



2010 Information Systems

Higher

Finalised Marking Instructions

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Part One: General Marking Principles

This information is provided to help you understand the general principles you must apply when marking candidate responses to questions in this Paper. These principles must be read in conjunction with the specific Marking Instructions for each question.

- a)** Marks for each candidate response must always be assigned in line with these general marking principles and the specific Marking Instructions for the relevant question. If a specific candidate response does not seem to be covered by either the principles or detailed Marking Instructions, and you are uncertain how to assess it, you must seek guidance from your Team Leader/Principal Assessor. You can do this by posting a question on the Marking Team forum or by e-mailing/phoning the emarker Helpline. Alternatively, you can refer the issue directly to your Team Leader by checking the 'Referral' box on the marking screen.
- b)** Marking should always be positive ie, marks should be awarded for what is correct and not deducted for errors or omissions.
- c)** Technical terms which have been spelled incorrectly should still be awarded the relevant mark
- d)** In situations where the subsequent part of a question depends on the correct answer to the first part, candidates who answer the first part incorrectly and then go on in the subsequent part of the question to give a correct answer based on their answer to the first part will be awarded the relevant mark for the subsequent part of the question.
- e)** In situations where the candidate has achieved the maximum number of marks available without getting to the end of their answer, a marker should award the maximum marks. However, in situations where there is only one correct answer and the candidate has split their answer with a / or an or, then this should not be accepted as a separate response and the marks should not be awarded. For example, if the correct answer for a data type question is date then a response of (date/time) or (date or time) would attract 0 marks as the / and the or combines the answer making it incorrect.
- f)** In situations where the candidate writes the correct answer followed by an alternative incorrect answer then this should not be penalised. However, if the candidate writes an incorrect answer followed by a correct alternative answer this should not be awarded the marks. For example if the correct answer to a 1 mark question is written and the candidate includes an alternative incorrect answer such as visual then the following would apply:
Written (visual) = 1 mark
Written/visual = 0 marks (example of combining as in (e) above.
Visual (written) = 0 marks

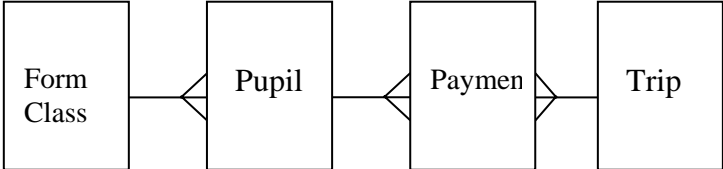
Part Two: Marking Instructions for each Question

Question			Expected Answer/s	Max Mark	Additional Guidance
1	a		<ul style="list-style-type: none"> Details about a new club cannot be entered without a player <p><i>1 mark for each bullet</i></p>	2	Do not accept - details about a player cannot be entered without a club.
1	b		<ul style="list-style-type: none"> >0 or >=1 < or <=5 or greater one decimal place real range check presence check restricted choice <p><i>1 mark for any bullet or equivalent answer</i></p> <ul style="list-style-type: none"> between 1 and 5 (or wider) in 1.1, 1.2, 2.1,2.2, ... ,10.2 (or similar) <p><i>Award 2 marks for either (complex) domain constraint</i></p>	2	Any two of the first six bullets for one mark each but either of the second list for two marks.
2			<ul style="list-style-type: none"> Another golfer may have the same initials and handicap The identifier would change when his handicap changed (or name changed) <p><i>1 mark for each bullet</i></p>	2	Only acceptable answers
3			<ul style="list-style-type: none"> Partial (key) dependencies are removed (2 marks) <p>OR</p> <ul style="list-style-type: none"> Deals with part of (compound) key Remove dependencies <p><i>1 mark for each bullet</i></p>	2	Only acceptable answers

Question			Expected Answer/s	Max Mark	Additional Guidance
4	a		<ul style="list-style-type: none"> Created in another application (2 marks) Graphic (or Video or Sound) <p>1 mark only</p>	2	<p>Need to get the idea that the object is created in another application. Stating a type of file for an object e.g. graphic, video, sound will only get one mark.</p> <p>Do not accept saved outwith database as this would be a link and not an object</p>
4	b		<p>Yes, No, True, False, On, Off, 1, 0</p> <p>1 mark</p>	1	Only acceptable answers
5	a		<ul style="list-style-type: none"> Item code Many item codes in one transaction <p>1 mark for each bullet</p>	2	Only acceptable answers
5	b	i	One to many	1	Only acceptable answer
5	b	ii	Many to Many	1	Only acceptable answer
6			<ul style="list-style-type: none"> the cost of the information refers to how much money was spent to obtain it (1 mark) the value refers to the importance (worth) of that information to the company or individual (1 mark) 	2	<p>Must have idea that cost is to do with money for first mark and that value is to do with the importance or worth of information for second mark</p>
7			A data processing system (1 mark)	1	Only acceptable answer
8			<ul style="list-style-type: none"> strategic used for long term (decisions) uses summarised information top level of management uses mostly external information predict trends major impact uses information from MIS and DSS <p>2 marks - 1 mark for level, 1 for justification</p>	2	<p>Need strategic for first mark and a justification of strategic for the second mark.</p>

