



Mark Scheme (Results)

Summer 2026

Pearson Edexcel International Advanced Level
In Information Technology (WIT13/ 01)
Unit 3

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General Marking Guidance

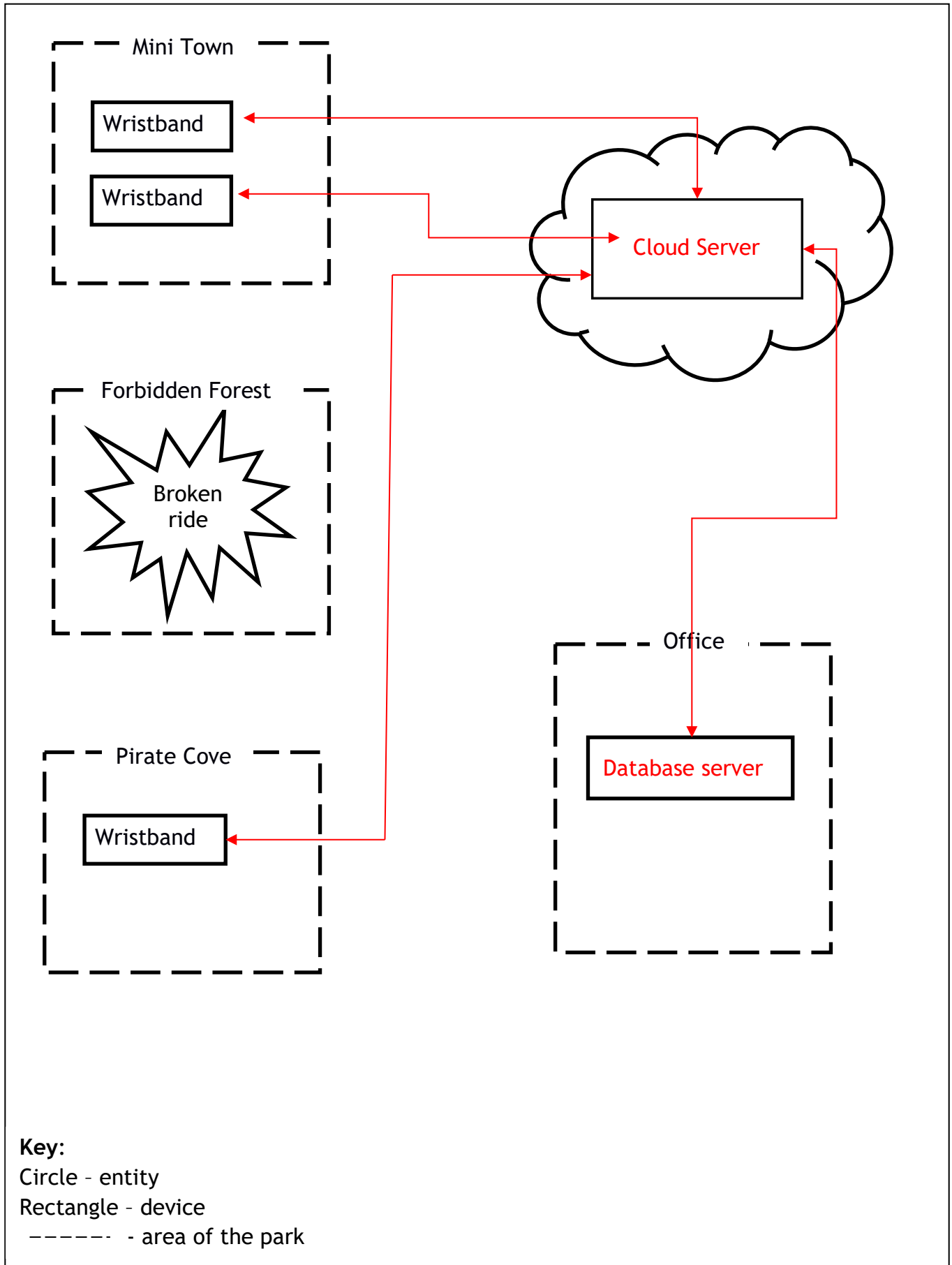
- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question number	Answer	Additional guidance	Mark
1(a)	Award one mark for any of the following, up to a maximum of two marks: • Added information (1) • Navigation (1) • Translation (1) • Retail/Hospitality (1)	Award examples where responses can be mapped to a single, identifiable category. Do not accept reference to games	2

