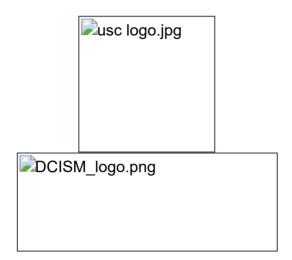
Final Examination - 1st Sem 2022-2023

Due No due date **Points** 157 **Questions** 82 **Available** after Dec 12 at 3pm **Time Limit** 90 Minutes

Instructions



University of San Carlos

Department of Computer and Information Sciences and Mathematics

Final Examination

ANY FORM OF COMPUTING DEVICE IS NOT ALLOWED DURING THE EXAMINATIONS!

OPENING OF BROWSER OR TABS OTHER THAN CANVAS IS STRICTLY PROHIBITED AND IS

CONSIDERED CHEATING!!

CIS 3106 Information Assurance and Security

Answer the given Exam according to what is needed, this exam is composed of multiple-choice with multiple answers, fill in the blanks and Essay question. Take note that the exam is time-limited so make the most of your time, you cannot return to the previous questions, therefore make sure of your answers. If you cannot submit the quiz on time, the system will automatically submit your scores. Good luck!!! Always follow instructions!!!

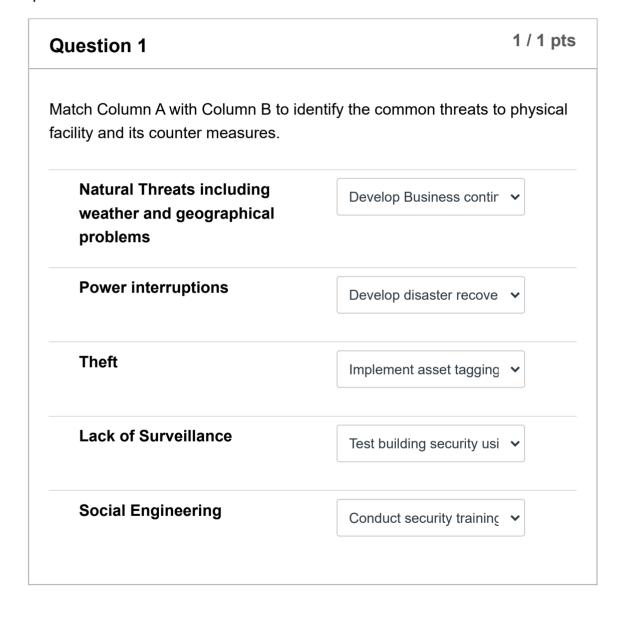
Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	75 minutes	121.95 out of 157

! Correct answers are hidden.

Score for this quiz: 121.95 out of 157

Submitted Dec 12 at 4:15pm This attempt took 75 minutes.



Question 2 1/1 pts What are the two pre-historic computers used by military in Information Assurance?

Bombe	
✓ ENIAC	
Analytical Engine	
UNIVAC	
EDSAC	

Type of encryption processing that processes the input in a block of elements at a time (typically 64-bits)? symmetric cipher asymmetric cipher block cipher stream cipher

The______ is one or more locations containing the tools that provide administrators with a detailed status of the organization's network. answer in lowercase only, no shortcuts, no abbreviation, no acronyms

operation centers

Question 5 1/1 pts It is a trial and error method used by application programs to decode

encrypted data such as passwords or Data Encryption Standard (DES) keys, through exhaustive effort rather than employing intellectual strategies.

answer in lowercase only

brute force

Question 6 1 / 1 pts

The oldest and most used cryptographic ciphers, the key that deciphers the ciphertext is the same key that enciphers the plaint text, this key is often referred to as the secret key.

asym	metric	cipher
,		

	symmetric	cipher
--	-----------	--------

stream cipher

Question 7

1 / 1 pts

These devices form the backbone of the Internet and communications between different networks, communicate with one another to identify the best possible path to deliver traffic to different networks
 wireless access points
router
wireless routers
○ firewall
switch

These are tools to intercept and log network traffic, shows the values of various fields in the packet, and analyzes its content, it can capture network traffic on both wired and wireless networks. answer in lowercase only, no shortcuts, no abbreviation, no acronyms

Incorrect

Question 9 0 / 1 pts

What type of state that joins the political entity of a state to the cultural entity of a nation, from which it aims to derive its political legitimacy to rule and potentially its status as a sovereign state?

