
 i.e $5/8 = 500/8\% = 62.5\%$ is the answer

Q. 6. lost Rs.68 in two races. My second race loss is Rs.6 more than the first race. My friend lost Rs.4 more than me in the second race. What is the amount lost by my friend in the second race?

Sol)

$x + x+6 = \text{rs } 68$
 $2x + 6 = 68$
 $2x = 68-6$
 $2x = 62$
 $x=31$
 x is the amt lost in I race
 $x+ 6 = 31+6=37$ is lost in second race
 then my friend lost $37 + 4 = 41$ Rs

Q. 7. Ten boxes are there. Each ball weighs 100 gms. One ball is weighing 90 gms.

- i) If there are 3 balls ($n=3$) in each box, how many times will it take to find 90 gms ball?
 ii) Same question with $n=10$
 iii) Same question with $n=9$

when $n=3$

(i) $nC_1 = 3C_1 = 3$ for 10 boxes .. $10 \cdot 3 = 30$

(ii) $10C_1 = 10$ for 10 boxes $10 \cdot 10 = 100$

(iii) $9C_1 = 9$ for 10 boxes $10 \cdot 9 = 90$

Q. 8. $(1-1/6) (1-1/7) \dots (1- (1/ (n+4))) (1-(1/ (n+5))) = ?$

leaving the first numerator and last denominator, all the numerator and denominator will cancelled out one another.

Ans. $5/(n+5)$

Q. 9. A face of the clock is divided into three parts. First part hours total is equal to the sum of the second and third part. What is the total of hours in the bigger part?

Sol) the clock normally has 12 hr
three parts x,y,z
 $x+y+z=12$
 $x=y+z$
 $2x=12$
 $x=6$
so the largest part is 6 hrs

Q. 10. Low temperature at the night in a city is $\frac{1}{3}$ more than $\frac{1}{2}$ hinge as higher temperature in a day. Sum of the low temp and high temp is 100 c. then what is the low temp.

Ans is 40 c.

Q. 11. 2 oranges,3 bananas and 4 apples cost Rs.15. 3 ornages 2 bananas 1 apple costs Rs 10. what is the cost of 3 oranges, 3 bananas and 3 apples

Ans. Rs 15.(same as above)

Q. 12. A shopkeeper bought a watch for Rs.400 and sold it for Rs.500.What is his profit percentage?

Ans. 25%

Q. 13. Bhanu spends 30% of his income on petrol on scooter. ? of the remaining on house rent and the balance on food. If he spends Rs.300 on petrol then what is the expenditure on house rent?

- a) Rs.525
- b) Rs.1000
- c) Rs.675
- d) Rs.175

(ans 175)

Q. 14. A sporting goods store ordered an equal number of white and yellow balls. The tennis ball company delivered 45 extra white balls, making the ratio of white balls to yellow balls $\frac{1}{5} : \frac{1}{6}$. How many white tennis balls did the store originally order for?

- a) 450
- b) 270
- c) 225
- d)None of these

ans=180

Q. 12. $(\frac{1}{2})$ of a number is 3 more than the $(\frac{1}{6})$ of the same number?

- a) 6
- b) 7
- c) 8
- d) 9

Q. 15. There are two water tanks A and B, A is much smaller than B. While water fills at the rate of 1 liter every hour in A, it gets filled up like, 10, 20, 40,80, 160..in tank B. (At the end of first hour, B has 10 liters, second hour it has 20 liters and so on). If tank B is $\frac{1}{32}$ filled of the 21 hours, what is total duration of hours required to fill it completely?

- a) 26
- B) 25
- c) 5
- d) 27

Q. 16. Smita was making a cube with dimensions $5 \times 5 \times 5$ using $1 \times 1 \times 1$ cubes. What is the number of cubes needed to make a hollow cube looking of the same shape?

- a) 98
- b) 104
- c) 100
- d) 61

Q. 17. A lady has fine gloves and hats in her closet- 25 blue, 7 red, and 9 yellow. The lights are out and it is totally dark. In spite of the darkness, she can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color?

Q. 18. A game is played between 2 players and one player is declared as winner. All the winners from first round are played in second round. All the winners from second round are played in third round and so on. If 8 rounds are played to declare only one player as winner, how many players are played in first round?

