

Past-paper walk-through

Ethics and Ownership ■ 7.1

eXercise

Questions in this set

- 9618/11 N25 Q8 ■ 9 marks
- 9618/12 N25 Q2 ■ 6 marks
- 9618/12 J25 Q3 ■ 12 marks
- 9618/11 N24 Q7 ■ 4 marks
- 9618/12 N24 Q5 ■ 9 marks
- 9618/13 N24 Q5 ■ 6 marks

Reading the mark scheme

- **B1** a mark that stands on its own – the point is either made or not.
- **M1** a *method* mark: the right approach, even if the number is wrong.
- **A1** an *answer* mark, and it usually needs its M mark first.
- **C1** a working mark on the way to the answer.
- **//** separates answers the examiner accepts equally.
- **ecf** = error carried forward: a later part is marked on your own earlier answer.
- **owtte** = “or words to that effect” – the wording need not match.

Question 8

9618/11 N25 ■ Q8 ■ 9 marks

One ethical consideration for a student connecting their personal computer to the school network is the risk of spreading malware on the network.

(a) Viruses and pharming are examples of malware.

Explain what is meant by a virus and pharming.

[2]

(b) Give **three** other ethical considerations for a student using their personal computer to connect to the school network.

1. 2. 3.

[3]

(c) Describe **two** social impacts of students using Artificial Intelligence (AI) to complete their homework.

1. 2.

[4]

Solution 8

(a)

Mark scheme

- 1 mark for each correct explanation, max 2 marks
- Virus:
 - Malicious program/software that replicates/copies itself and deletes/alters files/data stored on a computer
- Pharming:
 - Malicious code/software installed on a computer which redirects user to a fake website to obtain personal data

Solution 8

(b) Mark scheme

- 1 mark per bullet point, max 3 marks e. g.
- ■ Students should consider privacy issues
- ■ Students should not make inappropriate use of social networking //
- Students should not engage in cyberbullying
- ■ Students should not copy work that is not their own
- ■ Students should abide by the school rules/guidelines for accessing the network
- ■ Students should only use the school network for legitimate purposes
- ■ Students should not hack / crack other computers

Solution 8

(c) Mark scheme

- 1 mark per bullet point, max 4 marks e. g.
- Negative Impacts
 - ■ If students use AI to shortcut learning, they may miss out on developing reasoning and problem-solving skills // Students may not be learning anything // It could lead to a decline in specific skills
 - ■ It could have negative impacts on student communication // heavy reliance on AI may limit opportunities for collaboration, teamwork, and face-to-face communication

Solution 8

- ■ Emphasises the digital divide// some students may not have access to the technology
- ■ The AI answer might not be correct leading to mis-information
- ■ Increased screen time and isolation could contribute to anxiety or loneliness
- Positive Impacts
- ■ Students given additional support may do better
- ■ Pupils who struggle in traditional settings may gain self -esteem through
- AI-assisted learning at their own pace
- Long-Term Impacts
- ■ Protection of intellectual property // ethical issues and considerations

Solution 8

- ■ Schools may need to redesign curricula and/or assessment to integrate
- AI
- 4
- October/November
- 2025

Question 2

9618/12 N25 ■ Q2 ■ 6 marks

Complete the table by describing each term.

(a)

Term	Description
Copyright	
Open Source (Initiative)	
Shareware	
Software Licence	

Question 2

[4]

Question 2

Term	Description
Copyright	
Open Source (Initiative)	
Shareware	

Question 2

Software Licence	
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[4]

Question 2

9618/12 N25 ■ Q2 ■ 6 marks

Complete the table by describing each term.

(b) Describe the purpose of a code of conduct.