Question number	Answer	Additional guidance	Mark												
1(b)	Award one mark for each correct cell: <table><tr><th>Criterion</th><th>How the objective meets the criterion</th></tr><tr><td>Specific</td><td>The objective is clear in that Pearson Park wants a new roller coaster/Clearly defined as three separate quotes/using the right form. (1)</td></tr><tr><td>Measurable</td><td>(The objective is measurable) as there must be exactly three quotes submitted and three forms. (1) It is easy to measure if there are three quotes and three forms. (1)</td></tr><tr><td>Achievable</td><td>(It should be achievable) by two experienced members of staff (1) Employees in the buying team should be experienced at finding companies to quote for goods and services (1)</td></tr><tr><td>Relevant</td><td>This objective is relevant to the buying team, as it is within their job role to obtain competing quotes.</td></tr><tr><td>Time-bound</td><td>(Complete) this part of the project is September 17, 2027. (1) Allow September 16, 2027</td></tr></table>	Criterion	How the objective meets the criterion	Specific	The objective is clear in that Pearson Park wants a new roller coaster/Clearly defined as three separate quotes/using the right form. (1)	Measurable	(The objective is measurable) as there must be exactly three quotes submitted and three forms. (1) It is easy to measure if there are three quotes and three forms. (1)	Achievable	(It should be achievable) by two experienced members of staff (1) Employees in the buying team should be experienced at finding companies to quote for goods and services (1)	Relevant	This objective is relevant to the buying team, as it is within their job role to obtain competing quotes.	Time-bound	(Complete) this part of the project is September 17, 2027. (1) Allow September 16, 2027		
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Question number	Answer	Additional guidance	Mark
1(c)(i)	Award up to two marks for a linked description, such as: ONE mark for • A network of sensors (1) • A network of devices (1) • Interconnected devices (1) ONE mark for description • ... that perform actions autonomously/without human intervention (1) • ... in order to share data across the internet (1) • ... that work autonomously to collect data (1) • ... that can be controlled and monitored remotely (1)	Both parts must make sense together. Accept 'hardware'/'appliances' for devices	2

Question number	Answer	Additional guidance	Mark
1(c)(ii)	Award one mark for any of the following, up to a maximum of four marks: • Cloud (server/storage) (1) • Database (server) / DBMS / Structured Data / Data Store (1) Award up to two marks for bi-directional lines, ignore device labels • Bi-directional line between Cloud Server (in cloud) and Database server (in Office) (1) • Three bi-directional lines from Wristband to Cloud Server (in cloud) (1)	Do not award IoT server for cloud server Where devices have more than one label, mark from upper left. A pair of connecting lines with arrows at each end are interpreted as a single bi-directional line. Ignore any other directional lines	4



Question number	Answer	Additional guidance	Mark
2(a)	Award two marks for a linked explanation such as: • Menu (1) • Touch/Gesture-based (1) • GUI/Graphical User Interface (1) AND one of: • because it limits user choices/guides user to available options/buttons (1) • because it makes it harder to make a mistake/easier to use/user friendly (1) • because help (description/hover tags) can be provided (1) • because it works well for selection on a smartphone/small screen (1) • because it allows for the use of a virtual keyboard (1) • because it allows for easy navigation like tapping/swiping/scrolling(1)	Award marks independently Must refer to an interface type (I.e. menu, touch/gesture) Do not award haptic or voice as they are not appropriate to the scenario. They can still be awarded for explanation	2

