Pearson Edexcel

INTERNATIONAL ADVANCED LEVEL

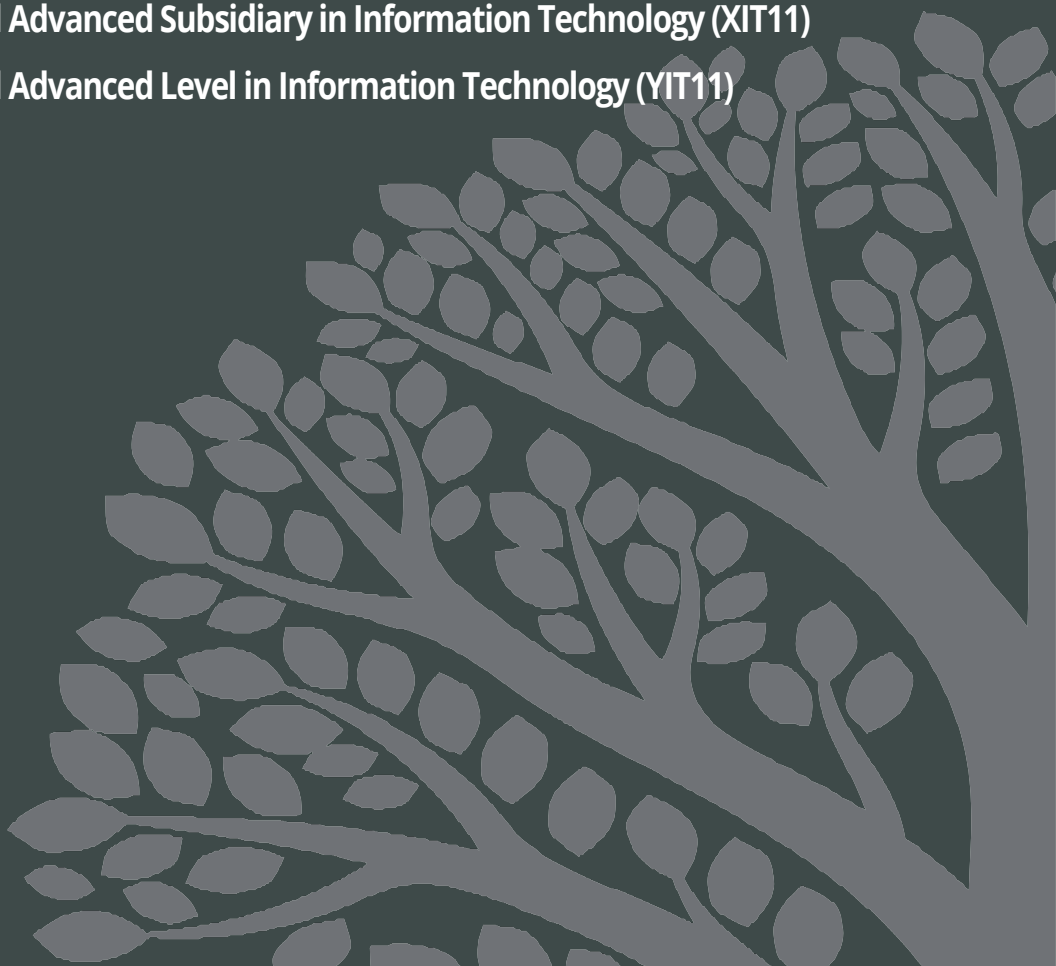
INFORMATION TECHNOLOGY

Exemplars with examiner commentaries

Unit 1 - WIT11

Pearson Edexcel International Advanced Subsidiary in Information Technology (XIT11)

Pearson Edexcel International Advanced Level in Information Technology (YIT11)



Contents

Introduction

1.1 About this booklet

This booklet has been produced to support teachers delivering the Pearson Edexcel International Advanced Level in Information Technology specification. These Unit 1 exemplar materials will enable teachers to guide their candidates in the knowledge and skills required to successfully complete this course. The booklet looks at questions 1 to 6 from the June 2019 examination series, showing real candidate responses to questions and how examiners have applied the mark schemes to demonstrate how candidate responses should be marked.

1.2 How to use this booklet

Each example covered in this booklet contains:

- Question
- Mark scheme
- Exemplar responses for the selected question
- Example of the marker grading decision based on the mark scheme, accompanied by examiner commentary including the rationale for the decision and where relevant, guidance on how the answer can be improved to earn more marks.

The examples highlight the achievement of the assessment objectives at lower to higher levels of candidate responses.

Centres should use this content to support their internal assessment of candidates and incorporate examination skills into the delivery of the specification.

1.3 Further support

Centres may find it beneficial to review this document in conjunction with the Examiner's Report and other assessment and support materials available here on the Pearson Qualifications website.

1(c)(i)	Digital devices, such as Sarah's TV, have features to assist those with disabilities. Describe **two** features of a smart TV's user interface that assist people with a visual impairment. Marks available: 4

Mark scheme

Question number	Answer	Additional Guidance	Mark
1 (c) i	Award up to **two** marks for each of **two** descriptions such as: • voice guide / on-screen reader (1) which will read on-screen text / give information about current channel / programme (1) • audio description (1) which provides a description of the scene/setting (1) • high contrast (1) which applies high contrast to all menus, control panels, etc. (1) • change brightness / screen temperature (1) to allow more comfortable viewing / relieve eye strain (1) • colour blindness mode / ability to change colours (1) to allow colour blind people to see what is on the TV (menus, etc.) (1) • screen zoom/enlarge (1) allowing people to zoom in to important parts of the screen / enlarge menus, etc. (1) • guide dots / markings on the (remote) controls (1) to enable people to operate it without seeing the buttons (1) • voice activated TV controls (1) to enable people to operate the TV without seeing the controls. (1)	Do not accept helping visual impairment as an extension	**4**

Candidate response A

1 The screen can be zoomed into or out off. This makes it easier to read text and see the information on the screen.

2 The brightness of the screen can be adjusted, so if high brightness bothers someone they can decrease it and set it to a point the won't hurt their eyes.

Marks awarded: 4

Examiner commentary

Candidate has achieved two x 2 marks for extended descriptions of two features of a smart TV's user interface that assist people with a visual impairment:

- zoom, of a specific item
- brightness, to prevent eyes hurting.

Candidate response B

1 When clicked on a button / hovered over the TV could speak up what the button does.

2 The Smart TV could have a microphone where Sarah could command in ~~there~~ what she wants to do.

Marks awarded: 2

Examiner commentary

Two x 1 mark are awarded for two simple descriptions of features of a smart TV's user interface:

- TV could describe the function of a button
- TV could respond to voice commands.

The second mark for each function would require an elaboration on what the button/commands could do.

1(c)(ii)	Explain **one** moral/ethical reason why manufacturers of digital devices include accessibility features in their products. Marks available: 3

Mark scheme

Question number	Answer	Additional Guidance	Mark
1 (c) ii	Award up to **three** marks for a linked explanation such as: Want to create an inclusive/non-discriminating society where anybody can access the digital devices (1) there are official standards/guidelines that manufacturers must follow (1) which have legal/reputation penalties if not followed (1) OR Making devices easier to use for people with disabilities will increase the size of the market (1) OR Customer pressure to include people with disabilities (1) company responds to keep customers satisfied (1)	Do not allow making more profit arguments	**3**

Candidate response A

Including accessibility features is an ethical stance for the differently abled, this means that they may also now be able to use a ~~the~~ digital device. This may increase the sales of the product as now more people demand for it. Also because regulations require manufacturers to include accessibility features in their product (Total for Question 1 = 12 marks)

Also the brand may gain more promotion and develop a positive brand image.