Political State		
Academic State		
None of the above		
Nation State		

Question 10 It is a mathematical technique used to validate the authenticity and integrity of a message, software, or digital document. Digital Certificate Hashing Digital Signature Cryptography

Incorrect

Question 11 Process of translating the ciphertext into data. Answer in lowercase only. No shortcuts, No abbreviation, No acronyms. deciphering

Question 12 1 / 1 pts

It is an art and science of transforming messages so as to make them secure and immune to attacks.

Answer in lowercase only. No shortcuts, No abbreviation, No acronyms

cryptography

Incorrect

Question 13 0 / 1 pts

Type of cryptography also known as public-key cryptography. It uses public and private keys to encrypt and decrypt data.

Answer in lowercase only. No shortcuts, No abbreviation, No acronyms.

digital certificate

Question 14 1 / 1 pts

What type of encryption that the sender and receiver use different keys (aka two-key, and public-key)?

answer in lowercase only.

asymmetric

Incorrect

Question 15 0 / 1 pts

Basin on the figure below, this is an example of a

Answer in lowercase only. No shortcuts, No abbreviation, No acronyms.

```
Version: 3 (0x2)
    Serial Number: 1 (0x1)
    Signature Algorithm: md5WithRSAEncryption
    Issuer: C=ZA, ST=Western Cape, L=Cape Town, O=Thawte Consulting cc,
             OU=Certification Services Division,
             CN=Thawte Server CA/Email=server-certs@thawte.com
    Validity
        Not Before: Aug 1 00:00:00 1996 GMT
        Not After : Dec 31 23:59:59 2020 GMT
    Subject: C=ZA, ST=Western Cape, L=Cape Town, O=Thawte Consulting cc,
              OU=Certification Services Division,
              CN-Thawte Server CA/Email-server-certs@thawte.com
    Subject Public Key Info:
        Public Key Algorithm: rsaEncryption
        RSA Public Key: (1024 bit)
            Modulus (1024 bit):
                 00:d3:a4:50:6e:c8:ff:56:6b:e6:cf:5d:b6:ea:0c:
                 68:75:47:a2:aa:c2:da:64:25:fc:a6:f4:47:51:da:
                 85:b5:20:74:94:86:le:0f:75:c9:e9:08:61:f5:06:
                 6d:30:6e:15:19:02:e9:52:c0:62:db:4d:99:9e:e2:
                 6a: 0c: 44: 38: cd: fe: be: e3: 64: 09: 70: c5: fe: b1: 6b:
                 29:b6:2f:49:c8:3b:d4:27:04:25:10:97:2f:e7:90:
                 6d:c0:28:42:99:d7:4c:43:de:c3:f5:21:6d:54:9f:
                 5d:c3:58:e1:c0:e4:d9:5b:b0:b8:dc:b4:7b:df:36:
                 3a:c2:b5:66:22:12:d6:87:0d
            Exponent: 65537 (0x10001)
    X509v3 extensions:
        X509v3 Basic Constraints: critical
             CA:TRUE
Signature Algorithm: md5WithRSAEncryption
    07: fa: 4c: 69: 5c: fb: 95: cc: 46: ee: 85: 83: 4d: 21: 30: 8e: ca: d9:
    a8:6f:49:la:e6:da:51:e3:60:70:6c:84:61:11:a1:la:c8:48:
    3e: 59: 43: 7d: 4f: 95: 3d: al: 8b: b7: Ob: 62: 98: 7a: 75: 8a: dd: 88:
    4e: 4e: 9e: 40: db: a8: cc: 3Z: 74: b9: 6f: Od: c6: e3: b3: 44: 0b: d9:
    8a: 6f: 9a: 29: 9b: 99: 18: 28: 3b: d1: e3: 40: 28: 9a: 5a: 3c: d5: b5:
    e7:20:1b:8b:ca:a4:ab:8d:e9:51:d9:e2:4c:2c:59:a9:da:b9:
    b2:75:1b:f6:42:f2:ef:c7:f2:18:f9:89:bc:a3:ff:8a:23:2e:
    70:47
```

digital signature

Incorrect

Question 16 0 / 1 pts

What level of focus does information assurance covers information and data manipulation ability maintained in cyberspace, including: data

structures, processes and programs, protocols, data content and databases.		
Write your answer in lowercase only.		
infrastructure		

