2021 Spring CC Exam2 (4/8 1pm) (Remotely Proctored)

Due No due date **Points** 108 **Questions** 28
Available after Apr 8 at 1:01pm **Time Limit** 85 Minutes
Exam Requirements A webcam and microphone are required to take this exam.
Exam Security This exam will be monitored by **Proctorio**. **[Learn more about Proctorio](https://proctorio.zendesk.com/hc/articles/200972514)** .

Instructions

- ○ Single attempt
  - ○ Closed notes, no Internet search/browsing activity.
  - ○ Time limit: 85 min to give you enough time despite any technical issues (It will be automatically submitted when time is up.)
  - ○ Once you are done, write 'I am done.' on zoom chat and leave quietly.

  Tips/Notes:

  - ○ Pay attention to the word '**NOT**'. Some questions ask for a **not-a-correct statement** while some questions ask for a correct statement.
  - ○ Multiple choice vs. Multiple answers questions:
    - ■ Select only one answer for multiple-choice questions.
    - ■ Select one or more answers for multiple-answers questions. Note that
      - ■ For every correct response that is selected, the student gets that many points. For **every incorrect response that is selected, the student loses that many points.**
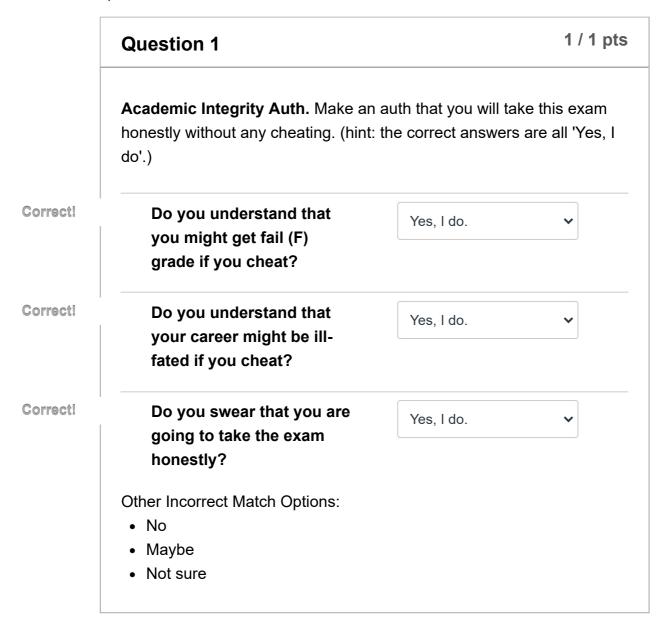
Attempt History

	Attempt	Time	Score
LATEST	**Attempt 1**	85 minutes	76.48 out of 108

Score for this quiz: **76.48** out of 108
Submitted Apr 8 at 2:31pm

This attempt took 85 minutes.

Question 1	1 / 1 pts

Academic Integrity Auth. Make an auth that you will take this exam honestly without any cheating. (hint: the correct answers are all 'Yes, I do'.)

Correct!

Do you understand that you might get fail (F) grade if you cheat?

Yes, I do.

Correct!

Do you understand that your career might be ill-fated if you cheat?

Yes, I do.

Correct!

Do you swear that you are going to take the exam honestly?

Yes, I do.

Other Incorrect Match Options:
- No
- Maybe
- Not sure

Question 2	3 / 3 pts

Storage Services. Which of the following is NOT about storage services?

- ○ Data Deduplication

- ○ Replication

Correct!

- ◉ Thick Provisioning

- ○ Virtualization

Question 3   3 / 3 pts

Data protection (at-rest). Which of the following is about at-rest data protection schemes?

rect Answer

- ○ HTTPS

- ○ TLS

Correct!

- ⦿ File access control

- ○ FTPS

Question 4   3 / 3 pts

DAS. Which of the following is NOT to do with DAS (Direct Access System)?

- ○ SATA

- ○ RAID

- ○ SCSI

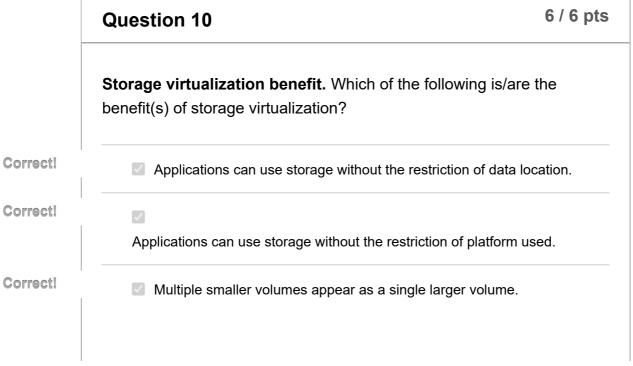Correct!

