



Indian Institute of Technology Guwahati

and

Techniche 
The Annual-Techno Management Festival
30th Aug-2nd Sep

in association with **Nimbuzz!**
present



Duration: 2hours 30 min

Hauts Squad

Maximum Marks: 171

TEAM DETAILS

Name of Participants:

1. _____

2. _____

Roll Number: _____

School Name: _____

City: _____

State: _____

General Instructions:-

Please read the instructions very carefully before attempting the paper. Failure to do so could cost you dearly.

1. Candidates must fill the Team Details in the space provided, before starting to attempt the paper.
2. All answers must be written in the space provided at the end of this booklet which has to be submitted at the end of the examination. The Question Paper can be taken back home.
3. All answers must be clear and legible. In case of any ambiguity, the decision of evaluation is final.
4. All the questions are correct and no queries will be entertained during the examination.
5. All those teams who have not paid their registration fee must submit it to the invigilators before signing the attendance booklet.
6. No additional sheets will be provided for the rough work.
7. Blank papers, clipboards, log tables, slide rulers, calculators, cellular phones, pagers and any other electronic gadgets are not allowed.
8. This question paper contains pages and **17+13** questions (objective and subjective respectively).
9. The medium for answering this Paper is English. Answers in any other Language will not be accepted.
10. The maximum marks for this paper is **171**.
11. The result will be declared on or before **4th August 2012**.

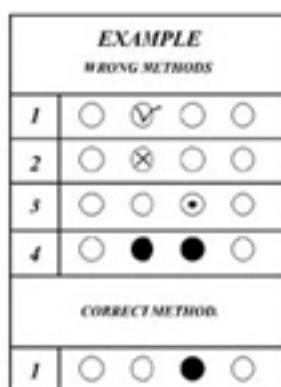
Selection Criteria

Top 1500 teams will be shortlisted on the basis of the objective section marks. Top 250 teams will be selected from these 1500 teams on the basis of their Subjective + Objective section marks. Top 50 among these 250 teams will be invited to IIT Guwahati for Technothlon Mains and will receive Gold Certificates. The next 200 teams will receive Silver Certificates.

NOTE: Subjective sections of only the top 1500 teams selected on the basis of Objective section marks will be evaluated.

OMR Instructions

1. Darken the bubbles properly by BLUE/BLACK pen only.
2. OMR sheet should not be FOLDED or SCRATCHED.
3. In case you feel that any question wrong or short of information then answer it **9999**.
4. Fill all the details given in the OMR sheet properly.
5. Result will be given only on the basis of Hall Ticket number. So, preserve your Hall ticket till the declaration of results.
6. Method to fill in the OMR Sheet.



DISCLAIMER: In any case of any discrepancy, the decision of the Organizers will be deemed final and no further correspondence will be entertained.



Marking Scheme

The following marking schemes will be used for evaluating various questions throughout the paper:

1) PLAIN MARKING SCHEME

This is the standard marking scheme for a section! In the Plain Marking scheme, the total marks you score in a section is a multiple of the number of correct answers you gave in that section.

2) GEOMETRIC MARKING SCHEME

This scheme guarantees bonus marks for more correct answers! In the Geometric Marking scheme, the total marks you score in a section increases exponentially with every correct answer you provide!

3) FIBONACCI MARKING SCHEME

The Fibonacci Marking scheme rewards consistency in answering questions of a section correctly! If 'n' is the number of questions you answered correctly in the section, then your score would be, a multiple of the ' $n+1$ 'th term in the Fibonacci Sequence dened by 1,1,2,3,5,8,13...

4) MOMENTUM MARKING SCHEME

In the Momentum marking scheme, a base score of 2 is awarded for a correct answer. For each correct answer in succession, you will be awarded ' $1 +$ (the no. of marks awarded for the previous correct answer)'. However, if you break the momentum (by not answering a question, or answering it wrongly), the score awarded to a correct answer resets to 2 (the base score)!

To clarify this scheme, consider this example:

If you correctly answered the rst question, you score 2 marks for it. Also, if you correctly answered the 2nd and 3rd questions, you score 3 and 4 marks, respectively, for the question. Supposing you did not answer the 4th question (or answered it wrongly) - so, you won't be awarded any marks for it. After that, if you answered the 5th question correctly, you will score 2 marks for it, and so on.

5) RIGHT WRONG SCHEME

In thhis Scheme, marks will be awarded according to the following equation:

$$(c^n - n^c + nc + 1)$$

where n = Total of no. of incorrect and not complete answers

c = No. of Correct answers

6) TETRAHEDRAL SCHEME

The Tetrahedral Marking scheme rewards consistency in answering questions of a section correctly! The nth tetrahedral number is the sum of the first n triangular numbers. A triangular number is the sum of the first n natural numbers. Marks awarded in this section will be the nth Tetrahedral number where n is the number of correct answers.