These are entities that participate or act in international relations. Neutral State Actions Non-state actors Non-state Attributes Natural Status Alienation

Question 18	1 / 1 pts
It is a pioneering encryption algorithm that helped revolutionize it is a symmetric type encryption method developed in 1975 and standardized by ANSI in 1981 as ANSI X. It uses 56 bit and 48-b 64-bit block cipher.	,
 symmetric cipher 	
data encryption standard	
asymmetric cipher	
advance encryption standard	

Question 19	1 / 1 pts		
To secure a network, What should an administrator used to provide a way to group devices within a network and on individual switches which use logical connections instead of physical connections.			
answer in lowercase only, no shortcuts, no abbreviation, no acror	nyms		
virtual local area network			

Question 20		1 / 1 pts
international conve	erent analytic frameworks have been propo entions allow a self-defense or "anticipatory to an armed attack. and qualify a cyber att	/ self-
instrument-based		
effects-based		
strict liability		
Answer 1:	ed	

Answer 2:	
Effects-based	
Answer 3:	
Strict liability	

What category of security solution/policy is phrased in terms of entities (users, processes, etc.) that execute activities and request access to objects. Write your answer in lowercase only.

Question 22	1 / 1 pts
It is a standalone malware computer program that replicates to spread to other computers. Often, it uses a computer net itself, relying on security failures on the target computer to a	work to spread
virus	
worm	
O malware	
trojan	

Question 23	1 / 1 pts
These are raw facts with unknown coding scheme?	
noise	
O data	
interference	
information	
knowledge	

Question 24 1 / 1 pts

What type of encryption that the sender and receiver use different keys (aka two-key, and public-key)?

Answer in lowercase only. No shortcuts, No abbreviation, No acronyms

asymmetric

Question 25 1 / 1 pts

It is the assurance that someone cannot deny the validity of something. It is also a legal concept that is widely used in information security and refers to a service, which provides proof of the origin of data and the integrity of the data.

non-repudiation

integrity
authenticity
○ hashing

Question 26 1 / 1 pts

It is a set of roles, policies, and procedures needed to create, manage, distribute, use, store, and revoke digital certificates and manage public-key encryption. Its purpose is to facilitate the secure electronic transfer of information for a range of network activities such as e-commerce, internet banking, and confidential email.

- public key infrastructure
- o private key infrastructure
- digital certificate
- digital signature

Question 27	1 / 1 pts
How do you know you have a digital certificate?	
Answer in lowercase only.	
https	

What category of security solution/policy is phrased in terms of operations, primitive or complex, that can operate on objects and must be controlled. Write your answer in lowercase only. actions

1 / 1 pts
Hackers?
e maximal damage to s and property.
nto information systems
ank accounts, credit card

Question 30	1 / 1 pts
What Cybersecurity Information Websites, developed at Carneq University helps government and industry organizations to developerate, and maintain software systems that are innovative, affind trustworthy.	elop,
© CERT	
O NVD	
O ACSC	
O SEI	
Question 31	1 / 1 pts

This is a digitally signed Certificate which is built of complex hashing functions and algorithm that keeps user's information encrypted during the data transmission from Client to Server and server to client. Digital Certificate SSL Certificate Organizational Certificate Developers Certificate

A _____ is a type of defense against cyber attack when taking steps to prevent an attack or to mitigate the damage should an attack

occur (access control, secure system design, security administration).

virtual private network

Partial

Question 33 0.5 / 1 pts

Using the steps in RSA algorithm, find the possible number for ${\bf e}$ or the encryption key.

if
$$p = 2$$
; $q = 13$

- 19
- 9
- **13**
- ✓ 7
- **5**
- 3
- **1**1
- 15

Question 34

1 / 1 pts

it is any software used to disrupt computer or mobile operations, gather sensitive information, gain access to private computer systems, or display unwanted advertising.

