

Mark Scheme for January 2013

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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

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Question			Answer	Marks	Guidance
1	(a)		Input device One from: <ul style="list-style-type: none"> • (touch) screen (1) • (video/still) camera (1) • microphone (1). Output device One from: <ul style="list-style-type: none"> • (touch) screen (1) • speaker (1). 	2	
	(b)	(i)	One from eg light sound magnetic field accelerometer/motion movement GPS proximity	1	Allow touch (screen) sensor, pressure sensor. Do not allow microphone.
		(ii)	One from: eg light - to adjust brightness of display sound – to record voice/background sounds magnetic field – to locate north accelerometer/motion movement – to adjust orientation of display GPS – to find location proximity – to adjust display when making calls	1	Must be related to sensor stated in (b) (i) Touch sensor – acceptable uses could be eg react to touch the screen/selecting objects/apps/to run/detects pressure on the screen/sense (where) screen is being touched
	(c)		Two from: Icon (for web browser) (1) Press/select/tap/hold/use on screen (1) Eg any valid method of opening browser on a tablet computer	2	Allow touch for tap. Do not allow click.

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	(d)		Two from: e.g. <ul style="list-style-type: none"> on-screen keyboard (1) microphone/voice activation (1) handwriting recognition (1) 	2	Accept alternative, valid text entry methods eg connect a physical keyboard
	(e)	(i)	Two from: e.g. <ul style="list-style-type: none"> faster access (to data) (1) not easily damaged (by movement/shocks) (1) uses less power (1) more compact/smaller in size (1) works in extreme environments (1) 	2	Allow references to removable flash memory/USB storage as the tablet has a card slot and a USB socket.
		(ii)	One from: eg. <ul style="list-style-type: none"> usually less storage capacity (than hard disk) (1) more expensive (per Mbyte/Gbyte) (1) (than hard disk) finite number of read-write cycles/number of read-write cycles is low(er) (1) short(er) time to failure (1) high(er) data corruption rates (1) 	1	Allow comparisons with HDD as stem refers to HDD. Allow references to removable flash memory/USB storage as the tablet has a card slot and a USB socket.
	(f)	(i)	Two from: wireless/no wires (1) standard (for connecting devices) on radio frequencies (1) that do not need a (broadcast) licence (1).	2	Allow radio waves. Do not allow references to connecting devices or to networks – both are given in the question.

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		(ii)	Two from: <ul style="list-style-type: none">• WiFi has greater range/range (of c.20m)/medium range (than Bluetooth)/Bluetooth has lower range/range (of c.5 to 10m) (1)• WiFi has greater data transfer rate (than Bluetooth) (1)• WiFi uses one frequency/Bluetooth uses frequency spread (1)• WiFi more susceptible to channel pollution/interference than Bluetooth (due to greater range) (1).	2	
		(g)	Two from: <ul style="list-style-type: none">• one on back for taking photos/video of other people/things (1)• one on front for taking photos/video of self/user (1).	2	
2			Lines as shown: <div><div><u>File type</u></div><div><u>Type of content stored</u></div><div><div>JPEG</div><div>MPEG</div><div>RTF</div><div>MP3</div><div>audio</div><div>document</div><div>image</div><div>video</div></div></div>	4	

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3	(a)		cell (1) range (1)	2	Allow group/column for range
	(b)		Two from: <ul style="list-style-type: none"> to carry out calculations/data manipulation/rule(s)/instructions(s) (1) refers to other cells/to enable modelling/so that cells can be changed and results change (1). 	2	
	(c)		Two from: <ul style="list-style-type: none"> reference(s) to other cells do not change (1) when cell contents copied/replicated/moved (from cell to cell) (1) usually has \$ (in front) (1). 	2	
4			Two from: <ul style="list-style-type: none"> collection of related fields/data items (1) a row of a table (1) stored in a file (1). 	2	Allow eg all information on one person for 1 mark.

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5	<p>Three considerations from, maximum two marks per consideration:</p> <ul style="list-style-type: none"> • user requirements (1) with details of data to be stored (1) /fields required (1) • input methods/date entry methods/data capture methods (1) suitable example (1) • must be able to edit data (1) and add/delete of data (1) • processing required (1) suitable example (1) • outputs required (1) on screen/suitable example (1) hardcopy (1) • storage requirements (1) type of storage medium that will be used (1) such as hard disk/removable storage (1) with reference to access speed of device/medium (1) and volume of data (1) • type method of access to data (1) such as random/serial access (1) • consider the grouping of data (1) as related data should be grouped together (1) and data not used often (1) stored away from data used often (1) • relationships/linking between data (1) so that users can search/find data quickly/easily (1) • data types to be used (1) data is stored/processed efficiently (1) • must keep access to files to minimum (1) so storage medium (eg hard disk) not is constant use (1) • methods of data security (1) eg encryption techniques (1) because stored data may be subject to DPA (1) 	6	Note that the volume of data is not strictly relevant with today's systems.