7) PASCAL SCHEME

In this scheme base marks are awarded according to Plain Marking Scheme. The Pascal Triangle marking scheme rewards bonus marks as per the Pascal Triangle. A simple construction of the triangle proceeds in the following manner. On row 0, write only the number 1. Then, to construct the elements of following rows, add the number above and to the left with the number above and to the right to find the new value. If either the number to the right or left is not present, substitute a zero in its place.

Look at the Nth line of the Pascal triangle, if the section contains N questions. Call this the 'active line'. If you correctly attempt both the i th and $(N-i+1)$ th questions, add the i th and the $(N-i+1)$ th numbers of the active line. The resulting sum is the number of bonus marks you get.

E.g., If you answer 1st and last question correctly, and the section contains 7 questions ($i = 0, N = 7$), you get bonus marks equal to the sum of the first and last numbers of the 7th line of the Pascal triangle.

No marks will be awarded for a section with no questions correctly answered.

There is NO negative marking for any section.





Math-era



(Geometric Marking Scheme - 3×2^N
N is the number of correct answers)

K. Dheerasameer was a very passionate mathematician of ancient times. He used to play with numbers and do what all mathematicians do the best; find a pattern. Logically speaking Mathematics in its phase as a new discipline was understood by observing the patterns which existed in the universe and that is why it is called the universal language. As many of his counterparts, Dheera too discovered something fascinating. During the course of his never ending pursuit of unravelling the secrets of Mathematics he stumbled on to a fascinating phenomenon. He found that there were a few 4 digit numbers which had the property to re-form themselves if divided into two 2 digit numbers (only from the middle) and their sum is squared.

For Example: 3025 can be divided into 30 and 25. $30+25 = 55$. The square of 55 ($55 \times 55 = 3025$).

He found out a few more numbers having the same trait. See whether you can guess them right based on the following hints

- 1) Find another 4 digit number possessing above quality and none of its digits are repeated?
- 2) Find another 4 digit number having same but one of its digits is repeated?
- 3) Find another 4 digit number having same but two of its digits are repeated?

If you have figured out the numbers then answer with the digit in the tens' place of each number.

For example if the number you figured out is 3025 then you should answer here with '2'.

Question 1:

For Number 1:

- a)2 b)0 c)5 d)3 e)None of these

Question 2:

For Number 2:

- a)9 b)1 c)0 d)4 e)None of these

Question 3:

For Number 3:

- a)4 b)6 c)0 d)5 e)None of these

Two lines touching each other perpendicularly.





(Geometric Marking Scheme - 2^*3^N
N is the number of correct answers)

Shubham was an avid chess player, one of the best in his college. Yesterday while practicing for the inter-IIT sports meet he plans to make the practice session more fun for the rookies present. He asked them to divide the chess board into two equal parts using straight lines along the predefined lines of the chess-board. The players were finding it quite fascinating to do but when they realized that everyone was coming up with his or her own version of the answer which were all correct they inferred that there were more than one ways to solve it. As Shubham asked all of them to find out the exact number of solutions for dividing a standard sized chess board into two equal parts they found it really difficult to do. So finally they were given a few easier versions to practice and excel the skill.

For Example: It is obvious that a square board of 2×2 can only be divided in one way-by a straight cut down the centre-because we shall not count reversals and reflections as different.

Question 4:

How many different ways are possible for a board of sixteen squares 4×4 to be cut in same fashion as said above ?

- a)4 b)7 c)6 d)8 e)None of these

Question 5:

Lets move on to a square board having odd no. of squares say 9 . Now to divide it into two equal parts we have to cut out the central square and then divide it into equal shape and size. There is only one way to do it as shown below.

Now tell in how many ways a board of 25 squares

5×5 can be divided in same manner?

- a)10 b)15 c)12
d)20 e)None of these



One of the letter is underlined



math magic

(Tetrahedral Scheme)

Trick 1

Question 6:

Given 6 zeroes and 5 ones on a blackboard, Ram has to cross out pairs of numbers and write a number instead of them. If the pair he chooses is made up of equal numbers, he writes replaces them with a zero. While if they are unequal, he replaces them with a one. He stops only when he is left with a single one uncrossed number. Can you help him guess the number which he will end up with?

