

Per Texas Science Olympiad rules, you must have printed notes for this event. If you are communicating with your partner through a voice or video call, please start it before you begin the test itself.

Significant time spent outside of the browser window is grounds for a penalty or disqualification per TSO policies.

1. (300.00 pts)

[TIMED] Decrypt this **ARISTOCRAT**, which is a quote from a 20th century musical. Make sure only one person is entering the letters or else your progress might be written over. Make sure to press SUBMIT when you think you have the correct solution. The system will notify you if your answer is correct and you will receive the appropriate time bonus. [FREQUENCY]

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

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

H	E	T	V	Y	D	J	U	H	Z	F	D	Q	D	J	Z	V	H	E	L	U	H	E	P	T	U	U	D	Y	P	U	H	O	D	T	Y	P	V	D	Q	D	J	Z
T	H	I	S	C	O	U	N	T	R	Y	O	F	O	U	R	S	T	H	A	N	T	H	E	I	N	N	O	C	E	N	T	V	O	I	C	E	S	O	F	O	U	R

Y	E	T	W	M	Z	P	U	?
C	H	I	L	D	R	E	N	?

2. (100.00 pts) Solve this quote from a scientist which has been encrypted with the **CAESAR** cipher.

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

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

L	S	Y	M	R	O	W	S	C	D	O	K	B	V	C	D	K	N	D	W	K	X	G	K	C	A	E	Y	D	O	N	K	C	C	K	I	S	X	Q	,	"	K	Q	S	X	Q
B	I	O	C	H	E	M	I	S	T	E	A	R	L	S	T	A	D	T	M	A	N	W	A	S	Q	U	O	T	E	D	A	S	S	A	Y	I	N	G	,	"	A	G	I	N	G

S	C	K	N	S	C	O	K	C	O	.	"
I	S	A	D	I	S	E	A	S	E	.	"

3. (125.00 pts) Solve this **AFFINE** cipher which is a quote from "The Legend of Sleepy Hallow". You realize that a = 17 and b = 22.

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

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

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

4. (250.00 pts) Decrypt this **ARISTOCRAT**, which is a quote from the first-person shooter game VALORANT. **Hint:** The last word in the quote is "RIGHT". [FREQUENCY]

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

J	A	J	'	Y	X	N	Z	H	Z	M	Q	H	H	Q	R	,	Z	P	Q	X	V	N	O	H	P	N	O	F	R	X	N	Z	C	Q	H	Z	M	Q	H	H	Q	R	.	J
I	F	I	'	M	N	O	T	S	T	R	E	S	S	E	D	,	T	H	E	N	Y	O	U	S	H	O	U	L	D	N	O	T	B	E	S	T	R	E	S	S	E	D	.	I

Y	Q	B	X	F	N	N	G	B	Z	Y	Q	,	U	N	N	F	B	H	B	U	O	U	O	Y	C	Q	M	.	L	B	,	Z	P	B	Z	'	H	Z	P	Q	Z	P	J	X	S
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Y Q B X F N N G B Z Y Q , U N N F B H B U O U O Y C Q M . L B , Z P B Z ' H Z P Q Z P J X S
M E A N L O O K A T M E , C O O L A S A C U C U M B E R . J A , T H A T ' S T H E T H I N G

B Y Q M J U B X H H B V , M J S P Z ?
A M E R I C A N S S A Y , R I G H T ?

5. (250.00 pts) Solve this quote from "Broken Embraces" that was encrypted with the **VIGENERE** cipher. The keyword is MORNING.

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

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

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

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

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

6. (300.00 pts) Solve this **BACONIAN** cipher which is a quote from "Alien Minds". We love emojis :D



Expected Answer: He went outside and sat down with his back leaning against the bole.

7. (350.00 pts) Decrypt this **ARISTOCRAT**, which is a quote from the show *Hunter x Hunter*. [FREQUENCY]

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

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

O M T Q D F N K E .
T H E M A N G R Y .

8. (250.00 pts) A quote from "Winter Solstice" has been encoded using the **MORBIT** Cipher for you to decode. You are told that 6=●—, 2=—●, 8=●×, 4=●●, 1=—, 3=×●.

4 8 1 9 1 3 7 3 8 1 3 3 4 5 6 9 8 7 6 7 8 1 9 6 9

3 1 8 8 1 9 6 2 3 2 8 8 3 1 3 4 8 1 9 3 9 6 8 8 7

7 1 7 1 5 6 9 1 9 2 7 4 3 3 2 3 6 8 4 9 6 4 5 4 2
7 1 3 2 5 6 9 1 9 6 8 2 8 4 8 3 8 3 9 1 5 2 7 1 7
5 1 9 2 3 5 1 9 4 2 5 9 4 4 3 7 9

Expected Answer: Sometimes we know people who are too wonderful for words. I am not one of them.

9. (250.00 pts) Solve this song lyric that is encrypted with the **HILL** cipher. You know that the matrix is BEAT [1 4 / 0 19].

$$\begin{pmatrix} B & E \\ A & T \end{pmatrix} \equiv \begin{pmatrix} 1 & 4 \\ 0 & 19 \end{pmatrix}$$

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

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

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

10. (300.00 pts) Encrypt this quote from a romance manga with the **VIGENERE** cipher. The keyword is HORIMIYA.

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

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

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

E	M	O	T	I	C	O	N	S	L	I	K	E	T	H	I	S	.
E	T	C	K	Q	O	W	L	S	S	W	B	M	F	P	G	S	.

