



2009 Information Systems

Higher

Finalised Marking Instructions

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Part One: General Marking Principles for Information Systems – Higher

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 | | Updating multiple records (<i>1 mark</i>) Possible inconsistency if it is not done eg might miss one or update it incorrectly (<i>1 mark</i>) Update anomaly (<i>2 marks</i>) | 2 | Accept actual examples from data shown eg If D Aitken changed address then every occurrence of 4 Rowan Road might not be changed. |
| 1 | b | | Add a surrogate key (<i>2 marks</i>) Add a new identifier (<i>1 mark</i>) | 2 | Add a surrogate gets 2 marks but add a new identifier only gets 1 mark. |
| 2 | a | | Must have primary key or unique identifier (<i>1 mark</i>) Non-null (<i>1 mark</i>) | 2 | Only acceptable answers. |
| 2 | b | | Primary key (<i>1 mark</i>) In another table (<i>1 mark</i>) | 2 | Entity is acceptable instead of table. |
| 3 | | | To remove non-key dependencies (<i>2 marks</i>) | 2 | Only acceptable answers. |
| 4 | | | Cost descending or description (<i>1 mark</i>) Product No. ascending or description (<i>1 mark</i>) Correct order (cost then product no.) (<i>1 mark</i>) | 3 | |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|--|--|----------|--|
| 5 | a | | 1:M or one to many (<i>1 mark</i>) | 1 | Only acceptable answers. |
| 5 | b | | M:M or many to many (<i>1 mark</i>) | 1 | Only acceptable answers. |
| 6 | | | Use a template or master slide or theme (<i>1 mark</i>) Used to create every page or idea that it is used throughout the presentation (multiple pages) (<i>1 mark</i>) | 2 | Template or master slide or theme gets 1 mark and then some idea that a template would be used to create and/or update every page or a master slide or theme would be used to create and/or update every slide throughout the presentation for the second mark. <i>Must have template or master slide or theme for first mark and only then can second mark be awarded</i> |
| 7 | | | By recording any actions or writing a script (<i>1 mark</i>) Assigned to combination of keys or button (<i>1 mark</i>) | 2 | For first mark must have the idea of recording or writing a script and for the second mark must have this assigned to keyboard shortcut or a button. |
| 8 | | | Timeline (<i>1 mark</i>) Resource allocation (<i>1 mark</i>) Gantt (and other) charts (<i>1 mark</i>) Optimisation and critical path analysis (<i>1 mark</i>) | 2 | Any two of these for 2 marks . |
| 9 | | | Cost = monetary (<i>1 mark</i>) Value = level of importance (<i>1 mark</i>) | 2 | Must have idea that cost is to do with money for first mark and that value is to do with the importance of information for second mark . |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|--|--|---|----------|--|
| 10 | | | <p>To summarise data (<i>1 mark</i>) from other information systems (<i>1 mark</i>)</p> <p>To produce graphical (<i>1 mark</i>) summarised output (<i>1 mark</i>)</p> <p>To support a strategic level (<i>1 mark</i>) decision (<i>1 mark</i>)</p> <p>To drill down (<i>1 mark</i>) to levels below (<i>1 mark</i>)</p> | 2 | <p>Any 2 of these points for 2 marks.</p> <p>Accept appropriate exemplification of any of these points.</p> |
| 11 | | | <p>Hacking (<i>1 mark</i>) – gaining unauthorised access to the system (<i>1 mark</i>)</p> <p><i>or</i></p> <p>DOS (<i>1 mark</i>) – flooding the server with large number of requests (<i>1 mark</i>)</p> | 2 | Naming without description (<i>1 mark</i>) |
| 12 | | | <p>Yes (<i>1 mark</i>)</p> <p>Freedom of Information Act (<i>1 mark</i>)</p> <p>Public body (local council) (<i>1 mark</i>)</p> | 3 | Must mention the FOI Act and state that the council is a public body therefore the resident is entitled to see this information. |

| Question | | | Expected Answer/s | | Max Mark | Additional Guidance | |
|----------|--|--|--|--|--|---|--|
| | | | | | 17 | | |
| 13 | | | UNF | 1NF | 2NF | 3NF | |
| | | | (<u>Employee no</u> Name Address Date of birth Branch Manager Branch address <i>Date</i> <i>Course title</i> <i>Trainer</i> <i>Grade achieved</i>) | (<u>Employee no</u> Name Address Date of birth Branch Manager Branch address) (<u>Date</u> <u>Course title</u> Trainer Grade achieved <u>Employee no</u> *) | (<u>Employee no</u> Name Address Date of birth Branch Manager Branch address) (<u>Date</u> <u>Course title</u> * Grade achieved <u>Employee no</u> *) (<u>Course title</u> Trainer) | (<u>Employee no</u> Name Address Date of birth Branch*) (<u>Branch</u> Manager Branch address) (<u>Date</u> <u>Course title</u> * Grade achieved <u>Employee no</u> *) (<u>Course title</u> Trainer) | |

Process

1NF

1 mark for creating second entity including Employee no.