Question 7: Love, Flower, Petals

Durwank and Vishesh are very good friends. Vishesh is the witty one and always tries to sharpen Durwank's mental skills with his little games. He one day came up with this new game called 'Love Flower Petal' which involves rolling of 5 dice. He asked Durwank to find out the next outcome of the game based on the given set of results. Durwank bewildered to see the question knew just one thing 'rolling 5 dice gives you a combination numbers(1-6) which relates to an even number always'.

Here are given set of outcomes:

4, 1, 6, 3, 6	2
5, 6, 5, 4, 4	8
3, 5, 5, 5, 6	14
2, 1, 2, 1, 4	0
4, 3, 2, 1, 3	4
6, 5, 6, 2, 2	?



Durwank is still scratching his head, please help him out to find the next outcome

Question 8:

The Principal of an institution has to gift his wife a fresh bouquet on her birthday. He goes to a Biotechnology student, Aniket & asks for the fastest growing flowers. He recommends a species that doubles its no. everyday. To make the complete bouquet, 1 flower would have taken 80 days. So, the Principal decides to take 8 flowers. But he was not able to present the bouquet on time as he needed 1 day more. How many more flowers could have saved the Principal from the embarrassment?

(Right Wrong Scheme - ($c^n - n^c + nc + 1$)

--- c is the number of correct answers

--- n is the number of incorrect answers)

Trick 2

Question 9:

A group of pioneer scientists led by Pranshu and Abhishek, after years of research finally came up with the one machine Human Civilization has been longing for; "The Time Machine". But the success was only half achieved as they succeeded only in moving to and fro in the future. They were not able to go back first and then come back. There were a number of expeditions planned as they could now move forth and back in future. Once a few manuscripts belonging to the Maya Civilization were discovered by the world renowned archaeologist Pavan. Though the discovery was a pathbreaking one as according to the legends the manuscript contained the 'Date of Earth's Doom', but due to the manuscripts being half burnt the writing was not legible.

Pavan heard of the invention of time machine and seeked help from his old mate Abhishek. As Abhishek and Pranshu for the trial run of the Time Machine had already gone on several expeditions they knew that in the 56th century scientists have developed the technology which can rejuvenate the burnt paper.

So all three of them went on to time travel and reached the year 5555. Finally when they were able to read the manuscript they found out that the date was embedded in a code.

There were two hints printed to decode the data:

represents that the digit is present but not in the correct position.

* represents that the digit is present in its correct position.

The digits which form the year are the one of the digits of the given numbers which have to be found out using the above hints:

1302 ##

7456 *

1263 #*#

9863 ###

2178 ##

Find the correct year that the code tries to tell?

Question 10:

Aditya, the anchor of a Quiz Show wants to keep his crowd engaged when the participants were busy completing the assigned task. He decides brain teasers are the way to take. He tells the audience of two situations, one where the hour hand was exactly at a minute mark on the clock and the minute hand was 6 minutes ahead of it and the other where the hour hand was again on some other minute mark, with the minutes hand was 7 minutes ahead of it. The question is to find out the minimum time difference between the said situations.

Are you smarter than the audience?

I mix up an owl over a standing Z & a standing Z over an owl



Question 11

In a chessboard colouring of the “two-dimensional plane”, every black square has an equal number of white and black neighbours - 4 (even touching vertices counts as being neighbours). If one did a chessboard colouring of the 3-D space, such that an infinite cube which comprises of smaller cubes is alternately painted black and white i.e. for the two planes “vertical” and “horizontal” that every cube belongs to, has a chessboard colouring, what is the number of black neighbouring cubes a black cube has?

Question 12

Prisons, by tradition, are very fond of orderliness. The prisoners, however, are not. One such prison (looked after by the able Jailor Sagar) requires daily parades in a particular order, which is inevitably broken by the prisoners. Since re-arranging them from the scratch was a hectic job, the Jailor came up with an algorithm. The prisoners were made to stand in a line, and the following procedure repeated: a prisoner was made to move leftwards in the line, until there was no one of higher rank (as defined by the order) on his left. One such day, during the rearrangement, the number of steps taken by each of the prisoners is given below:

Number of steps: 0 1 2 3 1 0 2

Prisoner number: 1 2 3 4 5 6 7

Identify the initial order in which the prisoners were standing.

How to answer: If the initial configuration was 7654321, answer with 4321.

Question 13

We define an n-rabbit to be a special kind of chess piece. It can move one step in any of the vertical directions (i.e. to the four squares adjacent to it), and then take n steps, in the direction perpendicular to the one it just moved in. For instance, the 2-rabbit is the same as a knight. Find all n for which the corresponding n-rabbit, can reach any square from any other square, on a standard chessboard.

