

Markscheme

May 2018

**Information technology
in a global society**

Standard level



Paper 1




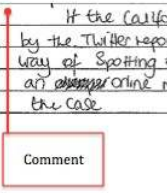
21 pages

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The following are the annotations available to use when marking responses.

Annotation	Explanation	Comment	Short cut
	Correct point	Use for identify, state, outline, describe	
	Incorrect point	Use for identify, state, outline, describe	
BOD	Benefit of the doubt	Answer is close enough to give some credit, indicates that you see some merit in it.	
NBOD	No benefit of doubt	Not quite enough to earn any credit.	
SEEN	Seen	Indicates that the text has been noted, but no credit has been given, or used on a blank page to ensure that RM Assessor and/or staff in Cardiff know that you have seen the page	
OC	Off course		
TV	Too vague	Point is unclear, or not specific enough to answer the question.	
REP	Repetition	Repeats a point previously made, not necessarily worded in the same way.	
REF	Reference	This is used to indicate a reference to the stimulus material, article or the Case Study (Paper 2 or Paper 3)	
D	Description	Candidate has added descriptive information to an initial idea that has been named or identified.	
A+	Analysis / Explanation	Candidate has explained why something occurs, or why it is important to the point s/he is making, or described the consequences of a policy/action/use of IT.	
B+	Balanced argument involving detailed analysis	Use in the examiner’s comments at the end of extended response questions. Balanced arguments involving detailed analysis can occur within paragraphs as well as at the end of the response. Often, a transition word to link/compare ideas, such as “however” or “on the other hand” is used. Can also be structured analysis of ideas, <i>eg</i> good vs bad, for X and against X.	
EVAL	Evaluation – beyond the ideas presented to reach a conclusion or overall comment.	Use only if evaluation is supported , not just stated. Note that evaluation can occur in the body of an extended response as an evaluative comment about an idea as well as at the end in the conclusion. Fully evaluated requires a well-supported conclusion. Evaluation and detailed analysis can overlap when evaluation is within a paragraph.	
O	Opinion	Use only if opinion is supported, not just stated. Note that opinion can occur in the body of an extended response as well as at the end.	

	Dynamic, Horizontal	Indicates a valid point that the student will need to support in an extended response.	
	Dynamic, Horizontal Wavy	Used for incorrect statements/phrase	
	Dynamic, Vertical Wavy	Indicates that the candidate has veered off course, ie either by not answering the question that is asked or has moved in a direction unrelated to the question. Can also use OC annotation	
	Text box with extended vertical line.	Used to mark and comment on a block of writing that makes a valid point. Note that the text box and the vertical line are connected.	
Text box	Insert comments	Used for comments at the end of questions where the mark needs to be JUSTIFIED. Often with AO2 command terms – EXPLAIN. ALWAYS with AO3 command terms – EVALUATE, JUSTIFY, TO WHAT EXTENT, and DISCUSS.	

You **must** make sure you have looked at all pages. Please put the **SEEN** annotation on any blank page, to indicate that you have seen it.

Critical Thinking – explanation, analysis and evaluation

These trigger words often signal critical thinking. The bold words are the key terms in the various criteria.

Explanation – *Because, as a result of, due to, therefore, consequently, for example*

Analysis – *Furthermore, additionally, however, but, conversely, likewise, in addition, on the other hand, whereas*

Evaluation – *My opinion, overall, although, despite, on balance, weighing up*

Examiners should be aware that in some cases, candidates may take a different approach, which if appropriate should be rewarded. If in doubt, check with your team leader.

In the case of an “identify” question read all answers and mark positively up to the maximum marks. Disregard incorrect answers. In all other cases where a question asks for a certain number of facts eg “describe two kinds”, mark the **first two** correct answers. This could include two descriptions, one description and one identification, or two identifications.

