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Rewarding Learning

General Certificate of Secondary Education
2013

Information and Communication Technology (Full Course)

Unit 3: Understanding ICT Systems in Everyday Use and its Implication for Individuals, Organisations, Society and the Wider World

[GIT31]

THURSDAY 6 JUNE, MORNING

MARK SCHEME

General Marking Instructions

Introduction
Mark schemes are intended to ensure that the GCSE examinations are marked consistently and fairly. The mark schemes provide markers with an indication of the nature and range of candidates' responses likely to be worthy of credit. They also set out the criteria which they should apply in allocating marks to candidates' responses. The mark schemes should be read in conjunction with these general marking instructions.

Assessment Objectives
Below are the assessment objectives for GCSE ICT.

Candidates must:
- recall, select and communicate their knowledge and understanding of ICT;
- apply knowledge, understanding and skills to produce ICT-based solutions; and
- analyse, evaluate, make reasoned judgements and present conclusions.

Quality of candidates' responses
In marking the examination papers, examiners should be looking for a quality of response reflecting the level of maturity which may reasonably be expected of a 16-year-old which is the age at which the majority of candidates sit their GCSE examinations.

Flexibility in marking
Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which candidates may produce. In the event of unanticipated answers, examiners are expected to use their professional judgement to assess the validity of answers. If an answer is particularly problematic, then examiners should seek the guidance of the Supervising Examiner.

Positive marking
Examiners are encouraged to be positive in their marking, giving appropriate credit for what candidates know, understand and can do rather than penalising candidates for errors or omissions. Examiners should make use of the whole of the available mark range for any particular question and be prepared to award full marks for a response which is as good as might reasonably be expected of a 16-year-old GCSE candidate.

Awarding zero marks
Marks should only be awarded for valid responses and no marks should be awarded for an answer which is completely incorrect or inappropriate.

Types of mark schemes
Mark schemes for tasks or questions which require candidates to respond in extended written form are marked on the basis of levels of response which take account of the quality of written communication.

Other questions which require only short answers are marked on a point for point basis with marks awarded for each valid piece of information provided.

Levels of response
Tasks and questions requiring candidates to respond in extended writing are marked in terms of levels of response. In deciding which level of response to award, examiners should look for the 'best fit' bearing in mind that weakness in one area may be compensated for by strength in another.

In deciding which mark within a particular level to award to any response, examiners are expected to use their professional judgement. The following guidance is provided to assist examiners.

- **Threshold performance**: Response which just merits inclusion in the level and should be awarded a mark at or near the bottom of the range.

- **Intermediate performance**: Response which clearly merits inclusion in the level and should be awarded a mark at or near the middle of the range.

- **High performance**: Response which fully satisfies the level description and should be awarded a mark at or near the top of the range.

Marking calculations

In marking answers involving calculations, examiners should apply the 'own figure rule' so that candidates are not penalised more than once for a computational error.

Quality of written communication

Quality of written communication is taken into account in assessing candidates' responses to all tasks and questions that require them to respond in extended written form. These tasks and questions are marked on the basis of levels of response. The description for each level of response includes reference to the quality of written communication.

For conciseness, quality of written communication is distinguished within levels of response as follows:

Level 1: Quality of written communication is limited.
Level 2: Quality of written communication is satisfactory.
Level 3: Quality of written communication is of a good standard.

In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below:

Level 1 (Limited): The candidate makes only a limited attempt and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

Level 2 (Satisfactory): The candidate makes a reasonable attempt and use of an appropriate form and style of writing, supported with appropriate use of diagrams as required. Relevant material is organised with some clarity and coherence. There is some use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning evident.

Level 3 (Good): The candidate successfully selects and uses an appropriate form and style of writing, supported with effective use of diagrams where appropriate. Relevant material is organised with a good degree of clarity and coherence. There is good use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are of a sufficiently high standard to make meaning clear.