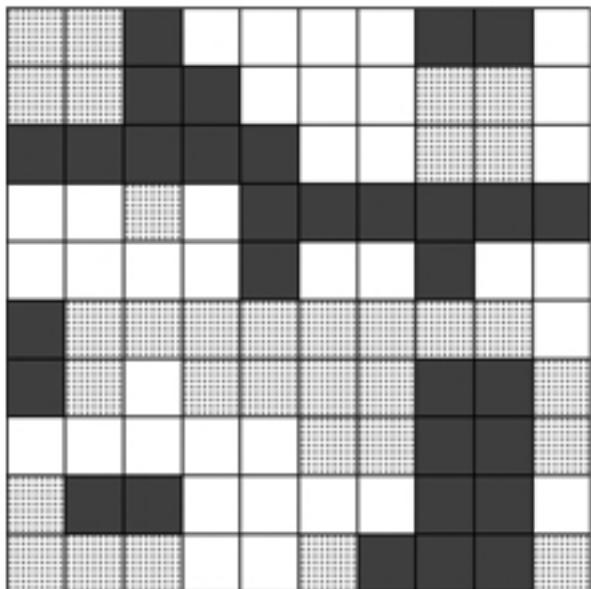
Give your answer as sum of all n.

Two sets of "three books which are placed horizontally in a rack one above the other"





(Plain Marking Scheme - 4*N
N is the number of correct answers)



Let's play a game. It is a vertical board game. Keep in mind that gravity is constantly acting on all the elements of the game. Here we have three blocks of different patterns and they are all explosive, but only when more than one are together. Note that you score based on a simple equation: Score = (No. of blocks exploded at once)². Therefore the larger the chain the more is your score. Also as soon as one of the rows is completely empty, the two of the parts created due to this gap close in on each other and fill the gap. For example, if 1,2,3,4,5 are the

columns of the game and at some point of time 3rd column is empty, so immediately the two parts created i.e. 1,2 and 4, 5 come together and the new arrangement thus formed is 1,2,4,5. Have fun while playing, but to spice things up you will be asked a few questions based completely on your experience of playing this game.

Question 14:

Which type of block fetches you the maximum score with minimum number of moves?

- a)White one
- b)dotted one
- c)grey one
- d)Both a and b
- e)Data insufficient

Question 15:

What is the minimum number of moves you need to clear one of the above colours?

- a)4
- b)5
- c)6
- d)8
- e)None of these

I'm here with you



TOGGLING LIGHTS



(Plain Marking Scheme - 4*N
N is the number of correct answers)

Krtin wants to be an actor but his parents do not support his dream. One night he plans to flee and try out his luck in the film city but doesn't want his parents to know his intentions. He wants to switch off all the lights of his house so that no one discovers that he was fleeing. As the bungalow was quite old, the wiring had worn out. If he switched off one of the lights, the adjacent lights' state toggled, but some are faulty (crossed) switches which don't have any effect. He needs your assistance for the same. Please help him out.



Bulb on



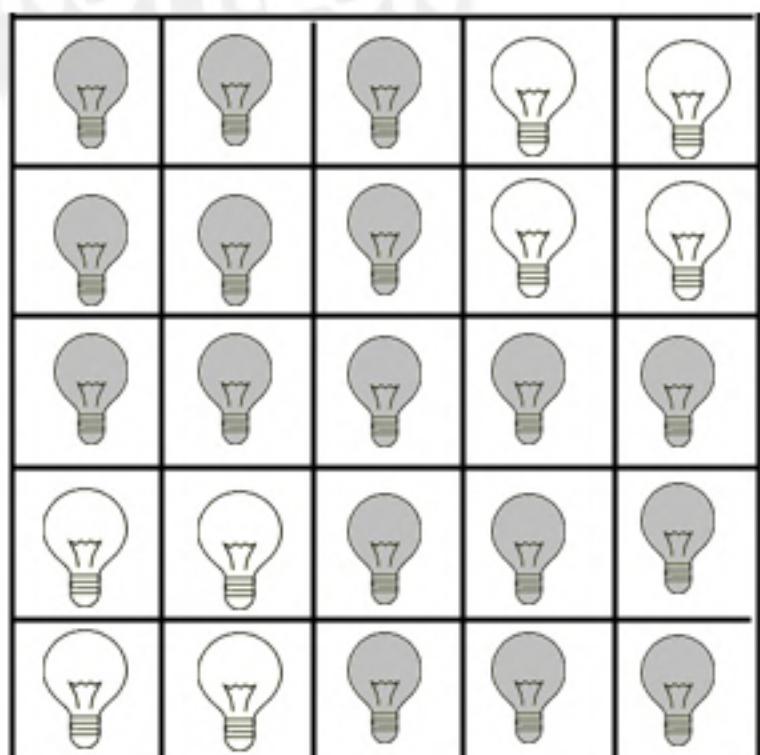
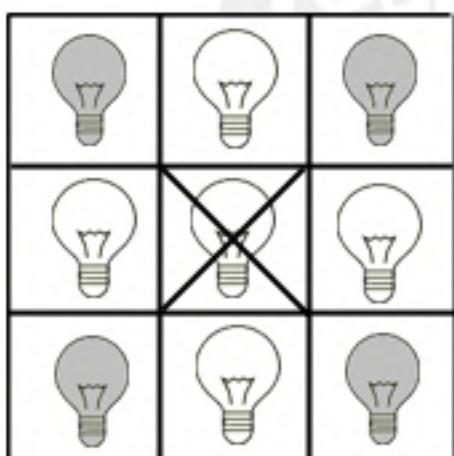
Bulb off



