

NT213 English for IT

Examination

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

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

***April 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** protocols Bports **C** sockets **D** networks

The two most widely used (0) \_\_\_\_\_\_\_\_ in multiplayer networked games are the Transmission Control Protocol (TCP) and the User Datagram Protocol (UDP). When writing a network game, for example an action multiplayer game, we first need to choose what type to use: TCP, UDP or a mixture of both? The wrong choice of protocol, or their combination may cause a multiplayer game to have low performance, such as long unwanted delays.

TCP and UDP are both transport layer protocols used in TCP/IP networks, but they are important differences.

TCP and IP form the (1) \_\_\_\_\_\_\_\_ for almost everything you do online, from web browsing to sending and receiving emails. TCP is a both reliable and ordered (2) \_\_\_\_\_\_\_\_ -based protocol. This means the communicating devices should establish it before transmitting data and should close the it after transmitting the data. All data you send is waiting for acknowledgments that packets will be received, even though they may not arrive at the destination, and is in the order you wrote it. It’s also a stream protocol, so TCP automatically splits your data into (3) \_\_\_\_\_\_\_\_ and sends them over the network for you.

The problem with using TCP for real-time games like FPS is that unlike web browsers, or email or most other applications, these multiplayer games have a *real time requirement* on packet (4) \_\_\_\_\_\_\_\_. What this means is that for many parts of a game, for example player input and character positions, it really doesn’t matter what happened a second ago, the game only cares about the most recent data.

Instead of treating communications between computers like writing to files, what if we want to send and receive packets directly? UDP (user datagram protocol) is very simple connectionless protocol, as it forwards its datagrams directly to IP without needing any acknowledgments that datagrams have been received and is a very thin (5) \_\_\_\_\_\_\_\_ on top of IP. With UDP we can send a packet to a destination (6) \_\_\_\_\_\_\_\_ (e.g. 112.140.20.10) and (7) \_\_\_\_\_\_\_\_ (say 80), and it gets passed from computer to computer until it arrives at the destination or is lost along the way.

On the (8) \_\_\_\_\_\_\_\_ side, we just sit there listening to a specific port and when a packet arrives from *any* computer (remember there are no connections!), we get notified of the address and port of the computer that sent the packet, the size of the packet, and can read the packet data.

UDP is a/n (9) \_\_\_\_\_\_\_\_ protocol because of 1-5% packet loss and no guarantee of ordering of packets with UDP, but thing is we don’t want a reliable ordered stream. We want our data to get as quickly as possible from client to its destination without having to wait for lost data to be resent.

Both protocols provide communication services between (10) \_\_\_\_\_\_\_\_ in a network system. When data is sent through TCP, the application running in the source machine first establishes a connection with the destination machine. In short, TCP is a connection-based protocol that guarantees the delivery of the full data in the correct order while UDP is faster than TCP and results in less network traffic.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **A** connection | **B** backbone | **C** delivery | **D** hub |
|  | **A** text | **B** transmission | **C** message | **D** connection |
|  | **A** subsets | **B** pieces | **C** packets | **D** chunks |
|  | **A** delivery | **B** reassembling | **C** receiving | **D** sending |
|  | **A** node | **B** layer | **C** gateway | **D** connection |
|  | **A** URL | **B** DNS | **C** port | **D** IP address |
|  | **A** URL | **B** DNS | **C** port | **D** IP address |
|  | **A** receiver | **B** sender | **C** requestor | **D** destination |
|  | **A** ordered | **B** discord | **C** reliable | **D** unreliable |
|  | terminals | **B** thin clients | **C** workstations | **D** clients |

# 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)** *Increasingly*

*Programming by Voice May Be the Next Frontier in Software Development*

(0) \_\_\_\_\_\_\_\_\_\_\_\_\_ we’re interacting with our gadgets by talking to them. Old friends like Alexa and Siri are now (1) \_\_\_\_\_\_\_\_\_\_\_\_\_ joined by automotive assistants like Apple CarPlay and Android Auto, and even apps sensitive to voice biometrics and commands. But (2) \_\_\_\_\_\_\_\_\_\_\_\_\_ the technology itself could be built using voice?

That’s the premise (3) \_\_\_\_\_\_\_\_\_\_\_\_\_ voice coding, an approach to developing software using voice (4) \_\_\_\_\_\_\_\_\_\_\_\_\_ a keyboard and mouse to write code. Through voice-coding platforms, programmers utter commands to manipulate code and create custom commands that cater to and automate their workflows.

Voice coding isn’t as simple as it seems, with layers of complex technology behind it. The voice-coding app [Serenade](https://serenade.ai/) has a speech-to-text engine developed specifically for code, unlike [Google’s speech-to-text API](https://cloud.google.com/speech-to-text), (5) \_\_\_\_\_\_\_\_\_\_\_\_\_ is designed for conversational speech. (6) \_\_\_\_\_\_\_\_\_\_\_\_\_ a software engineer has spoken the code, Serenade’s engine feeds that into its natural-language processing layer, (7) \_\_\_\_\_\_\_\_\_\_\_\_\_ machine-learning models are trained to identify and translate common programming constructs to syntactically valid code.

