

Mark Scheme for January 2012

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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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Annotations

Annotation	Meaning
^	Omission mark
BOD	Benefit of doubt
C	Subordinate clause/Consequential error
Cross	Cross
E	Expansion of a point
FT	Follow through
NAQ	Not answered question
NBOD	Benefit of doubt not given
P	Point being made
REP	Repeat
/	Slash
Tick	Tick
TV	Too vague
ZERO	Zero (big)

Question		Answer	Marks	Guidance
1	(a)	2 from: [addition of] context (1) structure (1) meaning (1) Processed data (1)	2	
	(b)	1 from, 2 marks each eg: Pictures can be easier to understand (1) require less text (1) Pictures can make the brochure more attractive (1) more likely to pick it up (1) Pictures are multi-lingual (1) do not need to be able to read the language to understand the picture (1) Do not have to be able to read (1) can understand the picture from the images (1)	2	
	(c)	2 from, 2 marks each eg: Single data source can be used (1) does not require it to be created specially (1) Codes can be used/if/next (1) to select individuals to send the material to (1) Standard letter less likely to have errors (1) only needs to be checked once (1) Speeds up creation (1) allows other work to be done in same time (1) Maintains consistency of letters (1) by setting up the layout once (1)	4	Do not accept answers related to personalisation Do not accept saves time
	(d)	2 from, 2 marks each e.g: There will be no bias (1) responses more likely to be trustworthy (1) they will have asked the questions themselves (1) Questions can be changed (1) depending on previous responses (1) Additional information can be requested (1) if original answer unclear (1)	4	Allow answers relating to factors affecting the quality of information, must be quantified.

Question		Answer	Marks	Guidance
2	(a)	2 from: code which creates programmes/application that performs tasks (1) eg word processing/spreadsheets (1)	2	Must be an example for full marks Do not accept programme without qualification
	(b)	4 for characteristics and 2 for examples of use: windows: area of the screen (1) contains icons that are part of a group (1) such as internet applications (1) icons: small images (1) when clicked open an application (1) eg word processing (1) mouse/pointer: arrow on screen (1) that tracks movements of mouse (1) e.g can use to select text (1) menu: set of grouped commands (1) can be pull down or pop up (1) some options greyed out (1) eg edit/help (1)	6	Do not allow marks for identification of WIMP
	(c)	2 marks per device: Puff-suck switch: switch that works on breath of operator (1) e.g can be used to operate left and right mouse clicks (1) Microphone: converts sound to electrical signals/allows speech to be entered (1) e.g control the software through voice commands (1)	4	Must be a concrete example for full marks.

Question		Answer	Marks	Guidance
3	(a)	2 from, examples: How much can be spent on the new shop and still make a profit? (1) If we take on 5 extra staff, how much profit does the new shop need to make to make a profit overall ? (1)	2	Must be related to business Must be realistic Must be able to be asked and give an answer Need to be two parts – what is changed and what are you looking at for the result.
	(b)	2 from, 2 marks each: Automatic recalculation (1) make a change and see the result (1) Use of variables (1) can lock formulas so they cannot be changed (1) Goal seeking (1) gives variables based on results required (1) Familiarity with software (1) no need for training (1) No need to purchase (1) reduced expenditure (1) Graphs (1) can extrapolate and best fit (1)	4	
	(c)	4 from e.g: Rules can be used to develop functions (1) and use variables to answer questions (1) such as employee bonus depending on number of sales (1) Rules could be used to link relationship between cost and sale price (1) so that the company can see the effect of raising prices (1) Different size shops can be looked at to see the potential sales (1) and determine if the purchase is viable (1)	4	For full marks, must include example