Question		Expected Answer/s	Max Mark	Additional Guidance
9	a	Security strategy (<i>1 mark</i>)	1	Only acceptable answer
	b	<ul style="list-style-type: none"> Access rights (<i>2 marks</i>) Hide the folder (<i>1 mark</i>) 	2	Accept Access Rights OR an answer that describes access rights for 2 marks, e.g. the director has Read and Write access rights for his own network area which cannot be viewed by other workers.
10		<ul style="list-style-type: none"> Serif fonts (p) have a small stroke at the end of the letter, while sans serif fonts (p) do not. <i>2 marks, 1 for illustration / description of each type</i>	2	Accept an illustration OR a description of the difference. Only naming fonts does not describe the difference therefore 0 marks
11		<ul style="list-style-type: none"> Text wrapping feature is useful as it allows a user to specify how text flows (<i>1 mark</i>) around graphics and other objects in a document. (<i>1 mark</i>) OR <ul style="list-style-type: none"> Text can be wrapped squarely, tightly and to the top and bottom (<i>1 mark</i>) of an image. (<i>1 mark</i>) OR <ul style="list-style-type: none"> Controls white space (<i>1 mark</i>) as text flows round graphics (<i>1 mark</i>) Text flows around graphic (<i>1 mark</i>)	2	If only mentions text flows around a graphic without stating the user has control of how it flows – only 1 mark
12	a	<ul style="list-style-type: none"> Data – cell B3 contains a number (36) which has no meaning or context on its own Information – cell B3 part of spreadsheet, adjacent cell mentioning ‘Number of Months’ <i>2 marks – for each bullet (1 mark for generic descriptions for data and information with no link to scenario)</i>	2	Must mention details in the scenario for 2 marks.
12	b	Goal Seek (<i>1 mark</i>)	1	Only acceptable answer

Question		Expected Answer/s			Max Mark	Additional Guidance
13		UNF	1NF	2NF		3NF
		<u>Customer name</u> Customer address Customer contact Customer telephone Room Date Time Room telephone Capacity Price	<u>Customer name</u> Customer address Customer contact Customer telephone <u>Room</u> <u>Date</u> <u>Time</u> Customer name* Room telephone Capacity Price	<u>Customer name</u> Customer address Customer contact Customer telephone <u>Date</u> <u>Time</u> <u>Room*</u> Customer name* <u>Room</u> Room telephone Capacity Price		<u>Customer name</u> Customer address Customer contact Customer telephone <u>Date</u> <u>Time</u> <u>Room*</u> Customer name* <u>Room</u> Room telephone Capacity* <u>Capacity</u> Price
		<p>Process</p> <p>1NF 1 mark for creating a second entity including Customer name 1 mark for including Room, Date, Time, Room telephone, Capacity and Price (ignore extra attributes)</p> <p>2NF 1 mark for removing Room (or any part of compound key – NOT Customer name on its own) 1 mark for leaving a copy of the part of the compound key only behind</p> <p>3NF 1 mark for removing non-key attributes provided a PK is not removed with them 1 mark for leaving a copy of the selected key of these attributes behind</p> <p>Looking only at 3NF</p> <p>4 marks for attributes) 1 mark for each entity having the correct attributes (a misplaced non-key attribute would only lose 1 mark, ie would not lose the mark in both entities)</p> <p>(4 marks for Primary keys) 2 marks (Room + Date + Time) (Customer Name + Room + Date + Time) (Customer Name + Date + Time) 1 mark for Room as PK 1 mark for Capacity as PK</p> <p>(3 marks for Foreign keys) 1 mark for each correct Foreign key which is correct for candidate's 3NF</p>				