					AVAILABLE MARKS

1 **(a)** **C** A Wide Area Network [1]

(b) **A** Repetitive Strain Injury [1]

(c) **B** The Copyright, Designs and Patents Act [1]

(d) **C** Asymmetric Digital Subscriber Line. [1]

(e) **B** Icons, Menus, Pointers, Windows [1]

(f) **C** ROM can be read from but not written to [1]

(g) **D** RAM is volatile and the amount of RAM in a computer can affect its performance. [1]

(h) **B** is a standard layout for a document which can be reused [1]

(i) **C** A LAN is a Local Area Network, allows peripherals to be shared across and allows users to share data. [1]

(j) **A** It must be switched on to receive faxes and can transmit hand written documents. [1]

(k) **D** It provides itemised receipts and allows payments to be processed [1]

(l) **B** Automatic Teller Machine [1]

(m)

A Input	[1]
B Output	[1]

[2]   14

2 **(a)** **ONE** from:
SUM(H3:H8) [1]/ H3+H4+H5+H6+H7+H8[1]/ G9+E9 [1]   [1]

(b)

Formula	Tick(✓)
=IF(H3>100,"Yes", "No")	✓[1]
=IF(H3<100,"Yes", "No")	
=IF(H3=100, "No", "Yes")	

[1]

(c) The cell reference will not change when copied[1] only one cell needs to be changed to make changes to other cells [1]
if A12 **and** B15 mentioned in middle of range of cells [–1]   [2]

(d) A12 [1]:B15 [1]/Answers in range A10:I15 to include cells A12:B15   [2]

(e) **THREE** from:
B2/B3:B8 [1]; E2/E3:E8 [1]; H2/H3:H8 [1]
or
B2/B3 to B8 [1]; E2/E3 to E8 [1]; H2/H3 to H8 [1]
or
B2/B3 - B8 [1]; E2/E3 - E8 [1]; H2/H3 - H8 [1]   [3]

(f) The percentage amount of time that each person has worked [1]
Surname of each person [1]   [2]   11

3 (a) (i) Communicating on a network/online using sound and pictures (video)/
microphones and cameras [1]

(ii) High bandwidth is required [1] to ensure the quality of the
conference [1]/to transmit images and sound together [1]
e.g. no lag Not so you have a good connection [2]

(b) Any **two** from:
No travelling therefore no pollution [1]/Reduced carbon footprint [1]
Fuel is conserved/Less fuel/energy is used [1]
Emissions are reduced [1] [2]
Not less paper

(c) (i)

Statement	TRUE/FALSE
Teleworking is the use of the telephone to make sales to customers.	**FALSE**
Teleworking allows employees to work flexible hours.	TRUE [1]
Teleworker activity is more difficult for managers to monitor.	TRUE [1]
Teleworking allows for a lot of face-to-face contact between workers.	FALSE [1]

[3]

(ii) Level 0 [0]
Answer is not worthy of credit.

Level 1 ([1]–[2])
The candidate can be awarded [1] if they provide a response with suitable
SPG and suitable/reasonable context.

The candidate mentions **one** [1], **two** [2] or **three** impacts [3] or
describes **one** of the areas. The candidate makes limited use of spelling,
punctuation and grammar. The meaning of the text is not always clear.
The candidate demonstrates a limited form and style appropriate to the
question. The organisation of the answer is limited.

The candidate demonstrates some knowledge and understanding of the
impact of teleworking, but this is limited.

Level 2 ([3]–[4])
The candidate describes **two** of the areas. The candidate makes
satisfactory use of spelling, punctuation and grammar. The meaning of
the text is usually clear. The candidate demonstrates a satisfactory form
and style to the question. The organisation of the answer is satisfactory.

The candidate demonstrates satisfactory knowledge and understanding
of teleworking.

Level 3 ([5]–[6])
The candidate describes **three** of the areas. There is a good explanation
of each aspect. The candidate makes good use of spelling, punctuation
and grammar. The meaning of the text is always clear. The candidate
demonstrates good form and style appropriate to the question. The
organisation of the answer is good.

The candidate demonstrates good knowledge and understanding of teleworking. For example:

- Change in recruitment potential (from a local to a global market)/ distance from workplace does not matter.
- How employees could be trained by referring to communications technologies/specialist teleworking training.
- Evaluation of the economic impact of employing teleworkers and refers to for example, no travel expenses, smaller premises, lower overheads/cost of specialist equipment. [6]

14

4 **(a)** A network which is used within a building is called a **LAN**. Each computer on the network should have a **Network Interface Card** installed to allow the computer to send messages on the network. A **Switch** is a single connection point for a group of computers and is connected to the file server. The **Router** will share the Internet connection between computers on the network. [4]

(b) An agreed standard/set of rules (for sending/receiving/exchanging data) on a network [1]

5

5 **(a)** **Level 0 [0]**
Answer is not worthy of credit.

Level 1 ([1]–[2])
The candidate can be awarded [1] if they provide a response with suitable SPG and suitable/reasonable context.