answer in lowercase only.

malware

Incorrect

What are two types of defenses against cyber attacks?[virtual private netwo firewall Answer 1: virtual private network Answer 2: firewall

Question 36 1 / 1 pts

What step in the digital forensic process involves discovering what type of storage media and what data or information could be recovered relative to the investigation or case.

answer in lowercase only

identification

Question 37 1 / 1 pts

It is a mathematical algorithm, produces a unique digital fingerprint of a file and verifies that binary content of an acquired forensic image is exactly the same as the source media

write your answer in lowercase.

hash

Question 38	1 / 1 pts
Gacolion oo	-

This is a tool used to protect data stored in the form of files, transforms data using a complicated algorithm to make it unreadable.

answer in lowercase only

file encryption

Question 39 1 / 1 pts

These are "individuals or organizations that have economic, political or social power and are able to influence at a national who employ violence in pursuit of their objectives.

Verifiable Armed Sectors	
Violent Non State Actors	
☐ Vicious Non State Actors	
Arrmed Violent Sector	

Question 40 1/1 pts What type of encryption that the sender and receiver use the same key (aka single-key, and secret-key)? Answer in lowercase only. No shortcuts, No abbreviation, No acronyms symmetric

Question 41 It means to ensure that a transferred message has been sent and received by the parties claiming to have sent and received the message. non-repudiation

Question 42 1 / 1 pts

Which of the following is the Principle #3 in Digital Evidence Principles?

The person in charge of the case has overall responsibility for ensuring that a computer has been correctly examined in accordance with the law and these principles.
In exceptional circumstances it may be necessary to access the original data held on a target computer.
An audit trail or other record of all processes applied to digital evidence should be created and preserved. An independent third party should be able to examine these processes and achieve the same result.
No action taken by the law enforcement agencies or their agents should change the data held on a computer or other media which may subsequently be relied upon in Court.

It is the process of attempting to discover the plain text or the key of an encrypted file. acquisition imaging cryptanalysis steganography

Question 44 1 / 1 pts

It is any malicious computer program which is used to hack into a computer by misleading users of its true intent, it does not have the ability to replicate itself however, it can lead to viruses being installed on a machine since they allow the computer to be controlled by the its creator.		
o worm replicator		
trojan horse virus		
o worm viruses		
malware		

Write blocker is a multi-function tools that assist with hard drive preparation and duplication, forensic imaging, and verification, what type of forensic tools is a write blocker? Forensic Imager Forensic Report generator Forensic Aquisitioner

Question 46 1 / 1 pts

It is a trial and error method used by application programs to decode encrypted data such as passwords or Data Encryption Standard (DES)

eys, through exhaustive effort rather than employing intellectual trategies.	keys, through exhaust strategies.
nswer in lowercase only. No shortcuts, No abbreviation, No acronyms	Answer in lowercase
brute force	brute force

Incorrect

A malware which is a variety of software components that together provide services to the attackers. Currently this includes information stealing capabilities and in the background, kernel drivers and injection tools. Part of this malware is written in unknown high-level programming language. | Stuxnet|

Question 48	1 / 1 pts
A type of physical bridge which is stand-alone imaging device tool with dedicated forensic capabilities)	multifunction
write blocker	
Autopsy	
ProDiscovery	

duqu

AccessData FTK

Question 49	1 / 1 pts
An artifact from windows OS environment contains events logg Windows system components. For example, the failure of a driv system component to load during startup is recorded in the sys The event types logged by system components are predetermine Windows.	ver or other tem log.
security log	
application log	
set up log	
system log	
windows log	

Question 50	1 / 1 pts
refers to digital information that may be information in a case, an information being subject to human	
or not, that can be extracted from a computer system that mu human-readable format or capable of being interpreted by a perpertise in the subject	st be in
answer in lowercase only.	
digital evidence	

Question 51	1 / 1 pts
A type of encryption where data is encrypted using a key and the decryption is also done using the same key.	
Symmetric Encryption	
Asymmetric Encryption	
Shifting	
Transpositional	

Question 52 It is an art and science of transforming messages so as to make them secure and immune to attacks. answer in lowercase only cryptography

This is a modular computer malware discovered in 2012 that attacks computers running the Microsoft Windows operating system. The program is being used for targeted cyber espionage in Middle Eastern countries.