Question number	Answer	Additional guidance	Mark
2(b)	Award one mark for each correct cell: • Corrective (1) • Perfective (1) • Corrective (1) • Adaptive (1)	Ignore other wording i.e maintenance	4

Question number	Answer	Additional guidance	Mark
2(c)(i)	Award up to two marks for a linked explanation such as: - Memory/storage is freed up/Takes less storage (1) because duplicate fields/data are removed (1) - Values cannot get out of sync (1) because duplicate fields/data are removed (from multiple tables) (1) - Reduces inconsistencies/increases consistency (1) because values cannot get out of sync (1) - Reports/Queries can be completed/Faster processing (1)	Both parts must make sense together.	2

Question number	Answer	Additional guidance	Mark
2(c)(ii)	Award one mark for each of: - Circle around validation column of email (1) - Yes/True/tick in primary key column of User ID (1) - Circle around data type column of mobile phone (1) - Decimal/float/real/currency in data type column of total purchases (1)	If more than a single item in Primary key column, mark from the top down. If more than two items circled, mark from top-left corner, across rows. Do not skip incorrect circles. Once two circles marked, then stop.	4

Name	Data type	Size	Primary key	Validation
Email	String	255		None required
User ID	Integer	32	Yes	None required
Mobile number	Integer	11		Length Digits only
Total spend	Decimal	8		None required

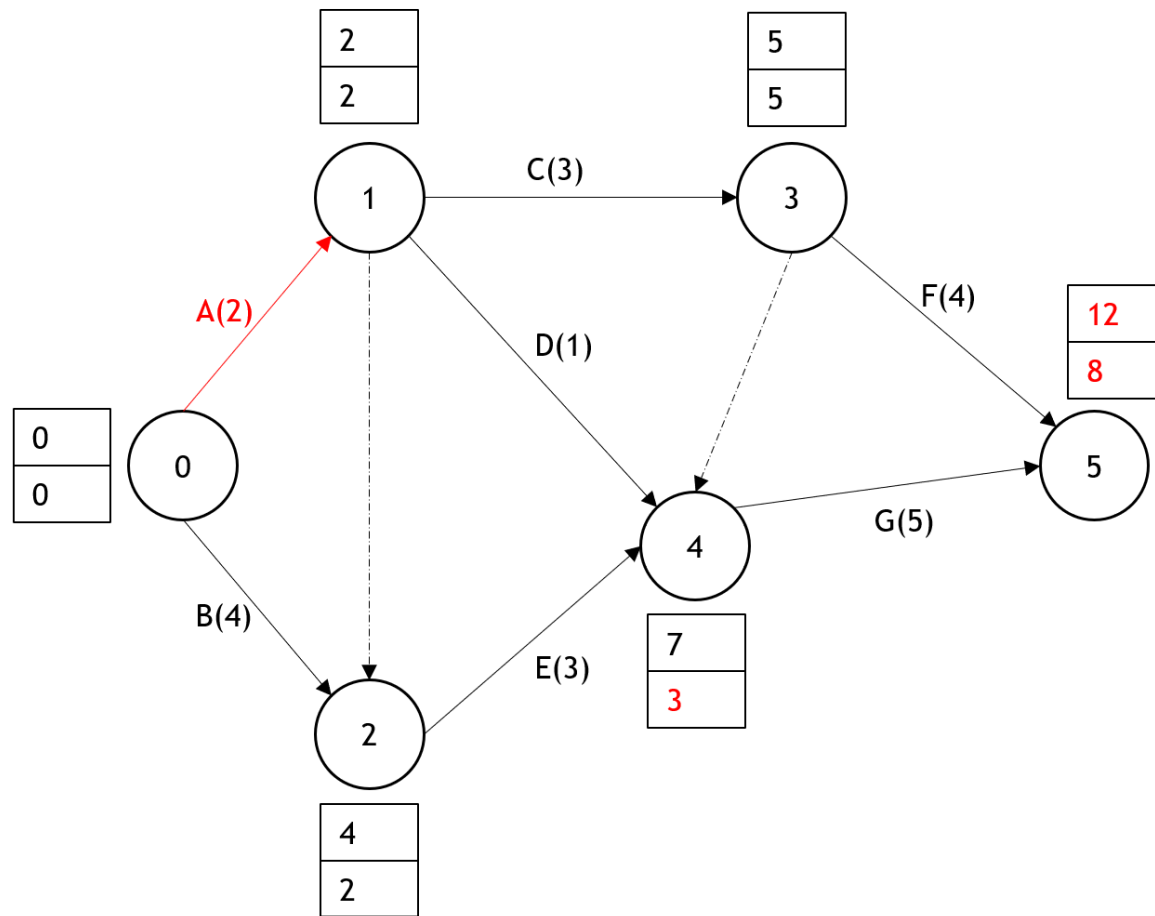
Question number	Answer	Additional guidance	Mark
3(a)	Award up to two marks for a linked explanation such as: • Reduces load on local machine/storage/computation/resources (1), because all operations take place in the cloud / use shared OS (1) • Portability (between different cloud platforms) (1), because the environment is part/inside of the container (1) • Improves security (1) because the applications on the host are isolated from each other within containers (1) • Quick application start-up/loading times (1), because only the required software is running in the container (1) • Easy to scale (1) because it is easy to bring another container online as needed (1)	No requirement to compare to virtualisation. Do not award benefits of cloud storage or cloud computing.	2