- a) 256
- b) 512
- c) 64
- d) 128

Q. 19. There is 7 friends (A1, A2, A3, ..., A7). If A1 have to have shake with all without repeat. How many handshakes possible?

- a) 6
- b) 21
- c) 28
- d) 7

Q. 20. On planet korba, a solar blast has melted the ice caps on its equator. 9 years after the ice melts, tiny planetoids called echina start growing on the rocks. Echina grows in the form of circle, and the relationship between the diameter of this circle and the age of echina is given by the formula $d = 4\sqrt{t-9}$ for $t \geq 9$ where d represents the diameter in mm and t the number of years since the solar blast. Jagan recorded the radius of some echina at a particular spot as 7mm. How many years back did the solar blast occur?

- a) 17
- b) 21.25
- c) 12.25
- d) 14.05

Q. 21. Ferrari S.P.A is an Italian sports car manufacturer based in Maranello, Italy. Founded by Enzo Ferrari in 1928 as Scuderia Ferrari, the company sponsored drivers and manufactured race cars before moving into production of street-legal vehicles in 1947 as Ferrari S.P.A. Throughout its history, the company has been noted for its continued participation in racing, especially in Formula One where it has employed great success. Rohit once bought a Ferrari. It could go 4 times as fast as Mohan's old Mercedes. If the speed of Mohan's Mercedes is 35 km/hr and the distance traveled by the Ferrari is 490 km, find the total time taken for Rohit to drive that distance.

- a) 20.72
- b) 5.18
- c) 238.25
- d) 6.18

Q. 22. A sheet of paper has statements numbered from 1 to 70. For all values of n from 1 to 70. Statement n says 'At least 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 are false.
- b) The odd numbered statements are true and the even numbered are false.
- c) The first 35 statements are true and the last 35 are false.
- d) The first 35 statements are false and the last 35 are false.

Q. 23. 3 persons a, b, c were there A always says truth lies on Monday, Tuesday, & Wednesday. but C lies on thursday, Friday & Saturday. one day A said "that B & C said to A that" B said "yesterday way one of the days when I lies", C said that" yesterday way one of the days when I lies too". then which day was that?

- a) Sunday
- b) Thursday
- c) Saturday

d) Tuesday

Q. 24. By using 1,2,3,4,5, how many 5 digit no. can be formed which is divisible by 4, repetition of no. is allowed??

Q 25. 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 ($0 \leq i \leq 19$)

Q 26.. 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 coin is the third coin from the top. Then:-

- A) In order to win, Alice's first move should be a 0-move.
- B) In order to win, Alice's first move can be a 0-move or a 1-move.
- C) In order to win, Alice's first move should be a 1-move.
- D) Alice has no winning strategy.

Q.27. 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) $4/9$
- B) $1/9$
- C) $2/3$
- D) $5/3$

Q.28. 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

29. 10 suspects are rounded by the police and questioned about a bank robbery. Only one of them is guilty. The suspects are made to stand in a line and each person declares that the person next to him on his right is guilty. The rightmost person is not questioned. Which of the following possibilities are true?

- A. All suspects are lying or the leftmost suspect is innocent.
- B. All suspects are lying and the leftmost suspect is innocent .
- A) B only
- B) Neither A nor B
- C) A only
- D) Both A and B

Q.30 The IT giant Tirmop has recently crossed a head count of 150000 and earnings of \$7 billion. As one of the forerunners in the technology front, Tirmop continues to lead the way in products and services in India. At Tirmop, all programmers are equal in every respect. They receive identical salaries and also write code at the same rate. Suppose 12 such programmers take 12 minutes to write 12 lines of code in total. How long will it take 72 programmers to write 72 lines of code in total?

Q.31. 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

Q. 32. If you type in the command `nohup sort employees > list 2 > error out & and log off`, the next time you log in, the output will be

- a) in a file called list and the error will be typed in a file error out
- b) there will be no file called list or error out

- c) error will be logged in a file called list and o/p will be in error out
- d) you will not be allowed to log in
- e) none of the above

Q.33. Ram buys a cycle for 31 dollars and given a cheque of amount 35 dollars. Shop Keeper exchanged the cheque with his neighbor and gave change to Ram. After 2 days, it is known that cheque is bounced. Shop keeper paid the amount to his neighbor. The cost price of cycle is 19 dollars. What is the profit/loss for shop keeper?

