

IS/SQP240

Information Systems
Intermediate 2

NATIONAL
QUALIFICATIONS

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Course Assessment Specification

Information Systems Intermediate 2

The purpose of this document is to provide:

- ◆ details of the structure of the Question Paper for this Course
- ◆ details of the structure of the Practical Coursework task that contributes to this Course
- ◆ guidance to centres on how to use information gathered from the Question Paper and the Practical Coursework task in this Course to estimate candidate performance

PART 1

This part of the Course Assessment Specification details the structure of the Question Paper for this Course.

The Question Paper

- ◆ consists of three sections
- ◆ has a mark allocation of 70 marks
- ◆ has a time allocation of 1 hour 30 minutes

Section 1 – 15 marks

- ◆ consists of objective and short response questions
- ◆ samples across the content statements of the two mandatory Units (*Database Systems* and *Using Information*)
- ◆ approximately 10 marks will be for knowledge and understanding
- ◆ approximately five marks will be for problem solving
- ◆ the problem solving will be based in familiar contexts and be of a fairly straightforward nature
- ◆ candidates will be expected to tackle all questions in the section

Section 2 – 30 marks

- ◆ consists of questions requiring extended responses demonstrating structuring and reasoning
- ◆ questions have varying mark allocation and, therefore, do not have to be of the same length. Most questions will subdivide into a number of connected parts with the marks for each part clearly indicated
- ◆ questions will involve both knowledge and understanding and problem solving, and will be set in less familiar and more complex contexts than those in Section 1
- ◆ approximately 10 marks will be for knowledge and understanding
- ◆ approximately 20 marks will be for problem solving
- ◆ questions will sample across the content statements associated with the mandatory units (*Database Systems* and *Using Information*)
- ◆ some questions, or parts of questions, will require integration of knowledge from the two mandatory Units

- ◆ candidates will be expected to tackle all questions in the section

Section 3 – 25 marks

- ◆ this section has three sub-sections, one for each of the optional Units (*Applied Multimedia, Expert Systems and The Internet*)
- ◆ candidates will be expected to tackle all the questions within **one** sub-section
- ◆ each sub-section consists of questions requiring extended responses demonstrating structuring and reasoning
- ◆ questions have varying mark allocation and, therefore, do not have to be of the same length. Most questions will subdivide into a number of connected parts with the marks for each part clearly indicated
- ◆ questions will involve both knowledge and understanding and problem solving, and will be set in less familiar and more complex contexts than those in Section 1
- ◆ approximately eight marks will be for knowledge and understanding
- ◆ approximately 17 marks will be for problem solving
- ◆ questions in each sub-section will sample across the content statements associated with the appropriate optional Unit
- ◆ some questions, or parts of questions, will require integration of knowledge from the mandatory Units

PART 2

This part of the Course Assessment Specification details the structure of the Practical Coursework task in this Course.

- ◆ The Practical Coursework task has a mark allocation of 30 marks.
- ◆ There is no set time allocation, but the task has been designed to be completed by a typical candidate in 8–10 hours.
- ◆ The task provides the candidate with the opportunity to demonstrate and integrate practical skills and knowledge they have developed within the mandatory Units (*Database Systems* and *Using Information*) in a more complex and less familiar context than is possible within the Units
- ◆ A new Practical Coursework task will be provided by SQA in autumn each year
- ◆ The task is only valid for the session in which it is issued.
- ◆ The task may be undertaken in ‘open book’ conditions, but under supervision of the teacher/lecturer, to ensure that the work presented is the candidate’s own work
- ◆ The task will be marked by the teacher/lecturer, using a marking scheme provided by SQA, but be subject to moderation.
- ◆ The marking scheme will provide a mark out of 30, which will be submitted directly to SQA without scaling.
- ◆ The teacher or lecturer may give the candidate hints and/or help if requested. Any such help should be reflected in the marks awarded.
- ◆ Once the task has been completed and marked, it should **not** be returned to the candidate for further work.

PART 3

This part of the Course Assessment Specification provides guidance on how to use assessment information gathered from the Question Paper and the Practical Coursework task to estimate candidate performance.