[2]

Solution 2

(a) Mark scheme

- 1 mark for each correct row, max 4 marks
- Term
- Description
- Copyright
- Gives the holder the legal right of ownership of intellectual property
- Open Source
- (Initiative)
- Software can be freely copied, distributed or adapted

Solution 2

- Shareware
- Gives the user a trial period / limited functionality before a payment/sign up may be required
- Software
- Licence
- A (legal) agreement that defines the rights and terms of usage for the software
- 4
- Parity byte check
- Checksum
- Parity block check

Solution 2

- Data transfer
- Visual check
- Data entry
- Use
- Verification Method
- October/November
- 2025

Solution 2

(b) Mark scheme

- 1 mark per bullet point, max 2 marks e.g.
- ■ to create a safe, respectable and professional working environment for all employees
- ■ to ensure that employees understand the expectations
- ■ ... and the consequences of their actions
- ■ to provide a clear outline of what is considered good practice
- ■ so there are clear rules to follow in certain situations
- ■ to protect the reputation of the organisation // maintain public trust

Question 3

9618/12 J25 ■ Q3 ■ 12 marks

A computer program uses a digital camera to read the words on an item. The program can read the words that are written on the item, translate the words to a chosen language and then output the words as audio. For example, when used in a supermarket, the program can output the words written on the labels on products. The program uses Artificial Intelligence (AI).

(a) Explain how AI is used in the computer program described. [4]

(b) State **two** social benefits of the use of AI in the computer program described.

1. 2. [2]

(c)(i) Describe the features of a commercial software licence. [3]

(c)(ii) Explain the reasons why an open source software licence might not be appropriate for the computer program described. [3]

Solution 3

(a) Mark scheme

- 1 mark each to max 4 e.g.
- ■ Uses image recognition // optical character recognition
- ■ to analyse a photograph/pixels to identify the location of characters within an image
- ■ in order to convert the pattern of pixels into individual characters
- ■ Uses natural language
- ■ to combine the characters into words

Solution 3

- and compare the words to database to identify a match in the language of the writing
- it may also predict what is missing / incomplete / from what has been read
- then compare the words to a database of the user's chosen language to find a match and translate
- Uses text-to-speech
- to generate the audio waveforms corresponding to the words

Solution 3

(b)

Mark scheme

- 1 mark each to max 2 e.g.
- ■ It can help people with visual impairment to identify which products to purchase
- ■ It can help people who cannot understand the language
- ■ It can help to overcome learning / reading difficulties

Solution 3

(c)(i) Mark scheme

- 1 mark each to max 3
- ■ The program is usually sold for a fee
- ■ Users have no access to source code
- ■ It protects the intellectual rights of the programmer / developer
- ■ Users cannot legally alter or share the program
- ■ There are limitations on the use of the software e.g. number of times it can be installed
- ■ Support and maintenance is usually provided e.g. updates, bug fixes etc.

Solution 3

(c)(ii)

Mark scheme

- 1 mark each to max 3 e.g.
- ■ The source code would be accessible therefore it could be changed
- ■ which might lead to the program outputting an incorrect response
- ■ so people could purchase the wrong item
- ■ which might have serious consequences // by example e.g. allergies

Question 7

9618/11 N24 ■ Q7 ■ 4 marks

Software is distributed with a licence.

(a) Give **two** benefits of distributing software using a shareware software licence.

1. 2.

[2]

(b) Give **two** benefits of distributing software using a commercial software licence.

1. 2.

[2]

Solution 7

(a)

Mark scheme

1 mark for each bullet point (max 2)

- The user can test/trial the program before purchasing to see whether it meets needs
- There is no initial cost
- Users who try the software may spread the word so the developer gets more custom
- The developer can get feedback to improve the program

Solution 7

(b)

Mark scheme

1 mark for each bullet point (max 2)

- The owner/developer can earn a fee
- Comprehensive support is usually offered so problems can be easily solved
- The software is usually well tested so few bugs

Question 5

9618/12 N24 ■ Q5 ■ 9 marks

A computer programmer is learning about the importance of acting ethically at work.

(a) Explain the reasons why the computer programmer needs to act ethically towards colleagues and the public. [4]

(b)(i) Identify **one** suitable type of software licence for the program **and** describe the reasons for your choice. [3]

(b)(ii) Explain the reasons why the programmer should copyright their program. [2]

Solution 5

(a) Mark scheme

- 1 mark for each bullet point max 2 for public max 2 for colleagues e.g.
- Colleagues:
- The programmer should:
 - ■ Treat colleagues fairly and avoid acts of discrimination
 - ■ Be prepared to accept / offer critique
 - ■ ... so that technical work can be improved
 - ■ Credit the contributions of colleagues
 - ■ ... so that they feel valued / respected

Solution 5

- ■ Help / train colleagues etc.
- e.g.
- The public:
- The programmer should:
 - ■ Maintain the health, safety and welfare of the public
 - ■ ... so as not to endanger anyone
 - ■ Be honest / realistic in making claims about the software
 - ■ ... so that public trust is maintained
 - ■ Maintain the security of the public's data etc.