Marks awarded: 3

Examiner commentary

The candidate has achieved 3 marks. One mark each for:

- increasing demand
- regulations require it
- developing a positive brand image.

Candidate response B

~~Eth~~ Working ethically means doing things what is right ~~todo~~ to do.
If a ~~m~~ specific manufacturer coorck ethically their brand image will be improved. Including accessibility features in their product will help dissable people to enjoy TV channel using the feature which suits them. As a result ~~p~~ dissable people and people who support ethical act will ~~buy their~~ be attract to their product. (Total for Question 1 = 12 marks)

Marks awarded: 2

Examiner commentary

The candidate has achieved 2 marks. One mark each for:

- improving brand image
- attracts disabled and ethical people.

An extension for the third mark might have been that the company would therefore increase the size of their market.

2(a)	Hilmi Megat has a personal website. Hilmi uses the website to tell people about the places that he has travelled to. (a) The website's domain name is www.hilmi-megat.com and the IP address is 203.0.113.15. When someone wants to visit the website, they enter the domain name into their browser address bar. Describe how the connection is made to IP address 203.0.113.15. Marks available: 3

Mark scheme

Question number	Answer	Additional Guidance	Mark

2 (a)	Award **one** mark for each point up to a maximum of **three** marks for a linked description.
	
	• Find IP address:
	  ○ Browser checks cache for previously used connection information (1)
	  ○ Browser connects to Domain Name Service (server) / DNS (server) / Domain Name Server (1)
	  ○ DNS server has database/tables of domain names and IP addresses (1)
	  ○ DNS server looks up IP/converts name to IP (1)
	• IP address sent to browser (1)
	• IP address used to connect to website (host) (1)
			3

Candidate response A

when a person types "www.kilmi-megat.com" into the browser address bar, this domain name is received by the DNS, which stores a database of domain names and IP addresses. The DNS converts the domain name into the IP address, which is then used to access the website.

Marks awarded: 3

Examiner commentary

The candidate has achieved 3 marks. One mark each for:

- use of DNS
- DNS has a database of names and IP addresses
- IP address found from domain name.

Candidate response B

when they enter the domain name ~~Be~~ the browser sends it to a DNS server where ip adresses are stored from there it finds the corresponding IP & fetches it.

Marks awarded: 2

Examiner commentary

The candidate has achieved 2 marks. One mark each for:

- use of DNS
- DNS stores IP addresses.

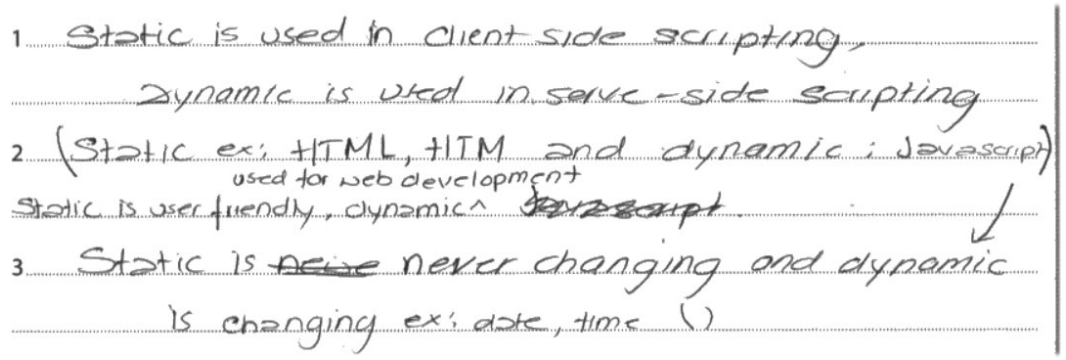
A third mark might have been obtained by saying how the addresses are stored.

2(b)	Hilmi uses a web-hosting company to host and support his website. The company provides software tools to make both static and dynamic web pages. (b) Give **three** differences between static and dynamic web pages. Marks available: 3

Mark scheme

Question number	Answer	Additional Guidance	Mark
2 (b)	Award **one** mark for each difference up to a maximum of **three** marks. • static page content is fixed, dynamic alters with user actions (1) • dynamic pages use a fixed format/template while static pages can all be different (1) • static written in HTML, dynamic written in a server-side scripting language/PHP/ASP/JSP (1) • static code/HTML is read/displayed by the browser/client computer, dynamic is a server-side process (1) • static content (usually) held in one location, dynamic page content called (by script) from other files/data source(s) (1) • dynamic, easy to add new features, such as a data feed, to an existing web page (whereas the content for static pages is hard coded) (1) • database can be used by dynamic pages to supply content (whereas the content for static pages is hard coded) (1)	Accept other server-side scripting languages	**3**

Candidate response A



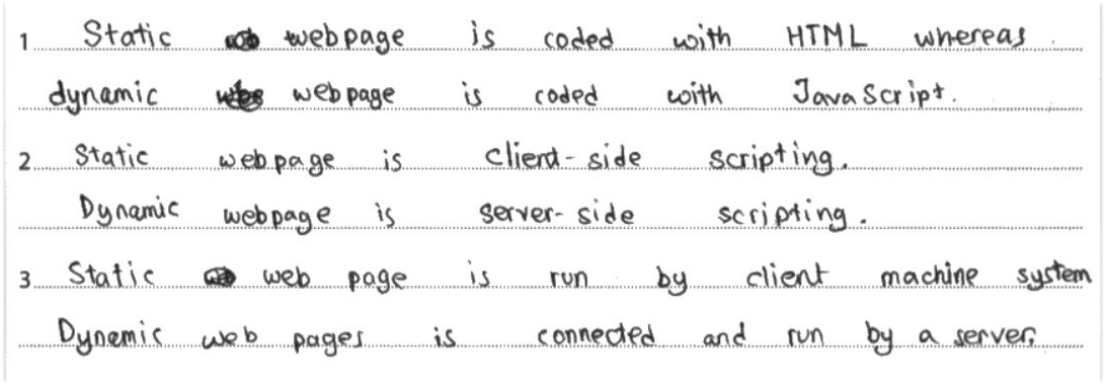
Marks awarded: 3

Examiner commentary

The candidate has achieved 3 marks. One mark each for:

- static uses client-side scripting while dynamic uses server side
- static uses HTML while dynamic uses a scripting language
- static does not change content while dynamic does, with specific example.

Candidate response B



Marks awarded: 2

Examiner commentary

The candidate has achieved 2 marks. One mark each for:

- static uses HTML while dynamic uses a scripting language
- static uses client-side scripting while dynamic uses server side.

The third point given is an expansion of the second and does not get an independent mark.

2(c)	Hilmi's website only has static web pages. He is thinking of converting the website into a dynamic one. (c) Discuss the advantages of using dynamic web pages instead of static web pages. Marks available: 6

Mark scheme

Question number	Indicative content	Mark

2(c)	Responses should be in relationship to the context of the question (advantages of dynamic web pages) responses may look at one aspect in depth or cover elements of more than one.
	