- ⦿ HTTP

Question 5   1 / 1 pts

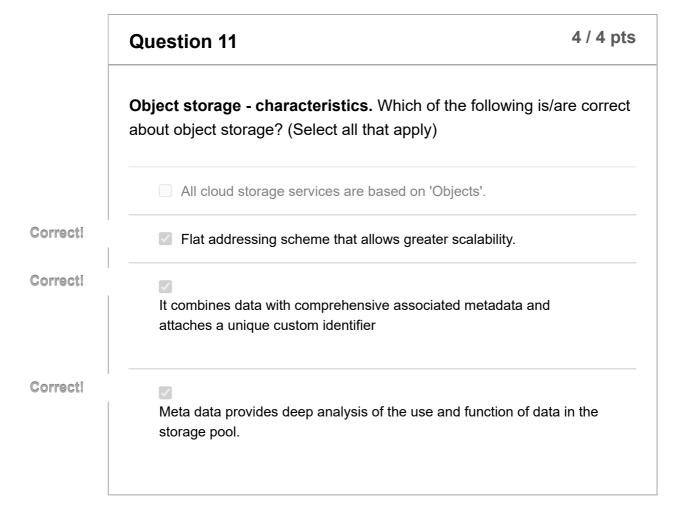**SAN-performance.** SAN offers block level access with high bandwidth than NAS.

Correct!

○ True

○ False

Question 6   0 / 1 pts

SAN - access granularity. SAN allows block-level access typically in a LAN environment.

orrect Answer

○ True

ou Answered

◉ False

Question 7   1.33 / 4 pts

NAS characteristics. Which of the following is/are correct about the characteristics of NAS? (Select all that apply)

Correct!

☑ File-based access

orrect Answer

☐ Unlimited distance

orrect Answer

☐
It allows share storage resources among multiple users from a disstance

☐ Block-based access

Question 8   0 / 3 pts

Storage abstraction. Which of the following is at the highest level of storage abstraction?

○ file storage

ɔu Answered

⊙ block storage

ɔrrect Answer

○ object storage

Question 9   3 / 3 pts

Storage virtualization technique. Which of the following is NOT provided by storage **virtualization**?

○ Storage Pooling

Correct!

⊙ Data Deduplication

○ Name Space Isolation

Question 10   6 / 6 pts

Storage virtualization benefit. Which of the following is/are the benefit(s) of storage virtualization?

Correct!

☑ Applications can use storage without the restriction of data location.

Correct!

☑

Applications can use storage without the restriction of platform used.

Correct!

☑ Multiple smaller volumes appear as a single larger volume.

Correct!

☑ Applications can use storage without the restriction of storage system implementation.

☐ Applications can use storage without the restriction of data permission.

Correct!

☑ Data is spread over multiple physical disks to improve reliability and performance.

Question 11   4 / 4 pts

Object storage - characteristics. Which of the following is/are correct about object storage? (Select all that apply)

☐ All cloud storage services are based on 'Objects'.

Correct!

☑ Flat addressing scheme that allows greater scalability.

Correct!

☑ It combines data with comprehensive associated metadata and attaches a unique custom identifier

Correct!

☑ Meta data provides deep analysis of the use and function of data in the storage pool.

Question 12   5 / 5 pts

Hot-Warm-[Cold] storage. Which of the following is/are about cold cloud storage service? (Select all that apply.)

    ☐   AWS EBS

Correct!   ☑   Azure Cool Blob Storage

Correct!   ☑   AWS S3 Glacier

    ☐   Google Drive

Correct!   ☑   Google Archival Cloud Storage

Question 13   4 / 4 pts

CDN-comparison. Which of the following is/are correct about the problems of server farms and Web caching proxies for content distribution? (Select all that apply)

Correct!   ☑

Server farms do nothing about problems due to network congestion, or to improve latency issues due to the network

Correct!   ☑

Accounting issues with caching proxies. For instance, cnn.com needs to know the number of hits to the webpage for advertisements displayed on the webpage

    ☐

Content providers (Web servers) can well rely on the existence and correct implementation of caching proxies for their content distribution quality

Correct!   ☑

Caching proxies serve only the ISP's clients, not all users on the Internet

Question 14 4 / 4 pts

Fb-workload. Which of the following is/are correct about Facebook's unique workload compared to traditional content service (eg. news)?