Component	Mark Range
Question Paper	0-70
Practical Coursework	0-30
Total Marks	0-100

The mark range for each component takes account of the weighting of each component.

In National Qualifications cut-off scores should be set at approximately 70% for Grade A and 50% for Grade C with Grade B falling midway.

For a total mark range of 0-100, the following gives an indication of the cut-off scores based on the candidate's **total** score.

Grade	Band	Mark Range
A	1	85-100
A	2	70-84
B	3	65-69
B	4	60-64
C	5	55-59
C	6	50-54
D	7	45-49
NA	8	40-44
NA	9	0-39

These cut-off scores may be lowered if Question Paper component turns out to be more demanding or raised if less demanding.

Worked example

- ◆ In a centre's own prelim, a candidate scores 44/70, and the candidate scores 18/30 in the Practical Coursework.
- ◆ The two marks are added together, giving a total of 62/100.
- ◆ The centre's view is that their own prelim is slightly less demanding than SQA examination.
- ◆ Using the mark range, a realistic estimate may be **band 5** rather than band 4.

IS/SQP240

Information Systems
Intermediate 2
Specimen Question Paper
for use in and after 2006

Time: 1 hour 30 mins

NATIONAL
QUALIFICATIONS

Attempt Sections 1 and 2 and **one part** of Section 3.

Sections 1 and 2 — Attempt all questions within these sections.

Section 3 — This section has three parts:

Part A—Applied Multimedia

Part B—Expert Systems

Part C—The Internet.

Choose **one** part of this section and attempt all of the questions within that part.

Read all questions carefully.

Write your answers in the answer book provided. Do not write on the question paper.

Write as neatly as possible.

SECTION 1

Marks

Attempt all questions in this section.

1. What is the difference between data and information? 1
2. A database of players in a tennis club includes the following fields:
Name;
Date of birth;
Sex (M or F);
Height (in metres);
Weight (in kilograms).
Suggest the most suitable data type for each of the fields *Sex (M or F)* and *Height (m)*. 2
3. State **two** activities that the Computer Misuse Act (1990) was designed to prevent. 2
4. Name the type of software used to organise the flow of money within a business. 1
5. Relational databases rely on the use of *primary keys*. What is a “primary key”? 1
6. Below is an extract from one of the tables in a relational database containing details of student marks.

ID No	Group	Unit 1	Unit 2	Unit 3
18762	3A	85	87	78
19792	3C	90	82	75
19981	3A	65	68	60
19993	3B	70	72	64

- (a) State a suitable *validation technique* for *ID No*. 1
- (b) *Group* is the *foreign key*. What is a foreign key? 1
7. What is the name given to formatted output from a database system? 1
8. May is looking for a book on the subject of Yoga for less than £10. Suggest a query that the book shop assistant could enter into the bookshop database to identify suitable titles. 2
9. State **one** method of ensuring that data entered in an information system is within an acceptable range. 1
10. Jack purchases a DVD using the Internet. Give **one** advantage and **one** disadvantage of shopping using the Internet. 2

Total for Section 1 (15)

[END OF SECTION 1]

SECTION 2

Marks

Attempt all questions in this section.

11. A college library makes use of a paper-based system to keep track of its books and borrowers. It has separate paper files for Borrowers and Book Reservations. A sample of the data in each of these files is shown below.

Borrowers			
Borrower-ID	Forename	Surname	Class
2613	Kerry	Munro	2A3
1852	James	Wilson	4A2
0958	Simon	Andrews	1B1
1164	Anna	Knight	3B2

Book Reservations					
Reservation-No	Reservation-Date	Borrower-ID	ISBN	Title	Author
126	16/9/04	1852	0-09-980840-8	Going Wrong	Ruth Rendell
143	10/10/04	0947	0-14-002374-7	Puckoon	Spike Milligan
176	28/11/04	1375	0-04-823070-7	The Hobbit	JRR Tolkein
279	28/4/05	2071	0-04-823070-7	The Hobbit	JRR Tolkein
288	1/5/05	1856	0-14-002374-7	Puckoon	Spike Milligan
291	2/5/05	2112	0-04-823070-7	The Hobbit	JRR Tolkein

Each book's International Standard Book Number (ISBN) is unique. Each borrower has a unique Borrower-ID.