	Ease of use by web author Hilmi:
	• easy to create structured / organised pages
	• does not need to know HTML
	• no need to recode pages to change content
	• can connect to a database / data source allowing the use of a content management system
	• no or reduced costs / time when changing page content
	
	Responsive to users:
	• pages are filled / sorted according to user actions
	• interactive actions allow help user engagement
	• able to respond to / accommodate different screen sizes / resolutions
	
	Other:
	• content can respond to:
	  ○ cookies
	  ○ time of day
	  ○ locational information
	• better for SEO
		6

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–2	• Demonstrates limited knowledge and understanding, some of which may be inaccurate. • Applies understanding with limited coherence to produce a superficial and unbalanced discussion.
Level 2	3–4	• Demonstrates knowledge and understanding which is mostly relevant but may include some inaccuracies. • Applies understanding to make some coherent connections, leading to a discussion that shows some development, but may be unbalanced.
Level 3	5–6	• Demonstrates accurate and relevant knowledge and understanding throughout. • Applies understanding coherently to produce a balanced and fully developed discussion.

Candidate response A

Dynamic web pages can allow Hilmi to create a content management system which will allow him to modify any pages or content himself without having to consult a developer which reduces time, cost and effort to modify content. Dynamic web pages also allow Hilmi to design basic layout once which will be used for all the pages which saves time, ~~and~~ money and effort instead of having to design each individual page seperately like for static web pages, and no need to change basic layout for minor changes. Dynamic ~~de~~ web pages also allow Hilmi to store the content and data of his web pages remotely and not in the web page code as the data is called in and displayed automatically on a template. Dynamic webpages may also include additional functionality and interactivity than static web pages. Dynamic web pages are also cheaper in the long run despite a high initial set up cost as there is little ongoing costs to modify. If Hilmi wants to update webpage design, he may have to consult a developer and start from scratch, which is more expensive than changing individual page layout like in static. Hilmi also needs little technical ~~or~~ and knowledge to maintain dynamic web pages compared to static web pages.

Marks awarded: 6

Examiner commentary

This is a good level 3 response. The candidate has identified and expanded upon the advantages of several features of dynamic pages. These include:

- use of a content management system
- ability to use design layouts for all pages
- interactivity
- technical requirements.

Candidate response B

When using dynamic web pages, a visitor does not need to constantly refresh the page for new content and the visitors are constantly kept up-to-date with new information. Hilmi would be able to add live events, such as live ~~ve~~ videos. This may ~~increase~~ intrigue new visitors and attract more of them.

Although it may be more complex to ~~use~~ create dynamic webpages, it does not require Hilmi to constantly change and modify, delete the codes. This saves time.

Marks awarded: 3

Examiner commentary

This is a level 2 response. The candidate has identified and given some expansion for the advantages of two features of dynamic pages:

- content changing
- technical requirements.

The answer is given the lower mark for level 2 as the second feature, not needing code changes, is undeveloped and the 'code' is unidentified. A mention of not needing to know html, javascript or other specified code would probably have raised the mark to the top of level 2.

3(b)(i)	A customer wants to buy a replacement light bulb for a car. The bulb is no longer manufactured. The car dealer can order one from a specialist supplier. A member of staff uses a specialist database to find suppliers of the bulb. The manufacturer of the bulb is Lucas Electrical. The member of staff can only make out **LL~~80 1157 BAY~~D** of the part number: where the symbol **~** indicates an unreadable character. (i) Write an SQL query that will display names and contact details of suppliers who are likely to have the bulb in stock. List the suppliers in alphabetical order. Marks available: 6

Mark scheme

Question number	Answer	Additional Guidance	Mark
3 (b) i	Award **one** mark for each correct part of the query up to a maximum of **six** marks. • select required fields from the correct tables (1) • only the required fields selected (1) • manufacturer = Lucas Electrical (1) • stock > 0 (1) • use of LIKE/= with correct pattern for part number (1) • use of AND for multiple conditions (1) • join correct (1) • ORDER BY name (1) e.g. SELECT name, telephone FROM tbl_supplier, tbl_bulbs WHERE manufacturer='Lucas Electrical' AND partnumber LIKE 'LL_ _80 1157 BAY_ _D' / =LL%80 1157 BAY%D AND stocklevel > 0 / !=0 / <>0 AND tbl_supplier.supplierID=tbl_bulb.supplierID ORDER BY name	Award marks with minor errors in syntax as long as the intent is clear.	**6**

Candidate response A

```
SELECT name, telephone
FROM tbl-supplier, tbl-bulb
WHERE manufacturer = "Lucas Electrical" AND partnumber = "LL%
80115?BAY%.D" AND stocklevel != 0
ORDER BY ASC ;
```

Marks awarded: 6

Examiner commentary

The candidate has gained full marks for the query. The marking points are:

- select required fields from the correct tables
- only the required fields selected
- manufacturer = Lucas Electrical
- stock level > 0
- use of pattern for the part number
- use of AND for multiple conditions.

Candidate response B

```
SELECT name, telephone FROM tbl_supplier
WHERE IN ( SELECT [redacted] supplierID
FROM tbl_bulb WHERE manufacturer = "Lucas Electrical")
GROUP BY name ASC;
```

Marks awarded: 3

Examiner commentary

The candidate has gained 3 marks for the query. The marking points are:

- select correct fields from correct tables, first two and a half lines
- manufacturer = Lucas Electrical, second part of line three
- order by name, line four.

3(b)(ii)	(ii) Explain **one** advantage for the **car dealer** of having access to the specialist database. Marks available: 3

Mark scheme

Question number	Answer	Additional Guidance	Mark
3 (b) ii	Award up to a maximum of **three** marks for a linked explanation. e.g. Car dealer has access to rare / obsolete stock (information) (1) does not have to build / maintain its own database / information is all in one place/does not have to call numerous suppliers (1) saving time / resources (1) Car dealer has access to rare / obsolete stock (information) (1) does not have hold wide variety of stock (1) saving space / resources / money (1) Car dealer can offer (better) service to customers (1) that it could not do without access (1) giving better customer experience / satisfaction (1) Car dealer can supply rare / obsolete items (1) that would take time / resources to find without the database (1) giving increased sales / profit / customer satisfaction (1)		**3**

Candidate response A

- With the help of the database and relational database he can easily gain information that shows the stocklevel wether there is a part, the ~~voltage~~ type or energy. ~~this~~ This will give him a clear idea gaining ~~his~~ ~~customer~~ ~~trust~~ ~~and~~ ~~customer~~ ~~will~~ ~~increase~~. as to where to order the parts ~~and~~ due to this he will save time and money for contacting everyone even so due to less time taken customer will statified increasing his customer loyalty. **(Total for Question 3 = 15 marks)**

Marks awarded: 3

Examiner commentary

The candidate has achieved 3 marks: not having to contact each supplier, thus saving time and money, improving customer satisfaction.