1 mark for including Date, Course title, Trainer, Grade Achieved (ignore extra attributes)

2NF

No compound key – 0 marks

1 mark for removing Course title or Date OR Course title and Date

1 mark for leaving a copy of the above attribute(s) **only** behind as a foreign key

3NF

1 mark for removing a non-key dependency provided a PK is not removed with it

1 mark for leaving a copy of the non-key dependency behind as a foreign key **only**

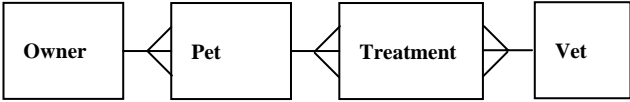
Looking at 3NF only– accept only correct answers, not incorrect answers logically arrived at

4 marks for attributes in 3NF – award **1 mark** for each correct entity in 3NF (a misplaced non-key attribute would normally only lose **1 mark**)

4 marks for Primary keys in 3NF – **2 marks** for the Compound key (all 3 attributes), **1 mark** for any 2 of the 3 attributes and **1 mark** each for the other primary keys ('Course title' and 'Branch')

3 marks for Foreign keys in 3NF – **1 mark** for each correctly marked Foreign key

Note: 'Branch' need not be chosen as the Primary key in 3NF. 'Manager' or 'Branch address' will be awarded full credit providing the choice is matched by a Foreign key in the Employee entity.

