Cambridge International Examinations
Cambridge International Advanced Subsidiary and Advanced Level

APPLIED INFORMATION & COMMUNICATION TECHNOLOGY	**9713/12**
Paper 1 Written A	**March 2017**
MARK SCHEME	
Maximum Mark: 80	

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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This document consists of **8** printed pages.

Question	Answer		Marks
1	Flexible hours means working less hours every day.		**4**
	Workers who work part time earn more than full time workers.		
	Flexible hours involves working the same number of hours as a normal worker.	✓	
	Job sharing never involves workers communicating with each other.		
	Part-time means working fewer hours than a full-time worker.	✓	
	Workers never get ill working flexible hours.		
	Job-sharing can involve working fewer days than normal.	✓	
	Full-time workers work harder than part-time workers.		
	Job sharing involves two workers doing a job that would normally be done by one worker.	✓	
	Flexible hours involves working whenever you want to.		

Question	Answer		Marks
2	Programmers can choose to work off peak hours as travelling to work outside peak times is less stressful.		**4**
	Programmers tend to be more content and have greater productivity.	✓	
	It is difficult to arrange meeting times to suit all workers.		
	If programmers stay late to finish a job, they can take time off at a later date.		
	Easier to allow for programmers' personal needs which leads to a reduction in absenteeism/ improved punctuality.	✓	
	The company saves money on utility bills.		
	The company is more likely to retain staff so don't have to spend money on retraining.	✓	
	The company can save money as they rent fewer offices.		
	It is easier for the company to organise training sessions.		
	Working flexible hours would appeal to many programmers so it helps future recruitment.	✓	

Question	Answer	Marks
3	*Four* from: Product code would be better as a bar code, so a bar code reader would be needed If data needs to be input quickly then bar code reader/QR code reader may be better method If cost is no object and data needs to be input quickly then RFID chip reader may be more suitable If there is a large volume of data to be input, keyboard may not be suitable If product numbers have to be selected from a menu, then a mouse would be appropriate If the number of products is limited, then touch screen/concept keyboard may be more appropriate	4

Question	Answer	Marks
4	*Eight* from: Phased implementation involves implementing one part of the system while rest of system remains unchanged/implementing system part by part Phased is cheaper than parallel running as you do not employ two complete sets of workers With phased if there is a problem with the new system; you still have bulk of the old system to fall back on unlike direct changeover Training can be gradual in parallel running and phased implementation unlike direct changeover Changes can be made if problems occur with phased and parallel unlike direct changeover Phased is a slower method of implementation than direct changeover Parallel running involves running the old system alongside the new system If there is a problem with the new system; you still have the old system as a backup unlike phased implementation/direct changeover/pilot running Pilot running involves running the new system in one branch of the organisation whilst old system still operates in other branches With pilot running, if there is a problem with the new system it only affects one branch unlike direct changeover Direct changeover – involves replacing the old system with the new system all in one go Direct is cheaper than parallel running as you do not have to employ two sets of workers Direct is a quicker method as there is no delay waiting for bugs to be fixed unlike other methods/benefits of the new system become apparent immediately unlike other methods With direct changeover, if there is a problem you do not have any of the old system to fall back on unlike other methods	8

Question	Answer	Marks
5	***Five*** *from:* It needs to be as simple as possible/easy to use/read Screen output should not contain any extra material other than that required Each screen of output must have a consistent theme The user should not get confused by changing appearances Instructions on how to navigate between screens Should be easy to navigate from screen to screen Need to consider who is going to use it The formats need to be relevant to the output produced Needs to be attractive to look at Needs to limit the potential for inaccurate input Should ask relevant questions only Form should not be overly long/take too long to complete	**5**

Question	Answer	Marks
6(a)	***Five*** *from:* Limited number of characters from password are asked for… Memorable information such as mother's maiden name/favourite place/phone number/date of birth Data is encrypted allowing only users/computers with the key to decipher it Provide customers with anti spyware to detect spyware/keylogging software TANs – passwords which are sent by post/email and are used once only Different characters from password are asked for at each log on… …leading to hacker not being able to use part of password already intercepted Two factor authentication – customer inserts card into chip and pin device and types in PIN and a pass number is produced… …pass number changes each time of use User can be timed out after a period of inactivity preventing another person using the site	**5**