Ans. is 23(cost price + change given).

Q.34. Metal strip of width 'x' cm. 2 metal strips are placed one over the other, then the combine length of 2 strips is 'y'. If 'z' strips are placed in that manner. What is the final width of that arrangement?

Ans. is $(z-1)(y-x) + x$.

Q.17. A game is played between 2 players and one player is declared as winner. All the winners from first round are played in second round. All the winners from second round are played in third round and so on. If 8 rounds are played to declare only one player as winner, how many players are played in first round

Ans. is 28.

Q.35. There are 3 boys A, B, C and 2 Girls D, E. D always sit right to A. Girls never sit in extreme positions and in the middle position. C always sits in the extreme positions. Who is sitting immediate right to E?

Ans. is B or C

Q.19. 49 members attended the party. In that 22 are males, 17 are females. The shake hands between males, females, male and female. Total 12 people given shake hands. How many such kinds of such shake hands are possible?

Ans. is 12C2

Q.36. Entry ticket to an exhibition ranges from 1p to 31p. You need to provide exact change at the counter. You have 31p coin. In how many parts will u divide 31p so that u will provide the exact change required and carry as less coins as possible?

- (a) 22
- (b) 31
- (c) 6
- (d) 32

Ans. is 6

Q.37. There are 2 friends Peter and Paul. Peter age is twice as old as Paul when peter was as old as Paul is now. Sum of the present ages of Peter and Paul is 35.What is the present age of Peter?

Ans. is 20

38. There are two water tanks A and B, A is much smaller than B. While water fills at the rate of one liter every hour in A, it gets filled up like 10, 20, 40, 80, 160 in tank B. (At the end of first hour, B has 10 liters, second hour it has 20, and so on). If tank B is $\frac{1}{32}$ filled after 21 hours, what is the total duration required to fill it completely?

- (a) 26 hrs
- (b) 25 hrs
- (c) 5 hrs
- (d) 27 hrs

Ans. a

39. There are two water tanks A and B, A is much smaller than B. While water fills at the rate of one liter every hour in A, it gets filled up like 10, 20, 40, 80, 160... in tank B. (At the end of first hour, B has 10 liters , second hour it has 20, and so on). If tank B is $\frac{1}{16}$ filled after 4 hours, what is the total duration required to fill it completely?

- (a) 8hrs
 - (b) 25 hrs
 - (c) 5 hrs
 - (d) 27 hrs
- Ans. a

40. Unnecessary data. A lady has fine gloves and hats in her closet- 18 blue- 32 red , 10 white , 25 yellow, 55 purple, 30 orange. The lights are out and it is totally dark inspite of the darkness. She can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color of blue, red, yellow?

- (a) 59
 - (b) 8
 - (c) 50
 - (d) 42
- Ans. a(32+25+2)

Note: For this type of questions:

Bigger+Middle+1 (Suppose 18, 32, 25 =32+25+1), If you do not find answer in options, choose the one closer tho the answer you got.

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Written Test:-

Q.1. How many four digit numbers can be formed using the digits 1, 2, 3, 4, 5 (but with repetition) that are divisible by 4?

Can you help Alok find the answer?

- (a) 100
- (b) 125
- (c) 75
- (d) 85

Ans. $5^n - 1 = 5^4 - 1 = 125$, n= no of digits

Q.2. On planet korba, a solar blast has melted the ice caps on its equator. 9 years after the ice melts, tiny planetoids called echina start growing on the rocks. Echina grows in the form of circle, and the relationship between the diameter of this circle and the age of echina is given by the formula $d = 4 * (t-9)$ for $t \geq 9$

Where d represents the diameter in mm and t the number of years since the solar blast.

Jagan recorded the radius of some echina at a particular spot as 12mm. How many years back did the solar blast occur?