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|----|--|----------|--|
| 14 | a | |  <p>4 marks – award 2 marks each for two correct relationships 2 marks – a third correct relationship with no incorrect relationships shown</p> | 6 | 1 mark should be awarded for each relationship where the cardinality is wrong |
| 14 | b | | <p>A – Text (1 mark) B – Date (1 mark) C – Object (or Link) (1 mark) for either D – Boolean (1 mark) E – on or before today's date (or suitable range check >1/1/1950 <u>NOT</u> <*/*/2008) (1 mark) F – Male or Female (1 mark) G – Lookup from Owner (1 mark)</p> | 7 | Accept IN(Male, Female) |
| 15 | a | | <ul style="list-style-type: none"> • Uses a large amount of input data eg from a DP system (1 mark) • Helps with decision making or planning (1 mark) • Draws on internal and external sources of data (1 mark) • Gives summarised output OR converts data into information OR produces information (1 mark) | 2 | Any 2 of these points or equivalent for 2 marks |
| 15 | b | i | Operational or Tactical (1 mark) | 1 | |
| 15 | b | ii | Written (1 mark) | 1 | |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|--|---|----------|---|
| 15 | c | | <p>Aggregated (<i>1 mark</i>)</p> <p>As there are examples of totals (<i>1 mark</i>)</p> <p>eg no. of customers, no. of items, total sales (<i>1 mark</i>)</p> | 3 | <p>1 mark for aggregated</p> <p>2 marks for justification relating to the data eg no. of customers, no. of items, total sales</p> <p>1 mark that does not relate to the data</p> |
| 15 | d | | <p>Relevance or Relevant (or appropriateness)</p> <p>Accuracy or accurate</p> <p>Completeness or complete</p> <p>Reliability (or objectivity)</p> <p>Timing or Timeliness</p> <p>Level of detail (or conciseness or concise)</p> <p>Presentation</p> <p>Availability or available</p> | 2 | <p>1 mark for each – maximum 2 marks</p> <p>Accept these terms only</p> |
| 15 | e | | <p>It is ethical (<i>1 mark</i>) as it is acceptable for the employer to monitor the work of the employee (<i>1 mark</i>)</p> <p><i>or</i></p> <p>The employee may feel it is unethical (<i>1 mark</i>) as this (use of ICT) affects privacy (<i>1 mark</i>)</p> | 2 | <p>1 mark for taking a stance i.e. ethical/unethical, fair/unfair, should/should not, right/wrong and then 1 mark for a reasonable justification.</p> <p><i>It can be difficult to determine what is a reasonable justification</i></p> |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|--|--|---|----------|--|
| 16 | | | <p>Evaluation of software (functionality, performance, usability, compatibility data migration, reliability, resource requirements, portability, support)</p> <p>Training (on-the-job training, in-house and external courses)</p> <p>User support (manuals, online help, online tutorials, help desk, newsgroups, FAQs)</p> | 8 | <p>1 mark for naming the aspect and then 1 mark each for clear points about that aspect up to a maximum of 5</p> <p>Example answer with aspect named (eg Evaluation of Software)</p> <p>Evaluation of software (functionality, performance, usability, compatibility data migration, reliability, resource requirements, portability, support)</p> <p><i>This would get 6 marks (1 mark for the aspect and 5 marks for the criteria, which is the maximum)</i></p> <p>Example answers with aspect not named</p> <p>Compatibility (1 mark) ensuring that software is compatible with existing software (1 mark) existing documents (1 mark) existing hardware (1 mark)</p> <p>Functionality. (1 mark) Ensuring that the features of the software (1 mark) will meet the needs of the organisation (1 mark) without having too much functionality as to waste resources (1 mark)</p> |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|----|--|----------|---|
| 17 | | | Levels of access Administrator rights Disc space (quota) Access rights to printers Access rights to e-mail Access rights to Internet Access rights to folders Access rights to applications Remote access Printer credits/allowance | 3 | 1 marks for any point – maximum 3 marks Any equivalent answer to those listed would also be acceptable. |
| 18 | a | i | An on-line identity (<i>2 marks</i>) <i>or</i> A character with a name (<i>2 marks</i>) <i>or</i> an avatar representing a person (<i>2 marks</i>) | 2 | 2 marks for any point – 1 mark for identity or character on its own Note: Chatroom is mentioned in the question therefore no credit should be given for this |
| 18 | a | ii | To hide their true identity (<i>2 marks</i>) To role play (<i>2 marks</i>) | 2 | 2 marks for any equivalent answer to those listed |
| 18 | b | i | The police action was legal (<i>1 mark</i>) under the Regulation of Investigatory Powers Act (<i>1 mark</i>) <i>or</i> As they have the right (<i>1 mark</i>) to intercept electronic communications (<i>1 mark</i>) | 2 | 1 mark for stating that the action was legal and 1 mark for mentioning the RIP Act or the interception of electronic communication Accept responses that are very close to the correct wording of the Act eg Investigatory Regulating Powers Act |
| 18 | b | ii | They should contact the sender and/or receiver OR contact the individuals (<i>2 marks</i>) | 2 | 2 marks for mentioning the sender <i>or</i> the receiver <i>or</i> the individuals |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|----|--|----------|---|
| 19 | a | | Epilepsy (<i>1 mark</i>) | 1 | |
| 19 | b | | Increasing (<i>1 mark</i>) number of frames per second (frame rate) (<i>1 mark</i>) Mention of frame rate (<i>1 mark</i>) | 2 | |
| 19 | c | i | Mpeg (<i>1 mark</i>) | 1 | Accept also DivX, Xvid and H.264 |
| 19 | c | ii | <ul style="list-style-type: none"> Changes not visible to human eye (looks the same) Frame rate is the same Screen size Removing unnecessary bits of information Cannot tell difference if compressed file is viewed in small window size | 2 | Any 2 points for 2 marks |
| 20 | a | | Three or more people (<i>1 mark</i>) Using web cams (<i>1 mark</i>) Through electronic medium (<i>1 mark</i>) | 3 | Must mention number of people, using web cams, through electronic medium eg the Web |
| 20 | b | | Video Audio View slide presentations Annotate diagrams using white board | 2 | Any 2 points for 2 marks |

