

NT213 English for IT

Examination

Student \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student ID number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***September 2021***

**Time** 1 hour 30 minutes

# Instructions to students

Do not open this question paper until you are told to do so.

**Write your name and ID number.**

Read the instructions for each part of the paper carefully.

Answer all the questions.

You mustcomplete the answer sheets within the time limit.

**INFORMATION FOR STUDENTS**

There are 60 questions in this paper.

Questions 1 – 20 carry 1 mark (Part 1, Part 2).

Questions 21 – 33 carry up to 2 marks (Part 3, Part 4).

Questions 34 – 40 carry 1 mark (Part 5).

Questions in Part 6 carry 10 marks (Part 6).

Part 1 Multiple-choice cloze

For questions **1 – 10**, read the text below and decide which answer **(A**, **B**, **C** or **D**) best fits each gap. There is an example at the beginning (**0**). Mark your answers **by circling the correct answer. (10 x 1 = 10 points)**

**Example:**

**0 A** Regulation BDirective **C** Law **D** Legislation

The General Data Protection 0 \_\_\_\_\_\_\_\_\_\_ (GDPR), which came into 1 \_\_\_\_\_\_\_\_\_\_ on May 25, 2018, is the successor of the European Union’s Data Protection Directive of 1995. The main aims of GDPR are to ensure the 2 \_\_\_\_\_\_\_\_\_\_ of EU citizens is better protected and to increase their rights over their personal data. Under GDPR, a(n) 3 \_\_\_\_\_\_\_\_\_\_ is an EU citizen or other national who is physically present in the EU at the time data are collected. Any business or organization that offers services to EU data subjects that collects, processes or stores the data of EU data subjects has to 4 \_\_\_\_\_\_\_\_\_\_ with GDPR regardless of the location of that business or organization.

Broadly speaking, there are three categories of entities and individual covered by GDPR. The first, the 5 \_\_\_\_\_\_\_\_\_\_, is a government agency or organization (public or private) that initiates the collection and processing of personal data, i.e. the entity that collects and uses personal data or shares that information.

The second, 6 \_\_\_\_\_\_\_\_\_\_, are those contracted by the controller to process personal data. These are usually IT companies or third-party marketing companies, but the term “data processor” can also relate to any software used to process data. Therefore, apps used to collect or process personal data are also subject to GDPR compliance.

Finally, there are the data subjects. These are the people whose personal information is being collected, used and processed by the controllers and processors. These individuals retain the right to access their personal data, correct errors, and request the removal of information collected about them (commonly called the “right to be forgotten”). In all cases, such requests must be processed within thirty days. GDPR also gives data subjects the right to 7\_\_\_\_\_\_\_\_\_\_, meaning the information must be provided in a structured, electronic format which allows individuals to obtain and reuse their personal data for their own purposes across different services.

Data subjects also have the “right 8 \_\_\_\_\_\_\_\_\_\_”. This means that they must receive information from the controller about what information is collected, how it is stored, and how it is being used.

A 9 \_\_\_\_\_\_\_\_\_\_ is any situation where an outside entity gains access to user data without the permission of the individual. They often involve the malicious use of data against users. If this situation should occur, the GDPR specifies that companies must provide adequate notification. The affected company has 72 hours to notify the appropriate data protection agency and must inform affected individuals “without undue delay.”

If a regulatory authority finds an organisation to be non-compliant with GDPR, they can charge them with any of a number of different \_\_\_\_\_\_\_\_\_\_. The size of the fine depends upon various factors, including the type of violation or the number of records affected in a data breach.

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| --- | --- | --- | --- | --- |
|  | **A** application | **B** use | **C** effect | **D** the world |
|  | **A** personal records | **B** personal data | **C** personal info | **D** private information |
|  | **A** data subject | **B** person | **C** individual | **D** affected party |
|  | **A** observe | **B** comply | **C** follow | **D** respect |
|  | **A** data subject | **B** data officer | **C** processor | **D** controller |
|  | **A** data subjects | **B** data officers | **C** processors | **D** controllers |
|  | **A** portability | **B** transferability | **C** movability | **D** transportability |
|  | **A** to be forgotten | **B** to be heard | **C** to information | **D** to be informed |
|  | **A** data breach | **B** data noncompliance | **C** privacy violation | **D** data infringement |
|  | **A** punishments | **B** penalties | **C** sanctions | **D** rewards |