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6			One advantage from, maximum three marks from: Increased security (1) as more difficult to decrypt (1) and guarantees (1) that sender/recipient is alerted (1) by attempt to read/look at the data (1) because the data is changed (1) when observed (1).	3	

Question			Answer	Marks	Guidance	
					Content	Levels of response
7			<p>This question to be marked as levels of response:</p> <p>Answers may include:</p> <p>Social networks are, for example:</p> <p>groups of individuals/organisations/nodes connected by eg friendship, beliefs, financial links, common interests use in emergencies use in investigations</p> <p>Social networks include the use of, for example:</p> <p>(we)blogs, instant messaging systems, chat rooms, web based file/photo/video sharing etc.</p> <p>Aspects include:</p> <p>share photos, videos, images easily with friends, relatives around the world almost real-time updates on activities possible</p>	8	<p>Allow use of common brand names eg Twitter, Facebook, etc in the discussions.</p> <p>Answers are examples of possible topics for discussion.</p>	<p>Level 3 (7–8 marks) Candidates will explain both the advantages and disadvantages of a range of different social networks using relevant and appropriate examples. The information will be relevant, clear, organised and presented in a structured and coherent format. Specialist terms will be used correctly and appropriately. There will be few, if any, errors in grammar, punctuation and spelling.</p> <p>Level 2 (4–6 marks) Candidates will explain the advantage(s) and disadvantage(s) of using social network(s) OR the advantage(s) or disadvantage(s) of more than one social network. Examples used will be for the most part relevant. For the most part, the information will be relevant and presented in a structured and coherent format.</p>

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			<p>can follow activities of others</p> <p>others can follow your activities</p> <p>can be viewed/updated from any internet-enabled device</p> <p>can be viewed/updated while travelling</p> <p>corporate blogs used form internal communications and/or marketing</p> <p>can contact/be followed large numbers of people at once</p> <p>much time can be spent following others</p> <p>much time can be spent updating own entries</p> <p>lack of privacy of activities</p> <p>no real control over who sees postings</p> <p>personal details can be revealed to others</p> <p>may not know/be able to identify who is making contact with you</p> <p>details can be used to track user</p>			<p>Specialist terms will be used appropriately and for the most part correctly.</p> <p>There may be occasional errors in grammar, punctuation and spelling.</p> <p>Level 1 (1–3 marks)</p> <p>Candidates will only address some aspects of the use of social network(s).</p> <p>Examples, if used, may lack relevance.</p> <p>Answers may be in the form of a list.</p> <p>There will be little or no use of specialist terms.</p> <p>Errors of grammar, punctuation and spelling may be intrusive.</p>

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8	<p>Three descriptions, maximum two marks per description: eg</p> <ul style="list-style-type: none"> • use of CCTV/digital/web/video camera (1) to capture face (1) connected to computer/server (1) via internet/dedicated cabling/wireless connection (1) • image shown on screen (1) and studied by humans (1) • image compared to database/stored images (1) with facial recognition software (1) using algorithm to analyse (selected) facial features/relative position, size, and/or shape of the eyes, nose, cheekbones, and jaw (1) • use of biometrics (1) using eg. fingerprint analysis/iris recognition/shape of the body/DNA/palm print/hand geometry/retinal scans/odour/scent (1) compared with a stored database (of the biometric data) (1) • interception of (1) email (1) scanning for keywords (1) • monitoring (1) telephone calls/conversations (1) • passport scanning (1) linked to database of eg 'no-fly' persons (1) • used to enhance images (1) from CCTV (1) • used to create photo/video fit images (1) from witness descriptions (1) • identification of abnormal movement patterns in crowds (1) at eg airport terminals (1) • voice recognition software (1) linked/compared with to stored voice patterns (1) 	6	

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9			<p>This question to be marked as levels of response:</p> <p>Benefits may include:</p> <p>Curriculum Benefits: “Communication is a key learning skill and students using videoconferencing can gain opportunities for higher level thinking via live face-to-face interaction with peers, tutors or experts from around the world.” DoE Australia</p> <ul style="list-style-type: none"> • use of video-conferences for demonstrations • use in language teaching: • increased motivation of students • raised levels competence in learning languages • suitable medium through which to create contacts • increased cultural understanding by creating friendships with native speakers; • enables students to interact with each other as an alternative to physical exchange visits. <p>Drawbacks may include:</p> <ul style="list-style-type: none"> • appropriate references to additional hardware and the additional costs • school requires technical skills to set v/c up • school requires technical skill to maintain • requires stable/high speed network/internet connection to work properly • time zone issues around the world if v/c with other schools. 	8		<p>Level 3 (7–8 marks) Candidates will explain both the benefits and drawbacks of the use of video-conferencing in the school, using relevant and appropriate examples. There will be a conclusion which may be implied rather than explicit. The information will be relevant, clear, organised and presented in a structured and coherent format. Specialist terms will be used correctly and appropriately. There will be few, if any, errors in grammar, punctuation and spelling.</p> <p>Level 2 (4–6 marks) Candidates will describe the benefit(s) and drawback(s) of the use of video-conferencing in the school. Examples used will be for the most part relevant. For the most part, the information will be relevant and presented in a structured and coherent format. Specialist terms will be used appropriately and for the most part correctly. There may be occasional errors in grammar, punctuation and spelling.</p> <p>Level 1 (1–3 marks) Candidates will only address some aspects of the use of video-</p>

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					Content	Levels of response
						<p>conferencing in the school. Examples, if used, may lack relevance. Answers may be in the form of a list. There will be little or no use of specialist terms. Errors of grammar, punctuation and spelling may be intrusive.</p>
			Total	60		

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