Borrowers can reserve any number of books.

The librarian now wishes to use a relational database to store this information.

- (a) Give the entities and attributes of the current system. **4**
- (b) Book Reservations has been put into first normal form. Identify the primary and foreign keys in each of the two new entities below.

BOOKS (ISBN, Title, Author)

RESERVATIONS (Reservation-No, Reservation-date, Borrower-ID, ISBN) **4**

12. A video store owner is transferring details of her customers and of the videos available for rental, from a paper based system to a computerised system.

(a) Explain how the new computerised system will help the store owner in relation to

(i) searching and sorting;

(ii) analysis and reporting.

4

(b) Suggest **two** advantages the computerised system could have in relation to

(i) security of data;

(ii) preventing data loss.

2

13. A history teacher needs to store a large number of dates and events to be used in a series of lessons he will be giving during the school year.

(a) (i) What software application should he use to store and organise the historical information. Justify your answer.

(ii) What software application could he use to help illustrate his lessons by displaying pages in a series of slides?

3

(b) Once the data is stored on the history teacher's computer he is able to share it with his pupils.

(i) Suggest **one** method he could use to share the data.

(ii) Give **one** advantage of using this method.

2

Some people in Scotland don't have access to, or the ability to use, information systems, and feel disadvantaged.

(c) Suggest **one** way that our society could remedy this situation.

1

14. A consultant has recently advised the Nextus Company to integrate its ordering and dispatch processes, which had previously been done separately. The consultant says that if they use an integrated system there will be benefits to the company in the ordering and despatch process.

Explain how integrating the systems will provide benefits in terms of:

(a) (i) speed;

(ii) accuracy;

(iii) efficiency.

3

Many people shop online nowadays. The company has decided to provide this facility for its customers.

(b) Describe **two** social implications of this trend towards online shopping.

2

The company has decided to use Web authoring software to create new Web pages for its online site.

(c) State **three** objects you would expect to be able to create on a page.

3

(d) State **two** things that the company must do to comply with the Data Protection Act 1998.

2

Total for Section 2 (30)

[END OF SECTION 2]

SECTION 3

Marks

Complete ONE part of this section.

Either PART A or PART B or PART C

PART A—Applied Multimedia

- 15.** A sports company plans a presentation to advertise its products.
- (a) Give **one** reason why the company will need to consider their proposed audience and the content before developing the presentation. **1**
 - (b) (i) Suggest **two** possible media for delivery of the presentation. **2**
 - (ii) Give **one** advantage for each of these means of delivery. **2**
- 16.** During development of a company's Web based multimedia presentation the multimedia designer has responsibility for the overall appearance.
- (a) State **two** other areas of responsibility the designer has. **2**
- Part of the presentation allows new customers to make online requests for information to be sent to them.
- (b) Suggest **two** methods the designer can use to ensure that these customers
 - (i) are able to enter their details easily; and
 - (ii) send them securely. **2**
 - (c) What piece of legislation provides safeguards for companies receiving information via the Internet? **1**

17. Steven is working on a Web based presentation that involves biographical details and photographs about the players in his favourite football team. He wants to allow users of the presentation to go directly to individual players' Web sites on the Internet.

(a) Which type of application package should he choose to create his presentation?

Give a reason for your answer.

2

The squad list looks like this:

Swaffham Town Rovers

Peter Groves

Steven Collier

Robert Stewart

Gordon Williamson

David Roberts

François Legrand

Terry Cochrane

Mike Gresham

Donald Winterton

Craig Campbell

Dougal MacIntosh

(b) Suggest **one** way in which Steven could

(i) design the layout of his presentation to allow direct access from the squad list to individual details;

(ii) go directly from players' details to their own Web sites.

2

(c) When testing his presentation, Steven discovers that the squad list looks disorganised. How could he improve the layout of the squad list in his Web presentation?

