



General Certificate of Secondary Education  
2011

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**Information and Communication Technology**

Full Course

Paper 2

Higher Tier

[G5804]

**THURSDAY 16 JUNE, AFTERNOON**

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**MARK  
SCHEME**

1 (a)

Student ID	Examination Code
1001	GCSE03
1001	GCSE05
1003	GCSE01
1000	GCSE01
1005	GCSE06
1002	GCSE06

Order of presentation is unimportant

[4]

- (b) (i) Data is raw facts and figures [1]  
 Information is data that has been processed/given a meaning [1] [2]
- (ii)

AVAILABLE MARKS

Tablename	STUDENT	STUDENT	STUDENT-EXAMINATION	EXAMINATION	STUDENT
Fieldname	Forename [1]	Surname	Examination Code	Examination Name [1]	Gender [1]
Criteria				ICT [1]	=“F”

- (c) Two from:  
 Relational database tables are linked together (using relationships) [1]/Relationships are made between fields in the tables [1]/Searching and sorting is more efficient(faster) [1]/Relational databases provide a system for managing access to data [1]/Relational databases have less data redundancy/more integrity(data is more likely to be correct) [1]  
 Has more than one table [1]
- Flat files repeat data [1]/tend to be larger in size [1]/sorting and searching is less efficient [1] [2]
- Flat file is one table/table on its own [1]

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2 (a) (i) Optical Mark Recognition [1]/Reader [1] [1]

(ii) One from:

National Lottery (NOT lottery tickets) [1]/Multiple choice examinations/Reading/Marking Multiple Choice [1]  
School register/Attendance [1] [1]

(iii) Two from:

Faster processing of documents/data/faster results because of speed of input/Faster than typing [1]  
Less mistakes/Improved accuracy/No Human Error [1]  
Minimal training required [1]  
Batch entry of data [2] [2]

(b) Use the OCR function on the scanner/scan the document [1]/save or edit the document electronically/convert to electronic/digital/text [1] [2]

(c) The ability to transfer data [1]  
From one system/software to another [1]  
without having to re-enter the data [1]  
The file can be opened with more than one application [1]  
Accept statement on compatibility of systems [1] [2]

(d)

File type	Meaning	Compressed?
RTF	Rich Text Format	No
JPEG	Joint Photographic Experts Group [1]	YES [1]
TXT	TEXT [1]	NO [1]
MPEG	Moving Pictures Experts Group [1]	YES [1]

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MARKS

- 3 (a) (i) One from:**  
 To monitor order/purchase history [1]/to check credit available [1]/  
 to check payments/bills [1] [1]
- (ii) One from:**  
 To check/track the status of a current order [1] to check/track  
 delivery/dispatch of a current order [1] [1]
- (b) Deliveries – one from:**  
 To check delivery costs [1]  
 To check the length of time a delivery could take [1]  
 To check if special delivery is available [1]  
 To check where the company delivers to [1]
- Returns – one from:**  
 To check the returns policy [1]  
 To find out the Returns address [1]  
 To find out how to return items [1] [2]
- (c) (i) One from:**  
 She cannot try them on before buying them/they may not fit [1]/  
 Damaged [1]/Not the same as image [1] [1]
- (ii) Two from:**  
 Larger/worldwide customer base [1]  
 Immediate communication with customers [1]  
 Can sell 24 × 7 [1]  
 Less overheads [1]/less staff [1]/less (no) premises [1]  
 Less money in stock [1]  
 Online database of customers can be maintained [1]  
 Easy updating of product information [1]  
 Cheaper advertising via website [1] [2]
- 4 (a) Two from:**  
 Receiver does not have to present [1]  
 Flexible – can be sent/received anytime [1]  
 Saves paper/No paper – [1]/Environmentally friendly [1]  
 Instant delivery of mail [1]  
 Cheaper than ordinary mail [1]/telephone [1]/fax [1]  
 Filtering of email can be done [1]  
 Attachments can be sent [1]  
 Emails can be sent securely [1]  
 Emails can be sent more widely to patients (multiple emails/  
 multiple people) [1] [2]
- (b) So that he can receive handwritten/signed documents/drawings [1]/  
 No risk from viruses [1]/can be used to send/receive information  
 when people do not have email [1]/can be used when the Internet is  
 down [1] [1]**