Candidate response B

Because, rather than always having a stock of unused parts that brings less to the business, the dealer can stock up all other marketable parts, and call for a specific number of the special parts, depending on the buyer. (3)

Mark awarded: 1

Examiner commentary

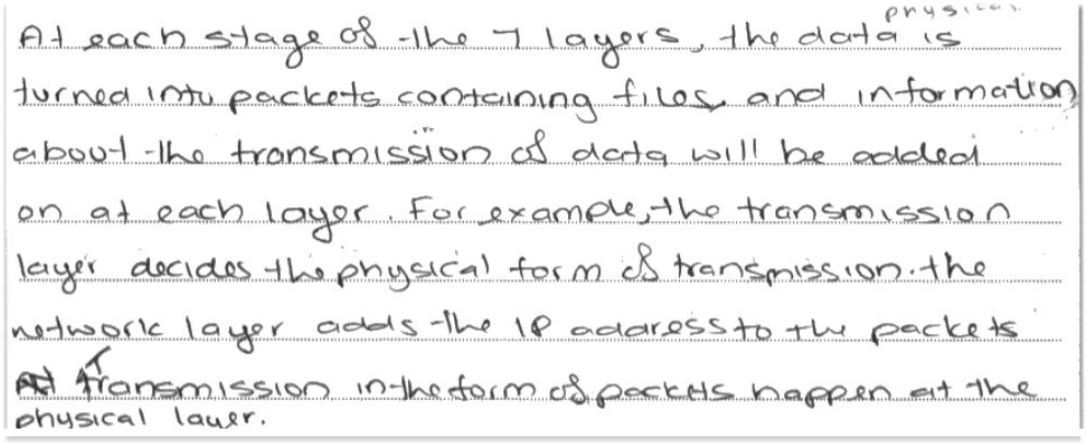
The candidate gains 1 mark for not having to keep a stock of parts.
This is part of the second example answer given in the mark scheme but does not include the consequence: that it saves space/resources/money; or the reason: because the dealer has access to stock via the database.

4(a)	The Open Systems Interconnection (OSI) model is a 7-layer model of communications protocols. It is used to connect computers over the internet. Data passing through the layers is encapsulated. (a) Describe the process of encapsulation in this context. Marks available: 3

Mark scheme

Question number	Answer	Additional Guidance	Mark
4(a)	Award **one** mark for each point up to a maximum of **three** marks for a linked description: • data moving into the stack/layers is given a header (1) • in each/all layers going down, data is encapsulated further / new header is added (1) • the header plus data from previous layer becomes the data/package (1) • header contains addressing information / header makes data compatible with the next process (1) • the header information is used to extract the data from the encapsulated package (1)	Accept reverse arguments for data passing up the stack Allow information instead of header	**3**

Candidate response A

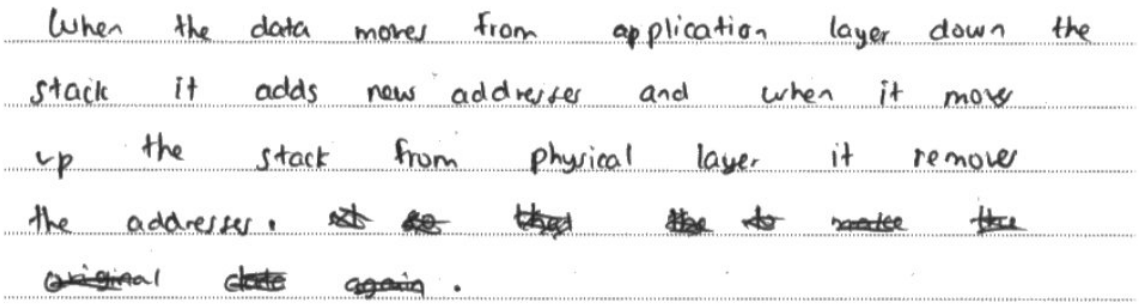


Marks awarded: 2

Examiner commentary

The candidate has identified two factors: adding information at each stage and including addressing information. A logical extension for a third mark might be to say that the data plus the information added becomes the data for the next layer down.

Candidate response B



Mark awarded: 1

Examiner commentary

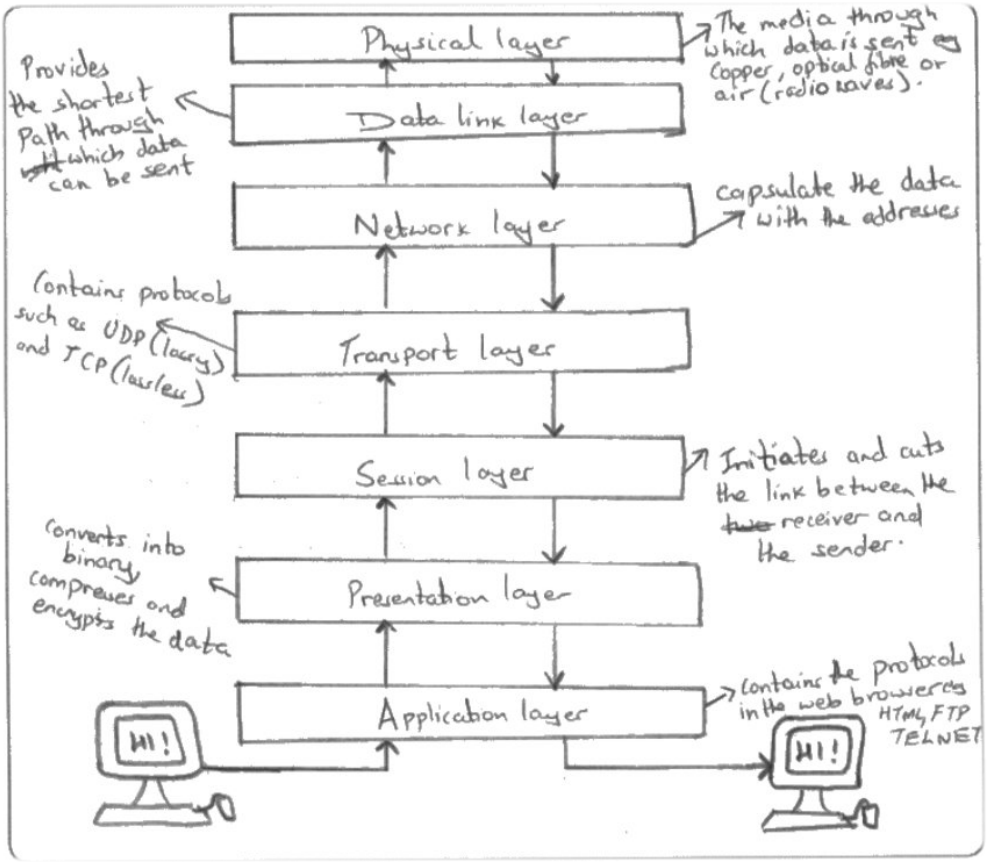
The candidate has identified that addressing information is added at each stage. This is not quite enough for 2 marks as it implies that it is only an address that is added. Further marks might have been gained by saying that the 'new addresses' that are added are used as a header and that this is used to extract information when the process is reversed going back up the stack.