It should be recognized that, given time constraints, answers for part (c) questions are likely to include a much narrower range of issues and concepts than identified in the markband. There is no “correct” answer. Examiners must be prepared to award full marks to answers which synthesize and evaluate even if they do not examine all the stimulus material.

1. IT support for staff laptop computers at RZX

Note to examiners:

- All part (a) questions are marked using ticks and annotations where appropriate
- Part (b) and part (c) are marked using markbands. Use annotations and text comments to provide a rationale behind the marks you awarded. **Do not use ticks.**

- (a) (i) Identify **two** functions of an operating system. [2]

Answers may include:

- provide user interface/GUI
- allows users to run programs/ authenticating users
- manages memory
- controlling hard drive
- allocating processing time to running programs
- managing peripherals
- launching applications
- file management
- control system resources
- providing utilities
- managing hardware
- managing security.

Award [1] mark for identifying each function of an operating system up to a maximum of [2] marks.

- (ii) Identify **two** characteristics of random access memory (RAM). [2]

Answers may include:

- RAM stores data that is currently being used
- RAM stores instructions from the software programs that are currently running
- RAM is volatile – will be erased when the computer is turned off
- RAM is both readable and writable
- accessing data in RAM is much faster than accessing it from the hard disk
- reading data from RAM is usually faster than from ROM
- RAM addresses can be accessed in any order
- RAM is an example of primary storage.

Award [1] mark for identifying each characteristic of random access memory up to a maximum of [2] marks.

- (iii) Identify **two** devices that could be used to store a backup of the files that employees have saved on their laptops.

[2]

Answers may include:

- USB drive/flash drive/thumb drive/SD card/pen drive
- external hard drive (accept responses without “external”)
- online servers / cloud storage
- DVD/CD
- magnetic tape / tape cartridges.

Award [1] mark for identifying a device that could be used to store the backup to a maximum of [2] marks.

- (b) Analyse the advantages and disadvantages of using cloud-based storage for an RZX employee’s work files.

[6]

Answers may include:

Advantages:

- files stored in the cloud can be accessed from anywhere with internet access
- files stored in the cloud can be accessed from multiple devices
- if more storage space is needed then RZX can arrange with the cloud storage provider to make this possible almost immediately
- security measures are provided by the cloud service (backups, firewalls, access, encryption of stored files *etc*) which may reduce the burden on RZX’s IT department
- it may be cost effective for RZX to purchase cloud storage rather than purchasing extra storage
- the IT department will spend less time managing staff files
- files stored in the cloud would not take up storage space on the laptop computers leaving more room for applications *etc*.
- cloud storage located in countries with strong privacy laws could help protect stored files from access by third parties
- files stored in the cloud could be shared between employees / worked-on collaboratively *etc*.
- storing files in the cloud reduces the chance of important files being deleted during the vacation maintenance by the IT department.

Disadvantages:

- files cannot be accessed if there is no internet access
- if internet access is unavailable staff files cannot be saved in the cloud.
Employees may save files to their laptop. This can lead to problems as files could be deleted/lost or even accessed by an unauthorized user
- employees may find if there are issues relating to the storage of their data getting them resolved may be more time consuming than simply walking to an employee in the same office
- security of staff files depends on the security measures provided by the cloud service. RZX needs to be assured that the cloud security is adequate
- cloud storage located in countries with weak privacy laws could risk files being accessed by third parties.

Marks	Level descriptor
0	No knowledge or understanding of ITGS issues and concepts. No use of appropriate ITGS terminology.
1–2	A limited response that indicates very little understanding of the topic or the reason is not clear. Uses little or no appropriate ITGS terminology. No reference is made to the scenario in the stimulus material. The response is theoretical.
3–4	A description, unbalanced or partial analysis of the issues related to the use of cloud-based storage for an employee’s work files. There is some use of appropriate ITGS terminology in the response.
5–6	A balanced and detailed analysis of the relative advantages and disadvantages of cloud-based storage for an employee’s work files. Explicit and relevant references are made to the scenario in the stimulus material. There is appropriate ITGS terminology throughout the response.