Question		Answer	Marks	Guidance
4		<p>3 from, 2 marks each eg: Find all trains that arrive before 6.35 (1) and find start time (1) Find all routes that start at Coventry (1) and finish at Newton Abbott (1) Find connections between trains (1) and make sure finish time of connections gets there on time (1) Check days of the week for different times (1) and cross reference against works on the line (1) Collate times (1) in preparation for production of route timetable (1) Reserve routes (1) in case of booking (1)</p>	6	
5	(a)	To uniquely identify each record (1) allow relationships (1) between product and orders table (1)	3	
	(b)	<p>2 from, 2 marks each eg: default value (1) the starting value for the field (1) validation (1) length/type etc applied to the field (1) length (1) maximum length of data allowed (1) data type (1) real/integer etc – that can be stored in the field (1) [field] name (1) unique name for the field (1)</p>	4	<p>Not primary, foreign or secondary keys Do not accept attribute/field without qualification Must be clear what item the description is related to</p>
	(c)	<p>4 from eg: To allow query results from multiple tables (1) eg products purchased by which customers (1) To reduce data duplication (1) eg only storing each customer details once (1) To improve data consistency/less errors (1) by only storing product details once (1)</p>	4	

Question		Answer	Marks	Guidance
	(d)	<p>2 from, 2 marks each:</p> <p>Limits the data that can be stored (1) calculated fields may need to be stored (1)</p> <p>Increases number of tables (1) increases processing/memory requirements/reduced database performance (1)</p> <p>Fail to meet needs of company (1) may want whole address as one not as single elements (1)</p>	4	
	(e)	<p>One mark each:</p> <p>Customer to Order_Details 1:M (1)</p> <p>Product to Order_Contents 1:M (1)</p> <p>Order_Details to Order_Contents: 1:M (1)</p>	3	Accept different methods of representation of degree of relationship

Question		Answer	Marks	Guidance
6	(a)	4 from eg: Font size (1) font style (1) font typeface (1) Margin size (1) paragraph spacing (1) kerning (1)	4	Do not accept font without qualification. Allow same item for different elements (e.g. font size for title (1) and font size for body (1).)
	(b)	2 from, 2 marks each eg: Allows customer recognition (1) identifiable as the brand (1) Designer has been paid (1) waste of money not to use it (1) Allows different people to work on different elements of the same presentation (1) fits together without editing the style when combined (1) Lack of confusion from document writers (1) know exactly what font etc to use (1)	4	
	(c)	2 from, 2 marks each: Can change the order of the slides (1) without the audience knowing (1) Do not need technical expertise to use (1) do not have to know how to use computer (1) Not a lot to go wrong with the equipment (1) easy to fix if it goes wrong (1) Can amend the slides whilst presenting (1) update as appropriate to the presentation (1)	4	
	(d)	3 from, 2 marks each e.g: Bitmap made of pixels (1) vector made of geometric information (1) Bitmap takes up large amounts of memory (1) vector files are small in size (1) Bitmap uses low processing to display (1) vector uses high processing (1) Bitmap cannot be enlarged without pixelation (1) vector can be enlarged with no distortion (1)	6	

Question		Answer	Marks	Guidance	
				Content	Levels of response
7		<p>Points may include:</p> <p>Allows the user to see many images in one go, images can be grouped by category which allows for searching. If thumbnail looks like the right image can be enlarged which saves having all images opening on computer at same time which reduces processing/memory needed on computer. Several images can be selected and the images compared to see which one to use.</p> <p>The images may not show enough detail and have to be opened to see them correctly wasting time. There may be too many images and difficult to make a choice as to which one to use.</p>	6	<p>This is not about thumbnails appearing on the website but selecting images to go on a website.</p> <p>Does not matter which way the conclusion goes.</p>	<p>High [5 – 6 marks]: Positive and negative reasons for using thumbnails to select images. Reasoned conclusion.</p> <p>Medium [3 – 4 marks]: Positive or negative reasons for using thumbnails to select images. Conclusion may be implied.</p> <p>Low [0 – 2 marks]: List of points given.</p>