Question	Answer	Marks
6(b)	***Eight** from:* Single password not considered by most banks to be sufficient protection TANs only have a few minutes validity, reducing time hacker has to intercept it Hacker might be able to intercept email/SMS *Limited number of characters from password are asked for:* Hacker not able to guess whole password If patient hacker will eventually get the whole password *Different characters from password are asked for at each log on:* leading to hacker not being able to use part of password already intercepted Sometimes (random occurrence) same three characters are asked for making it easier for hacker to access account *Two factor authentication:* Pass number changes each time of use so hacker would not be able to use it Only lasts a few minutes so reduces time available to hacker to use Hacker would need to have access to the Chip and PIN device, debit/credit card and the user's PIN to be able to hack into account *Memorable information:* Somebody who knows you could answer these questions Hacker is unlikely to be able to guess this	**8**
6(c)	***Four** from:* Save costs as do not have to rent so many high street premises Employ fewer staff therefore less paid in staff wages Save costs of printing/sending statements Because of lower costs can offer higher rates of interest for savers and lower rates of interest for borrowers… …these rates attract more customers Lower running costs, fewer branches so less electricity, heating and lighting Less likelihood of the bank being robbed Less money is spent as there are fewer security staff	**4**

Question	Answer	Marks
6(d)	***Eight* from:** *Benefits:* There is no queuing in online banking Can bank at any time of day or night Can ask for a loan over the internet without being embarrassed about asking a cashier Interest rates on savings accounts are higher Does not have to worry about whether the mail will get their bill payments to companies on time There is less likelihood of robbery/violence *Drawbacks:* Expense of buying a computer with a broadband internet connection Risk that hackers might hack into account and transfer funds to own account May not like it that the bank is not providing the 'personal touch' May mismanage accounts (as it is so easy to transfer money from one account to another) Unable to make cash deposits or withdraw cash without physically going to the bank or to an ATM Security concerns about data transmitted over internet such as hacking, phishing, pharming, spyware, viruses, malware Description of phishing Description of pharming Description of viruses One mark is available for a reasoned conclusion	8

Question	Answer	Marks
7	**=SUMIF($G$10:$G$20, G2, $F$10:$F$20)** =SUMIF() – 1 mark G10:G20, in correct position – 1 mark G2, – 1 mark F10:F20 in correct position – 1 mark Absolute referencing for G10:G20 – 1 mark Absolute referencing for F10:F20 – 1 mark	6

Question	Answer	Marks
8(a)	Monitor to display customer/call details/script	**1**
	Telephone set/headset/speakers/microphone to speak with/listen to customers	**1**
	Keyboard to type up details of the call/action taken/input orders	**1**
8(b)	***Six*** *from:* The customer is asked to enter their userID IVR checks if it is a valid userID The customer is asked to enter their password IVR checks if password matches that on system The customer is provided with a list of options The customer uses speech/enters numbers on keypad… …to select an option from a list The response is decoded using speech recognition/DTMF tones The call may be queued The call is passed through to the server/appropriate operator	**6**

Question	Answer	Marks
9(a)	***Four*** *from:* Staring at a computer <u>screen</u> **<u>continuously</u>** can cause problems with one's sight Typing at a keyboard **<u>continuously</u>** can cause RSI Gripping a mouse and **<u>repetitive</u>** clicking can cause carpal tunnel syndrome/RSI Sitting in the **<u>same position/with wrong posture all day</u>** can cause lower back pain Staring at a computer screen **<u>all day</u>** can cause eye strain/headaches **<u>Poor positioning</u>** of screen can cause upper back/neck/shoulder pain/eyestrain/headaches Looking at the **<u>glare</u>** from a screen can cause eye strain/headaches	**4**
9(b)	***Three*** *from:* Too many plugs connected to a socket/overheating of computers can be a fire hazard Touching bare wires can cause electrocution/spilt drinks can cause electrocution Trailing wires could cause an operator to trip over Poorly placed hardware/weak tables can cause hardware to fall off table and cause injury	**3**

Question	Answer	Marks
10	***Eight* from:** Overseas phone operators were paid less Buildings needed to house call centres were cheaper to buy/rent Call centre opening during normal hours in some countries would be unsociable hours in UK leading to a lower wage bill The operators were better qualified The operators were better motivated The operator might not understand UK dialects resulting in loss of/dissatisfaction of customers The customer might not understand operator's accent resulting in loss of/dissatisfaction of customers *Reasons for relocation:* Operators will not have difficulty with UK culture resulting in greater number/increased satisfaction of customers Operators will not have to stick to script/more likely to be able to answer out of the ordinary questions resulting in greater number/increased satisfaction of customers Customers are more likely to be able to get required responses resulting in greater number/increased satisfaction of customers Company were losing customers to those companies with UK call centres	8