The candidate states **one** [1] or **two** [2] principles or explains **one** or **two** principles. The candidate makes limited use of spelling, punctuation and grammar. The meaning of the text is not always clear. The candidate demonstrates a limited form and style appropriate to the question. The organisation of the answer is limited.

Level 2 ([3]–[4])
The candidate states correctly and explains **one** principle **and** (states another **or** explains another). The candidate makes satisfactory use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a satisfactory form and style appropriate to the question. The organisation of the answer is satisfactory.

Level 3 ([5]–[6])
The candidate states correctly and explains both principles. The candidate makes good use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a good form and style appropriate to the question. The organisation of the answer is good.

Answers may include:

Two principles of the Data Protection Act
What the company should do to comply with the principles in each case
- Data is processed lawfully/fairly
- Data must only be used for the purposes specified/selected (must name purpose)

- Data must be kept no longer than necessary
- Data must be stored securely
- Data must not be circulated outside eu
- Data must be accurate and up to date
- Data must be held in accordance with the rights of the data subject
- Data should be adequate and relevant for its intended purpose [6]

(b)

Statement	Tick (✓)
The Data Subject is the person who is responsible for the security of data.	
The Data Subject is the person about whom the data is held.	✓
The Information Commissioner is the person responsible for recording data in an organisation.	
The Information Commissioner is the person responsible for making sure companies follow the Data Protection Act.	✓

[2]

8

6

Data	Validation	Reason for choice
(a) Surname	Presence check [1]	To ensure that this field is not left blank [1]
(b) Budget	Type check [1]	To ensure that the budget is entered in pounds/currency/money. [1]
(c) Age	Range check [1]	To ensure all those registering are in the age range 10–18 (must mention age range) [1]
(d) Password	Length check [1]	To ensure the password is at least 8 characters in length [1]

[8]   8

7 (a) Level 0 [0]
Answer is not worthy of credit.

Level 1 ([1]–[2])
The candidate can obtain [1] if they provide a response with suitable SPG and suitable/reasonable context.

The candidate mentions **one** [1] or **two** [2] current trends. The candidate makes limited use of spelling, punctuation and grammar. The meaning of the text is not always clear. The candidate demonstrates a limited form and style appropriate to the question. The organisation of the answer is limited.

Level 2 ([3]–[4])
The candidate describes **one** trend. The candidate makes satisfactory use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a satisfactory form and style appropriate to the question. The organisation of the answer is satisfactory.

–

Level 3 ([5]–[6])
The candidate describes two trends (one in each area). The candidate makes good use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a good form and style appropriate to the question. The organisation of the answer is good.
Answers may include:
- Additional features online, e.g. online leaderboards
- High resolution graphics
- More userfriendly interfaces e.g. headsets and peripherals
- Purchase of additional features online
- The impact of increasing processing power on the gaming
- Communal game playing/reference to evolving game genres
- Introduction of portable devices
- More communication
- Wider variety of controllers
- Multifunctionality of the console (e.g. browse Internet, watch DVD)
- The impact of increasing availability of Internet connectivity and high bandwidth on the gaming industry
- Multiplayer platform [6]

(b) **(i)** **TWO** from:
Plan/layout of pages in an application/game [1] showing how game will work [1] used before development [1] [2]

(ii) **TWO** from:
Animation/graphic/sprite [1]
Rules/instructions/help [1]
Scoring mechanism/lives [1]
Controls [1]
Feedback/sound/music [1]
Interaction [1]
Cheats [1]
Levels [1]
Timer [1] [2]   10

8 **(a)** Optical Mark Recognition/reader [1]

(b) **TWO** from: reduced human error [1]/more accurate **data entry** (must be included) [1]
faster input of (large amounts of) data [1]/quicker processing of results [1] [2]

(c) **(i)** **TWO** from:
Product ID/code/number or item ID/code/number [1]
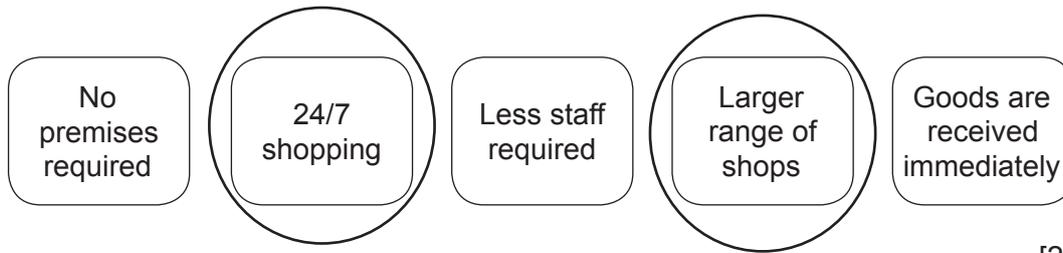Manufacturer code [1]
Country of origin [1]
Check digit [1] [2]