4(b)	Explain the OSI model using a labelled diagram. Marks available: 6

Mark scheme

Question number	Answer	Additional Guidance	Mark
4(b)	Award **one** mark for each point up to a maximum of **six** marks • diagram shows a layered process (1) • 6 layers in order / reverse order, (any 6 of Application, Presentation, Session, Transport, Network, Data link, Physical) (1) • 7th layer in correct position (1) • diagram indicates data flow between the layers (1) • diagram includes some protocols/information about the data (1) • diagram indicates media (bottom 3 / layers1-3) / host (top 4 / layers 4 - 7) (1) • diagram is a labelled diagram, not a table, list, set of paragraphs, etc. (1)		**6**

Candidate response A



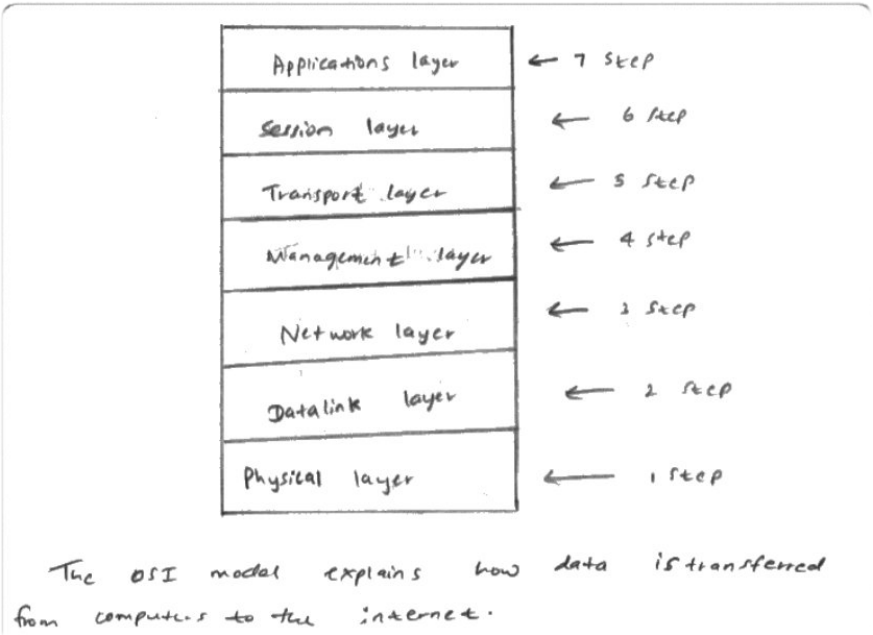
Marks awarded: 6

Examiner commentary

The candidate has gained full marks for the query. The marking points are:

- diagram shows a layered process
- six layers in order (any six of Application, Presentation, Session, Transport, Network, Data link, Physical)
- seventh layer in correct position
- diagram indicates data flow between the layers
- diagram includes some protocols/information about the data
- diagram is a labelled diagram, not a table, list, text, etc.

Candidate response B	



Marks awarded: 3

Examiner commentary

The candidate has gained 3 marks for the diagram. The marking points are:

- diagram shows a layered process
- six layers in order (any six of Application, Presentation, Session, Transport, Network, Data link, Physical)
- diagram is a labelled diagram, not a table, list, text, etc.

The seventh layer in not in the correct position.

There is no indication of information flow or protocols used.

4(c)(i)	Transmission Control Protocol/Internet Protocol (TCP/IP) is a 4-layer model of communications protocols. (i) Explain **one** difference between the TCP/IP model and the OSI model. Do not include details of layer names or functions. Marks available: 4

Mark scheme

Question number	Answer	Additional Guidance	Mark
4 (c) i	Award **one** mark for each point up to a maximum of **four** marks for a linked explanation. • OSI is about communications between a network and a user (1) • TCP/IP is about connecting hosts over the internet/a network (1) • OSI is generic/protocol independent / can use any appropriate protocol (1) • TCP/IP is based on (standard) internet protocols (1) • OSI is a reference model/guide (1) • TCP/IP is an implementation of that (OSI) model (1) Examples • OSI is a generic model (1) used as a guide to building a network/communications system (1) while TCP/IP is an implementation (1) that uses standard protocols for running a (network/communications) system/the internet (1) • TCP/IP is used to connect hosts over the internet. (1) It uses TCP and IP/standard protocols (1) while OSI is about communications between a user and a network. (1) OSI does not have standard protocols (1) • TCP/IP uses TCP and IP/standard protocols (1) for communicating over a network (1) while OSI can use these protocols but does not have to. (1) It is protocol independent (1)		**4**

Candidate response A

TCP model is a client-server model used for transmission of data over the internet which is the standard protocol for networking.
OSI model is a theorotical/conceptual model used to understand the ~~architecture~~ computer architeture, it is not a protocol.

Marks awarded: 3

Examiner commentary

The candidate has achieved 3 marks for a linked explanation. One mark each for:

- TCP/IP is about connecting hosts over a network
- TCP/IP is based on internet protocols
- OSI is a reference model/guide.

A logical extension for a fourth mark would be that the OSI model is protocol independent.

Candidate response B

TCP/IP ~~model deals with~~ are set of rules about how data is transmitted on the network where both the sender and the receiver need to have the same set of rules. Also TCP/IP deals with errors if some of the data is lost during transmission. On the other side OSI are set of ~~not~~ general rules for any type of connection over the network.

Marks awarded: 2

Examiner commentary

The candidate has achieved 2 marks for a linked explanation. One mark each for:

- TCP/IP is about connecting hosts over a network
- OSI is a reference model/guide.

Neither answer has been extended for the second mark. This could have been done by saying something about the protocols used by the two models.

4(c)(ii)	Most internet traffic uses Internet Protocol version 4 (IPv4) but this is being replaced by IPv6. Give **two** reasons why IPv6 is replacing IPv4. Marks available: 2

Mark scheme

4 (c) ii	Award **one** mark for each point to a maximum of two marks. • IPv4 is running/has run out of available addresses / IPv6 has many times more addresses available (1) • IPv6 removes need for address sharing / removes need to use NAT to share a (network) address (1) • IPv6 is more secure (than IPv4) (1) (allow Encrypted) • IPv6 is more efficient (than IPv4) (1)		**2**

Candidate response A

1 IPv6 is more ~~so~~ secure than IPv4.

2 More unique addresses are provided by IPv6.

Marks awarded: 2

Examiner commentary

The candidate has given two correct responses.

5	Sanjeev writes short stories for magazines. He does not have a permanent position and only gets paid when a story is published. Some stories are commissioned by a magazine's editor, others are submitted in the hope that they will be accepted and published. Sanjeev researches material for his stories by using the internet. He also has an active social media presence for his work and personal life. By using the internet, Sanjeev has generated both an active and a passive digital footprint. Evaluate the advantages and disadvantages for Sanjeev of the digital footprints that he has generated. You should consider: • the impact on Sanjeev's working and personal life • how Sanjeev should manage his footprints going forward. Marks available: 12

Mark scheme

Question number	Indicative Content	Mark

5	Responses should be in relationship to the context, advantages and disadvantages to Sanjeev of the digital footprints that he has generated.
	
	Active footprint (generated when Sanjeev deliberately releases / shares personal data, e.g. on social media).
	
	Advantages:
	• editors can more easily find Sanjeev to
	  ○ offer work
	  ○ see examples of his writing
	  ○ see what styles, genres etc. he can write in
	• helps protect Sanjeev from:
	  ○ fraudulent activity
	  ○ plagiarism / claims of plagiarism
	  ○ other legal issues such as copyright
	• allows companies to personalise Sanjeev's visits to their sites, for e.g. special offers, suggested products.
	