Question		Expected Answer/s	Max Mark	Additional Guidance
14	a	 <p><i>4 marks – award 2 marks each for two correct relationships 2 marks – a third correct relationship with no incorrect relationships shown</i></p>	6	1 mark should be awarded for each relationship where the cardinality is wrong
14	b	<p>A – Date or Date/Time (<i>1 mark</i>) B – Lookup from Trip table (<i>1 mark</i>) C – Range check or example of range check or >0 or restricted choice (<i>1 mark</i>)</p>	3	Only acceptable answers
14	c	No (<i>1 mark</i>) as the foreign key value 2D3 in the Pupil table (<i>1 mark</i>) is not a value (<i>1 mark</i>) of the Primary key in the Form Class table (<i>1 mark</i>)	4	
15	a	<p>Source – Secondary/External Level - Tactical Time - Present Frequency – Daily Form - Written Type – sampled / aggregated</p> <p><i>– 1 mark for each heading correctly named (max 4) - 1 mark for correctly categorising the website information under those headings</i></p>	8	Only acceptable answers
15	b	<ul style="list-style-type: none"> Customer feedback unreliable No mention of number of people who provided feedback No names, is the feedback real or made up <p><i>1 mark each for any 2 bullets</i></p>	2	Answers that relate to the 3 bullets or answers that justify unreliable feedback would be acceptable.

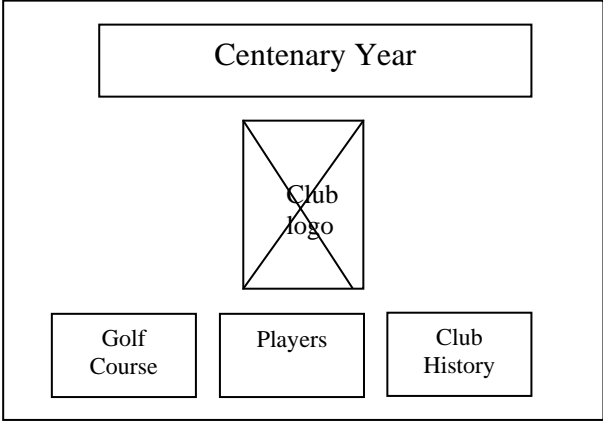
Question		Expected Answer/s	Max Mark	Additional Guidance
16	a	<p>Future proofing</p> <ul style="list-style-type: none"> Computers and communications technology develop at an incredible rate (1 mark) and future proofing requires an organisation to attempt to anticipate future developments (1 mark) in order to secure resources which will be compatible with them (1 mark). Buy the most advanced processor (1 mark) and ensure that the computer can be upgraded with extra memory and storage if required (1 mark). In a year or so this computer will be the standard that everyone else is buying (1 mark). <p>Legacy systems</p> <ul style="list-style-type: none"> Legacy systems are the systems which are in existence (or under development) (1 mark), at the start of an upgrade program. (1 mark) Many companies continue to use legacy systems (1 mark) because the cost of buying new hardware (1 mark) and re-writing/upgrading the application software for the new hardware (1 mark) is so costly that it does not make financial sense to move to the new system (1 mark). <p>4 marks – 2 marks for each good description</p>	4	<p>Mention of the following bullets will receive a mark each</p> <ul style="list-style-type: none"> Rate of technology development Anticipate future (hardware, software) developments Buy appropriate resources to match anticipated future developments Buy most advanced hardware e.g. processor, memory, storage Ensure computer can be upgraded System will be advanced now but the standard in the future Systems are in existence At start of upgrade Continue to use legacy systems Costly to buy new hardware Costly to re-write/upgrade existing software Too costly to move to new system
16	b	<ul style="list-style-type: none"> identification of suitable network topology network hardware e.g. client-server, NIC, cabling software – network operating system, network management system auditing and monitoring software network manager/administrator, location of server, no of nodes (<i>any 1 of these 3 for 1 mark</i>) <p>4 marks – 1 per bullet</p>	4	<p>Accept topology on its own but not network hardware or network software on its own – must give an example of this e.g. client-server hardware, NIC, cabling, OS, network management system</p> <p>Choice of 3 possible answers for 4th bullet (but Not network management)</p>

