UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS GCE Advanced Subsidiary Level and GCE Advanced Level

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for the guidance of teachers

9713 APPLIED ICT

9713/33

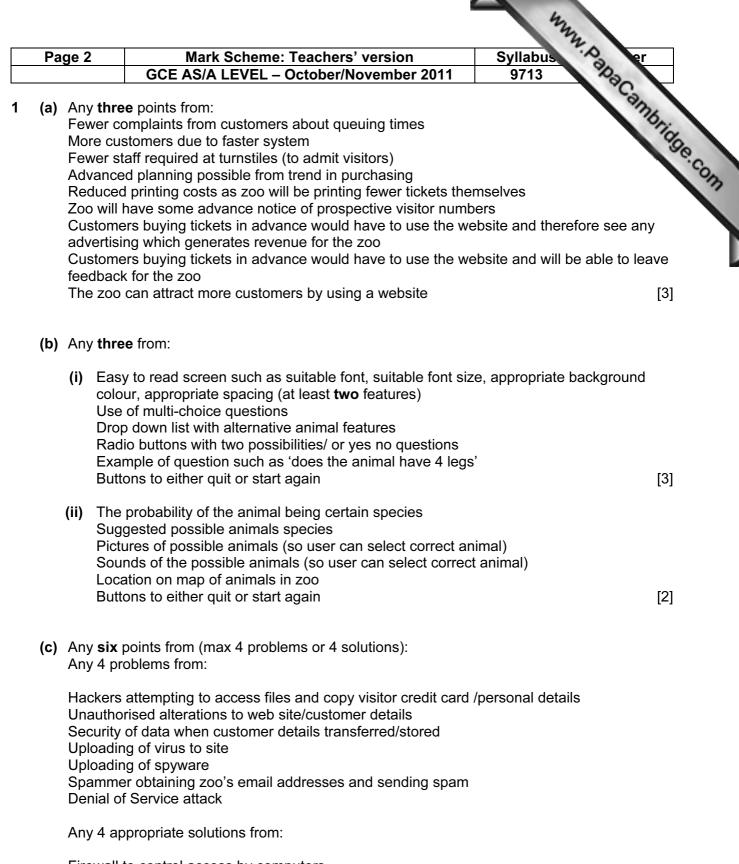
Paper 3 (Written B), maximum raw mark 80

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.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



Firewall to control access by computers Description of appropriate authentication technique Use of encryption of data when being transferred or stored/use of secure website/https/SSL Use of digital certification to verify website Use of up to date anti-virus application Use of anti-spyware software use of spam filtering software Install a firewall, and configure it to restrict traffic coming into and leaving your computer [6]

Page 3	Mark Scheme: Teachers' version	Syllabus Syllabus
	GCE AS/A LEVEL – October/November 2011	9713

2 (a) Any five points from:

Cambridge.com Rendering can be altered to view object by polygon rendering, scan line, wire frame, tracing/shading effects Zoom used for detail/over view

Can view from different angles

3D representation generated from 2D drawings/to view representation of final product Materials required can be stored for use by CAM

Costs calculated/stored for analysis

Walk through/virtual prototype to show product/product interiors/alternative views Use of library of elements to choose from plus example of elements e.g. windows Accurate dimensions (enabling glass to be ordered before frames built) Designs can be worked on by several designers simultaneously

Can be used to create (virtual) prototype to allow changes to dimensions/shape to see effect on e.g. performance [5]

(b) Any four of the following:

Uses critical path method/Gantt/PERT charts finding optimum time to be spent on individual stages/find end date

Critical path specifies the order in which tasks must be completed

PERT charts specifies the order in which tasks are completed

Gantt charts help to show progress of individual tasks

Event chain diagrams for visualising multiple events

Software helps identify progress made in each task

Software helps with daily and weekly planning

Identifying progress/lack of progress helps with planning future tasks/Milestones identified such as building walls

Some tasks can be done in parallel such as developing software and installing hardware, installing network cabling

Other tasks must be done in sequence such as installing hardware, installing software, testing network

Number of workers/cost of each stage identified- to monitor cost/organise work force Use of alarms if stage is late and warning zoo director/ project manager

(c) One mark for up to four sensor descriptions including use:

Light sensor to measure lighting level

Sound sensor to detect animal in distress/noisy

Movement sensor to detect animal awake/ visitor

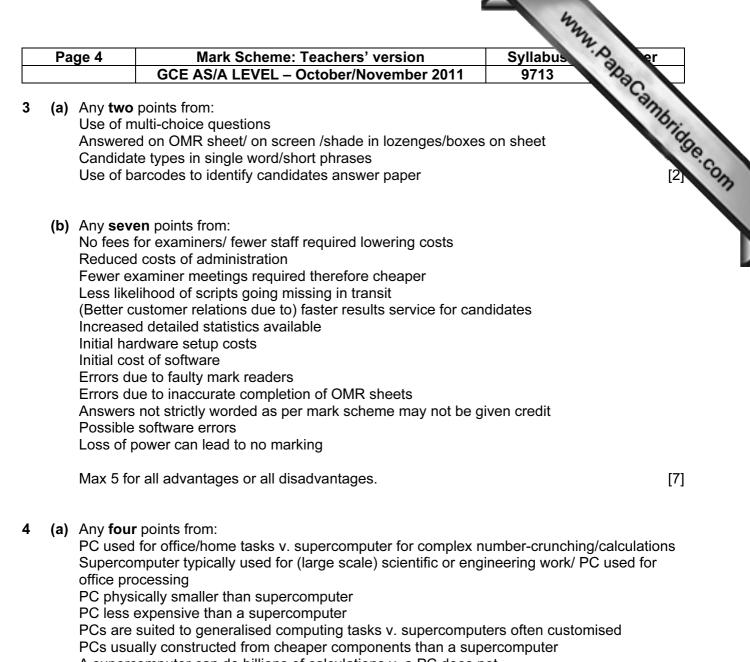
Temperature sensor to ensure animal kept in correct temperature range/ fire detector