	Disadvantages:
	• adverts / offers may be based on Sanjeev's research and not be wanted for his everyday life
	• personal data can be monetised without Sanjeev's knowledge / permission
	• companies may 'personalise' by increasing prices based on a perception of Sanjeev's wealth / status
	• analysis of an active footprint can reveal more information than Sanjeev had intended to share
	• privacy problems
		12

	Passive footprint (generated when Sanjeev visits sites, performs transactions. e.g. cookies, logfiles).
	
	Advantages:
	• enhanced experience, e.g. search fill, location awareness
	• helps protect Sanjeev from:
	  ○ credit card fraud
	  ○ attempts to log in to his accounts, e.g. email, shopping
	
	Disadvantages:
	• privacy problems
	• no control over what is collected
	• information may end up in wrong hands, e.g. credit card numbers, account numbers
	• embarrassing / inconvenient material may be collected
	• may impact on non-internet activities. Footprint may be used by companies dealing with e.g. credit references, rental agreements.
	
	Managing the footprints going forward:
	• keep personal / work accounts separate / separate accounts for different functions
	• don't use same user names for multiple accounts / set up multiple profiles
	• security measures / clearing cookies / browser add ons to prevent tracking
	• deliberate management of active footprint(s) to suit Sanjeev's purposes
	• use of anonymous / private browsing / secure browser (add ons)	

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–4	• Demonstrates limited knowledge and understanding, some of which may be inaccurate. • Applies understanding with limited coherence to produce a response that lacks development. • Demonstrates limited awareness of competing arguments. • Conclusion, if present, is generic or unsupported.
Level 2	5–8	• Demonstrates knowledge and understanding, which is mostly relevant and may include some inaccuracies. • Applies understanding to make some coherent connections and a partially developed response. • Demonstrates some awareness of competing arguments, but this may be unbalanced, and partially supports conclusion with evidence.
Level 3	9–12	• Demonstrates accurate and relevant knowledge and understanding throughout. • Applies understanding coherently to produce a fully developed response. • Demonstrates an awareness of competing arguments and supports conclusion with evidence.

Candidate response A

Digital footprint is the details ~~&~~ ~~act~~ of activities & on the internet or online that is left behind when someone uses the internet. passive digital footprint is collected without a users knowledge & includes things such as browser history whereas active digital footprint is created when users offer up data such as when they log in to an account or answer questions.

There could be several advantages as well as disadvantages of sanjeevs digital footprint. One advantage could be that more personalised advertisements ~~that could~~ could be shown to sanjeev & he may actually find things that interest him. For example

an advertisement looking for writers could be aimed at Sanjeev due to his digital footprint & this could interest him more than an advert for a product for example.

Further, more relevant data & information can also be found as the Sanjeevs browser history & the type of content he views is known. This searches can be more appropriately tailored. Additionally, because of his social media presence he may attract a larger audience that enjoy reading his short stories.

However the Internet is forever & anything put up on it could be extremely, if not impossible, to remove, this means that any activity conducted online is permanently associated with Sanjeev, for example his social media posts on his personal life could be linked to his work life & this may have a negative effect on Sanjeev as past posts ~~could~~ containing questionable or offensive messages could be connected to him by his employers, maybe causing him to lose his job.

Further, ~~privacy is also~~ the larger a Sanjeevs digital footprint the less privacy he has as more & more of his life gets documented permanently ~~& people~~. The stored info can also be stolen, taken or bought by companies which may have malicious intentions.

To manage his digital footprint Sanjeev should take notice of the cookies he visits & maybe use a VPN when browsing, or using social media

(Total for Question 5 = 12 marks)

Marks awarded: 12

Examiner commentary

This is a levels-based question. The work meets the descriptor for a level 3 answer.
The work describes both active and passive footprints and gives valid examples of advantages and disadvantages of both.
The answer also includes sensible ideas for managing digital footprints.

Candidate response B

Sanjeer left digital foot print, meaning his online activity were recorded. The magazine operators/ publisher can see his social activity and they can judge about his personality and ~~if~~ if ~~their jud~~ they find his online activity is smart, honest friendly behavior ~~and his~~ ~~they I~~ ~~then they can judge weather they will publish is~~. then the editor/publisher might accept his stories. But if they find that his online ~~bat~~ activity is bad, recist, ~~and h~~ using abusive languages then the editor may cancel his story ~~de~~ and if they find his activity/post are dump the chances of getting his story rejected much higer.

2) Sanjeev should browse and act smart in social media, he must not use anything which is not ~~permited~~ permitted by the lay or it violates the rules and regulation of the social media site because if he do ~~so~~ so he will have to face ~~consequences~~ consequences as it was mentioned by me in point 3(1). My suggestions for Sanjeer are

1) He should act smart

2) He should post staff related to his job it will have a better footprint on his account.

3) He should be honest while commenting on a post and it is strongly suggested for not using abusing language or anything that violets the rules and regulations of the social media because it ~~with~~ might put a black spot on his carrer.

Marks awarded: 8

Examiner commentary

This is a levels-based question. The work meets the descriptor for a good level 2 answer. The work gives valid descriptions of advantages and disadvantages of digital footprints but does not distinguish between active and passive footprints.
There are some sensible suggestions for managing footprints.

Candidate response C

Advantages

Sanjeev has a chance that his stories may be will be seen by a professional and he will get chances of being well paid monthly ~~and~~ or weekly or daily.

Sanjeev should used a digital footprints of not being hacked and stole his stories in short steal his company.

Sanjeev he could may be use youtube to publish his personal life ~~by~~ and to include his company.

Sanjeev he could use, a social media to publish his short stories and he may get somebody professional and he likes his magazine short stories.

Sanjeev His magazine short stories he could publish them on instagram and he can make sure that celebrities are seeing the stories.

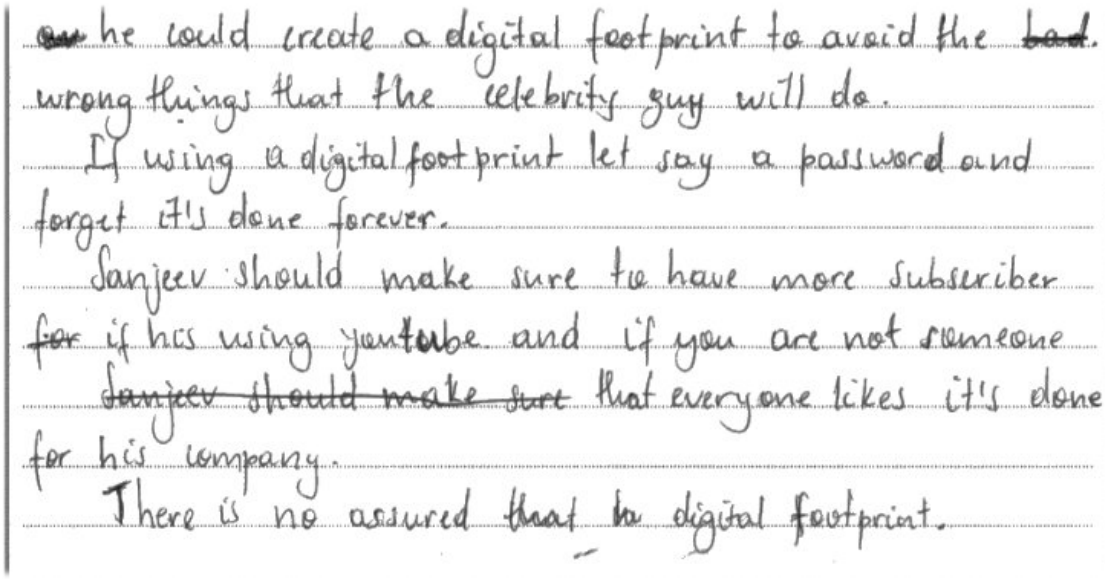
One of the celebrity may like the stories and also he can publish and make Sanjeev famous.