Question	Answer	Marks	Guidance								
8 (a)	3 marks each, 1 for example of use: Lookup: based on a value cross referencing (1) and returning a single value/list of values (1) Example: eg lookup book titles based on author/lookup titles based on genre (1) Check digit: mathematical calculation (1) that results in a single number to compare (1) Example: eg checking ISBN number on book (1)	6	Must be related to books.								
(b)	<table border="1" data-bbox="376 560 1151 703"> <thead> <tr> <th>Field Name</th> <th>Data Type</th> </tr> </thead> <tbody> <tr> <td>ISBN</td> <td>Text/string/alphanumeric</td> </tr> <tr> <td>Book Price</td> <td>Real/Currency</td> </tr> <tr> <td>No of Pages</td> <td>Integer</td> </tr> </tbody> </table>	Field Name	Data Type	ISBN	Text/string/alphanumeric	Book Price	Real/Currency	No of Pages	Integer		Do not accept number.
Field Name	Data Type										
ISBN	Text/string/alphanumeric										
Book Price	Real/Currency										
No of Pages	Integer										
9	2 from, 2 marks each e.g: Novice/first time users will require help on using the system (1) how to navigate around (1) Expert/advanced/return users will want to access the information straight away (1) bypass how to use information (1) Language needs (1) be able to change presentation to specific language (1) Increases accessibility in appropriate format (1) sound for blind / subtitles for deaf (1) Age appropriate (1) different pictures / language for elderly/children (1)	4									
10	1 mark each: Storing Mr Jones's old address after he has moved: DPA (1998) (1) Mr Jones' secretary accessing his account without permission: CMA (1990) (1) Giving information about Mr Jones' purchases to his neighbour: DPA (1998) (1)	3	Dates not required								

Question		Answer	Marks	Guidance	
				Content	Levels of response
11		<p>Answers may cover:</p> <p>Virtual reality models of objects allow the shopper to see all dimensions and real life size of objects – can see the object in a model of their own home, less likely to return the object.</p> <p>Smellovision – able to get full impact of the object, see texture and feel of the object.</p> <p>Virtual reality stores, able to walk through the store and select items, without leaving the home, - benefit to elderly and disabled, environmental impacts and consequences.</p> <p>Use of barcodes and barcode scanners on portable devices – allows price comparisons and immediate ordering – can direct to cheaper locally with directions.</p>	11	<p>Level 4 [9 – 11 marks]: The candidate is able to explain in detail the impact of future developments. Ideas will be expressed clearly and fluently using specific knowledge to support and inform the answer. Subject specific terminology will be used accurately and appropriately.</p> <p>Level 3 [6 – 8 marks]: The candidate is able cover a range of future developments, however explanations may lack specific detail or reasons. Subject specific terminology will be used accurately and appropriately.</p> <p>Level 2 [3 – 5 marks]: The candidate is able to identify future/existing developments and describe impacts but their responses will show a limited understanding and lack depth. Some subject specific terminology will be used.</p> <p>Level 1 [0 – 2 marks]: The candidate is able to identify future/existing developments. The information may be poorly expressed and may be in the form of a list of points. Subject specific terminology may be limited or missing.</p>	

Question		Answer	Marks	Guidance	
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12		<p>Impacts and consequences may include: Use of mobile phone to video conference allows visual conversations with body language and locations can be shown. Connectivity to social networking sites, micro behaviour told to the world, no secrets, privacy given away which has consequences for future legal actions, job look at social sites for potential employees, indiscretions in youth can prevent you getting a job in the future.</p>	11	<p>Level 4 [9 – 11 marks]: The candidate is able to discuss clearly the impact and consequences. Candidates will show a detailed level of understanding and be able to explain in detail both the impacts and consequences of more than one position. Logical arguments are produced to demonstrate a clear understanding of the question. Ideas will be expressed clearly and fluently using specific knowledge to support and inform the discussion. There may be a reasoned conclusion. Subject specific terminology will be used accurately and appropriately.</p> <p>Level 3 [6 – 8 marks]: The candidate is able to discuss the impact(s) and consequences(s) Candidates will show a limited understanding and be able to explain, at least one impact and associated consequence of a given position, however explanations may lack specific detail and/or concentrate on either an impact or consequence with a limited explanation of the other. Subject specific terminology will be used accurately and appropriately.</p> <p>Level 2 [3 – 5 marks]: The candidate is able to explain the impact(s) or consequences(s) Candidates will show a limited understanding and be able to explain, at least one impact or consequence of a given position, however explanations may lack specific detail. The explanation, though informed, may stray from the point but specific knowledge will be evident. Some subject specific terminology will be used.</p> <p>Level 1 [0 – 2 marks]: The candidate is able to describe superficially the impact or consequences. The information may be poorly expressed and may be in the form of a list of points. Subject specific terminology may be limited or missing.</p>	

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