- (c) **Two** from:  
 Information about appointment/patient details [1]  
 Reports on patients missing appointments/cancelled appointments/  
 available appointments [1]  
 Busiest doctors/peak times [1]  
 Overall time spent with patients [1]  
 Number of appointments per patient/Number of appointments per  
 day [1] [2]

(d) (i)

Statement	Tick (✓)
SMS means Short Message Service	✓
SMS can only be sent using a mobile phone	
SMS can be received when a call is in progress	✓
SMS allows users to send photographs	

[2]

- (ii) Any **one** from:  
 May not have all patient numbers [1]  
 Patients may not have the right technology [1]  
 May not use it frequently [1]  
 Poor eye sight [1]  
 Not IT literate [1] [1]

(e) (i) Personal Digital Assistant [1] [1]

- (ii) **Two** from:  
 Internet [1]  
 Internet applications [1] (accept 2 internet applications)  
 Email [1]  
 Maps [1]  
 GPS services[1] [2]

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5 (a) (i) Asymmetrical Digital Subscriber Line [1]

- (ii) Any **one** from:  
 Faster download speed [1], connection can be shared by many  
 people at same time [1]  
 Higher/wider/larger bandwidth [1] [1]

			AVAILABLE MARKS
<p><b>(b)</b> Any <b>one</b> from:            Black spots [1]            Concerns about health [1]            Security/hacking [1]            Excessive demand on bandwidth might slow down data transmission [1]</p>	[1]		
<p><b>(c)</b> Any <b>two</b> from:            Connects two networks [1]            forwards data [1]            determines best route for data [1]            distributes data around a network [1]            used to share an Internet connection [1]</p>	[2]		
<p><b>(d)</b> Any <b>two</b> from:            Email [1]            Webspaces [1] user help [1] filtering/parental control [1]            Firewall [1] (virus protection)/anti-virus [1]            Variety of Bandwidth options [1]            Junkmail/Pop-up blocker [1]</p>	[2]		
<p><b>(e) (i)</b> Any <b>one</b> from:            Uses light (to transmit data) [1]            glass/plastic cable [1]</p>	[1]		
<p><b>(ii)</b> Any <b>one</b> from:            Higher bandwidth [1]            faster transmission of data [1]            less interference [1]            more secure [1]</p>	[1]		
<p><b>(iii)</b> Expensive to install/Set-up [1]            Cable is expensive [1]            Specialist installation required [1]</p>	[1]		
<p><b>6 (a) (i)</b> Any <b>two</b> from:            Difficult to monitor staff [1]            Difficult to help staff if they are having problems [1]            Has to supply them with (expensive) equipment [1]            May have to pay part of their bills, e.g. Internet, telephone, electricity [1]            Less security of data files [1]            Technology failure [1]</p>	[2]		
<p><b>(ii)</b> Any <b>two</b> from:            No social interaction with colleagues/No teamwork [1]            Difficult to get work/life balance [1]            Never leave work environment [1]            Too many distractions [1]</p>	[2]		
			10

(b)

Method of communication	Tick (✓)
Instant messaging	✓
SMS	
Video conferencing	✓
Facsimile	
Email	
MMS	

[2]

(c)

Job	Tick (✓)
Computer programmer	
Help desk operator	
Hardware designer	
ICT technician	✓

[1]

AVAILABLE  
MARKS

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- 7 (a) Any **three** from:  
RSI [1], Back Strain [1], Neck Strain [1], Eye strain [1], carpal tunnel syndrome [1], obesity [1]/headaches [1] [3]
- (b) Any **two** from:  
Take regular breaks [1], adjustable chair [1], use screen filters [1], ergonomic mouse/keyboard [1], foot rest [1], wrist rest [1], appropriate lighting [1], tilting screen/adjustable screen/eye level/distance from screen [1] [2]
- (c) Any **two** from:  
No trailing cables [1]  
No food/No drinks [1]  
Uncluttered work area [1]  
Safety test equipment/Use equipment in line with rules/instructions [1]  
No over loading of sockets [1]  
Switch off when not in use [1] [2]

7

- 8 (a) Faster processing of data/updating/merging [1]  
Masterfile can be updated quicker [1]  
Don't waste time searching for records [1]  
Only have to go through transaction file once to update masterfile [1] [1]

(b)

Changes to the customer records	Tick (✓)
Customer number	
Previous meter reading	✓
Customer address	
Last bill total	✓
Customer name	