Disadvantages

Sanjeev should get a good digital footprint to protect his company ~~or~~ although his company will be idle.

Sanjeev ~~h~~ should use a digital footprint of not being hacked and stole his stories.

If Sanjeev's ~~publish his short~~ company publish his short stories on instagram and one of a celebrity doesn't like and start criticise his stories and humiliate


he could create a digital footprint to avoid the bad. wrong things that the celebrity guy will do.

If using a digital footprint let say a password and forget it's done forever.

Sanjeev should make sure to have more subscriber for if he's using youtube and if you are not someone Sanjeev should make sure that everyone likes it's done for his company.

There is no assured that he digital footprint.

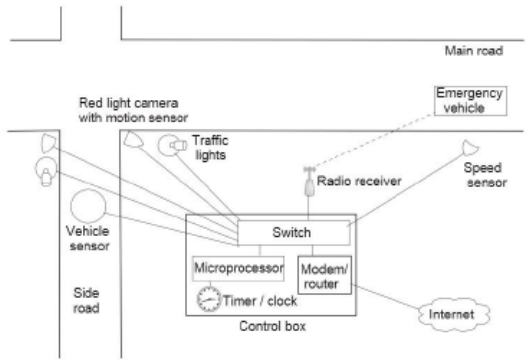
Marks awarded: 4

Examiner commentary

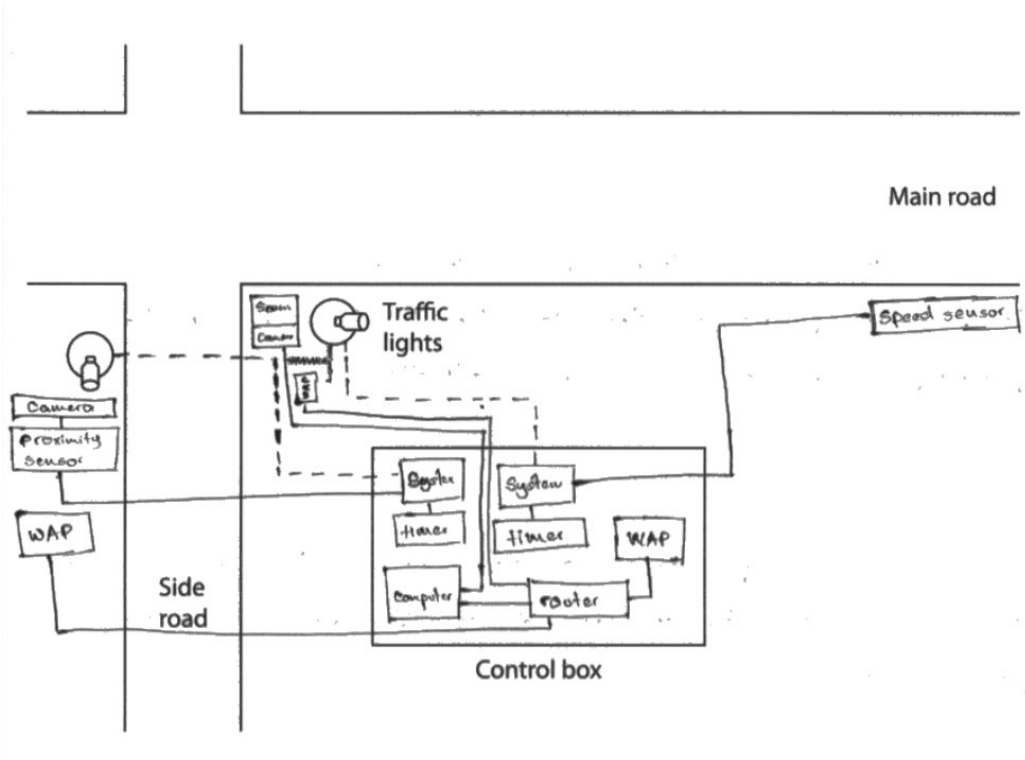
This is a levels-based question. The work meets the descriptor for a good level 1 answer. The work gives some examples of what digital footprints might include and how it might be beneficial, but the candidate seems to have misunderstood what a digital footprint is and how it is created.
There are no suggestions for managing footprints.

6(a)	In the country of Varma Loko, main roads often run through small villages. The Transport Ministry has installed a traffic management system in each village. One crossroads in each village has a set of traffic lights controlling the main road and the side roads. The system is controlled by a computer. These are the system requirements. • The default setting is for the lights on the main road to be green (go) and the lights on the side roads to be red (stop). • Proximity and speed sensors are used to detect the **two** conditions for when the lights will change. The conditions are: • when a vehicle stops at a red light on the side road • when a vehicle enters the village on a main road over the speed limit • an emergency vehicle can send a radio signal to change the lights • the lights reset to the default setting after a set time • if a vehicle moves past a red light on any road, a digital camera takes a photo and uploads it to the local police headquarters via the internet. Complete the diagram to show a network design that will meet these requirements. You only need to show devices and connections for the lower side road and the right-hand part of the main road. You should: • represent a cable connection by a solid line • represent a wireless connection by a line of dashes • represent network components by a labelled box or symbol • include appropriate network in the control box. Marks available: 10

Mark scheme

Question number	Answer	Additional Guidance	Mark
6 (a)	The diagram shows the functionality – the location of particular devices may vary. Allow radio signals for connecting devices as long as a receiver is included. Award **one** mark for each item to a maximum of **ten** marks: a) microprocessor / processor / embedded computer in control box / server / computer b) modem / router in control box / attached or wired to the box c) timer / clock in box or from internet d) microprocessor (or device credited in (a)) connects to Internet via router/modem e) red light / traffic camera on main/side road f) red light sensor identified, motion (radar, camera) g) speed sensor on main/side road (radar, camera) (must be at entrance to the village) h) appropriate vehicle sensor on **side road**, proximity (pressure, radar, induction loop, camera) i) radio receiver j) wireless signal to radio receiver (vehicle is not needed for the mark) k) all sensors, lights, cameras and radio receiver connect to switch  	Allow software based clock / timer for (c)	**10**
	Note: Where sensors are not labelled the mark can be awarded if: • a sensor is placed near the traffic lights (f) • one or more sensors are placed at the entrance to the village (g). (h) can only be awarded if it is clearly positioned on a side road		