| Question | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|--|----------|--|
| 20 | c | <p>Firewall (<i>1 mark</i>) firewall blocks (<i>1 mark</i>) unauthorised access (<i>1 mark</i>) or Encryption (<i>1 mark</i>) Use of private and public keys (<i>1 mark</i>) To code private information (<i>1 mark</i>) or username and password (<i>1 mark</i>) password policy eg what makes a strong password (<i>1 mark</i>) which prevents unauthorised access (<i>1 mark</i>)</p> | 3 | <p>1 mark for method 2 marks for description</p> |
| 21 | a | <p>Criteria - Consistency (<i>1 mark</i>)</p> <ul style="list-style-type: none"> logos or buttons (<i>1 mark</i>) buttons different, size and position (<i>1 mark</i>) font is different (<i>1 mark</i>) <p>Criteria - Information overload (<i>1 mark</i>)</p> <ul style="list-style-type: none"> client reviews (<i>1 mark</i>) screenshot 1 spaced neatly, client reviews cramped (<i>1 mark</i>) appropriate amount of text (<i>1 mark</i>) <p>Criteria – Clarity (<i>1 mark</i>)</p> <ul style="list-style-type: none"> informative (<i>1 mark</i>) uncluttered (<i>1 mark</i>) easy to read (<i>1 mark</i>) large buttons (<i>1 mark</i>) clear graphic (<i>1 mark</i>) background too dark (<i>1 mark</i>) clear/obvious navigation (<i>1 mark</i>) cramped/cluttered (<i>1 mark</i>) font too small (<i>1 mark</i>) <p>Criteria – Fitness for Purpose (<i>1 mark</i>)</p> <ul style="list-style-type: none"> Appropriate graphic (<i>1 mark</i>) <p>Criteria – Accessibility (<i>1 mark</i>)</p> <ul style="list-style-type: none"> Any appropriate comment relating to poor eye sight eg can text be made bigger (<i>1 mark</i>) | 6 | <p>Any 6 bullets for 6 marks but must only be from two criteria</p> <p>Each of the bullets opposite can be phrased as a relevant criteria eg is it informative?</p> <p>A description of fitness for purpose is acceptable eg it does what Jim wants</p> |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|---|---|----------|---------------------------------------|
| 21 | b | | objects (<i>1 mark</i>) placed on (<i>1 mark</i>) timeline (<i>1 mark</i>) and behaviour of objects can be controlled (<i>1 mark</i>) | 4 | |