- (c) The disposal of old IT equipment is becoming a problem. *RZX* is considering two options:
- donating the equipment to a charitable organization
 - sending the equipment to a recycling service.

Evaluate the implications of these **two** options.

[8]

Answers may include:

Donating the equipment:

- may be seen as an altruistic gesture and good PR for the company
- is a relatively simple process and ensures that existing equipment can extend its working life
- there may be financial benefits from donating such as tax relief compared to recycling
- donating provides IT equipment to less fortunate people
- a disclaimer would be essential so the recipients don't expect *RZX* to install/set up the donated equipment or fix any problems
- all proprietary software would need to be deleted as this would breach licensing agreements
- all personal and company files would need to be deleted to avoid privacy and security issues
- recipients might just discard equipment when it no longer works instead of recycling it
- charitable organization would need IT support/infrastructure.

Recycling the equipment:

- recycling is a better option for items that cannot be donated as they are out of date
- will reduce the environmental impact as less raw materials may need to be extracted, *etc*
- may be a straighter forward process than donating, the items are simply collected from the offices
- the recycling process may be unethical, for example, children working long hours in poor conditions in some countries
- untrained / unprotected recyclers may be exposed to harmful chemicals/toxins
- not all parts can be recycled so there is still waste that needs to be disposed of.
- all personal and company files would need to be deleted to avoid privacy and security issues.
- recycling can be more expensive than donating (*eg.* recycling fees)
- charities who could benefit from donated equipment will lose-out as the equipment is being sent for re-cycling instead.

Issues relating to proprietary software and company/personal files also apply to recycling as the equipment could be taken home by someone at the recycling depot.

In part (c) of this question it is expected there will be a balance in the ITGS terminology between IT technical terminology and the terminology related to social and ethical impacts.

Please see generic markband information sheet on page 22.

2. Medical centre budgets

Note to examiners.

- All part (a) questions are marked using ticks and annotations where appropriate
- Part (b) and part (c) are marked using markbands. Use annotations and text comments to provide a rationale behind the marks you awarded. **Do not use ticks.**

- (a) (i) Identify **two** characteristics of voice over internet protocol (VOIP). [2]

Answers may include:

- communication using internet / internet applications / one example such as Skype, Zoom, Google Hangouts, WhatsApp, etc.
- communication carried out using the internet
- may take the form of voice or multimedia
- communication / conferencing with many people at the same time
- communication is synchronous / transmitted in real time.

Award [1] mark for identifying each characteristic of voice over internet protocol (VOIP) up to a maximum of [2] marks.

- (ii) Identify the steps that Dr Schultz must follow to list only the surgeries carried out by Dr Tirbau using the spreadsheet software. [2]

Answers may include:

- set/select/filter the Doctor field/column to show only “Dr Tirbau”
- set/select/filter the Procedures field/column to show only “Surgery”.

Award [1] for identifying each of the steps followed by Dr Schultz in the spreadsheet software to list only the surgeries done by Dr Tirbau up to a maximum of [2] marks.

- (iii) Identify **two** reasons why Dr Schultz would use a spreadsheet instead of a database for record keeping. [2]

Answers may include:

- spreadsheets are much easier to set up than databases and can be set up in-house with no cost for IT expertise (eg. designing tables/forms/reports/setting relationships etc.)
- spreadsheets require less staff training whereas databases can be complicated for staff who are not IT literate
- the volume of medical data may not necessitate the time and effort required to set up a database
- the spreadsheet software may already come as part of the pre-loaded software whereas the database software may not
- spreadsheets allow for data analysis (eg. using functions/formulae)
- spreadsheets allow for data visualisation (eg. charts, graphs, etc.)
- Creating a filter/using “find” to search for information on a spreadsheet is easier than creating a database query.

Award [1] mark for identifying each reason why Dr Schultz would use a spreadsheet for the record keeping rather than a database up to a maximum of [2] marks.

