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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Question	Answer	Marks
1(a)	**One** from: • It has no meaning (1) • Raw/unprocessed values (1) **One** from: • any **correct** example (1)	**2**
1(b)	**One** from: • Any example. Must **clearly** include context or meaning (1). May simply be a description of a type of information. **One** from: • Processed data (1) • Data + meaning (+ structure) (1)	**2**

Question	Answer	Marks
2	**Four** from: • Accuracy (1) • Relevance (1) • Age (1) • Level of detail (1) • Completeness (1)	**4**

Question	Answer	Marks

3	**Seven** from:
	
	Sale
	• Computer reads the **barcode** number (1)
	• Computer searches for this barcode number in the product file/database (1)
	• If this barcode number is found, then number in stock is reduced (1)
	
	Order
	• Computer compares the **number in stock** to the re-order level/set value (1)
	• If the **number in stock** is not equal (or lower) to the re-order level/set value another barcode is input//systems returns to the start (1)
	• If the **number in stoc**k is equal/lower than the re-order level//a threshold/set value (1st)
	   – the computer creates an (automatic) order (1)
	• Item is flagged to be reordered (1)
	• Computer looks up/finds the re-order quantity (for that product) (1)
	• Computer looks up/finds the supplier (reference) number (for that product) (1)
	• Computer searches/checks (the supplier file) for the record of the supplier (1)
	• Computer orders **automatically** (1st)
	   – using the supplier's contact details. (1)
		7

Question	Answer	Marks

4	**Eight** from:
	
	• Allows records to be accessed in **the order** they **were entered** (1)
	• Allows records to be accessed **randomly** (1)
	• Each **record** is given index (1)
	• A database may have several indexes (1st)
	   – based on the information required (1)
	• Each **record** is given index (1)
	• It is a method of allowing fast retrieval (1)
	• Data is organised into records which consist of **fixed length fields** (1)
	• Uses a set of hash tables (1st)
	   – contain "pointers" into the records (1)
	• Individual records can be retrieved without having to search the entire file (1)
	• Can be searched quickly (1)
	• Searches use an index (1st)
	   – which will narrow down the records/data to be searched (1)
	   – that section of the file is then searched sequentially to find the record required. (1)
		8

Question	Answer	Marks
5(a)	**Four** from: • A **user interface** so questions/queries about (e.g.) financial details **appear** (1) • A **user interface** so answers to questions can **be input** (1) • **Knowledge base editor** to **enter/amend** (e.g.) current financial facts and figures (1) • **Database of facts/knowledge base** to **hold/store** current financial details (1) • **Rules base** to **hold/store** financial rules, (1) • **Inference engine** to **interrogate** knowledge base**//uses forward/backward chaining** to come to a conclusion (1) • **Explanation system** to **describe why/say why/justify** how the conclusions were arrived at. (Do not award "explains") (1)	**4**
5(b)	**Six** from: • Reduced staff costs (1) • Saves staff time in writing (e.g.) documentation (1) • Makes **bank more** competitive (1) • Expert systems give **better** advice than humans (1) • Increase customer satisfaction (1) • Makes the **bank** look **more** reliable (1) • Expert system, does not need e.g. breaks/holidays (1) • Cheaper to copy an expert system than train new staff (1) • Errors are reduced. (1)	**6**
5(c)	**Three** from: • It can lead to **bad** reviews/reputation (1) • It can lead to **loss** of customers (1) • Expert systems cannot apply common sense (1) • Expert systems cannot be creative in//cope with unusual situations (1) • Costs of creation//initial installation//initial purchase is high (1) • Knowledge base/rules require **frequent** updating//knowledge goes out of date (1) • Need to pay/employ a (e.g.) technician//pay **maintenance** costs for the expert system (1)	**3**

Question	Answer	Marks

6	**Eight** from:
	
	Advantages: MAX SIX
	• The running/maintenance costs of a flight simulator are less than an actual aircraft (1)
	• Avoids repair costs for real aircraft (1)
	• **Different/various/a range of** situations can be simulated in a flight simulator (1st)
	  – planned at the start of the simulation (1)
	  – during the simulation (1)
	• Events can be simulated **without waiting for them to happen in real life** (1st)
	  – such as (suitable named example) (1)
	• Situations can be repeated multiple times until the pilot gets it right (1)
	• (Safer because) Situations can be practiced in a flight simulator without putting the humans/trainee/flight training instructor in danger (1)
	• Flight simulator does not need to be at an airfield//can be in a convenient location (1)
	• Can concentrate training on **specific** controls (1)
	• The environment benefits from flight training in a simulator (1st)
	  – as there is no pollution created by a flight simulator (1)
	• The level of noise in a flight simulator is not as loud as in an aircraft (1st)
	  – makes the communication between the instructor and trainee much easier (1)
	
