B - NSO Practice B - Nov 7 Country-wide SO Practice - 11-07-2020

Codebusters B

Virtual Country-wide Scilympiad Practice 1

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Hello and welcome to Scilympiad! Hopefully, this test will display how future Codebusters tests will be like in the near future.

- Make sure you have read the rules and have downloaded this reference sheet (https://scilympiad.com/Data/shared/testRefs/CodebustersReference.pdf).
- You will have **50 minutes** to complete **17 questions**
- There is a **TIMED QUESTION**. To earn bonus points, click submit answer at the end of the question and it will tell you if it is correct or not.
- Tiebreakers are xenocrypts, patristocrats, and aristocrats in descending value order. After that teams that earn the same score will earn the same rank.
- Browser time will be recorded to ensure no wandering off. You should have the reference sheet printed out.
- Feel free to set up a communication call with your team members such as FaceTime, Zoom, or Discord.

If you have any questions or feedback about the exam, feel free to email me at **martinmnguyen@utexas.edu**.

1. (350.00 pts)
Solve this **ARISTOCRAT** that I pulled out from my computer science textbook while I was studying for my midterm this past week. Make sure only one person is entering the letters o 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.

J	G	V	D	X	V		D	B		G
P	A	G	I	N	G		I	S		A

L	S	L	M	A	K
M	E	M	O	R	Y

L	G	X	G	V	S	L	S	X	F
M	A	N	A	G	E	M	E	N	T

B	H	U	S	L	S
S	C	H	E	M	E

F	U	G	F
T	H	A	T

S	T	D	L	D	X	G	F	S	B
E	L	I	M	I	N	A	T	E	S

F	U	S
T	H	E

X	S	S	Y
N	E	E	D

Q	M	A
F	O	R

H	M	X	F	D	V	C	M	C	B
C	O	N	T	I	G	U	O	U	S

G	T	T	M	H	G	F	D	M	X
A	L	L	O	C	A	T	I	O	N

M	Q
O	F

J	U	K	B	D	H	G	T
P	H	Y	S	I	C	A	L

L	S	L	M	A	K	.
M	E	M	O	R	Y	.

2. (75.00 pts) Solve this **ATBASH** cipher which is a quote from Saint Augustine of Hippo. I don't think he actually rode on one though...

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

G	R	N	V
T	I	M	E

G	Z	P	V	H
T	A	K	E	S

M	L
N	O

S	L	O	R	W	Z	B	.
H	O	L	I	D	A	Y	.

R	G
I	T

W	L	V	H
D	O	E	S

M	L	G
N	O	T

I	L	O	O
R	O	L	L

R	W	O	B
I	D	L	Y

Y	B	,
B	Y	,

Y	F	G
B	U	T

G	S	I	L	F	T	S
T	H	R	O	U	G	H

L	F	I
O	U	R

H	V	M	H	V	H
S	E	N	S	E	S

D	L	I	P	H
W	O	R	K	S

R	G	H
I	T	S

L	D	M
O	W	N

D	L	M	W	V	I	H
W	O	N	D	E	R	S

R	M
I	N

G	S	V
T	H	E

N	R	M	W	.
M	I	N	D	.

3. (75.00 pts) Solve this **CAESAR** cipher which is a quote from Ellen Burstyn.

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

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

D	W	U	X	W	N	U	H		K	N	R	W	P		J	U	X	W	N		L	J	W		K	N	.
U	N	L	O	N	E	L	Y		B	E	I	N	G		A	L	O	N	E		C	A	N		B	E	.

4. (100.00 pts) Solve this **AFFINE** cipher which is a quote from the movie *La La Land*. You know that *a = 19* and *b = 15*.

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

L	P	J	Q	N	M	M	L	C	Z	Q	L	G	N	S	L	M	J	N	F	C	M	L	Q	L	M	Z	N	M	T	M	L	A	N	U
I	A	M	L	E	T	T	I	N	G	L	I	F	E	H	I	T	M	E	U	N	T	I	L	I	T	G	E	T	S	T	I	R	E	D

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

5. (125.00 pts) Encrypt this quote by W. H. Auden with the **AFFINE** cipher with *a = 7* and *b = 642*.

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

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

N	O	T	O	N	E	W	I	T	H	O	U	T	W	A	T	E	R
F	M	V	M	F	U	Q	W	V	P	M	C	V	Q	S	V	U	H

6. (250.00 pts) Solve this **VIGENERE** cipher which needs to be decoded with the keyword SWEET.

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

F	E	G	I		F	W	I	S	V	B	W	O		E	V	X		D	E	O	I		V	Z	K	G	S	E	S	P	I	:		C	H	M		Y	E	R	'	M
N	I	C	E		M	E	M	O	R	I	E	S		A	R	E		L	I	K	E		C	H	O	C	O	L	A	T	E	:		Y	O	U		C	A	N	'	T

K	Q	V	Z	B	N	A		S	R		M	Z	A	Q		E	E	G	J	I	,		E	L		L	D	I	C		T	J	A	R	'	X		O	W	N	C
S	U	R	V	I	V	E		O	N		T	H	E	M		A	L	O	N	E	,		A	S		T	H	E	Y		A	R	E	N	'	T		V	E	R	Y

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

7. (300.00 pts) Encode this quote by Dr. Guy McPherson with the **VIGENERE** cipher with the keyword of EARTH.