Question		Expected Answer/s	Max Mark	Additional Guidance
16	c	<ul style="list-style-type: none"> • adjustable seats / desks • anti-glare screens • natural daylight/lighting • air conditioning • cables hidden if possible • all equipment PAT tested • ensure regular breaks • carry out risk assessments <p>2 marks – 1 mark for any valid point mentioned</p>	2	<p>Accept any valid measures that relate to health & safety regulations for those working with computer equipment</p> <p>Do not accept comfortable chair</p>
17	a	<p><i>Contacts</i> – Sanjeet can record all the important details that allow him to contact a person.</p> <p><i>Calendar</i> – Sanjeet can keep a diary of events, meetings, appointments and activities.</p> <p><i>Task(To-do) list</i> – Sanjeet can keep a list of all the tasks that require to be carried out and reminds him when each task is due to be completed.</p> <p><i>Communication</i> – Sanjeet can use email to communicate with people OR - Sanjeet can use texting to communicate</p> <p>Any two features with a description of its use for 2 marks each</p>	4	<p>Must mention record details in order to contact a person</p> <p>Any one of events, meetings, appointments, activities would suffice</p> <p>Must mention either tasks that require to be carried out OR remind him when each task is to be completed</p> <p>Must mention email OR texting</p>
17	b	<ul style="list-style-type: none"> • Data Protection Act AND Contacts • Regulation of Investigatory Powers Act AND Communication <p>(2 marks for either pair)</p>	2	<p>Accept DP Act, DPA, RIP Act, RIPA.</p> <p>Award 1 mark if candidate has the pair but name of Act is incomplete e.g. Investigatory Powers Act AND communication</p>

Question			Expected Answer/s	Max Mark	Additional Guidance
17	c		<ul style="list-style-type: none"> • Business costs (or similar) <ul style="list-style-type: none"> ○ Initial design and development ○ Initial/short term/installation costs ○ Running costs (telecommunications and consumables) ○ Total cost of ownership • Competitive advantage (or similar) <ul style="list-style-type: none"> ○ Improve service delivery ○ Increase productivity ○ Improved communication ○ Improved information gathering ○ Improved processing ○ Improved analysis ○ Use of company website <p>1 mark for each bullet and max of 1 mark for each supplementary bullet (4 marks)</p>	4	<p>Two points must come from Business Costs and two from Competitive Advantage.</p> <p>Supplementary bullets must relate to the economic implication. (except for Increase Productivity)</p>
18	a	i	<p>Capacity –</p> <ul style="list-style-type: none"> • DVD-ROM more suitable than CD-ROM • 4.7Gb or 17.1 Gb compared to 700Mb. • Complexity/graphics in game therefore more storage required <p>Data Transfer Rate – DVD-ROM faster than CD-ROM so DVD more suitable</p> <p>Ease of Update – the same for both media, so both are suitable for storing a computer game</p> <p>3 marks: 1 mark for criteria correctly named from arrangements + 2 for comparison/suitability</p>	3	<p>1 mark for correctly naming Capacity or Storage Capacity – NOT Memory or Memory Capacity. Approximate figures are acceptable</p> <p>1 mark each for any 2 bullets</p>
18	a	ii	<p>Capacity OR Data Transfer Rate OR Ease of Update OR Window Size (Resolution) (must be different from a (i) (1 mark))</p>	1	<p>Must be different from criteria selected in part (i)</p>
18	b		<ul style="list-style-type: none"> • TIFF is uncompressed / TIFF stores full details • Dithering used to replace missing colours <p>4 marks - 2 marks awarded for each bullet.</p>	4	<p>1 mark for vague answers e.g. TIFF file size is very large</p>

Question			Expected Answer/s	Max Mark	Additional Guidance
18	c	i	<p>Mp3</p> <ul style="list-style-type: none"> • small file size / compressed • realistic sounds required, so have to be recorded <p>3 marks - 1 mark for Mp3, 2 marks for justification and link into the scenario.</p>	3	Should pick up on 'realistic' and therefore not created as in Midi.
	c	ii	<p>Advantage of streamed audio</p> <ul style="list-style-type: none"> • game players do not have to wait until the sound has fully downloaded before they can play the game, or start a new level <p>2 marks – waiting to download, link to game scenario</p> <p>Disadvantage of streamed audio</p> <ul style="list-style-type: none"> • streaming during play may cause the game to appear jerky as the processor has to load the game and audio simultaneously, requires fast network connection, ... <p>2 marks - loading during play, problems that may occur</p>	4	<p>Don't have to wait until file downloads (1 mark) Before playing the game (1 mark)</p> <p>Slow loading/buffering during play (1 mark) OR audio may not stream fast enough to keep up with the game (1 mark)</p> <p>Game may appear jerky or stop (1 mark) OR audio may not play smoothly (1 mark)</p>
18	d		<ul style="list-style-type: none"> • A selected group of games users (testers) (1 mark) will try out all aspects of the game (1 mark) • They will evaluate how easily the game allows users to recover from mistakes (1 mark) and whether the interface is 'user friendly' or aesthetically pleasing (1 mark) • A checklist can be given to each participant (1 mark) and the results evaluated (1 mark) <p>2 marks – 1 mark for each valid point made</p>	2	<ul style="list-style-type: none"> • By group of testers • Trying out all aspects • Evaluating whether user friendly • Evaluating whether aesthetically pleasing • Use checklist • Evaluate results <p>(1 mark for any bullet)</p>
18	e	i	<ul style="list-style-type: none"> • hardware / software requirements • user (guide / instructions / manual) <p>2 marks – 1 mark for each item as stated in arrangements</p>	2	.Only acceptable answers