(ii) The barcode on the product is damaged/removed/dirty [1]
The barcode does not exist in the database [1] [1]   6

9 **(a)**

| No premises required | 24/7 shopping | Less staff required | Larger range of shops | Goods are received immediately |

(24/7 shopping and Larger range of shops are circled)

[2]

(b) TWO from:
Card Number/numbers on the card [1] Name on Card [1] Valid from Date [1] End Date/Expiry Date [1] Issue Number [1] Card Type [1] security code/ security trip number [1]   [2]

(c) Level 0 [0]
Answer is not worthy of credit.

Level 1 ([1]–[2])
The candidate can obtain [1] if they provide response with suitable SPG and suitable/reasonable context.

The candidate mentions **one** [1] or **two** [2] of the areas in context. The candidate makes limited use of spelling, punctuation and grammar. The meaning of the text is not always clear. The candidate displays a limited form and style appropriate to the question. The organisation of the answer is limited.

Level 2 ([3]–[4])
The candidate describes briefly one or two of the areas. The candidate makes satisfactory use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate displays a satisfactory form and style appropriate to the question. The organisation of the answer is satisfactory.

Level 3 ([5]–[6])
The candidate describes fully one area or describes both areas. The candidate makes good use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate displays a good form and style appropriate to the question. The organisation of the answer is good.

Answers may include:

- Secure Electronic Transaction used when credit card transactions are being processed
- SET keeps details confidential and prevents fraud
- Processing of data in scrambled format protects data
- Encryption protects data in transit
- Encrypted data cannot be understood by unauthorised individuals   [6]

10

10 (a) (i)

Name	House number	Street	Town/City	Postcode
Mr Joe Watson	1	High Street	Belfast	BT4 6TD
Mr Jim Donald	31	Mary Street	Newry	BT24 6TL
Miss Amy White	52	West Street	Armagh	BT62 8TY
Ms Caitlin Rooney	2a	Church Walk	Lisburn	BT18 5FG

[1]

(ii) ONE from:
Name/House number/Street/(Town/City) must be the 2 words/
Postcode [1]

(b) Split the name field into 2/3 fields/split the name field into 2/3 separate fields/
have 2/3 fields instead of one [1] **not** sort into alphabetic order
The database could be searched/sorted on surname/forename/title [1]   [2]

(c) TWO from:
Query [1]
Print/Print Preview [1]
Report [1]   [2]

(d) A field which uniquely identifies a record   [1]

(e) (i)

Field Name	Data Type
Rental No.	**Auto-number/number/numeric**
Member ID	**String/Text/Character/Alphanumeric**
Price per night	**Currency**

[3]

(ii) To link files/tables [1]   [1]   11

11 (a) (i)

Rank	Storage Device
1.	External Hard Drive
2.	USB Memory Stick
3.	CD-R

[3]

(ii)

Storage Device	Capacity	Type of media
USB Memory Stick	2 Gigabyte	*Flash*
External Hard Drive	1 Terabyte	*Magnetic*
CD-R	650 Megabyte	*Optical*

[3]

(b)

Statement	Tick (✓)
Both DVD-R and DVD-RW are read only..	
DVD-R can be written to only once.	✓
DVD-RW can be written to many times..	✓
Both DVD-R and DVD-RW can be written to only once	

[2]

8

12 (a)

Search Term	Tick (✓)
"Spanish holidays"	
Spanish Holidays + Hotels	
Costa Blanca + Benidorm	
Costa Blanca + Benidorm + Hotels	✓
Costa Blanca + Benidorm + Apartments not Hotels	

[1]

(b) Refine the search criteria [1]/use advanced search/add more criteria/use complex logic [1]

(c)

Domain	Top level Domains
GOVERNMENT	**.gov**
ORGANISATIONS	**.org**
COMMERCIAL ORGANISATIONS	**.com**
SCHOOL-COLLEGE	**.ac**

[3]

5

13 (a)

Term	Definition
Hyperlinks	Included on web pages to allow users to navigate from one web page to another
Hotspots	An area on a graphic which can be used to navigate from one page to another
HTML	The language used to create web pages

[3]

(b) **Level 0 [0]**
Answer is not worthy of credit.