Question number	Answer	Additional guidance	Mark
3(b)	Award up to two marks for a linked explanation such as:	Both parts must make sense together.	2

	• The ability to recover from disaster/failure is increased (1) because the (complete) loss of all the data is unlikely, as it is spread (backup) across database machines/as one database can be used to rebuild the one that fails (1) • The availability of data will be improved (1) because if one database goes down, data can be retrieved from a different one (1) • The data access speed will be increased (1) because data can be retrieved from the copy closest to the requestor (1) • The performance of any one server will improve (1) because requests for data can be directed to different databases (to load balance) (1)		
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Question number	Answer	Additional guidance	Mark
3(c)	Award one mark for each correct box: • Symmetric ◦ Shared (1) ◦ Shared (1) • Asymmetric ◦ Destination's public (1) ◦ Destination's private (1)	Allow: • receiver/recipient for destination • same for shared Do not award common/public for shared. Do not award destination, public, or private alone for asymmetric Asymmetric keys must state destination's ownership of the keys.	4

Question number	Answer	Additional guidance	Mark
3(d)	Award one mark for any of the following, up to a maximum of six marks: Precedence table • Predecessor of F identified as C (1) • Predecessors of G identified as C, D, and E (1) Network diagram • Arrow labelled A(2) connecting node 0 to node 1, pointing to node 1 (1) • 3 in bottom box of node 4 (1) • 12 in top box of node 5 (1) • 8 in bottom box on node 5 (1)	(1) The line must have a directional arrow. Where more than one line has been drawn, do not award any.	6