- (a) 17
- (b) 21.25
- (c) 12
- (d) 12.06

Ans. c

Q.3.. Ferrari S.P.A is an Italian sports car manufacturer based in Maranello, Italy. Founded by Enzo Ferrari in 1928 as Scuderia Ferrari , the company sponsored drivers and manufactured race cars before moving into production of street-legal vehicles in 1947 as Feraari S.P.A. Throughout its history, the company has been noted for its continued participation in racing, especially in Formula One where it has employed great success. Rohit once bought a Ferrari . It could go 4 times as fast as Mohan's old Mercedes. If the speed of Mohan's Mercedes is 46 km/hr and the distance

traveled by the Ferrari is 953 km, find the total time taken for Rohit to drive that distance.

- (a) 20.72
- (b) 5.18
- (c) 238.25
- (d) 6.18

Ans. b

Q.4. A sheet of paper has statements numbered from 1 to 70. For all values of n from 1 to 70. Statement n says 'At least 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 are false.
- (b) The odd numbered statements are true and the even numbered are false.
- (c) The first 35 statements are true and the last 35 are false.
- (d) The first 35 statements are false and the last 35 are false.

Ans. c

Note: For this type of Questions, follow this:

At least- 1st half are true, Last half are false

Exactly- Last second one is true or $(N-1)$ th Statement is true

Almost- All are true.

Q.5. There are two water tanks A and B, A is much smaller than B. While water fills at the rate of one liter every hour in A, it gets filled up like 10, 20, 40, 80, 160 in tank B. (At the end of first hour, B has 10 liters, second hour it has 20, and so on). If tank B is $1/32$ filled after 21 hours, what is the total duration required to fill it completely?

- (a) 26 hrs
- (b) 25 hrs
- (c) 5 hrs
- (d) 27 hrs

Ans. a

Q.6 There are two water tanks A and B, A is much smaller than B. While water fills at the rate of one liter every hour in A, it gets filled up like 10, 20, 40, 80, 160... in tank B. (At the end of first hour, B has 10 liters, second hour it has 20, and so on). If tank B is $1/16$ filled after 4 hours, what is the total duration required to fill it completely?

- (a) 8hrs
- (b) 25 hrs
- (c) 5 hrs
- (d) 27 hrs

Ans. a

Q.7. Unnecessary data. A lady has fine gloves and hats in her closet- 18 blue- 32 red, 10 white, 25 yellow, 55 purple, 30 orange. The lights are out and it is totally dark inspite of the darkness. She can make out the difference between a hat and a glove. She takes out an item out of the closet only if she is sure that if it is a glove. How many gloves must she take out to make sure she has a pair of each color of blue, red, yellow?

- (a) 59
- (b) 8
- (c) 50
- (d) 42

Ans. $a(32+25+2)$

Note: For this type of questions:

Bigger+Middle+1 (Suppose 18, 32, 25 = $32+25+1$), If you do not find answer in options, choose the one closer tho the answer you got.

Q.8 The IT giant Tirnop has recently crossed a head count of 150000 and earnings of \$7 billion. As one of the forerunners in the technology front, Tirnop continues to lead the way in products and services in India. At Tirnop, all programmers are equal in every respect. They receive identical salaries and also write code at the same rate. Suppose 12 such programmers take 12 minutes to write 12 lines of code in total. How long will it take 72 programmers to write 72 lines of code in total?

- (a) 6
- (b) 18
- (c) 72
- (d) 12

Ans. d

Note: $N1T1/W1=N2T2$, W=No. of Lines, N=No. of PRGMRS, T=Time

Q.9 The citizens of planet nigiet are 6 fingered and have thus developed their decimal system in base 6. 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) 256
- (b) 54
- (c) 192
- (d) 108

Ans. d

Note: First find no. 3s in 1000 (Decimal only), Definately you will get 300, Now convert 300 into 300 base 6 by this $3*6^2+0*6^1+0*6^0$

Q.10. 12 people $\{a_1, a_2, \dots, a_{12}\}$ meet and shake hands in a circular fashion. In other words, there are totally 36 handshakes involving the pairs, $\{a_1, a_2\}, \{a_2, a_3\}, \dots, \{a_{11}, a_{12}\}, \{a_{12}, a_1\}$. 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) 4
- (c) 18
- (d) 11

Ans. B (N/3)

Q. 11. Alice and Bob play the following coins-on-a-stack game. 100 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 ($0 \leq i < 100$). 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.