	Disadvantages: MAX FIVE
	• Simulators are not as **realistic/real** as a real aircraft (1)
	• Pilots get overconfident and may compromise safety (1)
	• It is difficult to recreate boredom/fatigue of a real flight (1)
	• Available simulated scenarios dependant on software packages (1)
	• Pilot may "freeze" when faced with a real flight/actual passengers (1)
		8

Question	Answer	Marks
7(a)	**Three** from: • Translates the whole program **as one complete unit/at once** (1) • Translates the program into machine code/language (1) • Creates an executable file (1) • Produces a report of errors in the code after compilation (1) • Can optimise source code (to run as fast or as efficiently as possible) (1).	3

7(b)	**Three** from:
	
	• A linker combines object files/modules (1st)
	  – that have been created using a compiler (1)
	  – into an executable file (1)
	• A linker can link modules from a common library file into the executable file (1)
	• Replaces symbolic addresses with real addresses (1).
		3

Question	Answer	Marks

8	**Six** from: e.g.:
	
	INPUT number
	
	    CASE number
	
	        >12 : X ← number / 12
	
	        >8 : X ← number / 8
	
	        OTHERWISE: X← number / 4
	
	    ENDCASE
	
	OUTPUT X
	
	   - INPUT number (name of variable is not important) (1) - INPUT number as first item (1) - CASE number (any variable, but must match MP1 above) in correct place (1) - Action if >12 correct plus **calculated** output (1) - Action >=8<=12 correct (1st) - plus **calculated** output (MUST be >= or <= structure) (1) - Action <4 correct plus **calculated** output (1) - ENDCASE in correct position (1) - CASE and ENDCASE correct indentation (1) - ALL other **correct** aspects indented from CASE and ENDCASE (1)
		6

Question	Answer	Marks

9	**Max six if concentrates on static or dynamic only**
	
	Positive Max 6 from:
	• Static parameter query is fixed/doesn't change/always uses the same criteria (1st)
	  – Which is set when the query is (first) written (1)
	  – saves time when running the query (1)
	  – less likely to have an error because no user input required (1)
	• A dynamic parameter query can be used to search for different values (1st)
	  – each time it is run (1)
	  – which makes it more flexible (search for other cities) (1)
	  – uses a dialogue box for the user to enter the data required (1)
	• For dynamic query saves time in designing the query as you don't need to create similar queries (1)
	• Static queries are more user friendly (1st)
	  – Because it's attached to a button/can click on a button to make it run/don't have to enter search criteria (1)
	
	Negative Max 6 from:
	• In a static query every time that the query is run it will search for the same data (1st)
	  – cannot be changed/search for another city (1)
	  – can end up having a lot of different static queries (1)
	  – making it difficult to find the query you want (1)
	• If different data is to be searched for the user would need to open up the query in design view (1st)
	  – and change the data in the criteria to that required (1)
	• Dynamic parameter query requires less technical knowledge of the user. (1)
	• Static queries require increased **storage** space/file size (allow converse, but award once only) (1)
	
	Two from:
	• Statement of when static parameter queries are the better option (1)
	• Statement of when dynamic parameter queries are the better option (1)
		8

Question	Answer	Marks

10(a)	**Three** from:
	
	• Data is scrambled (1st)
	  – so it is not understandable (1)
	  – of no use to a hacker/third party (1)
	• **Can only** be unencrypted with a key//need the key to unencrypt//access the data (1)
	• Use of/access to encryption key/software known only to authorised user (1)
		3

10(b)	**Three** from:
	
	• Acts as 'barrier' between internal and external networks/internet (1)
	• Reads (packet) sender's IP address/reads domain of sender (1st)
	  – checks against database/list of IP addresses (1)
	  – checks against database/list of network ports (1)
	• Permits access/passage of **packet** if not forbidden/if on allowed list/rules (1)
	• Drops **packet** if on forbidden/not on allowed list (1)
	• Can create logs for analysis (1)
	• Can create alerts. (1)
		3