| 21 | c | i | <p>Streaming (<i>1 mark</i>)</p> <ul style="list-style-type: none"> • no download time <i>or</i> • users listen in real time without waiting • does not take up space on hard drive <i>or</i> • streamed audio not stored on users' hard drive • customers might want to just listen and not download the samples <p>(<i>2 marks for each of 2 descriptions</i>)</p> | 5 | Remember it is any bullet for 2 marks |

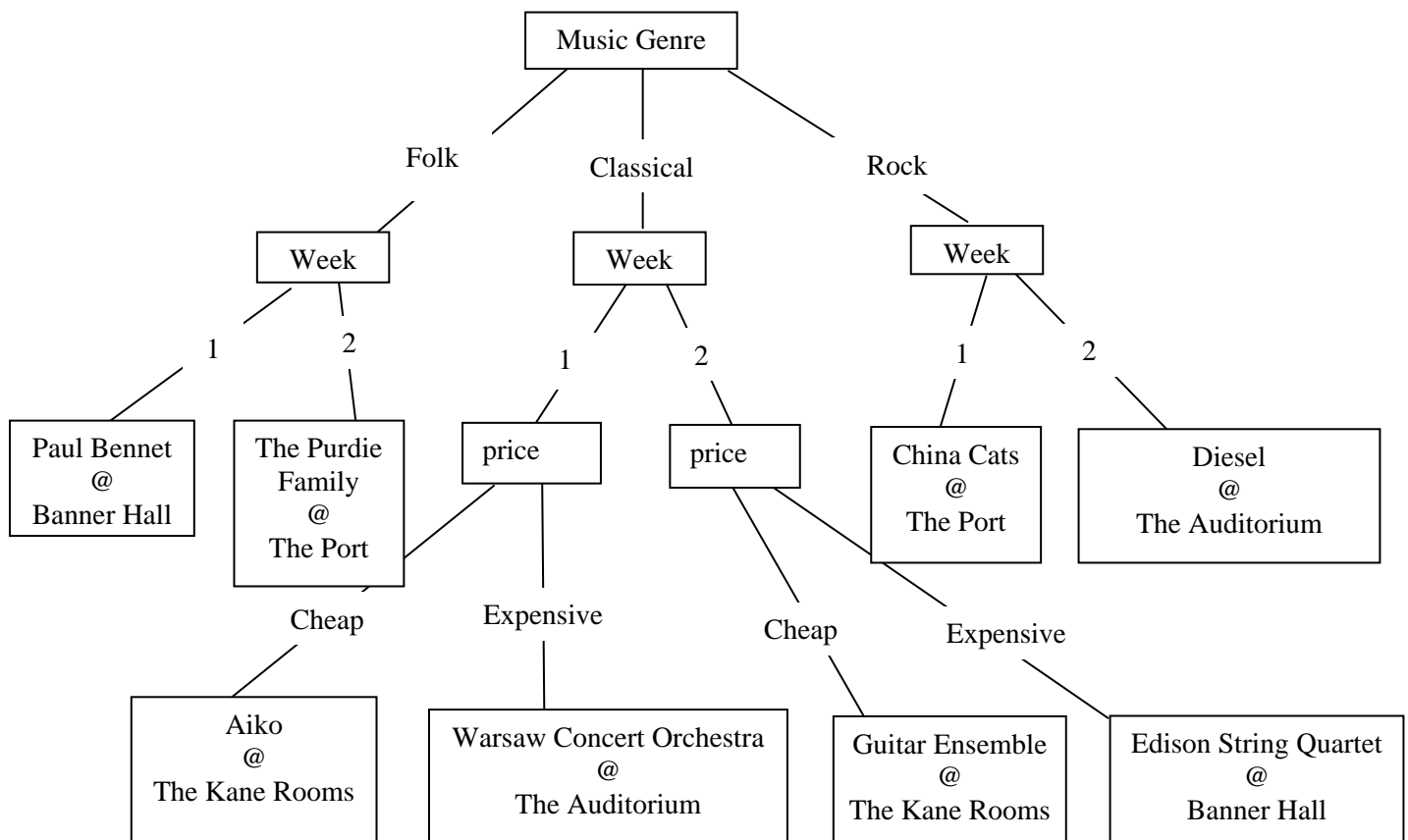
| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|-----|--|----------|---|
| 21 | c | ii | Yes, developer correct (<i>1 mark</i>) Already agreed/fixed/signed/binding/legal (<i>1 mark</i>) Requirements specification (<i>1 mark</i>) | 3 | Must mention requirement specification and that it is agreed or fixed or signed or binding or legal for the second 2 marks |
| 21 | c | iii | Fitness for purpose Accessibility (disabilities) Clarity of presentation | 2 | Description of any of these terms is acceptable eg for Fitness for Purpose accept meets the requirements of the client. |
| 21 | d | | Hardware requirements Software requirements User instructions | 1 | Any point for 1 mark |
| 21 | e | | Protocol = http Hostname or Domain Name = www.jimsjingles.co.uk Pathname = samples/partymusic Filename or file identifier = party1.mp3 | 4 | Any 2 points for 2 marks each 1 mark for a part OR a name (including a part with a wrong name OR a name with a wrong part) |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|--|---|----------|--|
| 21 | f | | <p><i>File Size</i></p> <ul style="list-style-type: none"> • midi file relatively small for 30 second clip (1 mark) • stores attributes such as pitch, tempo, volume, instrument, duration (2 examples for 1 mark) • midi would download efficiently (1 mark) <p><i>Degree of compression</i></p> <ul style="list-style-type: none"> • midi file not compressed (2 marks) <p><i>Appropriate use</i></p> <ul style="list-style-type: none"> • midi files instrumental (1 mark) • ideal for background music (1 mark) • midi files can be edited (1 mark) • to suit preference at a later date (1 mark) | 6 | Need 2 points under File Size and Appropriate use but only 1 point under Degree of Compression for 2 marks each |