Question			Expected Answer/s	Max Mark	Additional Guidance
18	e	ii	<ul style="list-style-type: none"> • make copies of the game (<i>1 mark</i>) without consent of the copyright licence owner (<i>1 mark</i>) • make copies of the game (<i>1 mark</i>) and sell/distribute them (<i>1 mark</i>) • copying the game idea, characters or music (<i>1 mark</i>) in the creation of their own game (<i>1 mark</i>) <p><i>2 marks for any good description linked to game scenario</i></p>	2	<ul style="list-style-type: none"> • Make copies (<i>1 mark</i>) • Without consent of copyright licence holder (<i>1 mark</i>) • Sell/distribute them (<i>1 mark</i>) • Copying the game idea (<i>1 mark</i>) • In creation of own game (<i>1 mark</i>)
19	a	i	<p>Project Brief – created by the client to give the analyst a <u>rough outline</u> of the content of the desired application</p> <p>Requirements Specification –a <u>formal document</u> that provides the basis of a binding contract between the client and the developer. It must provide a clear understanding (for both parties) of exactly what is required from the multimedia application.</p> <p><i>2 marks – 1 mark for each description</i></p>	2	Must give the idea of rough outline for project brief and more formal document for requirements specification
19	a	ii	<ul style="list-style-type: none"> • purpose - presentation outlining history of club/celebrate their centenary year • user/audience - golf club members and/or visitors to the club • content - selection of photos and/or textual info about the club • timescale – must be ready August 2010 <p><i>4 marks – 1 mark for each item contained in the spec, 1 mark for each example</i></p> <p><i>(1 mark can be awarded if delivery media, hardware/software requirements or budget mentioned, but no second mark as not enough information contained in the text)</i></p>	4	0 marks for examples without stating the items

Question			Expected Answer/s	Max Mark	Additional Guidance
	b	i	 <p><i>3 marks – 1 mark for title, 1 mark for logo position shown, 1 mark for location shown for 3 link buttons</i></p>	3	<p>Accept any layout but has to have the title, the club logo and the three link buttons</p> <p>Logo can be in the form of a placeholder (box with X) or a drawing</p> <p>Links can be in the form of buttons or text</p>
19	b	ii	<p>A detailed storyboard should include:-</p> <ul style="list-style-type: none"> • button (style, position, size, colour) • font/text (style, size, colour)) • graphics (screen position, filename, file size, file type) • destination page/slide (links, navigation) • background colour <p><i>3 marks – 1 mark for bullet</i></p>	3	<p>Accept the following for 1 mark each</p> <ul style="list-style-type: none"> • button style • button font(text) style or size • headline font(text) style or size • graphics - screen position • file name of logo • links and navigation (page button links to if clicked) • background colour
19	b	iii	<ul style="list-style-type: none"> • composite / hybrid • photos appear in linear structure • hierarchical menu structure <p><i>3 marks – 1 mark for each bullet as shown</i></p>	3	Only acceptable answers

Question			Expected Answer/s	Max Mark	Additional Guidance
19	c		<p>Multimedia Designer</p> <ul style="list-style-type: none"> • will specialise in the overall design of the product, and how to combine/position the text, graphics and photographs appropriately • will be responsible for: content, structure, navigation, screen layout, interactivity <p>Multimedia Programmer</p> <ul style="list-style-type: none"> • is responsible for creating the overall application to the design provided by the multimedia designers • responsible for incorporating media elements(photographs) provided by the media specialist. • S/he will be an expert in the chosen software or authoring tool. <p><i>4 marks – 2 marks for good description of each job type (linked to the scenario)</i></p>	4	<p>Award 1 mark for</p> <ul style="list-style-type: none"> • Specialise in overall design • Combines/positions text, graphics, photos • Responsible for content/structure/navigation/screen layout/interactivity – any two of these • responsible for creating the overall application to the design • responsible for incorporating media elements(photographs) (provided by the media specialist) • S/he will be an expert in the chosen software (or authoring tool)
19	d		<ul style="list-style-type: none"> • drag objects(photos) on to the timeline • attach behaviour to the object (or exemplification of this e.g. order that photos appear or length of time photo displayed or transition between photos) <p><i>2 marks – 1 mark for any valid point</i></p>	2	<p>Idea of putting objects on the timeline for 1 mark then any of the options in the second bullet for the second mark</p>
20	a		<p>Use a template/master slide (<i>1 mark</i>) and apply it to every slide (<i>1 mark</i>)</p>	2	<p>Use the same template/master slide for each slide (<i>2 marks</i>)</p>
20	b	i	<p>Mpeg or Mpeg4 (Not MP4)</p>	1	
20	b	ii	<p>It can be used within the presentation software</p>	1	
20	c		<ul style="list-style-type: none"> • Reduce frame rate – would make the presentation jerky • Reduce window size – would make the window size too small to view <p><i>2 marks – 1 mark for method, 1 mark for the effect</i></p>	2	<p>Only acceptable answers</p>