ID	Duration	Predecessor
A	2	-
B	4	-
C	3	A
D	1	A
E	3	A,B
F	4	C
G	5	C, D, E

Question number	Indicative content	Mark
4a	Responses should be in the context of an interactive websites sharing historical datasets about infectious diseases. Intuitive HCI design • Symbols\Buttons, their meanings and behaviour ○ The search bar at the top uses the magnifying glass symbol, which is used in web pages the world over. That symbol, it's meaning, and what it does when pressed should be obvious to the user. ○ This is also true of the exit button/door symbol in the top right of the dashboard, universally expected location of the exit ○ Playback controls - Triangle, double bars, and looping arrow on timeline player should cause the timeline to play, pause, and rewind, as those symbols are familiar to video players on lots of devices. ○ The download, share, and full screen buttons, on the bar chart, conform to the familiar design seen on other websites and applications. Their operation is intuitive, as no further explanation is required. User experience • User actions should be logical, intuitive, and predictable actions ○ Clicking on a country, shown in the map, with the cursor icon, brings up an additional box giving further detail. This same action is available in productivity software, such as word processors and spreadsheets. Therefore, it is a logical and predictable action that needs no more direction to be shown on the page, which could detract from the information. • User must not have to think too much to master the interface ○ The use of familiar action buttons (exit, search, hover, reset) means that mastering the interface should not be a barrier to finding the information that the user needs. • User must not become frustrated and leave the site ○ Being able to use the search bar, which is just for the Group's website, means that the user should be able to find the information they need quickly, even if it is not displayed on the first dashboard. • Different ways of presenting information make for a better user experience ○ The use of a variety of visual elements, like the map and the bar charts, means that the same/different data can be displayed using mechanisms that most suit it. A map is very good for users who are focusing on gathering information about countries. The bar chart is very good for comparing values. • Visualisations/graphs/images convey lots of information very quickly in a concise manner	6

	○ The maps, charts, and images, like the dial, provide the user with concise information that has already been manipulated by the Infectious Disease Group. Quickly being able to see the information can help them make strategic decisions quicker. https://childmortality.org/ https://ourworldindata.org/search?q=tuberculosis https://ourworldindata.org/explorers/global-health?facet=none&country=OWID_WRL~CHN~ZAF~BRA~USA~GBR~IND~RWA&Health+Area=Infectious+diseases&Indicator=Malaria&Metric=Number+of+deaths&Source=IHME	
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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.

Example

They want to find the information they need, as quickly as possible. One way to achieve this is to provide a search and/or filtering facility on the page. For example, the ability to search just for tuberculosis will save the user time. The searching has been made intuitive on this mock-up, as the search bar appears at the top and uses the magnifying glass icon.

An intuitive interface means they will not have to think too much to master the interface. For example, a user will become frustrated if the action of a familiar icon, like a 'next' button is overridden with an unintuitive action, like going forward by two pages. On this page, it's quite clear that the exit button is in the right place (top right) and is an intuitive icon (going out a door).

Visualisations, such as infographics, charts, and maps, are a good way to provide an overview of lots of information in an easy to understand way. That means the user can quickly take in and understand a large amount of data. This mock-up has them in abundance. Some show range (current status) and others show comparisons (bar charts).

Users should not get frustrated and want to leave the web site before they find the information they need. The interactivity provided by the map, along with the playback of the timeline, should ensure the user is engaged.

Question number	Answer	Additional guidance	Mark
4(b)	Award one mark for each of: - Employee table (1) Single primary key in Employee table (empID) (1) - Project table (1) Single primary key in Project table (projID) (1) Contact table (1) - Primary key in Contact table (1) - Single key: contactID - Composite key: empID, telephone - Foreign key in Contact table (empID) (1) Work table (1) - Primary key in Work table (1) - Single key: workID - Composite key: empID, projID - Foreign key in Work table (empID) (1) - Foreign key in Work table (projID) (1) - Fully accurate 3rd normal form (1) - Employee table must include empName and postcode - Project table must include projName Contact table must include empID and telephone Work table must include empID and projID - Correct use of notation (brackets, underlined primary, asterisked foreign) Employee (<u>empID</u>, empName, postcode) Contact (<u>contactID</u>, empID*, telephone) OR Contact (empID*, <u>telephone</u>) Project (<u>projID</u>, projName) Work (<u>workID</u>, empID*, projID*) OR Work (empID*, <u>projID</u>*)	Do not award if more than the required number of primary/foreign keys are included in a table. Award a maximum of 11 marks if response is not given in parenthetical notation. RED text is what is expected, accept any other suitable naming i.e telephone for contact i.e. office for work Ignore additional fields in table as these are marked in MP12.	12