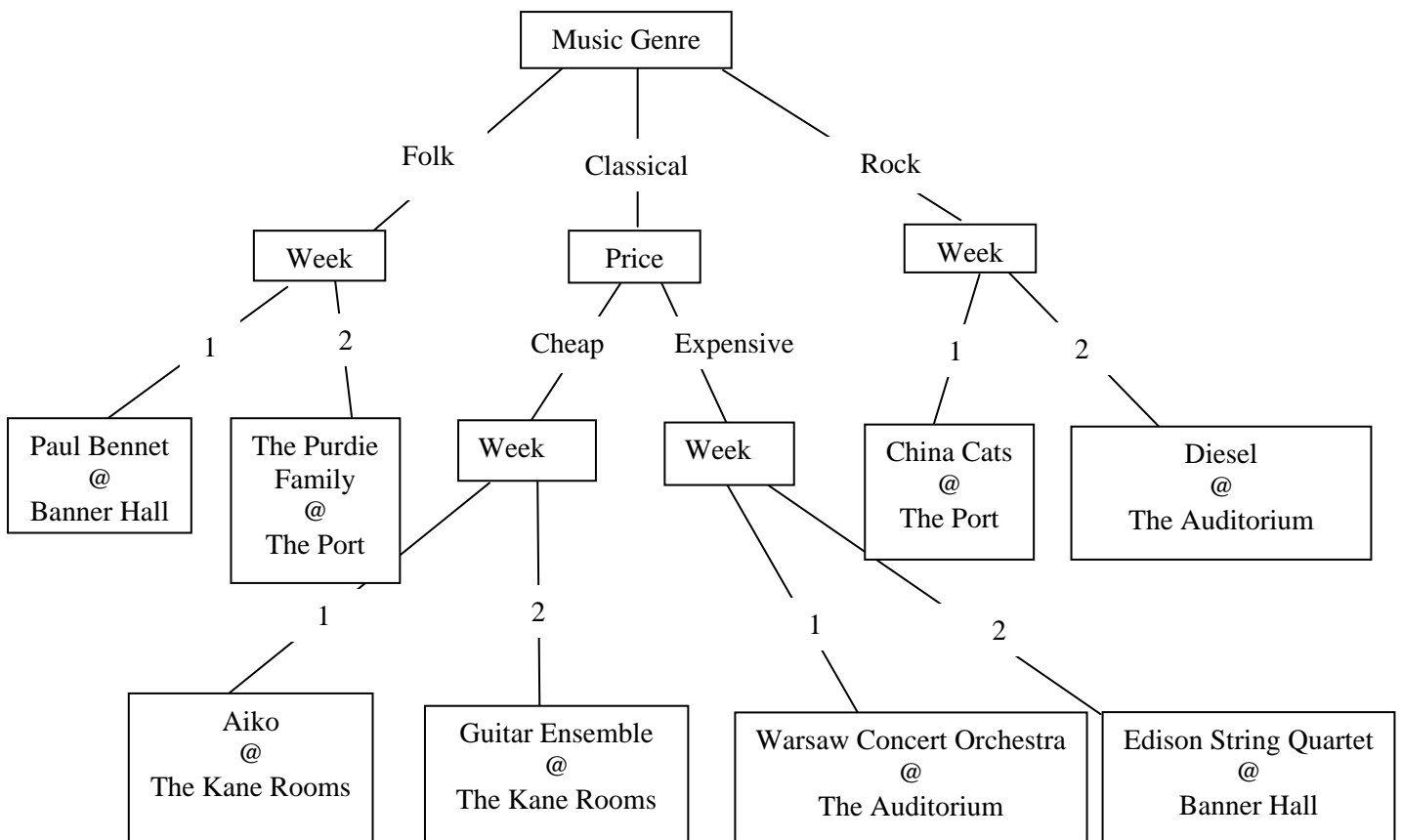
| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|--|--|----------|--|
| 22 | a | | Advert 1: Project Manager (<i>1 mark</i>) Advert 2: (Multimedia) Programmer (<i>1 mark</i>) | 2 | Programmer or media programmer would be acceptable, do not need the word Multimedia |
| 22 | b | | <p>(Multimedia) Designer (<i>1 mark</i>)</p> <p><i>Skills</i></p> <ul style="list-style-type: none"> • Overall design • Combination of different media • Content • Structure • Screen layout • Interactivity • Navigation <p>(<i>1 mark for each skill, max 2 marks</i>)</p> <p>Media Specialist (<i>1 mark</i>)</p> <p><i>Skills</i></p> <ul style="list-style-type: none"> • Expert in creating media elements • Editing elements <p>(<i>1 mark for each skill, max 2 marks</i>)</p> <p>Webmaster (<i>1 mark</i>)</p> <p><i>Skills</i></p> <ul style="list-style-type: none"> • Administer website • In charge of server hardware • In charge of server software • Website design • Update website • Monitor feedback • Monitor traffic <p>Subject expert (<i>1 mark</i>)</p> <p><i>Skills</i></p> <ul style="list-style-type: none"> • In-depth knowledge of subject • Ability to communicate • Participate in testing • Provide content <p>(<i>1 mark for each skill, max 2 marks</i>)</p> | 3 | <p>1 mark for job title and 1 mark for each of 2 skills, max 3 marks</p> <p>Accept equivalent skills to those listed.</p> <p>Any job title from the available list of 6 which has not been used as a correct answer in part (a) may be accepted as a correct answer for part (b).</p> <p>In this case the skills listed would have to be different from those in the advert</p> <p>OR</p> <p>2 marks are available for skills associated with the wrong title</p> |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|--|--|----------|--|
| 23 | a | | There are two possible answers which are detailed below | 8 | 8 x 1 mark for each correct “leaf”. |