Voice coding (8) \_\_\_\_\_\_\_\_\_\_\_\_\_ require a decent microphone, especially if you want to eliminate background noise.

(9) \_\_\_\_\_\_\_\_\_\_\_\_\_, voice coding allows people not only to continue careers for those with injuries or chronic pain conditions (10) \_\_\_\_\_\_\_\_\_\_\_\_\_ to lower barriers of entry to software development.

Voice coding is still in its infancy, and its potential to gain widespread adoption depends on how tied software engineers are to the traditional keyboard-and-mouse model of writing code. But voice coding opens up possibilities, maybe even a future where brain-computer interfaces directly transform what you’re thinking into code—or software itself.

Adapted from

<https://spectrum.ieee.org/computing/software/programming-by-voice-may-be-the-next-frontier-in-software-development>

# 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)** TECHNICAL

|  |  |
| --- | --- |
| *What Is 5G Technology? Breaking Down the Hype, the Tech & the Timeline*  5G stands for fifth generation mobile network. But when people talk about it, they rarely mean its literal definition. What the new generation will allow in terms of (0) \_\_\_\_\_\_\_\_\_\_\_\_\_ prowess and innovation is what gives meaning to the term.  5G will allow data transfer to expand past single mobile devices to connect homes, cities, and the entire IoT. Think of cars—not necessarily the self-driving trend of late—connected to the Internet and able to communicate with each other. Real-time data transfer happens faster than humans can react. As a result, cars could recognize an imminent crash and stop or adjust course before human drivers could. Modern technology like VR operating on 5G speeds show us that remote surgery is on the horizon. The point? People in rural areas or those who need a specialist won’t have to travel the world to receive the care they need. Connected cities can (1) \_\_\_\_\_\_\_\_\_\_\_\_\_ check infrastructure stability or manage traffic lighting in the name of (2) \_\_\_\_\_\_\_\_\_\_\_\_\_ and smoother routing.  The wireless world isn’t so border driven anymore. Modern technology allows us to connect with anyone across the globe from our kitchen tables. The economic benefits in question come from innovation, and we hardly know what 5G is capable of yet. Some of the world’s greatest minds choose to work from America. It’s difficult to envision them taking their work elsewhere merely because America is lagging behind other nations in deploying a network that’s barely (3) \_\_\_\_\_\_\_\_\_\_\_\_\_ yet.  On paper, America’s (4) \_\_\_\_\_\_\_\_\_\_\_\_\_ to launch 5G as fast as China comes off as a (5) \_\_\_\_\_\_\_\_\_\_\_\_\_ economic loss. In reality, we see how the world has changed and connected in the past decade, so having the first network seems about as important as getting the new iPhone the day it drops.  The biggest concern with China’s dominance in 5G is over infrastructure and their advanced (6) \_\_\_\_\_\_\_\_\_\_\_\_\_ schedule compared to the US. Officials are concerned that if Chinese companies build out 5G infrastructure in other countries, they’ll slip in back doors that allow surveillance on Western data. This is no joke, but not just because of 5G—cyberterrorism is frequently considered the biggest threat to the US today.  Adapted from *What Is 5G Technology? Breaking Down the Hype, the Tech & the Timeline*  <https://www.onsip.com/voip-resources/voip-fundamentals/what-is-5g-technology-breaking-down-the-hype-the-tech-the-timeline> | **TECHNOLOGY**  **AUTOMATIC**  **EFFICIENT**  **FUNCTION**  **FAIL**  **SIGNIFICANCE**  **DEPLOY** |

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

|  |  |
| --- | --- |
|  | I tried to persuade him to give the job to a junior software developer.  **URGED**  I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the job to a junior software developer. |
|  | Operating system enables everything in the computer to work together smoothly and efficiently.  **MAKES**  Operating system\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ together smoothly and efficiently. |
|  | Do you think you can help me with explanations on something I am working on?  **WONDERING**  I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ help me with explanations on something I am working on. |
|  | This code will take me six months to finish.  **HAVE**  In six months’ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ this code. |
|  | Tesla didn’t fail a long time ago because of Musk’s energy.  **HAVE**  If it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a long time ago. |
|  | It was only when the CEO phoned me that I found out about the meeting.  **FIND**  Not until \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ about the meeting. |

Part 5 Multiple Choice (Reading)

You are going to read a text about the Genetrix 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

Due to COVID-19 pandemic many things have changes, studying as well. You have been attending online classes for more than a year now. Online education normally provides a chance to study at our own speed as there is no rush. However, there are some drawbacks…

Is studying online a good thing or should we be more suspicious of its benefits? 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)**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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