Level 1 ([1]–[2])
The candidate can obtain [1] if they provide a response with suitable SPG and suitable/reasonable context.

The candidate mentions **one** [1] or **two** [2] or **three** [2] or discusses one of the areas. The candidate makes limited use of spelling, punctuation and grammar. The meaning of the text is not always clear. The candidate demonstrates a limited form and style appropriate to the question and the organisation of the answer is limited.

Level 2 ([3]–[4])
The candidate discusses **two** of the areas. The candidate makes satisfactory use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a satisfactory form and style appropriate to the question. The organisation of the answer is satisfactory.

Level 3 ([5]–[6])
The candidate discusses three of the areas. There is a good explanation of each aspect. The candidate makes good use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a good form and style appropriate to the question. The organisation of the answer is good.

Answers may include:

• Smaller images better performance
• Consistent navigation required/move from one page to another
• Improved presentation/interactivity/example of multimedia   [6]   9

14 (a)

Tool	Tick (✓)
Timings	
Buttons	✓
Hyperlinks	✓
Master slide	
Templates	

[2]

(b) **Level 0 [0]**
Answer is not worthy of credit

Level 1 ([1]–[2])
The candidate can obtain [1] if they provide a response with suitable SPG and suitable/reasonable context.

The candidate mentions **one** [1], **two** [2] or **three** [2] or describes one test. The candidate makes limited use of spelling, punctuation and grammar. The meaning of the text is not always clear. The candidate demonstrates a limited form and style appropriate to the question. The organisation of the answer is limited.

Level 2 ([3]–[4])
The candidate describes **two** tests. The candidate makes satisfactory use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a satisfactory form and style appropriate to the question. The organisation of the answer is satisfactory.

Level 3 ([5]–[6])
The candidate describes **three** tests. There is a good explanation of each aspect. The candidate makes good use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a good form and style appropriate to the question. The organisation of the answer is good.

Answers may include:-

Testing
Ensure in correct sequence – play thorough presentation and compare to storyboard
Ensure all links are working – click on action buttons/hyperlinks
Ensure all animations play – play through each slide in turn
Ensure all sound files are working – click on audio link to test
Ensure all multimedia elements play in correct sequence – play through each slide in turn [6]
Not SPG of content of presentation.

8

15 (a)

Activity	Input/Processing/Output
Temperature is compared to a range of values	Processing
Heating systems are turned ON/OFF	Output
Temperature is read using sensors	Input

[3]

(b)

Humidity (Motion) Temperature

Sound (Pressure)

[2]

(c)

Description	Tick (✓)
Washing machine cycle is selected using a dial on the washing machine	
The water temperature increases until it reaches the temperature level chosen	✓
The water level is recorded by a moisture sensor inside the drum	

[1] 6

16 (a) (i) Any **one** from:
Crop/Trim/cut/description of process [1]

(ii) Any **one** from:
Increase/decrease sound level [1]
Mix sound tracks [1]
Named example of available effects acceptable , e.g. fade in/
fade out/panning or pan/add bass [1]

(b) Any **one** from:
Transitions or example of [1]
Film effects or example of [1]
Timeline – allows reordering of movie clips [1] [1]

(c) Reference to size of movie [1] plus discussion
e.g. take too long to download web page containing movie [1]
e.g. need large bandwidth to download movie [1]
e.g. movie will start/stop when playing over internet [1] [2] 5

17 (a)

Statement	Tick (✓)
Information is raw facts and figures that have not been given a meaning	
Information can be produced by processing raw data	✓
Information is automatically encrypted when it is produced	
Information is raw facts and figures that have been given a context	✓

[2]

(b) **Font:**
Any **one** from
Consistent font [1]
More appropriate font [1]

Tick Boxes:
Any **one** from:
Could provide options for the question about lunches/school canteen [1]
Could provide options for the question about travel [1]
Limiting options for data entry [1]

Positioning of text:
Any **one** from
The fields are not in the correct order [1]
General layout of the form could be improved [1]
Comments about alignment spacing [1]

Instructions:
Any **one** from
Give instructions on how to write DOB [1]
Give instructions to say e.g. the school will complete the Pupil Number field [1]
(must give examples of how instructions relate to form elements) [4]