Example answer No. 1



Example answer No. 2



| Question | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|--|----------|--|
| 23 | b | <p>IF genre = classical AND week = 1 AND price = cheap THEN performer IS “Aiko @ The Kane Rooms”</p> <p>IF genre = classical AND week = 1 AND price = expensive THEN performer IS “Warsaw Concert Orchestra @ The Auditorium”</p> <p>IF genre = classical AND week = 2 AND price = cheap THEN performer IS “Guitar Ensemble@ The Kane Rooms”</p> <p>IF genre = classical AND week = 2 AND price = expensive THEN performer IS “Edison String Quartet@ Banner Hall”</p> | 8 | <p>1 mark for each rule (4 marks) (if genre = classical is omitted, do not penalise) 1 mark for lower case 1 mark for IS or = 1 mark for IF and AND 1 mark for quotes</p> <p>If performer and venue is incomplete (eg “Guitar ensemble” – performer but no venue) in all 4 rules, treat this as a repeating error and award 0 marks for first rule only but ignore this error in subsequent rules</p> |

| Question | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|--|----------|---|
| 24 | a | <p>Context limiting/Setting a rule agenda</p> <ul style="list-style-type: none"> Sets of rules are grouped together (called ‘agendas’) and may be switched at different stages of the inferencing process (called a ‘context’). <p>Data ordering</p> <ul style="list-style-type: none"> Each fact in working memory is given a value to represent its importance or priority. Rules that use the most important facts are considered in preference to others. <p>Recency</p> <ul style="list-style-type: none"> Rules which use the facts most recently added to the working memory in preference to others. <p>Refractoriness</p> <ul style="list-style-type: none"> Avoids looping by preventing rules from repeatedly firing. <p>Rule ordering</p> <ul style="list-style-type: none"> Rules are applied in the order in which they are listed in the knowledge base. Also known as first-come-first-served. <p>Specificity/Size Ordering</p> <ul style="list-style-type: none"> Considers the most specific rules ie those with the largest number of conditions in preference to others. | 6 | <p>Any 2 names for 2 marks</p> <p>Any 2 bullets for each strategy 1 mark each</p> <p>If more than two strategies given, mark all of them and select the best two</p> <p>Refractoriness Does not fire (1 mark) same rule twice (1 mark)</p> |
| 24 | b | <p>There may be several possible rules which could be fired (2 marks)</p> <p>or</p> <p>There may be a conflict set (2 marks)</p> | 2 | |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|--|--|----------|---|
| 25 | a | | main(martin, steak, beer) ^ dessert(martin, apple_pie) | 2 | 1 mark for 2 correct conditions and correct use of ^ 1 mark for underscore in apple_pie |
| 25 | b | | $\forall x: \text{main}(x, \text{chicken_nuggets}, \text{milkshake}) \rightarrow \text{dessert}(x, \text{ice_cream})$ | 3 | 1 mark for predicates in correct order with implication 1 mark for use of variable (any variable name acceptable) 1 mark for all other details correct (predicate arguments, use of \forall , use of underscore in chicken_nuggets and ice_cream)) |
| 26 | a | | The data concerning Mr and Mrs Reid will be stored in the relational database (1 mark) and the inferencing of the expert system will use this information/knowledge/facts/rules (1 mark) to provide advice (1 mark) | 3 | Key points here for the 3 marks are <ul style="list-style-type: none"> • Information held in a relational database • Expert system will use inferencing or knowledge or facts or rules • Expert System will provide advice |
| 26 | b | | Only “knows” about hotels/resorts which have been entered. Only “knows” about holidays arranged by Holiday International. | 2 | Any point describing limitation in context for 2 marks For example, does not know the customer’s experiences of previous holidays e.g. did not enjoy it |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|----|--|----------|---|
| 27 | | | <p>Category – diagnosis/classification (1 mark)</p> <p>Domain – medical (blood infections, bacterial infections) (1 mark)</p> <p>Characteristics –</p> <ul style="list-style-type: none"> • rule based • developed partly to see if it was possible to create a system like this • never actually used due to legal and ethical implications • Q and A dialogue interface. • Written in LISP • Uses backward chaining <p>(Any 2 bullets for 2 marks)</p> | 4 | <p><i>Characteristics</i></p> <p>Accept any equivalent characteristic to those listed.</p> <p>Award 2 marks if candidate gives a detailed description of one characteristic.</p> |
| 28 | a | i | <p>CF (conc) = min(CF(conditions)) x CF(rule) = $0.4 \times 0.9 = .36$ (36%)</p> <p>Or $40 \times 90 = 36$ or 36%</p> | 2 | <p>1 mark for correct application of formula.</p> <p>1 mark for correct answer.</p> |
| 28 | a | ii | <p>CF of rule 2: $0.6 \times 0.7 = 0.42$ (42%) (1 mark)</p> <p>CF of rule 3: $0.4 \times 0.8 = 0.32$ (32%) (1 mark)</p> <p>Advice is coin is coronet (1 mark)</p> <p>Because the CF of this is the highest (1 mark)</p> | 4 | <p>No penalty if incorrect formula in (i) is applied here.</p> <p>No penalty if working is not shown.</p> |