Correct! ☑ Frequent access of old content

Correct! ☑ Little cold data (i.e., mostly either hot or warm data)

Correct! ☑ Large working set of photos

☐ Relatively higher external CDN hit rate

Question 15 4.4 / 11 pts

Fb-Storage. Which of the following is correct about Facebook storage? (Select all that apply.)

ou Answered ☑ Haystack is Facebook's own CDN.

☐ F4 is for hot data.

Correct! ☑ F4 uses Reed-Solomon encoding.

☐ Haystack is for warm data.

☐ Facebook has lots of cold data that is almost never referenced after 3 months typically.

☐ Facebook doesn't use external CDN.

orrect Answer ☐ Both Haystack and f4 do replications of photo data for failure-resiliency (reliability).

orrect Answer

☐ Haystack does higher fact of replication than f4, and provides a better fault-tolerance.

Correct!

☑ Facebook photos are stored as objects.

Correct!

☑ Haystack uses RAID 6.

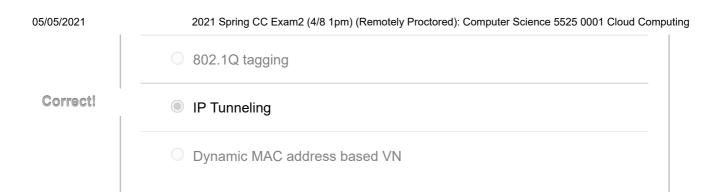☐ F4 is a new Facebook storage system that replaces Haystack storage.

Question 16   3.75 / 5 pts

CDN-explanation. Which of the following is correct about CDN?

Correct!

☑ CDN reduces origin web server's load as well as users' perceived latency.

Correct!

☑ Akamai is an example of CDN.

orrect Answer

☐ Content providers are CDN's customers.

☐ By using CDN, content providers can't get information on accounting or user demands.

Correct!

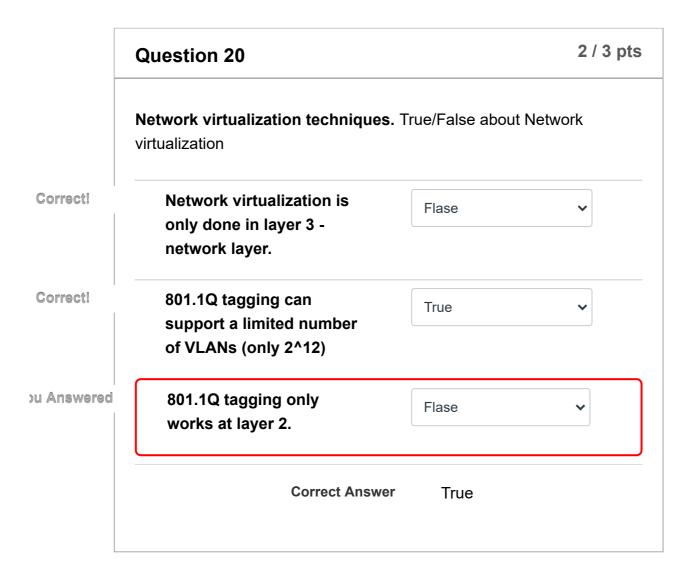☑ It is an overlay network used to distribute content from origin servers to users in various geographic locations.

Question 17   0 / 3 pts

CDN-redirection. Which of the following is NOT correct about CDN redirection techniques?

○ URL based request routing – consistent hashing

orrect Answer

○ Broadcast-based distribution

○ URL rewriting

ou Answered

◉ DNS based request routing

Question 18

3 / 5 pts

VN layer. Which protocol layer can a virtual network be implemented? (Select all that apply.)

orrect Answer

☐ layer 4 - transport layer

orrect Answer

☐ layer 5 - application layer

Correct!

☑ layer 2 - link/LAN layer

Correct!

☑ layer 3 - network layer

Correct!

☑ layer 1 - physical layer

Question 19

3 / 3 pts

VLAN. Which of the following is NOT about VLAN?

○ Static switch port based VN

○ 802.1Q tagging

Correct!