Moonlight Maze
sKyWlper
Stuxnet

Question 54 ____ is the scientific tests or techniques used in connection with the detection of crime. write your answer in lowercase. forensic

Question 55	1 / 1 pts
A is a category of entities, or a circumstar potential danger to an asset.	nce, that poses a
Write your answer in lowercase only.	
threat	

Question 56 1 / 1 pts

These are whole numbers greater than 1 whose only factors are 1 and itself. A factor is a whole number that can be divided evenly into another

number.

Answer in lowercase only. No shortcuts, No abbreviation, No acronyms.

prime number

A verifiable duplicate of all the contents of a storage media or selected files in a form of encapsulated file. Acquired by trained digital forensic examiner using validated hardware and software tools digital forensic image digital forensic process digital forensic tool

Question 58 1 / 1 pts

Issued by a trusted third party which proves sender's identity to the receiver and receiver's identity to the sender. This is issued by a Certificate Authority (CA) to verify the identity of the certificate holder.

Answer in lowercase only. No shortcuts, No abbreviation, No acronyms.

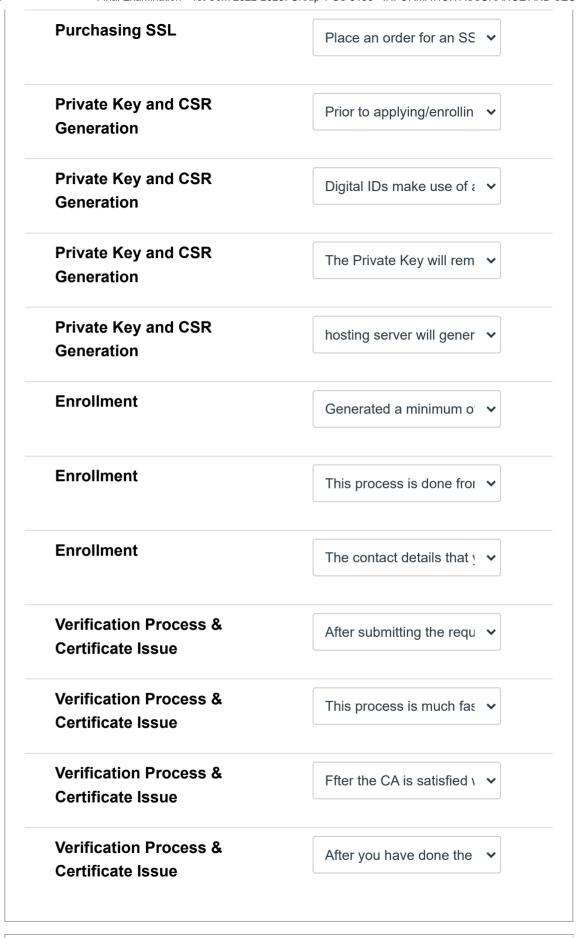
digital certificate

Question 59	1 / 1 pts
These are security measures to establish the validity of a transmessage, or originator.	nission,
No answer text provided.	
No answer text provided.	
No answer text provided.	
authentication	

Question 60	1 / 1 pts
It is the process of attempting to discover the plain text or the keencrypted file.	y of an
Steganography	
aquisition	
cryptanalysis	
imaging	

Question 61 12 / 12 pts

In order to be issued an SSL Certificate, you need to purchase one from a web service provider and then go through a process that entails the following:



Question 62

9 / 15 pts

Decipher the hidden message, using the table below

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
а	b	С	d	е	f	g	h	i	j	k	ı	m	n	o	р	q	r	s	t	u	٧	w	х	у	z	sp

sp - space

Hidden Message:



Determine the encryption and decryption key

if
$$p = 3$$
; $q = 11$

33 find N = ______-

find $\varphi N =$ ______-

7 find e = _____-

3 find d = ______ -

message secured! what is the encrypted message? -

write your answer in plaintext and lower case; plain numbers and no commas.