6

18 (a) Any **one** from:
Not suitable for lengthy responses [1]
Discussion threads cannot be developed or followed [1]
Difficult to collaborate on single document/No storage facility for document [1]
Students not online would need access to archived/past conversation [1]
Need everyone online at same time [1] [1]

(b) Bulletin boards are not **interactive**/offline. [1] Not everyone in the group has to be **online** [1] at the same time to take part in the discussion. Users can comment on the article and read the **replies** [1] from other group members at anytime. [3]

(c) Voice Over Internet Protocol [1]
Allows users to make telephone calls over internet/broadband/online[1]/Calls made from computer to computer [1]/Cheaper than using telephone [1]/
Use headphones/microphone/webcam [1]
e.g. skype [1] [2]

6

19 (a) 100_0030 [1]/gif image file [1]
gif file formats support animation/others don't support animation [1]   [2]

(b) (i) Increase download time   [1]

(ii)

File Types	Tick (✓)
JPEG	✓
TIFF	
MIDI	

[1]

(c) CSV   (AVI)   WAV   [1]

(d) Any **two** from:
Can edit individual pixels [1]
High quality images [1]   [2]

(e) Vector based graphics are made up of **objects** [1]
The image quality does not depend on **resolution** [1]
Vector based graphics can be **resized** without loss of quality [1]   [3]   10

20 (a) Level 0 [0]
Answer is not worthy of credit.

Level 1 ([1]–[2])
The candidate can be awarded [1] if they provide a response with suitable SPG and a suitable/reasonable context.

The candidate makes limited use of specialist terms. Application of knowledge to the question context, if present, is very limited. The candidate makes limited use of spelling, punctuation and grammar. The meaning of the text is not always clear. The candidate demonstrates a limited form and style appropriate to the question.
The organisation of the answer is limited.
The candidate demonstrates some knowledge and understanding of the technologies identified, but this is limited.

For example, the candidate:
Gives a brief justification.
or
Lists 1 or 2 disadvantage of either technology.

Level 2 ([3]–[4])
The candidate makes satisfactory use of specialist terms. Application of this knowledge to the question context is satisfactory. The candidate makes satisfactory use of spelling, punctuation and grammar. The meaning of the text is usually clear.
The candidate demonstrates a satisfactory form and style appropriate to the question.
The organisation of the answer is satisfactory.
The candidate demonstrates satisfactory knowledge and understanding of the technologies.

For example, the candidate:
Gives a brief justification
AND
Lists 2 or 3 disadvantages of either technology

Level 3 ([5]–[6])
The candidate makes good use of specialist terms. Application of this knowledge to the question context is good. The candidate makes good use of spelling, punctuation and grammar. The meaning of the text is usually clear. The candidate demonstrates a good form and style appropriate to the question and clear evaluation of how features affect user interaction is present.
The organisation of the answer is good.
The candidate demonstrates good knowledge and understanding of the technologies.

For example, the candidate:
Gives a full and accurate justification
AND
Lists 2 or 3 disadvantages of either technology.
Answers may contain references to:-
Wi-Fi
Limited range
Black spots
Security
Interference
Can be affected by weather conditions/performance factors
May incur a cost

3G
Can be expensive for data transfer
High demand on battery
Can't complete all tasks that require high bandwidth
Performance affected by mobile signal strength
Download time affected by network demand   [6]

(b)

Definition	Mobile Phone Feature
Allows users to send messages containing images to other users	MMS
Allows users to send and receive calls whilst in another country	Roaming
Allows users to make interactive calls containing image and sound	Video calling
Allows users to send a message containing text only to other users	SMS

[4]   10

21

Definition	Term
Software designed to protect a network from hacking via the Internet	FIREWALL
A document format which can be made read only	PDF
A software tool designed to deliver courses online	VIRTUAL LEARNING ENVIRONMENT
A type of cable which sends data using light pulses	FIBRE OPTIC
An input device which consists of a flat surface upon which the user draws using an attached stylus	GRAPHICS DIGITISER/ TOUCH SCREEN
Small capacity memory which operates at high speed	CACHE
The ability to transfer data from one system or software application to another without having to re-enter the data	DATA PORTABILITY
A programme designed to damage a computer system	VIRUS
A wireless technology which can be used to connect a headset to a mobile phone	BLUETOOTH
A copy of data currently held on a computer system	BACKUP

[10]   10

Total   **180**