◉ IP Tunneling

○ Dynamic MAC address based VN

Question 20   2 / 3 pts

Network virtualization techniques. True/False about Network virtualization

Correct!

Network virtualization is only done in layer 3 - network layer.	Flase ⌄

Correct!

801.1Q tagging can support a limited number of VLANs (only 2^12)	True ⌄

ɔu Answered

801.1Q tagging only works at layer 2.	Flase ⌄

Correct Answer   True

Question 21   0 / 3 pts

Network virtualization concept. Which of the following is not correct about network virtualization?

ɔu Answered

◉ It can save the cost through network resource pooling/sharing.

○ It allows to share computing, storage, and networking resources for different applications .

orrect Answer

○ It is required to support multi-tenant environments.

○ It can enable to run/test new protocols and applications.

Question 22   5 / 5 pts

Google's latest custom DC cluster fabric. What is the latest Google's latest custom DC cluster fabric?

(Capitalize only the first letter for automatic grading)

Correct!

☑ Jupiter

Question 23   2 / 4 pts

SDN. Which of the following is/are correct about Software-Defined Networking (SDN)? (Select all that apply.)

ou Answered

☑ It is only for LAN rather than WAN

Correct!

☑

Network services like Routing or Firewall would be applications running on top of a controller.

Correct!

☑ Openflow is the de-facto standard protocol used in SDN.

☐ It is still in academic stage and not used in public clouds yet.

Question 24   0 / 5 pts

Data protection location/time.

"Data actively moving from one location to another such as across the **Internet** or through a private **network**." is called

(   ) protection.

(Write in all lowercase letters for automatic grading.)

ɔu Answered

> data in transit / data in flight

ɔrrect Answers

in-flight

in-motion

in-transit

Question 25   5 / 5 pts

OpenFlow - explanation. Explain briefly how OpenFlow works?

Your Answer:

OpenFlow is an open standard for a communication protocol that enables the control plane to break off and interact with the forwarding plane of multiple devices from some central point, decoupling roles for highest functionality and programmability.

Question 26   4 / 5 pts

Within the scope of this exam, make a ***non-trivial*** exam "***multiple-choice"*** question on your own and answer it. This is to show your knowledge, ***not covered in the problems below***. *(no true/false question; 4 or more choices)*

Your Answer:

Ques : Which of the following is FALSE about RAID-6 ?

A: Read performance is low.

B: Write performance is High.

C: Cost is Low.

D: Supports Data Protection.

Answer : Option A.

write performance is higher than ??

Question 27

5 / 5 pts

Within the scope of this exam, make a **_non-trivial_** exam "**_descriptive"_** question on your own and answer it. This is to show your knowledge, **_not covered in the problems below_**.

Your Answer:

Define Moore's Law and Give some limitations.

Moore's Law : Moore's law states that the number of transistors on a microchip doubles every 2 years, though the cost of computer is halved.

Limitations :

1: Moore's law depends on shrinking of the transistors and here the law of physics intervene. Electron tunneling prevents the length of a gate - the part of a transistor that turns the flow of electrons on or off from being smaller than 5nm.

2: Smaller transistors will extract heat resulting malfunctions.

Question 28   1 / 1 pts

Self-assessment. Do the following self-assessment of your course work: (Be honest!) (Anyone who answers will get the point)

(Write numbers either **1**, **2**, **3**, **4**, or **5 only**. Otherwise, it will be automatically marked as wrong.)

> 4

Your effort for the course?

Outstanding (more than 15 hours a week) (**5**)

Great (more than 10 hours a week) (**4**)

Good enough effort (more than 9 hours a week) (**3**)

Below Average (more than 5 hours but less than 9 hours a week) (**2**)

Limited Effort (less than 5 hours a week) (**1**)

> 4

How regularly are you studying for the course?

Very much/Every day (**5**)

Every other day (**4**)

Twice a week (**3**)

Once a week (**2**)

Only before the exam (**1**)

> 4

Your growth and learning development from the beginning of the semester till now?

Outstanding (5) …………………… Below Average (1)

Answer 1:

Correct!   4

orrect Answer   1

orrect Answer   2

orrect Answer   3

Correct Answer	5	

Answer 2:

Correct!	4	
Correct Answer	1	
Correct Answer	2	
Correct Answer	3	
Correct Answer	5	

Answer 3:

Correct!	4	
Correct Answer	1	
Correct Answer	2	
Correct Answer	3	
Correct Answer	5	

Quiz Score: **76.48** out of 108