- A. Alice has no winning strategy.
- B. Initially, the gold coins the third coin from the top. Then
- C. In order to win, Alice's first move should be a 0-move.
- D. In order to win, Alice's first move should be a 1-move.

Ans. D

Q. 12. people meet and shake hands. The maximum number of handshakes possible if there is to be no "cycle" of handshakes is (A cycle of handshakes is a sequence of k people a_1, a_2, \dots, a_k ($k > 2$) such that the pairs $\{a_1, a_2\}, \{a_2, a_3\}, \dots, \{a_{k-1}, a_k\}, \{a_k, a_1\}$ shake hands).

- (a) 7
- (b) 6
- (c) 9
- (d) 8

Ans. $c^{*(N-1)^{*}}$

Q. 13. 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) 0
- (b) $12/2^{12}$
- (c) $11/12$

(d) 1/12
Ans. a

Q. 14. 10 suspects are rounded by the police and questioned about a bank robbery. Only one of them is guilty. The suspects are made to stand in a line and each person declares that the person next to him on his right is guilty. The rightmost person is not questioned. Which of the following possibilities are true?

- A. All suspects are lying.
- B. leftmost suspect is innocent.
- C. leftmost suspect is guilty

- (a) A only
- (b) A or C
- (c) A or B
- (d) B only

Ans. c

Q. 15. 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) 4
- (b) 3
- (c) 0
- (d) 1

Ans. a 3 lines are given so answer is 4 one incenter and 3 excenters. If it is 3 line segments then answer would be 1

Q. 16. Alok and Bhanu play the following min-max game. Given the expression $N = 15 + X*(Y - Z)$

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

Ans. $15+18=33$

Note: For this type of questions:

$$x+y-z=11$$

$$x-y-z=2$$

$$x*(y+z)=18$$

Q. 17. A hare and a tortoise have a race along a circle of 100 yards diameter. The tortoise goes in one direction and the hare in the other. The hare starts after the tortoise has covered 1/5 of its distance and that too leisurely. 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 win the race? (for this values are changed)

- (a) 8
- (b) 5
- (c) 37
- (d) 80

Ans. c

Q. 18. A sheet of paper has statements numbered from 1 to 45. For all values of n from 1 to 45, statement n says "At most n of the statements on this sheet are false". Which statements are true and which are false?

- A. The odd numbered statements are true and the even numbered are false.
- B. The even numbered statements are true and the odd numbered are false.
- C. All statements are true.

Ans. c

Q. 56. A hollow cube of size 5 cm is taken, with a thickness of 1 cm. It is made of smaller cubes of size 1 cm. If 1 face of the outer surface of the cube are painted, totally how many faces of the smaller cubes remain unpainted?

- (a) 900
- (b) 488
- (c) 563
- (d) 800

Ans. c

Note: $5^3 - (25 \times \text{No. of painted faces})$

Q. 19 The IT giant Tirnop has recently crossed a head count of 150000 and earnings of \$7 billion. As one of the forerunners in the technology front, Tirnop continues to lead the way in products and services in India. At Tirnop, all programmers are equal in every respect. They receive identical salaries and also write code at the same rate. Suppose 12 such programmers take 12 minutes to write 12 lines of code in total. How many lines of code can be written by 72 programmers in 72 minutes?

- (a) 72
- (b) 432
- (c) 12
- (d) 144

Ans. b

Q. 20. The teacher is testing a student's proficiency in arithmetic and poses the following question. $\frac{1}{3}$ of a number is 3 more than $\frac{1}{6}$ of the same number. What is the number? Can you help the student find the answer?

- (a) 12
- (b) 18
- (c) 6
- (d) 21

Ans. b

Note: Alok and Bhanu play the following min-max game. Given the expression $N = X - Y - Z$

Q29. 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) 2
- (b) 4
- (c) 9
- (d) -18

Ans. a

Q 21. Horse started to chase dog as it relieved stable two hrs ago. And horse started to ran with average speed 22km/hr, horse crossed 10 mts road and two small pounds with depth 3m, and it crossed two small street with 200 mts length. After traveling 6 hrs, 2hrs after sunset it got dog. compute the speed of dog?