| 28 | b | | <p>Inference engine applies the rules to the given facts (1 mark) to generate the next question or arrive at advice (1 mark)</p> <p>User interface controls the dialog (1 mark) between the user and the system (1 mark)</p> <p>OR</p> <p>User interface presents user with questions (1 mark) and with advice (1 mark)</p> <p>Knowledge base contains a representation of the expertise (krl) (1 mark) in rules and facts (1 mark)</p> | 6 | |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|-----|---|----------|---|
| 29 | a | i | Provide (meta) information (about a webpage) <i>(1 mark)</i> Such as description or keyword <i>(1 mark)</i> For search engines <i>(1 mark)</i> | 2 | Any 2 points listed for 2 marks |
| 29 | a | ii | There is no need for a search engine entry <i>(2 marks)</i> | 2 | |
| 29 | b | i | <title> <i>(1 mark)</i> BHS After School Clubs</title> <i>(1 mark)</i> | 2 | 1 mark for each correct tag only <title> and </title> is acceptable do not accept <any tag> with </same tag> as the correct second mark |
| 29 | b | ii | <p> Under 16 Boys' Football – Contact - Mr Anderson<p> <a href = <i>(1 mark)</i> mailto: <i>(1 mark)</i> mranderson@BuchanHighSchool.sch.uk> <i>(1 mark)</i> <i>(1 mark)</i> | 4 | <p> Under 16 Boys' Football – Contact – <i>(0 marks)</i> no penalty if copied incorrectly do not award the mark for <mranderson@BuchanHighSchool.sch.uk> The tag at the start indicates the candidate has misunderstood what is required. But the tag at the end must be included for the mark |
| 29 | b | iii | Color:blue <i>(2 marks)</i> | 2 | 1 mark for color, 1 mark for :blue. Colon must be included with blue |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance | | | | | | |
|---|---|--------------|---|------------|---------------------|--|--------------------|--|--------------|---|--|
| 29 | c | | <table><tr><td></td><td>Trial Page</td><td></td></tr><tr><td>Buchan High School</td><td></td><td>Tel 555 5555</td></tr></table> | | Trial Page | | Buchan High School | | Tel 555 5555 | 6 | In awarding the mark for 3 cells stretch across whole page, make sure the sketch is near to the margins of the page as possible. |
| | | | | Trial Page | | | | | | | |
| Buchan High School | | Tel 555 5555 | | | | | | | | | |
| 3 columns (1 mark) 2 rows (1 mark) border (1 mark) 3 blank cells (1 mark) 3 filled cells (1 mark) 3 cells stretch across whole page (1 mark) | | | | | | | | | | | |
| 30 | a | | 254 or (2 ⁸) -2 (2 marks) 255 or 256 (1 mark) | 2 | | | | | | | |
| 30 | b | i | The internal or home network IP address (1 mark) of the router (1 mark) | 2 | | | | | | | |
| 30 | b | ii | So that data packets with addresses outwith the network (1 mark) can be sent to the router (1 mark) | 2 | | | | | | | |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|--|---|----------|---|
| 31 | a | | <p>Page structure/layout (1 mark) ensuring web pages are consistent by catering for</p> <ul style="list-style-type: none"> • different screen display sizes • resolutions • colour depth • browser types • user preferences • available fonts • users changing window size <p>or</p> <p>Uniformity of presentation (1 mark) ensuring each web page is laid out in a similar manner (1 mark) or to give the user a familiar environment (1 mark)</p> <p>or</p> <p>Download efficiency (1 mark) ensuring that the web pages will not take too long to download (1 mark) or striking a balance between the number of images and the time needed to transmit the images (1 mark)</p> <p>or</p> <p>Browser compatibility issues (1 mark) different browsers interpret HTML scripts differently resulting in different displays in different browsers (1 mark) or some web pages will be displayed differently depending on the browser (1 mark)</p> | 4 | <p>1 mark for name and 1 mark for description.</p> <p>Description must contain one of the items in the bulleted list.</p> <p>1 mark for name and 1 mark for description. Description can relate either to the web page laid out in a similar manner or to give the user a familiar environment.</p> <p>1 mark for name and 1 mark for description.</p> <p>1 mark for name and 1 mark for description. Description must relate to the fact that different browsers interpret HTML scripts differently or that some web pages will appear different depending on the browser.</p> |

| Question | | | Expected Answer/s | Max Mark | Additional Guidance |
|----------|---|----|--|----------|--|
| 31 | b | i | Nominet (<i>1 mark</i>) | 1 | IANA oversees Nominet in the UK IANA (Nominet in UK) (<i>1 mark</i>) IANA (<i>0 marks</i>) |
| 31 | b | ii | So that it can be converted to an IP address (<i>1 mark</i>) So other users can access her webpage (<i>1 mark</i>) | 2 | |
| 31 | c | | Permission required (<i>1 mark</i>) from copyright holder (<i>1 mark</i>) Or Illegal, contravenes the C,D&P Act (<i>2 marks</i>) Or Illegal, does not have the copyright (<i>1 mark</i>) | 2 | |
| 31 | d | | Upload her files (<i>1 mark</i>) to the correct folder (<i>1 mark</i>) Create a link to the page (<i>1 mark</i>) on her hosting server (<i>1 mark</i>) | 3 | Any 3 points for 3 marks |
| 32 | a | i | Write HTML code (<i>1 mark</i>) and save with .htm or .html extension (<i>1 mark</i>) | 2 | |