11. (400.00 pts) Decrypt the following quote from a Disney movie. You know that the quote is an **ARISTOCRAT** with spelling mistakes. [FREQUENCY]

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

M	K	B	O	'	X	H	M	F	J	J	M	O	L	F	U	W	O	X	K	.	T	O	H	M	M	W	H	E	O	W	F	U	X	H	E	O	X	.	G	S
L	Y	F	E	'	S	A	L	I	D	D	L	E	B	I	T	M	E	S	Y	.	V	E	A	L	L	M	A	K	E	M	I	T	S	A	K	E	S	.	N	O

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

12. (250.00 pts) A quote has been encoded using the **POLLUX** Cipher for you to decode. You are told that 6=×, 4=●, 2=●, 0=●, 1=×, 5=−.

4066254263536000364662596436960605266
40469936653600563432 6224066426629633
664566402463039634062546356600006333
63562464

Expected Answer: I love water so much. I am a hydro homie.

13. (450.00 pts) Decrypt the following **PATRISTOCRAT**, which is a quote from the army official General Douglas MacArthur. **Hint:** One of the words is "HONOR". [FREQUENCY]

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

R	F	Y	M	S
D	U	T	Y	H

K	T	K	P	U
O	N	O	R	C

K	F	T	Y	P
O	U	N	T	R

M	Y	S	K	I
Y	T	H	O	S

W	Y	S	P	W
E	T	H	R	E

W	S	Q	E	E
E	H	A	L	L

K	G	W	R	G
O	W	E	D	W

K	P	R	I	P
O	R	D	S	R

W	C	W	P	W
E	V	E	R	E

T	Y	E	M	R
N	T	L	Y	D

N	U	Y	Q	Y
I	C	T	A	T

W	G	S	Q	Y
E	W	H	A	T

M	K	F	K	F
Y	O	U	O	U

H	S	Y	Y	K
G	H	T	T	O

J	W	G	S	Q
B	E	W	H	A

Y	M	K	F	U
T	Y	O	U	C

Q	T	J	W	G
A	N	B	E	W

S	Q	Y	M	K
H	A	T	Y	O

F	G	N	E	E
U	W	I	L	L

J	W
B	E

14. (150.00 pts) Encrypt this quote from Genshin Impact with the **AFFINE** cipher. You happen to know that a = 3 and b = 8.

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

A	N	D	T	H	I	S	M	A	S	C	O	T	W	H	A	T	S	T	H	E	D	E	A	L	W	I	T	H	I	T	E	M	E	R	G	E	N	C	Y
I	V	R	N	D	G	K	S	I	K	O	Y	N	W	D	I	N	K	N	D	U	R	U	I	P	W	G	N	D	G	N	U	S	U	H	A	U	V	O	C

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

15. (500.00 pts) Decrypt the following **PATRISTOCRAT**, which is a quote from mathematician Ada Lovelace. [FREQUENCY]

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

F	H	S	R	A
U	N	D	E	R

E	Z	J	H	S
S	T	A	N	D

V	R	W	W	J
W	E	L	L	A

E	M	D	J	L
S	I	M	A	Y

D	L	T	Q	D
M	Y	C	O	M

N	A	R	U	R
P	R	E	H	E

H	E	M	Q	H
N	S	I	O	N

T	J	H	Q	H
C	A	N	O	N

W	L	X	R	J
L	Y	B	E	A

H	M	H	G	M
N	I	N	F	I

H	M	Z	R	E
N	I	T	E	S

M	D	J	W	G
I	M	A	L	F

A	J	T	Z	M
R	A	C	T	I

Q	H	Q	G	J
O	N	O	F	A

W	W	M	V	J
L	L	I	W	A

H	Z	Z	Q	F
N	T	T	O	U

H	S	R	A	E
N	D	E	R	S

Z	J	H	S
T	A	N	D

16. (550.00 pts) Decrypt the following Spanish **XENOCRYPT**, which is a quote from a popular movie. [FREQUENCY]

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

C	V
L	A

Ñ	M	T	Z	R	E	F	G
C	U	E	S	T	I	O	N

G	F
N	O

T	Z
E	S

Z	E
S	I

G	F	Z	F	R	K	F	Z
N	O	S	O	T	R	O	S

Ñ	K	T	T	S	F	Z
C	R	E	E	M	O	S

F
O

G	F
N	O

Ñ	K	T	T	S	F	Z
C	R	E	E	M	O	S

T	G
E	N

G	F	Z	F	R	K	F	Z	,
N	O	S	O	T	R	O	S	,

D	F	K	A	M	T
P	O	R	Q	U	E

Z	E
S	I

G	F
N	O

Ñ	K	T	T	,
C	R	E	E	,

T	Z	R	V	S	F	Z
E	S	T	A	M	O	S

X	F	L	E	L	F	Z	.
J	O	D	I	D	O	S	.

17. (400.00 pts) Solve this **ARISTOCRAT**. [FREQUENCY]

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

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

18. (350.00 pts) Solve this **ARISTOCRAT**. [FREQUENCY]

Type your letters below the corresponding given letters. Your letters can be lower or upper case.

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

Thanks for taking our test! Feel free to contact us at martinmnguyen@utexas.edu and siddhant.arora@utexas.edu.

Good luck on the rest of your events!

If you have any feedback about any of the exams at this tournament, please let us know through this form: <https://tinyurl.com/utreg21feedback> (<https://tinyurl.com/utreg21feedback>)