Solution 5

(b)(i) Mark scheme

- Type of software licence
- 1 mark for
 - Open Source Initiative // Free Software Foundation
- Reason for choice:
 - 1 mark for each bullet point (max 2)
 - Allows program source code to be examined
 - ... so that the business can adapt/modify the program to meet their needs
 - Allows the programmer to earn money for the software and updates

Solution 5

(b)(ii) Mark scheme

- 1 mark for each bullet point (max 2)
- ■ To identify themselves as the owner/author // To gain formal recognition of ownership
- ■ To allow for legal consequences if anyone steals/copies it
- ■ To restrict competition
- 2
- October/November
- 2024

Question 5

9618/13 N24 ■ Q5 ■ 6 marks

5 A computer programmer writes programs that are distributed with a software licence.

(a) Complete the table by writing the type of software licence each statement describes.

Statement	Software licence
A fee is charged for the software. The source code cannot be accessed. Users do not get a free trial.	
Users can try the software before buying it. Users may not be able to access all features during the trial.	
Software is usually free of charge. Users can access the source code and alter the program	

Question 5

access the source code and alter the program to their needs.

.....

[3]

- (b) Explain the reasons why it is important for the computer programmer to join a professional ethical body.

Solution 5

(a) Worked steps

Each row is decided by two things: **is it paid for**, and **is the source code available**.

- A fee is charged, the source code is **not** available, and there is **no free trial** — **commercial** software.
- Users can **try before buying**, possibly with some features disabled — **shareware**.
- Usually **free of charge**, with the **source code available** to read and modify — **open source**.

Solution 5

One mark per row.

The distinction most often muddled is **freeware** against **open source**: freeware costs nothing but keeps its source closed, while open source publishes the source — and may still be sold. The word “free” is about the licence in one case and the price in the other, so read the row for what it says about the *source code*, not just about the money. [Mark scheme](#)

- 1 mark for each correct licence
- Statement
- Software Licence
- A fee is charged for the software. The source code

Solution 5

- cannot be accessed. Users do not get a free trial.
- Commercial
- Users can try the software before buying it. Users
- may not be able to access all features during the trial.
- Shareware
- Software is usually free of charge. Users can access
- the source code and alter the program to their needs.
- Open Source //
- Free software
- 3

Solution 5

- 9618/13
- October/November
- 2024

Solution 5

(b) Worked steps

Three marks. Say what the body provides, then what that gives the programmer and their clients.

- The professional body **publishes ethical guidelines** to follow ...
- ... so **clients and colleagues know the standards** being applied.
- ... so the programmer **does not have to decide alone** what is ethical — it is written down.
- Membership shows the programmer is **reputable**, and their competence has been checked.

Solution 5

The answer that scores is *mechanism, then consequence*. “It is more professional” is a consequence with nothing behind it; “it publishes a code of conduct, so a client knows what standards to expect” is one complete point.

Worth adding if there is room: a body can also **discipline or remove** a member who breaches the code, which is what makes membership mean something to a client rather than being a badge. [Mark scheme](#)

- 1 mark for each bullet point (max 3)
- e.g.
- ■
- The professional ethical body has ethical guidelines to follow

Solution 5

- ■
- ... so clients/other staff know the standards being applied
- ■
- ... so the computer programmer does not have to decide what is ethical
- it's written down
- ■
- Clients/staff know the computer programmer is reputable
- ■
- ... there may be a test/requirement for entry
- ■

Solution 5

- ... giving recognition of the computer programmer's skills/knowledge
- ■
- The professional ethical body provides help and support
- ■
- ... for example, if the computer programmer needs legal advice
- ■
- The professional ethical body runs training courses
- ■
- ... to keep the computer programmer's skills up to date
- 3