Faulty switch

Question 16:

What is the minimum no. of steps in which he will be able to switch off all the lights present in his bedroom(the 3x3 grid)?



Question 17:

What is the minimum no. of steps in which he will be able to switch off all the lights in the hall(5x5 grid)?

If I join with my image I will be nothing. And so placed separately with my image rotated 180 degrees



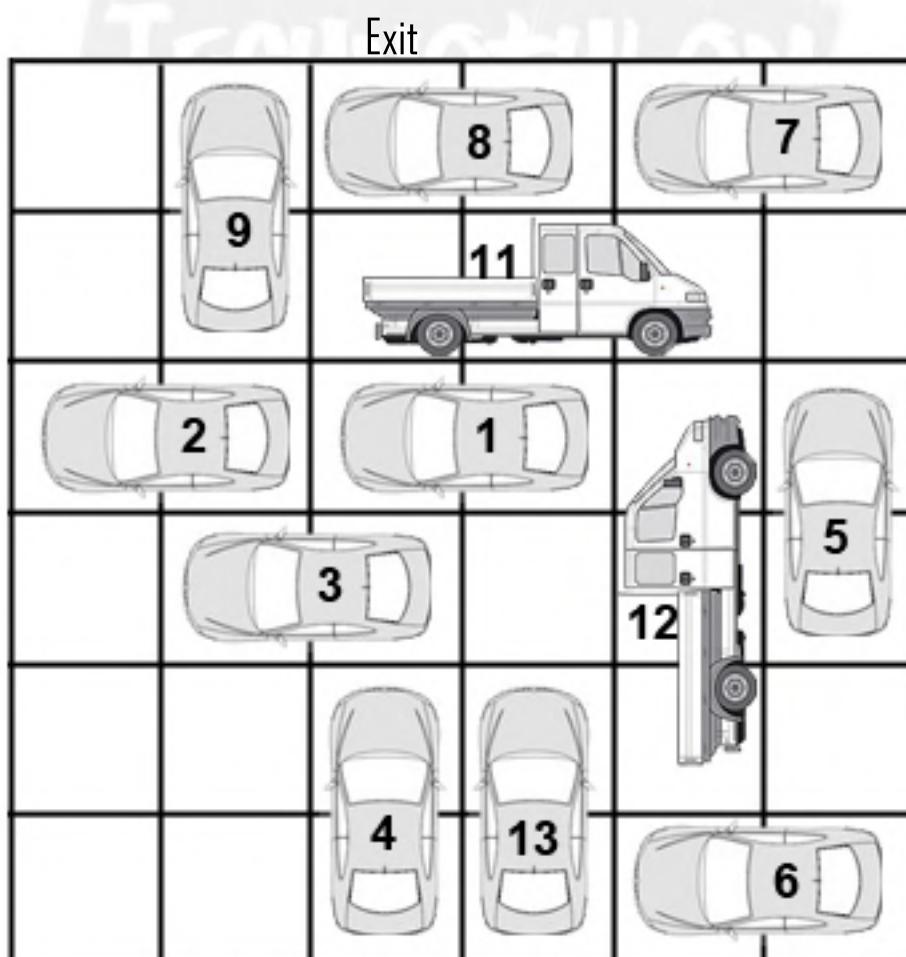


(Geometric Marking Scheme - 3×2^N
N is the number of correct answers)

Question 1:

Tejasvini drove her friend to a movie theatre to celebrate her birthday. She parked the car in the parking area which had only one entrance (or exit). After having a ball at the theatre when she went to get her car she found out that the parking lot was full of other cars which were chaotically arranged. She asked the guard for help but he was too lethargic to help her so, he gave her the keys to every car and asked her to help herself. She is running late as per the permission from her parents. So needs to do it as soon as possible but the cars can move only to and fro that is back and forth. What is the final position of all the cars after Tejasvini's car(car 4) finally moves out of the parking lot.