Answer 1:

33

Answer 2:

20

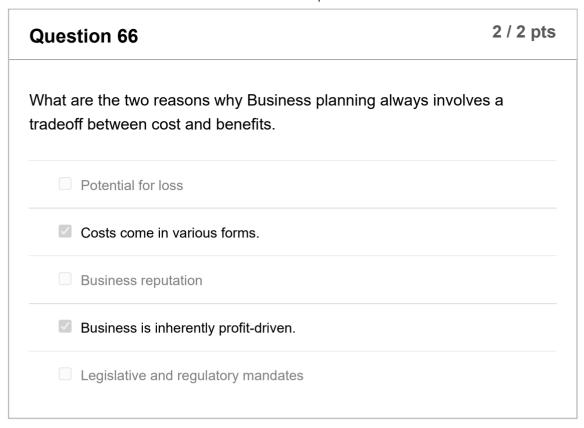
Answer 3:	
7	
Answer 4:	
3	
Answer 5:	
message secured!	

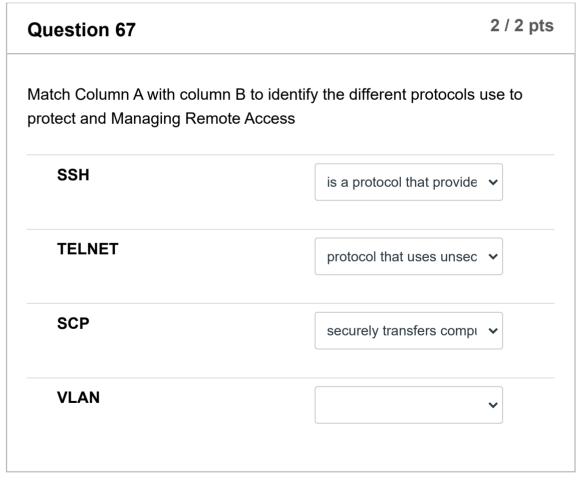
Incorrect

Question 63	0 / 2 pt
What are the 3 Popular Forms of Encryption? ans	ver in lowercase only
advanced encryptic	
digital encryption st	
rivest-shamir-adlerr	
Answer 1: advanced encryption standard	
advanced encryption standard	
advanced encryption standard	
Answer 2:	

Question 64	2 / 2 pts
Which of the following are the basic SSL Certificates? Choose all that applies.	
Positive SSL	
Positive SSL Wildcard	
☐ SSL 128	
☐ Wildcard Server	
SSL 256	
SSL123	

Which of the following are the Common Threats to the LAN? User Level Access Unauthorized network probing and port scanning Unauthorized LAN access, Network operating system software vulnerabilities, Improper password authentication Frequent patch updates





Incorrect

Question 68	0 / 2 pts
What are the 3 Popular Forms of Encryption? answer in lowerc	ase only
digital encryption st	
rivest-shamir-adlerr	
Answer 1:	
advanced encryption standard	
Answer 2: digital encryption standard	
Answer 3:	
rivest-shamir-adleman	

Question 69	2 / 2 pts
What are the three categories of threat? choose all that apply.	
by authenticity	
by kind of entity involve	
by integrity	
☑ by intent	

✓ by impact	□ by threat actor		
	by impact		

Question 70	2 / 2 pts
What are the two basic principles of encryption? answer in lo	wercase only
substitution	
transposition	
Answer 1:	
substitution	
Answer 2:	
transposition	

Question 71	2 / 2 pts
Enumerate the IA four security engineering of in lowercase only.	domains. write your answer
physical security	
personnel security	
IT security	

operational security		
Answer 1:		
physical security		
Answer 2:		
personnel security		
Answer 3:		
it security		
Answer 4:		
operational securit	/	

Question 72 1.33 / 2 pts

What are the four key attack attributes according to experts when determining whether a cyber attack is an act of cyber war?