Humidity sensor (to measure moisture/humidity) to ensure correct moisture levels for animals pH sensor to monitor the water acidity for animals

Gas sensor such as CO₂ sensor to ensure (safe) air supply

[4]

[4]



A supercomputer can do billions of calculations v. a PC does not

Supercomputer carries out more processes per second/ FLOPS A supercomputer is permanently on v. a PC is usually not always on

Supercomputer has many more processors than a PC

Supercomputer has more RAM/memory compared to a PC

Supercomputer uses tailor made/customised operating system

Supercomputer can support more users at same time than a PC

Security monitoring requires processing power of supercomputer to handle volume of traffic-[4]

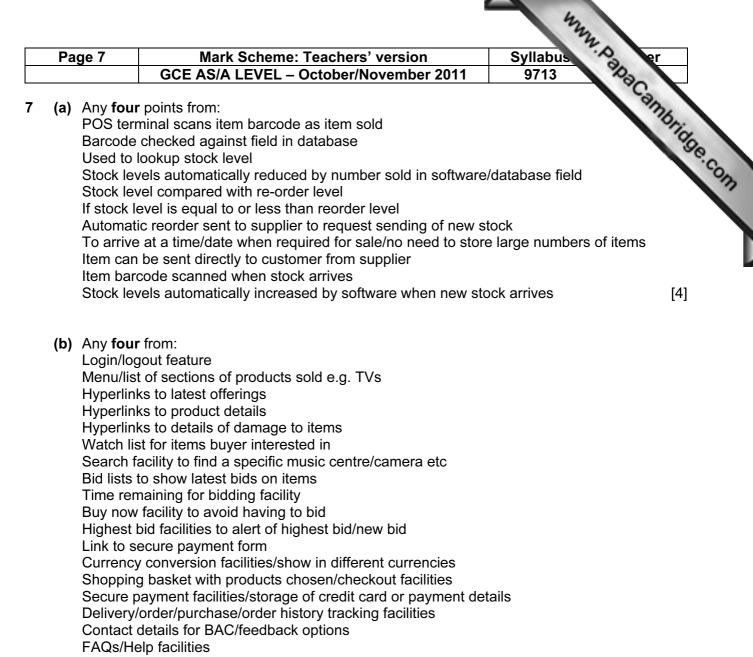
PC could not cope in the time frame

Page 5	Mark Scheme: Teachers' version	Syllabus 8	er
	GCE AS/A LEVEL – October/November 2011	9713	30
Complete Data provide Data inp Calculate Enormo Weathe Collecte Searche Softward Softward Selects Creates Uses plo	e points from: x models created ovided by sensors such as air pressure, humidity, temp out into model ions carried out/performed us number of calculations carried out r reports input ed around the globe es for a match in past conditions e makes prediction based on past data e observes patterns in current conditions and makes pr most likely forecast output charts to screens otters to print out charts/maps of pressures/wind speeds forecaster confirms forecast	edictions	
Human	forecaster confirms forecast		[5]
Loudspe Headph Motors/I Screens LEDs fo TFT dis	r points from: eakers to generate sound of engines ones for communications/hear instructions hydraulic rams to generate movement/vibrations to project panoramic view r information on buttons/switches to show status/warnir plays for aircraft status readout/in instrument panels uzzers when state is dangerous	ngs	[4]
Safer m Scenario Rare sc Dangero Reduce Training Airline c Passeng May be Can be	r points from: ethod of learning to fly os can be repeated many times enarios can be used in training bus scenarios can be simulated with no risk to the pilot s risk of accident causing costs for airline costs to the airline can be lower an get printouts or pilot performance ger reassurance of quality a requirement of Aviation Authority scheduled more flexibly that aircraft gers would not like to see a plane with engine failure/ or	ut of public view	[4
Softward outputs e.g. alarm si Pilots re Pilot inp	r from sor/pilot selects event e creates the required outputs using DAC to simulate e.g. sharp descent change in engine note gnal/ change in status display eactions are recorded by system on hard disk for review uts data by e.g. hing on joystick/pedals/pressing control	,	[4

	ige 6	Mark Scheme: Teachers' version	Syllabus 🔗 💡	r
	<u> </u>	GCE AS/A LEVEL – October/November 2011	9713 203	
(a)	Wid	r three points from: ler customer base rets can be booked at any time/from anywhere - better cust	omor satisfaction	abrid
	Rec tick Fas No Adv	kets can be booked at any time/from anywhere - better cust duced number of staff/reduced number of offices/no commis ets so reduced costs ter processing of bookings/faster check in - better customer double booking so better customer satisfaction vanced notice of customer requirements e.g. meals/seat allo n operate outside normal business hours	ssion to agents for selling r satisfaction	3
		s risk of losing ticket ter check-in process		[3]
(b)	Any	two points from:		
-	(i)	Inspects packets going in and out of system Can be hardware or software Restricts packets using IP addresses		
		Restricts packets using key word list		[2]
	(ii)	Issued by a trusted organisation allows server and client PC to trust each other/are who the transactions	y say they are/allows secu	ure
		Used in secure servers/use of https Uses public key		[2]
	(iii)	Changing confidential data such as customer credit card n An encryption key is used to encode data Key is used to decode data stream	umbers into meaningless	data
		The longer the key the more secure is the encoding		

File servers allow access by multiple users/PCs at same time

[5]



Site map of website

[4]