Initial grid of parking space is given below

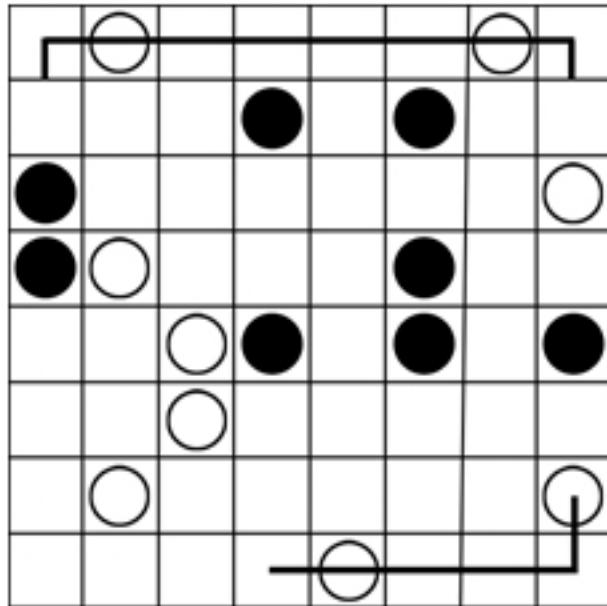


If you join two parts of mine which are in word, at the bases, I can help you to climb up for certain height with good support guess me!



Question 2:

The space on the board consists of black and white circles and make a very fascinating game. The player who is playing has to draw a closed loop with the line passing through all of the circles but cannot cross itself. The rules are simple: The curve line should turn at a right angle when it encounters a black circle and should turn at a right angle after one block when encountered a white circle. The turns should all be always at right angles and are up to your choice. There is a small catch that you cannot turn at the block adjacent to a black circle if your line is approaching the black circle. Let's see how skilled you are so just draw the loop.



TECHNOTHLON

I stay at the end of mountain

Question 3:

Welcome on board, Captain!

A Battleships puzzle represents an ocean with a hidden fleet of ships. The objective is to discover where all ships are located!

These ships may be oriented horizontally, vertically or diagonally within the grid such that:

1. No ship touches another, not even diagonally.
2. The numbers on the right and on the top of the grid show how many squares in the corresponding row and column are occupied by ship segments.

'S' denotes the starting point of the ship.

'm' denotes the middle portion of the ship.

'L' denotes the endpoint of the ship.

1	5	1	1	1	5	1	2	2	2	
										1
								S		3
										3
										3
							E			1
										1
		M								1
								M		5
										2
										1

You might meet me again....



Fun-Bytes

(Pascal Scheme - $4*N + 4*$ Bonus
N is the number of correct answers)

Question 4

Now we take you for a drink at the best juice bar of the town. Namit was at the counter bar tending for the evening. He as usual was very interactive with his customers and undoubtedly a charming host. He had asked you solve the given situation where you need to arrange all three glasses facing upwards. The rule is very simple you need to flip only two glasses at one time. What are the minimum number of steps are required to attain the desired orientation? Elaborate your answer.



Question 5

You are in an absolutely dark room, with (an infinite number of) coins strewn all over the floor. You know that only 20 coins are tails up. You need to split the coins in two groups, such that both have the same number of tails. How would you achieve this??

Question 6

The story takes us back to the times of Maharaja Vikramaditya. He was possessed by a demon called Betal who once asked him a tricky question to judge his wit. He showed him 3 coins (gold, silver and copper) and told him that if he made a true statement, he'll get a coin else he won't be getting any of the coins. Imagine yourself to be Vikramaditya and try and make an apt statement which would ensure that you get a gold coin.

CODE CRUNCHERS

(Momentum Marking Scheme)

Question 7:

During the sixteenth century, there was a secret cult in Rome, THE ILLUMINATI. To keep their activities hidden from law, they came up with a unique way to pass missives. The message to be sent was written downwards on successive columns of predecided length, starting a new column when the bottom was reached. The message was then read off in rows.

The secret message was then condensed and regrouped. In this way they could keep up their activities without the authorities having any clue.

To decipher a message one had to know the number of rows that were used to encipher it.

For example, if we have 3 rows and a we need to send "This is a secret message", we would write:

T	S	A	C	T	S	G
H	I	S	R	M	S	E
I	S	E	E	E	A	

The secret message is then condensed and regrouped to give us the code:

TSACTSGHISRMSEISEEEA
seems completely gibberish!!!