- (b) Dr Schultz has arranged to speak to the local authorities in an attempt to get more funding for the medical centre. He intends to use presentation software to create a slideshow to support this speech. Dr Schultz is aware that many people in the audience are annoyed when slideshows are poorly designed.

Explain **three** design errors Dr Schultz should avoid when creating his slideshow for the local authorities.

[6]

Answers may include:

Small font size / too much text / inappropriate fonts:

- Dr Schultz should avoid using a small font which makes the text difficult to read
- or results in too much text on a slide reducing its effectiveness
- some fonts may be difficult to read (e.g. “handwriting” fonts) or give an unprofessional impression (e.g. Comic Sans, ‘novelty’ fonts *etc.*)
- text that extends to the very edges of the slide can be difficult to read or not visible/cropped when the slides are displayed.

Too many different fonts on a slide:

- can make it hard for the audience to easily move through the content
- three or fewer fonts are ideal

Excessive/inappropriate transitions:

- Dr Schultz should ensure that the nature of the transition between slides is appropriate for the audience
- he should avoid excessive animations (flying in, *etc.*) on slides.

Too many slides:

- too many slides can mean that the slides do not remain visible long enough for the audience to engage with them
- or the key points associated with each slide become blurred in the overall message.

Poor choice of colours:

- Dr Schultz needs to ensure the mix of colours makes the slides easy to read
- therefore, may want to avoid certain combinations such as red or green that may cause some of the audience difficulty in reading the information (e.g. the combination of font and background colour *etc.*).

Inappropriate language:

- Dr Schultz should ensure the language used is appropriate for the intended audience
- this should ensure that overly complex terms or specialist medical terminology are not used.

Inappropriate use of images / multimedia:

- it may be appropriate to incorporate a video (*eg* interview with a patient)
- but irrelevant music/videos can be annoying and detract from the message
- underuse of images/visuals can detract from the impact of the slideshow
- overuse of irrelevant/inappropriate images/visuals can be annoying and detract from the message
- use of images of poor technical quality (*eg.* pixelated, distorted *etc.*)
- use of images with visible watermarks/copyright notices detracts from the quality of the presentation.

Inconsistent formatting from slide to slide:

- the presentation is not unified
- can be distracting as people begin to pay more attention to the formatting than the talk.

N.B. the response requires an identification of a common design error followed by an explanation of why it is a problem. If no design error is mentioned but from the explanation it can be determined this should be credited.

Award **[1]** mark for identifying a common design error and **[1]** mark for an explanation why it is a problem up to a maximum of **[2]** marks.

Mark as **[2] + [2] + [2]**.

- (c) The Okavango Medical Center has received additional funding from the local authority. The centre is investigating the possibility of using these funds to purchase IT equipment that would allow surgeons in Gaborone to carry out surgery remotely.

Evaluate the impact of the purchase of this IT equipment on the medical centre and its patients.

[8]

Answers may include:

Advantages of purchasing more IT equipment so that operations can be carried out remotely:

- specialized surgeries (*eg*, cardiac) can be done remotely/no need for specialists to travel to the medical centre
- adding specialist surgeons to this type of clinic would be expensive and inefficient as there would be a limited number of cases for them
- the doctors in Okavango could assist in and/or observe the surgery, thus improving their general surgical skills
- can improve the outcome for the patient as lifesaving surgery will be performed sooner than if the patient was transported to Gaborone
- increase in the number of patients who can receive medical surgeries who may not be able to be transported to Gaborone.