[2]

- (c) Any **two** from:  
Data Capture forms/Turn around documents [1]/OMR form [1]  
PDA/HHT [1]  
(Hand Held Terminal/Computer) [2]
- (d) Any **one** from:  
Not high enough quality print out [1]  
Expensive for large volume printing [1]  
Too slow for high volume printing [1]  
Need explanation [1]



			AVAILABLE MARKS
(e)	Any <b>one</b> from: Saves paper/environmentally friendly [1] May be more likely to pay bill online immediately [1] Bills can get lost in the post [1] Saves on cost of postage/paper [1]	[1]	
(f)	Any <b>two</b> from: Draw on processing power [1] Can negatively impact on performance of system [1] Delay between collection of data and processing of data [1]	[2]	
(g)	Any <b>one</b> from: Payroll/Attendance	[1]	
(h)	Data entered by (two people)/twice/double entry [1] Two data values compared [1]/Checked for similarities/mistakes [1] Don't match [1] Error reported [1] proof reading [1] Explanation of proof-reading process [1]	[2]	12
9	(a) Any <b>one</b> from: Less cost [1]/safer for trainees [1]/extreme conditions can be simulated [1] monitor performance [1] cannot cause damage to equipment [1] real life experience [1]	[1]	
	(b) Any <b>two</b> from: Not all factors taken into consideration [1] Expensive to design/Implement/Set-up [1]	[2]	
	(c) Any <b>one</b> from: Can take a virtual tour [1] Giving a realistic view of the building [1] Can change parts of design and test impact [1]	[1]	
	(d) Any <b>one</b> from: Testing/simulating impact of illness/treatment/operation [1] Testing medicines and their impact [1] Helping doctors experience illness [1] Demonstrate procedures	[1]	
	(e) Any <b>two</b> from: HMD (Head Mounted Devices)/Headset/VR Visor/Helmet/Visor/ Screen [1] gloves [1] Tracking devices/Joysticks/Controller/Balance Board Bodysuits/Clothing with pressure points [1]	[2]	

(f) Any **two** from:

- virtual reality provides a real life experience [1]
- additional hardware is used with virtual reality systems [1]
- virtual reality systems require a lot of processing power [1]
- Simulation models a real life situation [1]
- VR allows interaction [1]
- Simulations show you/predict what could happen [1]
- VR lets you control the situation [1]
- Simulations put values into models [1]

[2]

AVAILABLE  
MARKS

9

10 The UK is undergoing a massive changeover to Digital TV

(a) Any **three** from:

- Variety of packages available [1]
- On demand TV [1]
- More channels [1]
- Better quality image/sound/HD TV [1]
- Play games [1]
- It is interactive [1]
- You can send emails [1]/Internet services/Connection [1]
- Includes radio channels [1]
- You can lock undesirable channels [1]
- You can program channels to come on automatically/EPG (Electronic Program Guide) [1]
- Record and watch at the same time [1]

[3]

(b) Disadvantages to TV companies – Any **one** from:

- Cost of hardware for changeover [1]
- Increased cost of subscriptions – (may lose customers) [1]
- Increased cost of transmission (via digital communication links) [1] – need to lease or buy new communication links [1]
- More competition [1]

Reluctance of customer – Any **two** from:

- Might not want to purchase new TV with digital box [1]
- Cost of installation/subscription [1]/affordability [1]
- May be happy with analogue TV [1]
- Might not know how to use digital TV [1]
- Don't want more channels/feel they won't view all channels [1]
- Feeling that analogue is more reliable/mistrust of technology [1]

[3]

6

Total

95

QWC

5

**Total**

**100**

The assessment of quality of written communication.

Marks to be allocated for QWC in one of two ways.

Where QWC is to be allocated across 2 marks, the following criteria must be used:

- [2] Accurate spelling and punctuation. Some specialist terms used.
- [1] Reasonably accurate spelling and punctuation. Limited range of specialist terms used.
- [0] Question not attempted.

Where QWC is to be allocated across 3 marks, the following criteria must be used:

- [3] Highly accurate spelling and punctuation. A good range of technical terms used.
- [2] Accurate spelling and punctuation. Some technical terms used.
- [1] Reasonably accurate spelling and punctuation. Limited range of technical terms used.
- [0] Question not attempted.