# Part 2 Open cloze

For questions **1 – 10**, read the text below and think of the word which best fits each gap. Use only one or twowords in each gap. There is an example at the beginning (**0**). **(10 x 1 = 10 points)**

**Example: (0)** *have*

*Blockchain Explained*

If you have been following banking, investing, or cryptocurrency over the last ten years, you may 0 \_\_\_\_\_\_\_\_\_\_ heard the term “blockchain,” the record-keeping technology 1 \_\_\_\_\_\_\_\_\_\_ the Bitcoin network.

Blockchain is a distributed peer-to-peer database in 2 \_\_\_\_\_\_\_\_\_\_ all the participants (called nodes) are 3 \_\_\_\_\_\_\_\_\_\_ the same hierarchical level and because of the existence of a consensus protocol, don’t need to trust each other. 4 \_\_\_\_\_\_\_\_\_\_ every participant has a copy of the whole ledger of the blockchain.

5 \_\_\_\_\_\_\_\_\_\_ a node wants to perform a transaction (send money, deploy a smart contract, …) it sends this information to its node-friends. Each node checks some basic things first (for instance if the money has not been spent before).

6 \_\_\_\_\_\_\_\_\_\_ everything is right, they save the information about the transaction in their POOL (a sort of personal register) and resend it to their friend-nodes. Every node has a different POOL because they hear about the transactions in a different order.

In every round (in Bitcoin it is 10 minutes on average) a node is RANDOMLY chosen to propose a block with the transactions of its POOL. This is the key process called consensus protocol. Instead of 7 \_\_\_\_\_\_\_\_\_\_ 100% random, different nodes have different chances of winning.

8 \_\_\_\_\_\_\_\_\_\_ a transaction is recorded, its authenticity must be verified by the blockchain network. Thousands of computers on the blockchain rush to confirm that the details of the purchase are correct. 9 \_\_\_\_\_\_\_\_\_\_ a computer has validated the transaction, it is added to the blockchain block. Each block on the blockchain contains its own unique hash, along with the unique hash of the block before it. When the information on a block is edited in any way, that block’s hashcode changes—however, the hash code on the block after it would not. This discrepancy makes it extremely difficult for information on the blockchain to be changed 10 \_\_\_\_\_\_\_\_\_\_ notice.

# Part 3 Word formation

For questions **1 – 8**, read the text below. Use the word given in capitals at the end of some of the lines to form a word that fits in the gap **in the same line**. There is an example at the beginning (**0**). **(6 x 2 = 12 points)**

**Example: (0)** POTENTIAL

|  |  |
| --- | --- |
| *5G's "Killer App" Will Be 6G*  by Theodore S. Rappaport  Much of 5G's buzz centers on the 0 \_\_\_\_\_\_\_\_\_\_ (potent) it offers to the society: Lightning-fast downloads, barely-there latencies, and new and improved technologies like virtual reality and self-driving cars. Behind the buzz, however, one amazing fact is all but disregarded—the 1 \_\_\_\_\_\_\_\_\_\_ technological breakthroughs of 5G. Millimeter wave technology, small cell fundamental 2 \_\_\_\_\_\_\_\_\_\_, and massive multiple-input multiple-output (massive-MIMO) antenna systems are paving the way for the next several decades of the wireless industry. Together, these technologies will futureproof wireless networks as we enter an era of wireless cognition and human-style computing. In fewer than 20 years, wireless networks will carry information [at the speed of the human brain](https://ieeexplore.ieee.org/document/8732419).  Just like how Moore's law brought millions of times more processing power [over four decades](https://transition.fcc.gov/oet/5G/Workshop/Keynote%20Rappaport%20NYU.pdf), the three technological pillars of 5G will unleash an 3 \_\_\_\_\_\_\_\_\_\_ expansion that will bring vast new 4 \_\_\_\_\_\_\_\_\_\_ and use cases in the coming decades. 5G will support average and peak data rate increases for each user, as well as carried traffic across the network, such that in ten years from now, industry metrics will surely be one hundred times today's levels—and truthfully, most likely closer to two or three hundred times. This means that the average smart phone user in 2031 is likely to consume more than a terabyte per month, and the typical 2 to 3 Gbps peak wireless download speeds in today's 5 \_\_\_\_\_\_\_\_\_\_ 5G networks will in 2031 approach peak data rates of 1 terabit per second.  There is a tremendous amount of opportunity at stake for building today's 5G network, with benefits to inure for decades to come as we increasingly come to depend on these 6 \_\_\_\_\_\_\_\_\_\_ waves.  Adapted from <https://spectrum.ieee.org/5g-killer-app-6g> | 1. FUNDAMENT 2. DENSITY 3. EXPONENT 4. CAPACIOUS 5. NASCENCY 6. VISIBILITY |