Disadvantages of purchasing more IT equipment so that operations can be carried out remotely:

- the internet connection may not be sufficient to support remote controlled surgery because the surgery requires high-tech video and phone links
- latency in the connection is also a safety issue. Lag times can cause serious errors
- the remote surgery equipment may not be used frequently enough to justify the expense
- it might be wiser to spend the money on other medical needs
- patients in the area might be uncomfortable with the idea of a remote-controlled robot
- the data will need to be encrypted to protect patient privacy
- robotic surgery would use public networks raising security concerns including hacking
- doctors at the clinic will need to be trained to use this equipment which might be expensive/might require that they take time from their clinical work
- if something goes wrong during the surgery, there may not be suitably qualified personnel to assist the patient.
- IT staff will need to be hired to maintain the robot as well as take care of the internet connection/additional cost.

In part (c) of this question it is expected there will be a balance in the ITGS terminology between IT technical terminology and the terminology related to social and ethical impacts.

Please see generic markband information sheet on page 22.

3. Digital currency

Note to examiners.

- All part (a) and part (b) questions are marked using ticks and annotations where appropriate
- Part (c) is marked using markbands. Use annotations and text comments to provide a rationale behind the marks you awarded. **Do not use ticks.**

- (a) (i) Identify **two** characteristics of a peer-to-peer (P2P) network. **[2]**

Answers may include:

- there is no central administrator
- all users of the network have the same importance
- each computer acts as both client and server / there is no main server
- each computer can exchange files directly with every other computer on the network.

Award [1] mark for identifying each characteristic of a peer-to-peer network up to a maximum of [2] marks.

- (ii) Identify **two** characteristics of a strong password. **[2]**

Answers may include:

- sufficient length (usually more than six characters)
- made up of a mixture of letters, numbers and symbols
- uses upper and lower case characters
- not a dictionary word/common word
- not based on personal information (e.g. name, birth date etc.) (i.e. can't be guessed).

Award [1] mark for identifying each characteristic of a strong password up to a maximum of [2] marks.

- (iii) The use of a password is one method of authentication.

Identify **two** other methods of authentication.

[2]

Answers may include:

- biometric authentication
- fingerprint
- palm print
- palm vein
- facial recognition
- voice recognition
- retinal scan
- PIN
- passphrase
- two factor authentication
- authentication token (or security token),
- one-time code *ie.* contact user via phone/sms/email to provide the code,
- asking user to provide answers to security questions set-up when creating an account (*eg.* what was the first school you attended...?)

*Note for examiners: Award **[1]** mark for any of the above bullet points up to a maximum of **[2]** marks for the question.*

*Award **[1]** mark for identifying each additional method of authentication up to a maximum of **[2]** marks.*

- (b) (i) Explain **one** reason why Bitcoin makes use of private key and public key encryption. [2]

Answers may include:

- secure because every Bitcoin address has a matching private key (saved in the wallet file) of user
- private keys can be kept in computer files
- secure because it is impossible to determine a private key from corresponding public key
- public keys can be published and used to communicate securely with the user.

Award [1] for the reason identified and an additional [1] for the explanation why Bitcoin uses private key and public key encryption up to a maximum of [2] marks.

- (ii) Explain **one** reason why it may be difficult to ensure the security of information in a large peer-to-peer network such as Bitcoin. [2]

Answers may include:

- the security may be carried out at the level of the individual user (a large network has many potential targets for a cyber-attack). This may mean that the network's security may only be as strong as the weakest link
- there is no central control which manages the security of each computer by providing virus protection/firewall
- an inexperienced user may unintentionally allow access to his whole hard drive instead of allowing access to specific folders
- users may compromise security by sending password information *etc.* through unencrypted messaging systems.

Award [1] for the reason why the security of information may be difficult to maintain in a large peer-to-peer network such as Bitcoin and an additional [1] for the explanation up to a maximum of [2].

- (iii) Some users of Bitcoins are concerned that their anonymity may be compromised by their Bitcoin address.

Explain **one** way the Bitcoin address may be used to reveal information about a Bitcoin user. [2]

Answers may include:

- the Bitcoin address when transmitted may include additional information, such as the IP address of the user's device
- this information may be aggregated from a number of sources and this larger data set will then provide sufficient information to link the Bitcoin address to a person's identity
- Bitcoin addresses may be able to be associated with personal details stored as part of other transactions using the same Bitcoin address or from the same IP address (e.g. a delivery location for a physical item purchased using Bitcoin).