1

18. A kitchen accessory company is expanding its business to include specialist equipment for cake decorators. An electronic catalogue which includes a large number of full colour illustrations will be sent to all those currently in their customer database.

- (a) What type of storage medium should the company choose? Give **one** reason for your choice. 2

The storage requirements for one illustration are much greater than the others.

- (b) Suggest **two** properties of the illustration that can be altered to reduce the overall storage requirements. 2

A celebrity chef has already used some of the equipment on his TV show and has illustrations on his accompanying book. One member of the team suggests capturing the relevant illustrations and using them in the catalogue.

- (c) Is this legal? Justify your answer. 1

19. Sarah is organising the audio to be used for a presentation. She has a number of sound files, one of which she plans to use as background music.

- (a) State **one** advantage and **one** disadvantage of the use of background music in presentations. 2

The quality of sound output from this file is poor.

- (b) (i) Identify **two** hardware factors that Sarah could change which would improve the sound quality. 2
- (ii) Identify **one** software factor that could be altered to improve the sound output. 1

Total for Section 3 Part A (25)

[END OF SECTION 3—PART A]

SECTION 3

Marks

PART B—Expert Systems

20. *Travelplan* is software that recommends a route for vehicle drivers. The user enters a starting point and a destination and the software produces a route map between these points with an approximate length of time for the journey.
- One of the main components of the *Travelplan* expert system is the user interface.
- (a) Describe **three** main functions of a user interface. 3
- (b) Name the other **two** components of the expert system. 2
- Tracy was driving to Dover to catch the ferry to France. She used *Travelplan* to plan her journey. Although Tracy followed the directions exactly and there were no undue delays, she was 30 minutes late for the ferry.
- (c) State **two** people who could be blamed for Tracy missing the ferry and justify each of your answers. 3
21. *Scotts Country Kitchen* is a catering company which provides meals for special occasions like weddings, birthday parties and anniversaries. The company has decided to create an expert system to help them plan the menus for these special occasions.
- (a) What is the domain of this expert system? 1
- (b) Name and describe, in detail, the stages involved in setting up this expert system. 3
- The expert system is created using an *expert system shell*.
- (c) What is an expert system shell? 1
- Two methods of deductive reasoning that can be supported in an expert system are *forward chaining* and *backward chaining*.
- (d) (i) Explain what is meant by forward chaining and backward chaining. 2
- (ii) Which method of reasoning would you suggest for the expert system for the catering company? Justify your answer with an appropriate example. 2

22. There are four categories of expert system. Choosing a savings plan is an example of an expert system that gives *advice*.

(a) State the category of each expert system below.

- Identifying a medical problem
- Identification of a species of animal
- Devising a flight path of aeroplanes

3

MYCIN is an expert system used by the medical profession to diagnose illnesses and diseases. A user obtains a medical diagnosis from the expert system but is convinced it is wrong and asks the expert system to justify the diagnosis.

(b) Describe the type of justification that will be used.

2

(c) Using an expert system with which you are familiar represent **one** diagnosis from the knowledge in the following table as rules and facts.

Diagnosis	Temperature	Pulse	Condition 3
Fainted	normal	slow	skin is clammy and is not conscious
Sinusitis	high	normal	headache at front of head and pain in face
Hay fever	normal	normal	runny nose and watery eyes and sneezing

3

Total for Section 3 Part B (25)

[END OF SECTION 3—PART B]

SECTION 3

Marks

PART C—The Internet

23. A company currently has a dial up connection but needs a faster Internet connection.
- (a) (i) What type of connection should they purchase?
(ii) State **two** advantages of this type of connection. 3
- The company wishes to have a web site on the World Wide Web. They have approached an Internet Hosting Company asking them to provide this service for them.
- (b) Name **two** of the services their Hosting Company may offer to allow the company to set up their website. 2
24. Dawn is an Internet enthusiast. She is interested in how data is transmitted over the Internet, and reads a book about *Internet Routing*.
- (a) What is meant by the term “Internet Routing”? 1
- (b) (i) Explain what a “packet” is.
(ii) Describe the process used to transmit the data across a network. 3
- Dawn has been given the URL for a site.
- (c) What network service will provide the IP address for that domain? 1
25. The Singh family has Internet access in their home. They are concerned about the possibility of accessing inappropriate information on the World Wide Web.
- (a) What type of software should they install to help prevent this? 1
- Mr Singh uses his computer to work at home. He creates a document and wants to send it to his office using e-mail.
- (b) (i) Describe what Mr Singh has to do to send the document.
(ii) Where does the document go after he sends it? 2
- Ms Singh is looking at the United Nations website. She reads a warning about the world excluding *information poor* nations from the Information Revolution.
- (c) (i) Explain what “information poor” means. 1
(ii) Suggest a method of helping the information poor. 1

