

1.4

NETWORK SECURITY

TOPIC WISE EXAM QUESTIONS

GCSE

OCR

1.4 – Network security

Sub topic	Guidance
1.4.1 Threats to computer systems and networks	
<input type="checkbox"/> Forms of attack: <ul style="list-style-type: none">MalwareSocial engineering, e.g. phishing, people as the 'weak point'Brute-force attacksDenial of service attacksData interception and theftThe concept of SQL injection	Required <ul style="list-style-type: none">✓ Threats posed to devices/systems✓ Knowledge/principles of each form of attack including:<ul style="list-style-type: none">▪ How the attack is used▪ The purpose of the attack
1.4.2 Identifying and preventing vulnerabilities	
Common prevention methods: <ul style="list-style-type: none">Penetration testingAnti-malware softwareFirewallsUser access levelsPasswordsEncryptionPhysical security	Required <ul style="list-style-type: none">✓ Understanding of how to limit the threats posed in 1.4.1✓ Understanding of methods to remove vulnerabilities✓ Knowledge/principles of each prevention method:<ul style="list-style-type: none">▪ What each prevention method may limit/prevent▪ How it limits the attack

2023

(a) Tick (✓) **one or more** boxes on each row to identify all of the methods that can help to prevent each threat.

Threat	Anti-malware	Penetration testing	Encryption	Firewall
Spyware				
Brute-force attack				
Data interception				
SQL injection				

[4]

(b) Name **and** describe **one** threat to a computer system that is not given in **question 4(a)**.

Threat

Description

[3]

2022

5 A software development company wants to protect their computer systems and data from unauthorised access.

(a) Identify **two** methods of physical security that the company could use to protect their computer systems.

1

2

[2]

(b) Identify **and** describe **two** software-based security methods that the company can use to protect their computer systems and data.

Method 1

Description

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Method 2

Description

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[6]

SAMPLE

A hospital stores patients' details on its computer network. The hospital is concerned about the security of its patients' details.

(a) Staff already use strong passwords to protect systems. Explain, with reference to system security, **three** other ways that the hospital could protect the network system.

1

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2

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[6]

(b) Identify **three** errors that the hospital staff could make that may endanger the security of the network. Outline a procedure that could be put in place to prevent each error.

Error 1

Procedure 1

.....

Error 2

Procedure 2

.....

Error 3

Procedure 3

.....

[6]

2021

The university want to protect their data against threats when connected to the Internet.

- (i) Describe the threat malware can pose to the university's network and give a prevention method that the university can use.

Description

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Prevention

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[3]

- (ii) Describe the threat a brute force attack can pose to the university's network and give a prevention method that the university can use.

Description

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Prevention

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[3]

2020

Data in computer systems is valuable and at risk of loss, damage or being stolen.

(a) The table has four potential threats to data.

Write one prevention method for each threat in the table. Each prevention method must be different.

Threat	Prevention method
Unauthorised access to computer	
Virus	
Phishing	
Data interception	

[4]

(b) Name **two** other threats to the data in a computer system and give a method of preventing each.

Threat 1

Prevention 1

.....

Threat 2

Prevention 2

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[4]

(b) If unauthorised access does occur, Hamish would like to use encryption to add another layer of protection to his documents.

(i) Explain how encryption helps to protect Hamish's documents.

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[2]

2018

(e) The house owner is concerned about potential threats to the network from being connected to the Internet.

(i) Describe **three** possible threats to the computers connected to the network and give **one** way each threat can be reduced or prevented.

Threat 1

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Prevention

Threat 2

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.....

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Prevention

Threat 3

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.....

.....

Prevention

[9]

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useful, drop a follow
to help me out!**

THANK YOU!

GCST