Award [1] for identifying how the Bitcoin address may be used to reveal the name of a Bitcoin user and an additional [1] for the explanation up to a maximum of [2] marks.

- (c) Bitcoin is a form of digital currency. Bitcoin transactions are made between individuals without the knowledge of banks, governments or credit card companies. Some governments are investigating whether they should regulate digital transactions, such as those made using Bitcoins.

To what extent is it appropriate for governments to regulate digital transactions, such as those made using Bitcoins?

[8]

Answers may include:

- if transactions can be done without disclosing the name of the individuals, it could be a way to use money obtained illegally (money laundering)
- governments will not be able to see all commercial transactions and therefore miss the possibility to tax commercial activities – informality
- bitcoin wallet providers may have an agreement with clients not to disclose information – privacy invasion
- it is also possible to send a payment without revealing your identity. This allows people to transfer funds across country borders without cost but also allows users to buy illegal products anonymously
- unregulated services such as Bitcoin do not provide the protection of regulated services such as banks
- for governments to be able to forecast financial trends they need to have all of the information available. If some information is withheld, this makes forecasting more problematic
- there is the ongoing debate between the privacy/surveillance of the user versus the security of the state. The questions could be reframed as what is an acceptable level of regulation?
- if regulation is too strict it will stifle innovation and may prevent worthwhile developments in digital currency
- different degrees of regulation by governments of different countries could create an ‘uneven playing field’ for digital currency transactions
- as Bitcoin is worldwide, regulation could also impact the rights of people outside the government’s jurisdiction.

In part (c) of this question it is expected there will be a balance in the ITGS terminology between IT technical terminology and the terminology related to social and ethical impacts.

Please see generic markband information sheet on page 22.

4. Implementation of a new information system

Note to examiners.

- All part (a) questions are marked using ticks and annotations where appropriate
- Part (b) and part (c) are marked using markbands. Use annotations and text comments to provide a rationale behind the marks you awarded. **Do not use ticks.**

- (a) (i) Identify **four** ways that *TecniCo* could gather data about the present situation.

[4]

Answers may include:

- direct observation of business operations to identify data needed about requests, sales, products offered, clients
- interview key stakeholders (business owner, employees and customers)
- use questionnaires to survey key stakeholders (business owner, employees and customers)
- analyse the current system/documentation to understand how records are kept.

*Award [1] mark for identifying each way that *TecniCo* could gather data about the present situation up to a maximum of [4] marks.*

- (ii) *TecniCo* will provide a list of requirements for the solution proposed.

Identify **two** categories of information that should be included in the requirements specification provided by *TecniCo*.

[2]

Answers may include:

- system interaction
- input and output requirements
- processing requirements
- security requirements
- specific performance criteria
- IT system requirements (hardware and software).

*Award [1] mark for identifying each category of information that should be included in the requirements specification provided by *TecniCo* up to a maximum of [2] marks.*

- (b) The managers at *TecniCo* need to decide whether to use open source or proprietary software to develop the new information system for *Savoree*.

Analyse these **two** options.

[6]

Answers may include:

Using open source software:

- it is essentially free
- the open source community is very active and is continually making updates which may be a more efficient mechanism than the staged releases by many proprietary software companies
- the open source community may be able to respond more effectively to requests for assistance if there are problems/queries with the software because a large number of people are working on the problem *ie* the problem is crowd sourced. But that means selecting open source software with a large community of users
- the open source software may be more easily adapted to the end user’s requirements rather than the commercial considerations of a developer of proprietary software
- users of open source software must find out about updates and apply them
- open source software may be more secure as the open source community has an opportunity to test the code and suggest security improvements.