Ans. As we have speed and travel time of horse, we can get distance traveled by it.

Note: Hence $d = 22 \times 6 = 132\text{km}$,

Exactly this 132km was traveled by dog in 8 hours (as it started two hours earlier).

Hence speed of dog = $132/8 = 16.5\text{km/hr}$

Ans. 16.5km/hr.

Q 61. A and B play a game between them. The dice consist of colors on their faces (instead of number). When the dice are thrown, A wins if both show the same color, otherwise B wins. One die has 3 red faces and 3 blue faces. How many red and blue faces should the other die have if the both players have if the both players have the same chances of winning?

- (a) 5 red and 1 blue faces.
- (b) 1 red and 5 blue faces.
- (c) 3 red and 3 blue faces.

Ans. c

Q 22. In planet OZ planet there are 8 days, Sunday to Saturday and 8th day is Oz day. There is 36 hours in a day. What is angle between 12.40?

- (a) 80
- (b) 81
- (c) 87
- (d) 89

Ans. 89

Q 23. Ramu & sangeetha went for biological analysis to a island which is 34km from their place. They travelled in a boat which went at a speed of 2m/s. when they are in half a distance in the boat sangeetha note there are 7 leg & 8 leg octopuses under the water. Ramu counted the total number of legs of octopuses and got 54. Sangeetha instantly said I know how many 7 leged octopuses are there under the water. They both reached the island after 20 min they left . How many seven leged octopuses does sangeetha calculate?

- 1. 4
- 2. 5
- 3. 6
- 4. 7

Ans : Total number of legs of both 7 & 8 leged octopus = 54. Find number of 7 leged octopuses

Q 24 The ratio of current age of X and Y is 5:7. After how many years their age becomes 7:9?

Ans : Simple ratio

Q 25. by using 1,2,3,4,5,how many 5 digit no. can be formed which is divisible by 4,repitation of no. is allowed??

Ans : 2500 (not sure)

Q 26. $XY=21$ and $X+Y=13$.ans of X & Y will b in points..den $x^2+y^2=??$

Ans : Solve using quadratic eqn. you get x & y

Q 27. Person travels from A- to b in 9km/hr, and B to A in 4 Km/hr. What is the average speed?

Ans : $2(9*4)/9+4$

Q 28. Avg marks of 5 sub is 61. Six sub mark is 89. What is the average after adding 6th?

Ans : $(61*5) + 89/6$

Q 29. Find number of 3's between 1 & 100?

Ans : 19

Q 30. A pipe can fill a tank at the rate 1 litre/hr, the tank is 1/32 filled in 6 hours. After how many hours the tank is filled completely

Ans - 1/16, 1/8, 1/4, 1/2, 1. After 5 hours.

Q. 31. A man has to get air-mail. He starts to go to airport on his motorbike. Plane comes early and the mail is sent by a horse-cart. The man meets the cart in the middle after half an hour. He takes the mail and returns back, by doing so, he saves twenty minutes. How early did the plane arrive?

Ans:10min::assume he started at 1:00,so at 1:30 he met cart. He returned home at 2:00.so it took him 1 hour for the total journey.by doing this he saved 20 min.so the actual time if the plane is not late is 1 hour and 20 min.so the actual time of plane is at 1:40.The cart travelled a time of 10 min before it met him.so the plane is 10 min early.

Q. 32. 2 trees are there. One grows at $\frac{3}{5}$ of the other. In 4 years total growth of the trees is 8 ft. what growth will smaller tree have in 2 years.