Decipher the following code!

TERNCNAHDETODNEIPLLRUTGRAUOMHIEYMWBRTSENOEESERAFR

Question 8:

Sherlock Holmes had caught many thieves in his life. So he had to live a really guarded life in case any one of them became vengeful. To prevent his letters from getting intercepted, he devised a cipher of his own. Using the above table, he represented each letter of the alphabet by a 3-digit number. Each digit represents the layer, column and row of the respective letter but which digit represents what is given by the answer of the previous question. While encoding the desired message, he first converted all the letters into numbers, writing the three digits of a letter one below the other, beneath the corresponding letter. This is how he got 3 rows of numbers. Then he read the numbers horizontally in groups of three, thereafter converting each group into a letter to get the cipher text.

Going by this rule, pick out his decipher text for

phcdjgtInpbnwlpjub

<i>Layer 1</i>	<i>Layer 2</i>	<i>Layer 3</i>
1 2 3	1 2 3	1 2 3
1 A B C	1 J K L	1 S T U
2 D E F	2 M N O	2 V W X
3 G H I	3 P Q R	3 Y Z .



Question 9:

The day before his mom's birthday Arun had an idea of throwing a surprise party for her. This he needed to convey to his sister ,Shreya, who was to return home much after he would leave for his cricket practise. As it was urgent he knew he could not wait till night to tell her. After much thinking, he came up with a plan. He decided to leave her a written message in his safe. So that she could access it he had to pass on his password. He wrote it in their secret code they devised for fun last summer, so that even if their mom was to read it, she wouldn't guess anything at all.

If you were Shreya , what would you have understood from:

gsv pvdliw uli gsv mvcg jfvhgrlm rh 'rmgvoortvmxv

Question 10:

In a monastery in the heart of the Himalayas,a monk was teaching his disciples the value of time. He believed anything got easily never gathers as much importance as the thing one has earned. So he gave each of his disciples a paper with his teaching written in some cipher. To create the cipher, he first wrote down the alphabet. Below this he wrote down the keyword (omitting duplicate letters) followed by the remaining unused letters of the alphabet. To encipher the saying, he converted all letters from the top row to their corresponding letter on the bottom row .So the text encoded using this cipher could be decoded only if the keyword was known.

If you had a hint about the keyword(from the last question), what would you say the monk is saying?

**amw juta sbjl wbhh b rvl bg b em kms hmmf sm rll wais jy klbcannmuq riy r mq
emlr mq sabkfr**

Question 11:

During the Cuban-crisis , an American spy wanted to send a very important message to the generals in the U.S. As all the communications in Cuba were under scanner due to the war he could only send the message in a letter as a cipher which he had been taught during his training in the C.I.A . In this cipher he was taught, each letter of the text to be encoded is replaced by another letter. For this they had a common keyword and a grid consists of the alphabet written out 26 times in different rows, each alphabet shifted cyclically to the left compared to the previous alphabet.

For example: The seventh letter of the text is replaced by the letter got by the intersection of the row corresponding to seventh letter of the keyword with the column corresponding to the letter to be encoded. The keyword may be repeated until it matches the length of the text.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A
C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B
D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C
E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D
F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E
G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F
H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G
I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H
J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I
K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J
L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K
M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L
N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M
O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N
P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y

Can you help the general read out the message?

LXFOPVEFRNHR

(P.S. the keyword is in the irregularities of the previous solution)

The following two questions' hints have been spread all over the paper please read them carefully and try to find the answers:

12.

Once Surendra's grandfather told him that whenever he wants to do something big, he needs to go beyond the obvious. He left certain hints in his will for him to decipher, so that he could know what is it that defines going beyond the obvious. See whether you can figure it out.

13.

I am something with whom you are highly familiar.



A word from the Organisers of Technothlon 2012

The Question Paper

As our team sat together to prepare the question paper that you attempted during the course of the last two hours, a few thoughts often crossed our minds:

'Is the paper too tough? Will the students be able to enjoy it? Should we make it easier?'

Well, we contemplated long and hard on this, and the answer we came up with was:

The paper has been designed such that you've got to be awesome to solve all of the questions within the stipulated time. We stressed on this fact during our team's meetings. Our intention was to select the best and the brightest minds from across the country, through a paper that would uniformly inspire all young minds that wrote it.

The preliminary round of Technothlon 2012, in our opinion, comes close to testing the mental prowess that a student requires to become a world leader. Most definitely, it is wonderful to clear the preliminary round. However - don't be disheartened if you don't manage to clear it!