Part 4 Key word transformations

For questions 1-6, complete the second sentence so that it has a similar meaning to the first sentence, using the word given. **Do not change the word given.** You must use between **three** and **eight** words, including the word given. Here is an example (**0**). **(6 x 2 = 12 points)**

**Example:**

**0** James would only speak to the head of department alone.

**ON**

James \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the head of department alone.

The gap can be filled with the words ‘insisted on speaking’, so you write:

**Example: 0** INSISTED ON SPEAKING

|  |  |
| --- | --- |
|  | She just had time to shut down her computer before the rain came down in torrents.  **THAN**  No sooner \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the rain came down in torrents. |
|  | It’s ages since that computer worked properly.  **ORDER**  That computer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for ages. |
|  | Do you think I can return the laptop if it doesn't perform as expected?  **WONDERING**  I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ return the laptop if it doesn't perform as expected? |
|  | It says RSVP. I’m not sure what that means.  **STAND**  What \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for? |
|  | I didn't have time so I didn't fix the code.  **HAVE**  If I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the code. |
|  | One of the requirements is that the developer of the game is specialised in several kinds of video game console such as Nintendo Microsoft Xbox Sony PlayStation 4.  **ESSENTIAL**  It is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in several kinds of video game console such as Nintendo Microsoft Xbox Sony PlayStation 4. |

Part 5 Multiple Choice (Reading)

You are going to read a text about the impact of computer science technologies program. For questions 1 – 6, choose the answer (A, B, C or D) which you think fits best according to the text. **(6 x 1 = 6 points)**