Sol) THE BIG TREE GROWS 8FT IN 4 YEARS=>THE BIG TREE GROWS 4FT IN 2 YEARS.WHEN WE DIVIDE $4FT/5=.8*3=>2.4$

ans: 1.5 mt $4(x+(3/5)x)=88x/5=2x=5/4$ after 2 years $x=(3/5)*(5/4)*2 =1.5$

Q. 33. There is a six digit code. Its first two digits, multiplied by 3 gives all ones. And the next two digits multiplied by 6 give all twos. Remaining two digits multiplied by 9 gives all threes. Then what is the code?

sol) Assume the digit xx xx xx (six digits)

First Two digit $xx * 3=111$

$$xx=111/3=37$$

(first two digits of 1 is not divisible by 3 so we can use 111)

Second Two digit $xx*6=222$

$$xx=222/6=37$$

(first two digits of 2 is not divisible by 6 so we can use 222)

Thrid Two digit $xx*9=333$

$$xx=333/9=37$$

(first two digits of 3 is not divisible by 9 so we can use 333)

Q. 34. There are 4 balls and 4 boxes of colours yellow, pink, red and green. Red ball is in a box whose colour is same as that of the ball in a yellow box. Red box has green ball. In which box you find the yellow ball?

Ans is green...

Sol) Yellow box can have either of pink/yellow balls.

if we put a yellow ball in "yellow" box then it wud imply that "yellow" is also the colour of the box which has the red ball(becoz acordin 2 d question,d box of the red ball n the ball in the yellow box have same colour)

thus this possibility is ruled out...

therefore the ball in yellow box must be pink,hence the colour of box containin red ball is also pink....

=>the box colour left out is "green",,,which is allotted to the only box left,,the one which has yellow ball..

Q. 35. A bag contains 20 yellow balls, 10 green balls, 5 white balls, 8 black balls, and 1 red ball. How many minimum balls one should pick out so that to make sure the he gets at least 2 balls of same color.

Ans:he should pick 6 ball totally.

Sol) Suppose he picks 5 balls of all different colours then when he picks up the sixth one, it must match any on of the previously drawn ball colour.

thus he must pick 6 balls

Q. 36. What is the number of zeros at the end of the product of the numbers from 1 to 100

Sol) For every 5 in unit palce one zero is added Ch eta naS

so between 1 to 100 there are 10 nos like 5,15,25,...,95 which has 5 in unit place.

Similarly for every no divisible by 10 one zero is added in the answer so between 1 to 100 11 zeros are added

for 25,50,75 3 extra zeros are added

so total no of zeros are $10+11+3=24$

Q. 37. 10 Digit number has its first digit equals to the numbers of 1's, second digit equals to the numbers of 2's, 3rd digit equals to the numbers of 3's .4th equals number of 4's..till 9th digit equals to the numbers of 9's and 10th digit equals to the number of 0's. what is the number?.(6marks)

Ans:2100010006

2---shows that two 1's in the ans
1---shows that one 2 in ans
0---shows no 3 in the ans
0---shows no 4 in the ans
0---shows no 5 in the ans
1---shows one 6 in the ans
0---shows no 7 in the ans
0---shows no 8 in the ans
0---shows no 9 in the ans
6---shows six 0's in the ans

Q. 38 A and B are shooters and having their exam. A and B fall short of 10 and 2 shots respectively to the qualifying mark. If each of them fired atleast one shot and even by adding their total score together, they fall short of the qualifying mark, what is the qualifying mark?

Ans is 11

coz each had atleast 1 shot done so $10 + 1 = 11$
 $n 9 + 2 = 11$
so d ans is 11

Q. 39 Gavaskar average in first 50 innings was 50. After the 51st innings his average was 51 how many runs he made in the 51st innings

Ans) first 50 ings.- run= $50*50=2500$
51st ings.- avg 51. so total run = $51*51=2601$.
so run scored in that ings= $2601-2500=101$ runs.

Q. 40. Anand finishes a work in 7 days, Bittu finishes the same job in 8 days and Chandu in 6 days. They take turns to finish the work. Anand on the first day, Bittu on the second and Chandu on the third day and then Anand again and so on. On which day will the work get over?

- a) 3rd
- b) 6th
- c) 9th
- d) 7th

Ans is d) 7th day

Sol) In d 1st day Anand does $1/7$ th of total work
similarly,
Bithu does $1/8$ th work in d 2nd day
hence at d end of 3 days, work done = $1/7+1/8+1/6=73/168$
remaining work = $(168-73)/168 = 95/168$
again after 6 days of work, remaining work is = $(95-73)/168 = 22/168$
and hence Anand completes the work on 7th day.(hope u understood.)