Candidate response A



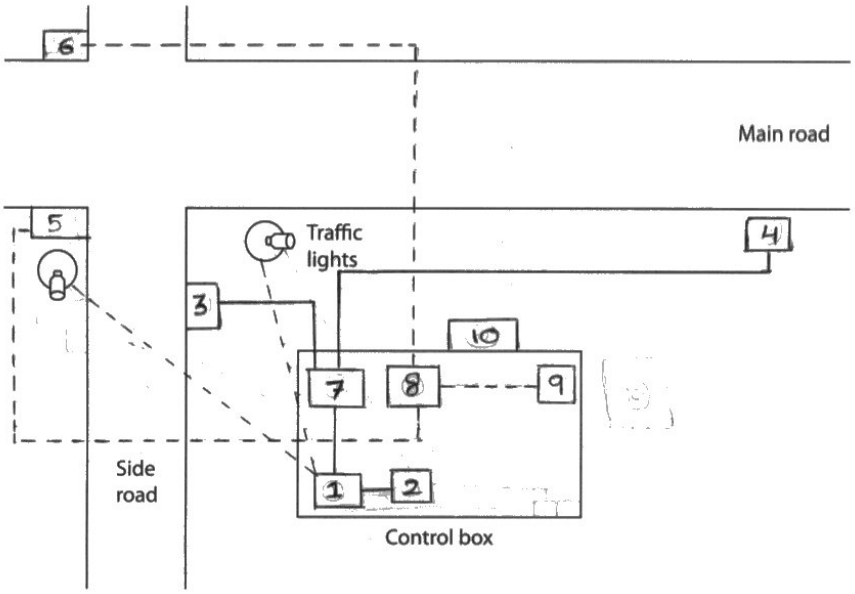
Marks awarded: 8

Examiner commentary

The candidate has gained 8 marks for the diagram. The marking points are:

- computer in control box
- router in control box
- timer in control box
- red light/traffic camera on side road
- red light sensor identified
- speed sensor on main road
- appropriate vehicle sensor on side road, proximity
- radio receiver, WAP.

Candidate response B



1 - Main Computer (Analyze information from sensors and Relay it to traffic lights).
2 - Wi-Fi Router
3 - Proximity Sensor
4 - Speed sensor
5 - Digital camera (for Main Road)
6 - Digital camera (for side Road)
7 - Sensor Relay
8 - Computer connected to the police headquater. (through Internet)
9 - Wireless Access point.
10 - Emergency vehicle.

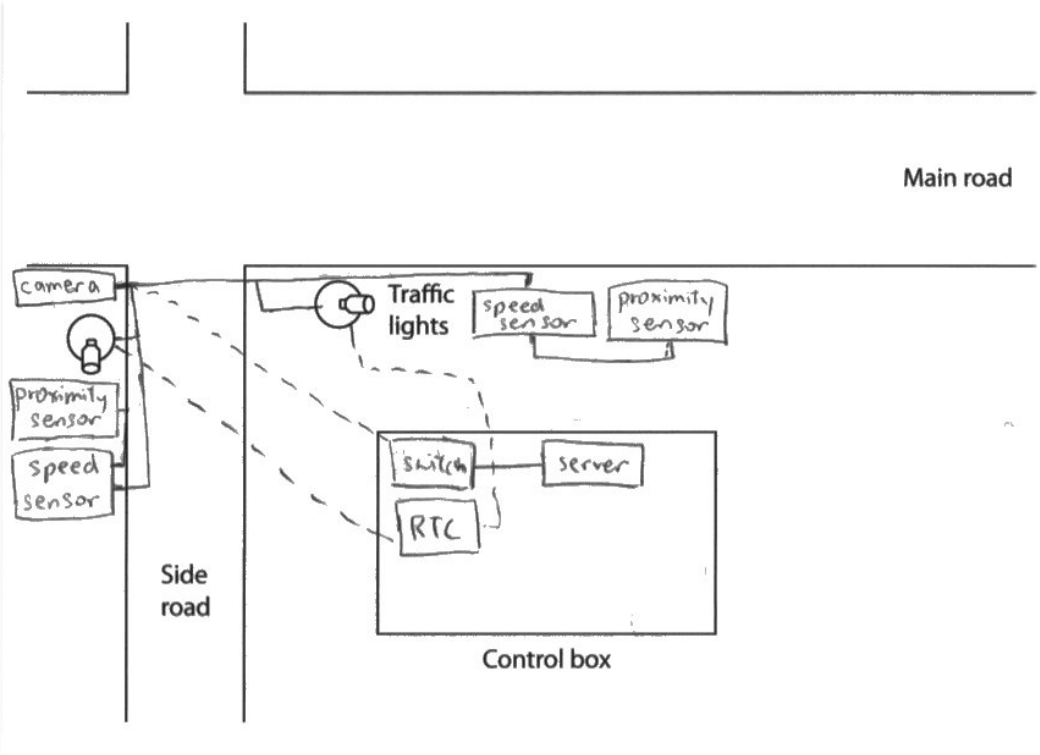
Marks awarded: 6

Examiner commentary

The candidate has gained 6 marks for the diagram. The marking points are:

- computer in control box
- router in control box
- red light/traffic camera on side road
- speed sensor on main road
- radio receiver, Wi-Fi router
- appropriate vehicle sensor on side road, proximity.

Candidate response C



Marks awarded: 4

Examiner commentary

The candidate has gained 4 marks for the diagram. The marking points are:

- server in control box
- red light/traffic camera on side road
- speed sensor on main road
- appropriate vehicle sensor on side road, proximity.

6(b)(i)	The Transport Ministry wants to photograph every vehicle that passes through the crossroad. A Civil Liberties Group opposes the idea on the grounds that the system might be abused by the government. (i) Explain **one** reason the government could use to justify photographing every vehicle. Marks available: 2

Mark scheme

Question number	Answer	Additional Guidance	Mark
6 (b) i	Award **two** marks for a linked explanation such as: • road safety (1) seeing defective/overloaded vehicles / seeing dangerous manoeuvres such as cutting corner when turning • crime reduction (1) tracking stolen/unlicensed vehicles (1) • traffic management/planning/statistics (1) recording types and volumes of traffic / need to know peak periods/volumes (1) • environmental concerns (1) need to need to know peak periods/volumes/vehicle types (1) • law enforcement (1) surveillance/intelligence gathering / deterrence (1)	Accept reasonable alternatives Not catching speeding, given in 6a	2

Candidate response A

(2)

Using the photographs the government can analyse the traffic in the area and adjust the lights accordingly.

Marks awarded: 2

Examiner commentary

The candidate has given a linked explanation, linking traffic analysis with adjusting the lights.

6(b)(ii)	Describe **one** way in which the government might abuse this system. Marks available: 2

Mark scheme

6 (b) ii	Award **one** mark for each point up to a maximum of **two** marks for a linked description. • privacy concerns / civil liberties violations / state surveillance (1) • tracking movements of vehicles / people/owners/drivers (1) • allowing (government) intrusion into private life (1) • risk of data theft from government database (1) • government might sell/pass on data without authorisation (1) Examples: • government could use the system to track the movement of innocent people (1) and therefore intrude on their right to privacy (1) • government could create a profile of its citizens movements (1) for political purposes (1)		**2**

Candidate response A

Lack of privacy as they will know where and at what instant someone was where, files can be corrupted and seen by someone for own personal purpose.

Marks awarded: 2

Examiner commentary

The candidate has given a linked explanation, linking privacy issues with files being used for personal/unauthorised purposes.

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