*The Impact of Computer Science Technologies*

|  |
| --- |
| Computer use in the UK is widespread and new technologies have provided many benefits to society. However, this technology has raised various ethical, legal, cultural and environmental concerns. It has also highlighted important issues surrounding privacy.  Ethics are moral principles, or rules, which govern a person's attitudes and behaviour. Ethics apply to the use of computers as much as they do to other things in life. Ethical issues in computing include ensuring public safety and security of data. Ensuring public safety is paramount. As new technologies are introduced, they bring safety concerns. For example, driverless cars may soon be on the roads in the UK. The designers of driverless cars have not only had to ensure the safety of passengers, but also of other drivers and pedestrians. Ethics apply here as a situation may occur where the car's software has to decide who has safety priority, the passengers or other road users. Personal data is precious and needs to be kept safe. Unfortunately, there are people that attempt to hack systems in order to gain access to other people's data. Social media accounts, phone mailboxes and networks that computers connect to are all prone to hacking.  When a person creates something, they own it. What they create might include: a picture, drawing or photograph; a video, television programme or film; text, such as a book, article or report; a game.  **Copyright** is a legal means of ensuring that content creators can protect what they create. It only applies to certain types of creative work, including art work, books and computer programs. In general, copyright does not apply to ideas. Copyright is applied automatically as long as certain criteria are met - it is not necessary to register copyright or to use a © symbol. Work is automatically protected by copyright unless the copyright holder chooses to give that right away.  Copyright gives the copyright holder exclusive rights to publish, copy, distribute and sell their creation. No one else can use the work without permission. Copyright on a piece of work lasts for a long time, although the rules about how long are quite complicated and vary from country to country. For example, in the UK, copyright on artistic work, literature, music and films lasts for 70 years after the death of the creator. When you buy something, such as a book, film or music CD, the copyright holder grants permission for you to use it as part of the sale. This is called a **licence**. The licence is generally only for you to use.  When using computers, unless you have permission with regard to particular copyrighted material, it is illegal to:   * make copies of the material * publish it and sell it without permission * distribute it to other people * sell copies to other people   This applies to any copyrighted material, such as music, films, games and television programmes. The internet has made it extremely easy to access copyrighted material illegally. If you download a music track, film, game or programme without the copyright holder’s permission, you are breaking the law. Open source and proprietary software One way to classify software is through ownership and licensing. There are two types of ownership and licensing software:   * open source software * proprietary software   While both types of software are usually widely available, they differ quite considerably in what can and cannot be done.  Open source software is free of copyright and available to anyone. Proprietary software is copyrighted and only available under licence.  Open source software can be free of copyright and is usually available to anyone. Open source software has several advantages:   * It costs nothing and provides the source code so that anyone can modify the software for their own purposes. * It can have many authors. This enables programmers to contribute to the development of a program over time, refining and improving it and adding extra features. * A modified version, known as a derivative, must also be made freely available for anyone else to use or adapt.   Open source software has its disadvantages too:   * There is no guarantee that it works properly as there is no requirement for anyone to ensure it is bug free. * Support might not be readily available, especially if the program is not in widespread use.   Examples of open source software include:   * Linux operating system * Firefox web browser * Python programming language * Open Office productivity suite * Thunderbird mail client * Apache web server * GIMP image editing software * Moodle virtual learning environment  **Proprietary software** Proprietary software is software that is copyrighted, which means it can only be obtained by paying for a licence.  Proprietary software has many advantages:   * The product should be free of bugs. If bugs still exist, updates known as patches are often provided free of charge, which fix these bugs. * Help can be sought from the organisation who supplied the software if problems occur. * Feature updates which extend the software's facilities are often available, although usually at a cost. * Proprietary software that is in widespread use often has support available from many sources.   Proprietary software also has a number of disadvantages:   * There is an initial or ongoing (subscription) cost. * Software cannot be adapted to meet the needs of the user. Only the machine code version of the software is distributed, which cannot be edited. * It can be limited to a single computer or network, so unless the licence allows it, a user may not redistribute the software.   Examples of proprietary software include:   * Windows and OS X operating systems * Microsoft Office productivity suite * Adobe Creative Suite productivity software * Logic music creation software * paid-for games for consoles |

**1** Which type of concern would public safety be classed under?

(a) Ethical

(b) Legal

(c) Cultural

(d) Environmental

**2** What is copyright?

(a) A legal means of ensuring that people can stream videos online.

(b) A legal means of ensuring that creators can protect what they create.

(c) A legal means of ensuring that people can distribute media.

(d) A legal means of ensuring that creators can protect their ideas.

**3** A licence is

(a) the authorship over a copyrighted work

(b) the authorisation of someone else to use the work to the owner of a copyrighted work

(c) the authorisation to download a music track, film, game or programme without the copyright holder’s permission

(d) the authorisation of the owner of a copyrighted work granted to someone else to use the work

**4** Which of these statements about proprietary software is true?

(a) It has no copyright and can be freely distributed.

(b) It is copyrighted and cannot be freely distributed.

(c) It is copyrighted but can be freely distributed.

(d) It has no copyright but cannot be freely distributed.

**5** Circle the sentence that *is* ***not*** *true*.

(a) Anyone can modify the open software for their own purposes.

(b) A derivative is a modified version of an open source program.

(c) Python programming language is a proprietary software.

(d) Patches for proprietary software are typically distributed as executable files instead of source code.

**6** Which of these statements about source code *is true*?

(a) Source code is the code behind a computer program, written in a programming language for open software.

(b) Source code in proprietary software is adapted to meet the needs of the user when the user needs it.

(c) Source code can be developed, refined and improved with extra features over time.

(d) Source code is copyrighted and can be freely distributed.

Part 6 Writing

Are you a technophobe or a technophile? Do you think artificial intelligence is beneficial or dangerous to society? Why? Discuss the given topic and present arguments related to it. Write it in a form of a persuasive essay in which you **argue strongly either in favour of or against a given point of view.** Give reasons for your answer and include any relevant examples from your own knowledge or experience.

*Your essay should be between* ***220-260 words*** *long. Going over the limit is not penalized, but potentially leads to more mistakes. However, if your text is under 220 you will have points deducted from your overall score.*

**(10 points)**

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***This is the end of your examination. Thank you***.