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

I	F		Y	O	U		R	E	A	L	L	Y		T	H	I	N	K		T	H	E		E	C	O	N	O	M	Y		I	S		M	O	R	E

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

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

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

8. (250.00 pts) Solve this **BACONIAN** cipher which is a quote from Cicero.

+/-+- +-*+/ *-/*+ -/*+/ *-+/* -+/*/ -+-+- *+-/* +-/+- +-+-+

-+*/- +-+-+ *-+-+ -+-/* +-/+- +*/-+ -+-+- +*/-+ -+-*/ +-+-+ -*+/-

+*-+- +-+-/ *+-+- +-+-+ /-+-+ *-/*+ /-*/+ -*/+* /-+*/ -+*/* -+-+-

/+-*/ +-*+- +-/+- *+-/* +-/+- *+-+- /+*/- *+-/+ -+*/* -/+-+ -*/+-

+-*/+ *-/*+ -/*+/ *-+/* -/*+- +-/+- +-*+- +-+/*

Expected Answer: If you have a garden and a library, you have everything you need.

9. (150.00 pts) Solve this **RAILFENCE** cipher which is a quote from a popular 2000s film. You are told that 3 rails were used to encode it.

IRHEESASEITPHMUMORTAPOLAEOELUOMBTCNHLITAIPPLRSYTPRJOFUAETTOA

Expected Answer: I'm sorry that people are so jealous of me, but I can't help it that I'm popular.

10. (150.00 pts) Solve this quote from Mitch Hedberg which was encoded with the **MORBIT** cipher. You are told that 4=●●, 6=●–, 3=×●, 7=×–, 8=●×, 1=—.

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

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

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

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

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

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

Expected Answer: I would imagine that if you could understand Morse code, a tap dancer would drive you crazy.

11. (150.00 pts) Solve this quote from Charles Pierce that was encoded with the **POLLUX** cipher. You are told that 2=–, 4=×, 5=●, 8=●, 9=×, 7=●.

248878474482254847174773745 4

383742445187412345753484738 4

455487544221428454482245757 4

313442457148154274788448842 8

424313447244711747541187422 8

848244514244858814483421

Expected Answer: The perfect lover is one who turns into a pizza at 4 am.

12. (450.00 pts) Solve this **ARISTOCRAT** which is a quote from Ehssan. [FREQUENCY]

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

J	L	D	X		L	I		J	L	N	X		O		Q	L	O	F	H	,		P	R	X		G	R	L	P	X		N	X	K	I		A	X	Q	A	X	I	X	F	P
L	I	F	E		I	S		L	I	K	E		A		P	I	A	N	O	,		T	H	E		W	H	I	T	E		K	E	Y	S		R	E	P	R	E	S	E	N	T

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

O	I		K	H	W		T	H		P	R	A	H	W	T	R		J	L	D	X	’	I		M	H	W	A	F	X	K	,		A	X	S	X	S	Y	X	A
A	S		Y	O	U		G	O		T	H	R	O	U	G	H		L	I	F	E	’	S		J	O	U	R	N	E	Y	,		R	E	M	E	M	B	E	R

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

13. (350.00 pts) Solve this **ARISTOCRAT** which I found online, which is almost everything nowadays. [FREQUENCY]

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

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

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

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

N	A	F	O	W	D	A	F	B		G	Z	Y	F	G	A	F	O		H	W	G	A		G	A	F		L	F	D	G		C	F	Z	C	E	F	.
C	H	E	R	I	S	H	E	D		T	O	G	E	T	H	E	R		W	I	T	H		T	H	E		B	E	S	T		P	E	O	P	L	E	.

14. (450.00 pts) Solve this **ARISTOCRAT** by Ally Carter which was slightly mangled when I attempted to copy it down. [FREQUENCY]

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

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

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

C	A	D	W	M	W	U	U	D	U	K	W	V	A	G	K	Q	U	X	Z	K	U	M	K	.
K	I	N	D	U	D	O	O	N	O	T	D	A	I	R	T	W	O	L	E	T	O	U	T	.

15. (550.00 pts) Solve this **PATRISTOCRAT** which starts with the letters THE. [FREQUENCY]

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

P	E	J	K	J	W	P	P	E	G	U	X	P	R	Y	R	H	G	B	W	P	P	E	G	U	X	G	U	P	E	J	F	R	B	U
T	H	E	B	E	S	T	T	H	I	N	G	T	O	D	O	F	I	R	S	T	T	H	I	N	G	I	N	T	H	E	M	O	R	N

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

16. (600.00 pts) Solve this **PATRISTOCRAT**. [FREQUENCY]

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

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

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

17. (575.00 pts) Solve this **XENOCRYPT** which was a statement I stuffed into Google Translate. [FREQUENCY]

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

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

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

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

Z	**B**	**A**	**U**	**A**	**U**	**.**
T	I	E	N	E	N	.

Congratulations on completing the exam! If you have any questions or feedback about the exam, feel free to email me at **martinmnguyen@utexas.edu**.

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