Proportionality

Effects-based

Consequence

Distinction

✓	Source
	Necessity
	Strict liability

Question 73 4 / 5 pts

Find the totient or ϕN .

answer in plain number no commas

Answer 1:

28200

Answer 2:

6552

Answer 3:

163048

Answer 4:

797280	
Answer 5:	
212640	

Question 74	0.63 / 5 pts			
Identify the difference between Signed and Self-Signed Certificates by Matching Column A with Column B				
Self-signed certificate	Is a security certificate th			
Self-signed certificate	Does not allow any auth ✓			
Self-signed certificate	Do not provide all of the ✓			
Self-signed certificate	are for testing so there is 🕶			
Signed Certificate	an authorized certificate 🗸			
Signed Certificate	When client visits site it: 🕶			
Self-signed certificate	Encrypt the data but flun 🗸			
Signed Certificate	Certificates provide encr ➤			

Incorrect

Question 75 0 / 5 pts

Find the N value in the formula c=m^e mod N,

10186

55224

5306

30772

if
$$p = 197$$
; $q = 158$; $N =$

answer in plain numbers, no commas

Answer 1:

278584

Answer 2:

10186

Answer 3:

55224

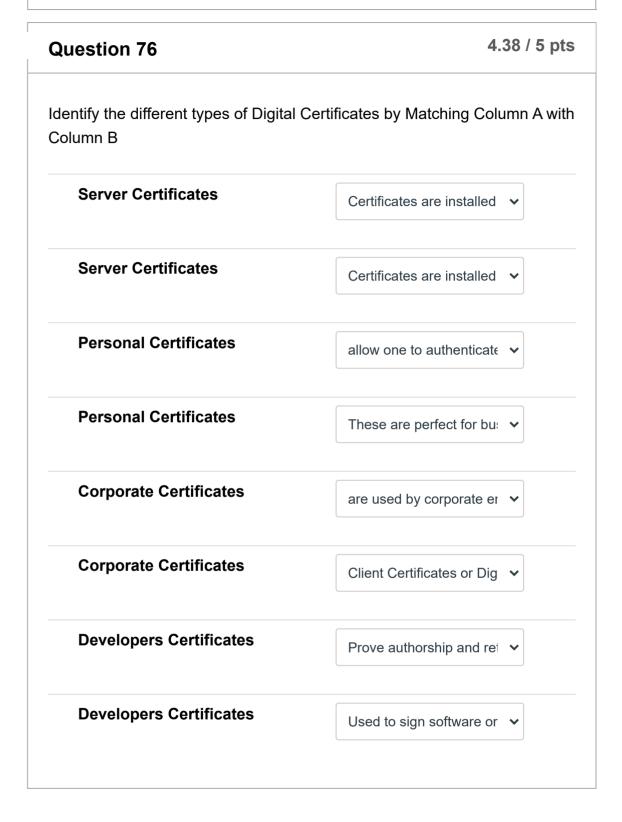
Answer 4:

5306

Answer 5:

30772

Partial

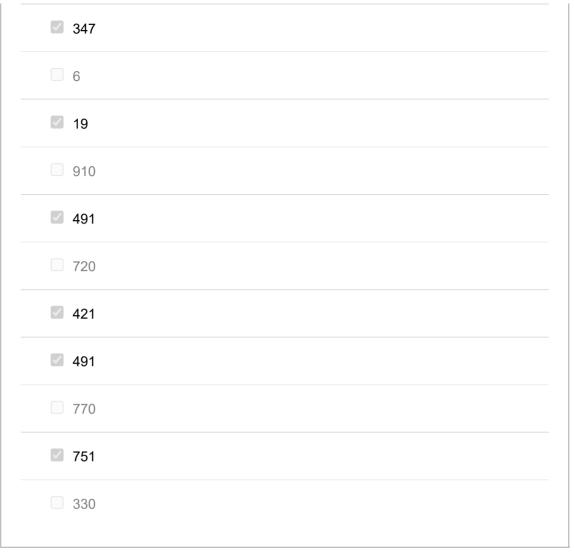


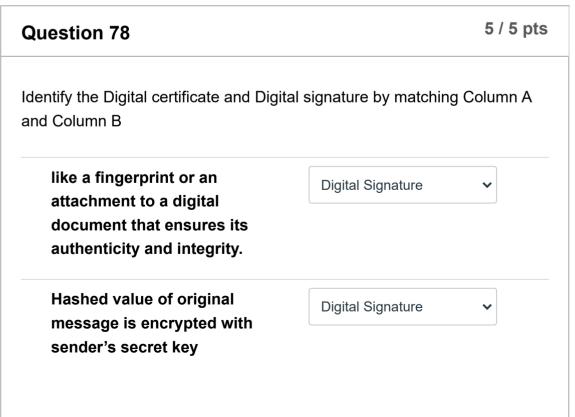
Partial

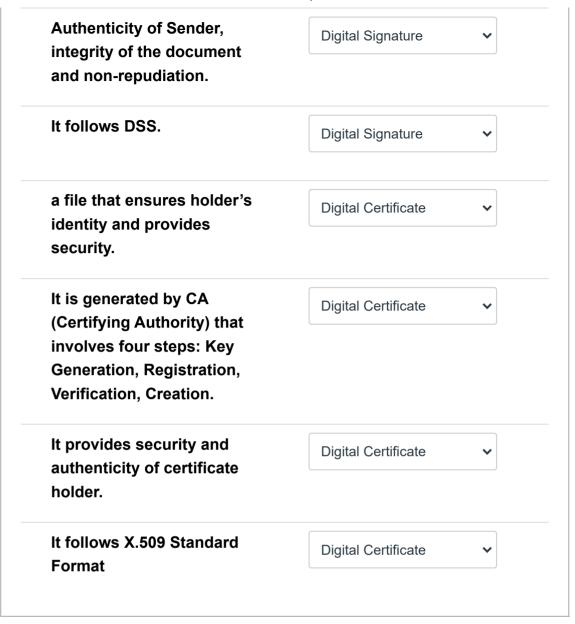
Question 77

4.29 / 5 pts

Identify the following prime numbers. choose all that apply.









Step 4	4: [Select]
Step	5: [Select]
Answ	er 1:
th di m	essage digest is computed by applying hash function on the message and en message digest is encrypted using private key of sender to form the gital signature. (digital signature = encryption (private key of sender, essage digest) and message digest = message digest gorithm(message)).
Answ	er 2:
	igital signature is then transmitted with the message.(message + digital gnature is transmitted)
Answ	er 3:
as er	eceiver decrypts the digital signature using the public key of sender.(This sures authenticity, as only sender has his private key so only sender can acrypt using his private key which can thus be decrypted by sender's ublic key).
Answ	er 4:
TI	ne receiver now has the message digest.
Answ	er 5:
	ne receiver can compute the message digest from the message (actual essage is sent with the digital signature).

Question 80 5 / 5 pts

or case.	ormation could be re	covered relative	to the investigation
identification		-	
acquisition		-	
analysis		-	
reporting		-	
court presentation		_	
	ase only.		
Answer 1: identification	ase only.		
Answer 1: identification	ase only.		
Answer 1: identification Answer 2: acquisition	ase only.		
Answer 2:	ase only.		
Answer 1: identification Answer 2: acquisition Answer 3: analysis	ase only.		
Answer 1: identification Answer 2: acquisition Answer 3: analysis	ase only.		
Answer 1: identification Answer 2: acquisition Answer 3: analysis Answer 4:	ase only.		

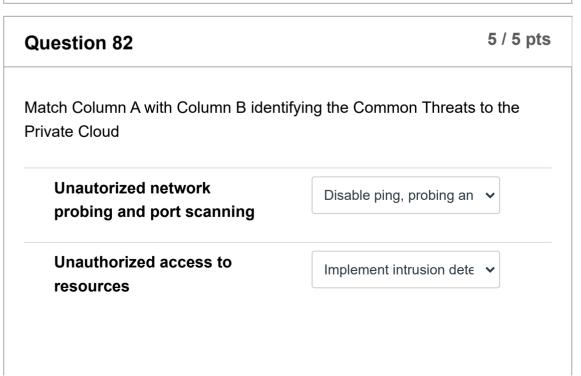
https://usc.instructure.com/courses/22023/quizzes/156679

Partial

Question 81

2.5 / 5 pts

What are the components of an information that makes it more significant compare from other type of data? Choose all that apply. timely perceptual available accurate comprehensive motivated verifiable consistent complete



Router, firewall or network device operating system software vulnerability	Update Devices with sec ➤
Remote users download sensitive data	Implement data classific⊢ ✔
Router, firewall or network device configuration error	conduct pen test post co ➤

Quiz Score: **121.95** out of 157