Question			Expected Answer/s	Max Mark	Additional Guidance																
20	d		Knowledge is derived from information (2 marks) Knowledge is extra information (1 mark)	2	Only acceptable answers																
21	a	i	<ul style="list-style-type: none">• colour = reddish-brown• location = heather• dorsal = pale• weather = rain <i>1 mark for any 3 pairs – (3 marks)</i>	3	variations on terms colour, location and dorsal are acceptable as are notation variations like (colour , reddish-brown)																
21	a	ii	<table border="1"><thead><tr><th></th><th>colour</th><th>location</th><th>dorsal</th></tr></thead><tbody><tr><td>Cousin German</td><td>reddish-brown</td><td>heather</td><td>pale</td></tr><tr><td>Small Underwing</td><td>purplish-grey</td><td>bearberry</td><td>bold</td></tr><tr><td>Maple Prominent</td><td>green</td><td>willow</td><td>darker</td></tr></tbody></table> <i>1 mark for a table with four columns as shown</i> <i>1 mark for each correctly entered row with no blanks</i> <i>(4 marks)</i>		colour	location	dorsal	Cousin German	reddish-brown	heather	pale	Small Underwing	purplish-grey	bearberry	bold	Maple Prominent	green	willow	darker	4	Do not penalise extra columns
	colour	location	dorsal																		
Cousin German	reddish-brown	heather	pale																		
Small Underwing	purplish-grey	bearberry	bold																		
Maple Prominent	green	willow	darker																		

Question			Expected Answer/s	Max Mark	Additional Guidance
21	a	iii	<p>IF colour IS reddish-brown AND location IS heather AND dorsal IS pale THEN caterpillar IS ‘Cousin German’</p> <p>IF colour IS purplish-grey AND location IS bearberry AND dorsal IS bold THEN caterpillar IS ‘Small Underwing’</p> <p>IF colour IS green AND location IS willow AND dorsal IS darker THEN caterpillar IS ‘Maple Prominent’</p> <ul style="list-style-type: none"> • <i>1 mark for use of IF, AND and IS (or =)</i> • <i>1 mark for use of caterpillar variable or any similar</i> • <i>1 mark for use of ‘’ where capitals or double words involved in the rule</i> <p><i>1 mark for each rule</i></p> <p>Accept variations like</p> <p>caterpillar IS ‘Cousin German’ IF colour IS reddish-brown AND location IS heather AND dorsal IS pale)</p> <p><i>(3 marks for style + 3 marks for rules = 6 marks)</i></p>	6	<p>Accept logically correct rules e.g.</p> <p>IF reddish-brown AND heather AND pale THEN Cousin German</p> <p>for 1 mark</p> <p>Award marks for rules based on candidate’s factor table in a (ii)</p> <p>Award full credit if it based on a reasonable factor table with at least two pairs for each type e.g.</p> <p>If colour IS green AND location IS willow And weather is sunny THEN caterpillar IS ‘Maple Prominent’</p>
21	b		<ul style="list-style-type: none"> • Spread of expert knowledge on caterpillars • Preservation of Moira’s expertise • Restricted domain (caterpillars) • Available domain expert (Moira) <p><i>2 marks each for any bullet – 1 mark for each generic point (4 marks)</i></p>	4	<p>Must relate to scenario for full marks</p> <p>1 mark if not related to scenario</p>