Using proprietary software:

- a proprietary software includes safeguards such as guarantees and warranties
- companies that provide proprietary software generally provide frequent security updates
- proprietary software is created by a company that has a vested interest in keeping its product secure
- the software is usually part of an integrated platform which means that it should operate with other software as this would have been tested in the development phase
- the user interface may be better as the software is considered as part of a whole package
- may have a greater range of features/options than open-source software.

Marks	Level descriptor
0	No knowledge or understanding of ITGS issues and concepts. No use of appropriate ITGS terminology.
1–2	A limited response that indicates very little understanding of the topic or the reason is not clear. Uses little or no appropriate ITGS terminology. No reference is made to the scenario in the stimulus material. The response is theoretical.
3–4	A description, unbalanced or partial analysis of the issues related to the use of open source and proprietary software. There is some use of appropriate ITGS terminology in the response.
5–6	A balanced and detailed analysis of the issues related to the use of open source and proprietary software. Explicit and relevant references are made to the scenario in the stimulus material. There is appropriate ITGS terminology throughout the response.

- (c) *Savoree* is looking to expand its business. To make this possible, *Savoree* is considering whether to open an online shop. Customers will be able to see products and make online purchases.

Discuss whether *Savoree* should provide an online shop as a way to expand its business.

[8]

Answers may include:

- the online market may offer new opportunities and open up new markets for *Savoree*
- it may be possible to purchase an online shop relatively easily so the investment may pay for itself very quickly
- the development of an online presence may require additional costs that are not recouped by the increased sales
- the online shop may be based on a generic profile and may not be appropriate for *Savoree*
- the online shop may be programmed in English and will need to be translated into Spanish
- the move to increase customers may need investment in a new shop which may not make the expansion into online sales cost-effective. Someone in the company would need to be responsible for updating the site (new prices/specials) – training implications
- the company may be held responsible for the security of customers' stored data (*eg. credit card information etc.*) - training/hiring implications
- sales, promotions, new products can be easily shared via the website
- customer feedback is possible on a website and good feedback is the best advertisement for a business.

In part (c) of this question it is expected there will be a balance in the ITGS terminology between IT technical terminology and the terminology related to social and ethical impacts.

Please see generic markband information sheet on page 22.

SL and HL paper 1 part (c) and HL paper 3 question 3 markband

Marks	Level descriptor
No marks	<ul style="list-style-type: none"> • A response with no knowledge or understanding of the relevant ITGS issues and concepts. • A response that includes no appropriate ITGS terminology.
Basic 1–2 marks	<ul style="list-style-type: none"> • A response with minimal knowledge and understanding of the relevant ITGS issues and concepts. • A response that includes minimal use of appropriate ITGS terminology. • A response that has no evidence of judgments and/or conclusions. • No reference is made to the scenario in the stimulus material in the response. • The response may be no more than a list.
Adequate 3–4 marks	<ul style="list-style-type: none"> • A descriptive response with limited knowledge and/or understanding of the relevant ITGS issues and/or concepts. • A response that includes limited use of appropriate ITGS terminology. • A response that has evidence of conclusions and/or judgments that are no more than unsubstantiated statements. The analysis underpinning them may also be partial or unbalanced. • Implicit references are made to the scenario in the stimulus material in the response.
Competent 5–6 marks	<ul style="list-style-type: none"> • A response with knowledge and understanding of the relevant ITGS issues and/or concepts. • A response that uses ITGS terminology appropriately in places. • A response that includes conclusions and/or judgments that have limited support and are underpinned by a balanced analysis. • Explicit references to the scenario in the stimulus material are made at places in the response.
Proficient 7–8 marks	<ul style="list-style-type: none"> • A response with a detailed knowledge and understanding of the relevant ITGS issues and/or concepts. • A response that uses ITGS terminology appropriately throughout. • A response that includes conclusions and/or judgments that are well supported and underpinned by a balanced analysis. • Explicit references are made appropriately to the scenario in the stimulus material throughout the response.