Question number	Indicative content	Mark
5	Responses should be in the context of FunFone, a national telecommunications company. Benefits • Synchronise marketing events ◦ Timing between events can be coordinated across channels (emails, radio, streaming services, social media), to provide more exposure ◦ Individual customers can be targeted via a preferred channel, rather than across all channels, to make customers feel valued ◦ A group of customers can be chosen to receive contact, reducing the potential for spamming customers • Buying trends ◦ Data collected about how rewards were earned/purchases lets FunFone analyse the behaviour of customers ◦ Data collected about how rewards are redeemed lets FunFone analyse the behaviour of customers ◦ Data collected about customers allow FunFone to see how often customers change phones or contracts, which can feed into marketing or upselling • Upsell products ◦ Monitoring of pay-as-you-go SIM usage could allow FunFone to identify which customers would benefit from upgrading to monthly/annual contracts ◦ Knowing which model of phone a customer owns could allow FunFone to identify which customers might be targets for upgrading their phones Drawbacks • Permission ◦ FunFone must ensure it obtains every customer's permission before storing/using their data • Operational issues (Security, Privacy, Compliance) ◦ FunFone must ensure that the collected data is stored within the guidelines of the prevailing legislation (Data Protection, General Data Protection, Privacy) ◦ There must be backup/restore policies in place to secure the data • Personnel ◦ Employees already in roles will need to be trained to use the CRM system to analyse the collected data Note	12

	The question states that the company already has a CRM, therefore infrastructure is not appropriate to the context.	
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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.

Example

A CRM contains all the information about customers, such as name, address, and purchases. It is used to track and monitor each customer's behaviour while using FunFone's products and services.

There are many benefits for FunFone. They can keep records of the different marketing events it puts out on different channels. Once it has a schedule, it can synchronise those events so that they follow on from each other, rather than overlapping. That will give them broad and continuous coverage, without annoying customers by spamming them.

FunFone can use the data collected from the loyalty scheme to see who is collecting the most/least and who is redeeming most/least. It gives them an opportunity to contact customers to promote reward collection, which will drive sales. FunFone can use the data collected to identify buying trends, such as how many people are buying the newest models of phones or one model back. They might find that people are buying refurbished phones rather than buying new.

They could analyse the pay-as-you-go SIM usage to identify customers to target for upselling to a contract. Identifying exactly which services a customer uses (text, data, calls) and mapping them to a contract could entice a customer to buy a different product.

However, there are some drawbacks to FunFone. They will need to ensure they obtain permission from their customers to collect and store data. There are many operational issues, such as security and compliance, that need to be addressed. The data must be stored under the rules of the local legislation, like data protection. FunFone must provide a way to backup and restore their data. They will have to train new employees to use the system.

Question number	Answer	Additional guidance	Mark																														
6	Award one mark for each correct cell: <table><tr><th>Label</th><th>Value</th></tr><tr><td>A</td><td>Student ID</td></tr><tr><td>B</td><td>Student's timetable</td></tr><tr><td>C</td><td>Room ID</td></tr><tr><td>D</td><td>(Classroom) telephone number</td></tr><tr><td>E</td><td>Number of seats required</td></tr><tr><td>F</td><td>Bus ID</td></tr><tr><td>G</td><td>Bus ID, trip details</td></tr><tr><td>H</td><td>Bus ID, problem (description)</td></tr><tr><td>I</td><td>Bus ID, problem (description)</td></tr><tr><td>J</td><td>Bus ID, status update</td></tr><tr><td>K</td><td>Start, Destination</td></tr><tr><td>L</td><td>Route plan</td></tr><tr><td>M</td><td>Current/GPS location</td></tr><tr><td>N</td><td>Next instruction</td></tr></table>	Label	Value	A	Student ID	B	Student's timetable	C	Room ID	D	(Classroom) telephone number	E	Number of seats required	F	Bus ID	G	Bus ID, trip details	H	Bus ID, problem (description)	I	Bus ID, problem (description)	J	Bus ID, status update	K	Start, Destination	L	Route plan	M	Current/GPS location	N	Next instruction		12
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