Question		Expected Answer/s	Max Mark	Additional Guidance
21	c	<ul style="list-style-type: none"> Knowledge acquisition (or elicitation) stage – mis-interpretation of expert knowledge Knowledge representation stage – programming error System validation stage – not thoroughly tested <p><i>2 marks for each bullet – 1 mark each if stage not mentioned (max 2)</i> <i>(4 marks)</i></p>	4	<p>0 marks for naming stages only.</p> <p>1 mark for the following:</p> <p>Knowledge Acquisition stage – knowledge acquired wrongly</p> <p>Knowledge Representation stage – knowledge represented wrongly</p> <p>System Validation stage – system not validated</p>
22	a	$CF_{conc} = CF_{rule} \times \min(CF_{cond1}, CF_{cond2}, \dots)$ $CF_{dangerous} = 0.9 \times \min(0.6, 0.8, 0.3)$ $CF_{dangerous} = 0.9 \times 0.3$ $CF_{dangerous} = 0.27 \text{ (or 27\%)}$ <p><i>2 marks for 0.27 (or 27%) – 1 mark for only stating the formula</i> <i>(2 marks)</i></p>	2	<p>If candidate has multiple answers, award 0 marks e.g.</p> <p>$0.9 \times 0.6 = 0.54$ $0.9 \times 0.8 = 0.72$ $0.9 \times 0.3 = 0.27$</p>
22	b	<p>The conclusion ‘dangerous’ is added (<i>1 mark</i>) to working memory (<i>2 marks</i>)</p> <p>OR</p> <p>Change to working memory (<i>2 marks</i>) dangerous added to knowledge base (<i>1 mark</i>)</p> <p><i>(3 marks)</i></p>	3	Only acceptable answers

Question			Expected Answer/s	Max Mark	Additional Guidance
22	c		<p>To determine the conflict set – (2 marks) OR Used after a change to working memory – (1 mark) Used to determine which rules can be fired – (2 marks) (max 2 marks) In a forward chaining inference engine – (2 marks) (4 marks)</p>	4	<p>Used to determine which set of rules can be fired NOT which rules will fire next</p> <p>Need forward chaining inference engine for full marks.</p>
22	d	i	<ul style="list-style-type: none"> • Level of detail good • as it is brief • Nature is qualitative • as it says as fast as you can (not a number) • Nature is formal as it is a serif font <p><i>1 mark for each bullet</i> (4 marks)</p>	4	Only acceptable answers
22	d	ii	<ul style="list-style-type: none"> • The advice/conclusion (1 mark) is well/clearly presented (1 mark) • There are no explanation facilities (1 mark) <p><i>(0 marks for comments about publishing style)</i> (3 marks)</p>	3	Must relate to user interface and not how it is published
22	d	iii	<ul style="list-style-type: none"> • The user interface (1 mark) should have included a suitable warning (1 mark) • The system should have been thoroughly tested (1 mark) before being sold (1 mark) • The accident should be reported (1 mark) so it does not recur (1 mark) • The tourist is at fault (1 mark) because he chose to take the advice from the expert system (1 mark) OR it is only a second opinion (1 mark) OR it could be bad advice (1 mark) OR should have found out about certainty factors (1 mark) 	2	The last bullet has a choice of 4 possible answers for the second mark
22	e		<p>camera \wedge \negdangerous \rightarrow photograph</p> <p><i>1 mark for correct use of \wedge for ‘and’</i> <i>1 mark for correct use of \neg for ‘not’</i> <i>1 mark for conditions in logical order and use of \rightarrow</i> (3 marks)</p>	3	Only acceptable answers

Question		Expected Answer/s	Max Mark	Additional Guidance
23	a	<ul style="list-style-type: none"> • The domain is medical/cancer treatments • The category is planning • To devise a course of cancer treatment • Tried to automated knowledge acquisition • Consulted domain experts directly • No requirement for a knowledge engineer and programmer • To maintain up to date knowledge base <p><i>1 mark for each bullet</i></p>	4	Only acceptable answers
23	b	<p>In an expert system there is a consultation where the user is asked questions (<i>1 mark</i>) and given advice (<i>1 mark</i>)</p> <p>In a database the user creates and runs a query or report (<i>1 mark</i>) by setting criteria for various fields or attributes (<i>1 mark</i>)</p> <p><i>2 marks for each where 1 mark is awarded for each appropriate use of a suitable term (4 marks)</i></p>	4	<p>Consultation/Questions - 1 mark</p> <p>Advice / Conclusion given – 1 mark</p> <p>Creates/runs query - 1 mark</p> <p>Produces report – 1 mark</p> <p>Based on search criteria – 1 mark</p>
24	a	<p></p> <p><img (<i>1 mark</i>) src= (<i>1 mark</i>) "Zologo.jpg" (<i>must come after src for 1 mark</i>) alt= "Zologo" (<i>1 mark</i>) height="70" (<i>1 mark</i>) width="120"> (<i>1 mark</i>)</p>	6	Do not penalise if quotes omitted
24	b	<p><td>Road racer (more)</td></p> <p><a href = (<i>1 mark</i>) "tthunder.html" > (<i>1 mark</i>) (more) or more (<i>1 mark</i>) (<i>1 mark</i>)</p>	4	Do not penalise if quotes omitted
24	c	<ul style="list-style-type: none"> • W3C (<i>1 mark</i>) • developments / standards (<i>1 mark</i>) • on the WWW (<i>1 mark</i>) • deal with HTML (<i>1 mark</i>) <p><i>Any 3 bullets for 3 marks</i></p>	3	