"Success is not final, and failure is not fatal. It's the courage to continue that counts.", as Winston Churchill famously put it. We hope that you will positively take up the challenge of returning here next year and attempt to clear what is arguably, one of the most competitive examinations conducted for school students in India.

On a side note, you might have noticed that the question paper was peppered with names of various people. We would like to point out that these are the names of members of Team Technothlon who were involved with the preparation of the Question paper. They've spent long hours in building from scratch a question paper that students all over the nation could solve, and as you might probably agree, they have done a pretty good job! We really do hope that you had as good a time solving the questions as we did while preparing them!

Indian Institute of Technology Guwahati

Presenting the body that brought Technothlon 2012 to you – IIT Guwahati! Established in 1994 as the sixth member of the IIT Fraternity, IIT Guwahati is one of the premier institutions for engineering, science and technology in the country. IIT Guwahati functions completely in a state-of-the-art and generously endowed campus both in infrastructure and natural beauty. Spread across 700 acres with the majestic Brahmaputra on one side, and hillocks and lakes on the other, this campus with its natural beauty provides an ideal setting for learning and innovation. We, as IITians, strive for excellence in all walks of life. Because, excellence and innovation are two words that aptly define the 3000-odd students who live on this campus.



Techniche

Techniche is the annual techno-management festival of IIT Guwahati. Every year, the IIT-G student community organises Techniche which draws an immense participation from around the world. Techniche is conducted with a vision to foster the spirit of science and technology among the youth of India and has successfully completed 12 editions. Eminent personalities, Nobel laureates, and world leaders have graced the stage during Techniche in its past editions. With 'Pixelating Perfection' as the tag line for the coming-up 2012 edition of Techniche, you just know that the techno-management extravaganza is going to get much bigger. Technothlon – The International School Championship is the module of Techniche devoted exclusively to school students across India!

An open invitation for a lifelong association with Technothlon

Before you feel like you have reached the end of a sensation, we should remind you that this is merely the beginning! The Technothlon community has been growing at a phenomenal rate, and we invite YOU, the future leaders of the country, to be a part of it. Regardless of whether you make it through to the final round or not, we cherish the opportunity to interact with every one of you. Facebook, Twitter, Wordpress and Flicker are our means of reaching out to the student community - Be connected, stay updated!

We are eager to help through counseling of any kind required in any sphere by utilizing the experienced pool of IITians and highly qualified faculty of IIT Guwahati. And finally, we would be glad to receive any constructive feedback about the question-paper or any general issue that you would like to discuss with us. After all, your feedback is what Technothlon thrives on for improvement. :)

Chief Organising Team

P. Jai Vardhan Rao
Aayushi Bajpayee

Rishikesh Ghewari
Alpana Kumari
Ketan Ganar

Deepanshu Goyal
M.V.S.R. Sastry

Contact us at

www.techniche.org/technothlon/

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ANSWER SHEET

Instructions:

1. Please Answer only the Subjective Part of the paper in the space provided below.
2. Please fill all the Details provided below carefully with black or blue ball point pen.

Name: 1. _____ Contact No.: 1. _____

2. _____ 2. _____

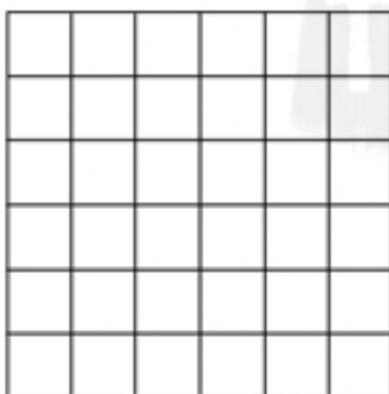
Email-Id: 1. _____ School: _____

2. _____ Squad: _____

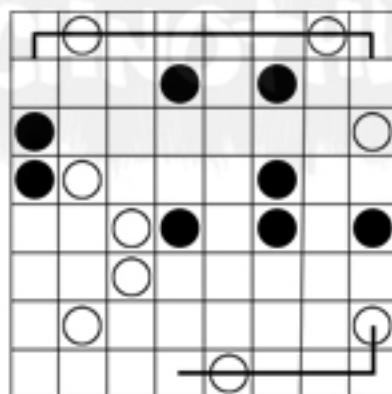
Registration No: _____ City: _____

Puzzles

Exit



Question 1



Question 2

1	5	1	1	1	5	1	2	2	2		
										1	
										S	3
										3	
										3	
										E	1
										1	
										M	1
											5
											M
											2
											1

Question 3

Fun Bytes

4. _____

5. _____

6. _____

Code Crunchers

7. _____
8. _____
9. _____
10. _____
11. _____

Pixelating Perfection

12. _____
 13. _____
-