Question			Expected Answer/s	Max Mark	Additional Guidance
24	d		<ul style="list-style-type: none"> The developer can define a style for each HTML element <i>(1 mark)</i> apply it to many Web pages <i>(1 mark)</i> To make a global change, simply change the style <i>(1 mark)</i> and all pages are updated automatically <i>(1 mark)</i> without having to change each individual page <i>(1 mark)</i> <i>any 4 bullets for 4 marks</i>	4	
24	e	i	Paula – <i>(1 mark)</i> inline style - <i>(1 mark)</i> has higher priority – <i>(1 mark)</i> than internal style sheet – <i>(1 mark)</i>	4	These specific terms not required as long as argument is correct. Award 1 mark for idea of hierarchy of stylesheets
24	e	ii	h3 { font-family:Arial; color:red } h3 {} <i>(1 mark)</i> font-family:Arial or “Arial” <i>(1 mark)</i> ; <i>(1 mark)</i> color:red <i>(1 mark)</i>	4	Only acceptable answers
25			<ol style="list-style-type: none"> A packet is a block of data with a header added with the source address packet number/length/protocol and destination addresses attached Routers in the Internet look at the destination address and use lookup tables to decide where to send the packet next which may be the destination or another router each packet is routed (may be different route) if does not arrive, will be re-transmitted packets are reassembled at destination using packet number <i>1 mark for each point up to a maximum of 5</i> <i>At least 2 points must come from points 1 to 5 and at least 2 from points 6 to 11</i>	5	

Question			Expected Answer/s	Max Mark	Additional Guidance
26	a		<p>Two answers in the correct range e.g. 201.103.61.121 and 201.103.61.125 (4 marks)</p> <ul style="list-style-type: none"> • correct IP address format e.g. xxx.xxx.xxx.xxx – (1 mark) • first octet in range 192 to 223 – (1 mark) • both on same subnet ie xxx.xxx.xxx is same for both – (1 mark) <p>last octet is not 0 or 255 – (1 mark)</p>	4	Accept structure or layout of 4 octets
26	b	i	<ul style="list-style-type: none"> • domain names are words/meaningful (1 mark) not just numbers (1 mark) <p>OR</p> <ul style="list-style-type: none"> • domain names are used by people (1 mark) not by computers (1 mark) <p>OR</p> <ul style="list-style-type: none"> • easier to remember (1 mark) than strings of numbers (1 mark) 	2	Only acceptable answers
26	b	ii	<ul style="list-style-type: none"> • posters.co.uk or posters.com (2 marks) <p>3 or 2 parts (should not include hostname www) (1 mark)</p> <ul style="list-style-type: none"> • Ends .co.uk or .com (1 mark) 	2	
26	b	iii	<ul style="list-style-type: none"> • DNS • Looks up (references, changes, converts) • IP address • If not found, passes it on to another server • Idea of hierarchy • If not found at all, error 404 <p>Any four bullet points @ (1 mark) each</p>	4	
26	c	i	<ul style="list-style-type: none"> • a protocol (1 mark) • for remote communication (1 mark) <p>for communicating with remote computers or servers or other network devices (1 mark)</p>	2	Remote computers or servers or other network devices are all acceptable
26	c	ii	<ul style="list-style-type: none"> • TELNET is an old protocol • So not very secure • May need to open firewall to allow this protocol through • May allow hackers to access servers <p>Any 2 bullet points @ 1 mark each</p>		

Question			Expected Answer/s	Max Mark	Additional Guidance
26	d	i	<ul style="list-style-type: none"> • Should be faster than server side scripting • Validation/Error trapping is improved • Individual fields can be checked rather than waiting for form to be submitted. • Less load on server/doesn't affect server performance <p><i>Any 2 bullet points @ 1 mark each</i></p>	2	Only acceptable answers
26	d	ii	<ul style="list-style-type: none"> • data stored in more than one table • idea of tables being linked • suggestion of PK • production of reports • use of queries to extract information <p><i>Any 1 bullet points for 1 mark each</i></p>	2	any other suitable answer relating to relational database with correct terminology

[END OF MARKING INSTRUCTIONS]