26. Robert is looking on the Internet for information on dinosaurs for his children. He knows that there are many different types of search service that can help him.
- (a) (i) Suggest a type of search service Robert could use to find the largest number of results. 2
- (ii) Suggest a type of search service that will only search specific sites. 2
- (b) Give **one** advantage and **one** disadvantage of using subject gateways. 2
- Robert is worried that he might download a virus when using the Internet.
- (c) How can he prevent a virus affecting his computer? 1
27. There are now a number of methods that enable people to access the Internet even if they don't have a computer.
- (a) Name and describe **two** methods of accessing the Internet without a computer. Include the method of communication used by the device. 2
- Peter is writing some web pages and will use HTML layout tables.
- (b) Describe **one** advantage HTML layout tables provide when designing web pages. 1
- Peter wishes to link his pages.
- (c) How can he do this? 1
- Picture compression is used on Peter's web page.
- (d) Explain why this may be required. 1

Total for Section 3 Part C (25)

[END OF SECTION 3—PART C]

[END OF SPECIMEN QUESTION PAPER]

IS/SQP240

Information Systems
Intermediate 2
Specimen Marking Instructions
for use in and after 2006

NATIONAL
QUALIFICATIONS

SECTION 1

Type/Source

- | | |
|---|---|
| <p>1. <i>Data does not have any meaning whereas information has meaning or structure.</i>
1 mark</p> | <p>KU
UI</p> |
| <p>2. <i>Sex – Text</i>
<i>Height (in metres) – Real</i>
2 marks</p> | <p>PS
DS</p> |
| <p>3. <i>Hacking</i>
<i>Virus distribution</i>
2 marks</p> | <p>KU
UI</p> |
| <p>4. <i>Financial</i>
1 mark</p> | <p>PS
UI</p> |
| <p>5. <i>A primary key identifies each record</i>
1 mark</p> | <p>KU
DS</p> |
| <p>6. (a) <i>Restricted choice OR presence check</i> 1 mark</p> <p style="padding-left: 20px;">(b) <i>A foreign key is the primary key from another table OR the field that links two tables</i> 1 mark</p> | <p>PS</p> <p>KU
DS</p> |
| <p>7. <i>A report</i>
1 mark</p> | <p>KU
DS</p> |
| <p>8. <i>Subject = Yoga AND Cost < 10</i>
1 mark for correct fields, 1 mark for correct Boolean link</p> | <p>PS
DS</p> |
| <p>9. <i>Using a validation check</i>
1 mark</p> | <p>KU
UI</p> |
| <p>10. <i>Advantage: wider choice, can order from home</i> 1 mark
<i>Disadvantage: wait for delivery, possible fraud, needs Internet access etc</i> 1 mark</p> | <p>KU
UI</p> |

[END OF SECTION 1]

SECTION 2

Type/Source

11. (a) *BORROWERS (Borrower-ID, Forename, Surname, Class)*
BOOK RESERVATIONS (Reservation-No, Reservation-date, Borrower-ID, ISBN, Title, Author)
1 mark for each entity and **1 mark** for each correct attribute to a max of **4 marks** **KU**
DS
- (b) *Primary keys –*
BOOKS – ISBN
RESERVATIONS Reservation-No
1 mark for each primary key to a max of **2 marks**
- Foreign keys –*
RESERVATIONS – Borrower-ID and ISBN **PS**
DS
1 mark for each foreign key to a max of **2 marks**
12. (a) (i) *Volume of data, easier to find particular video/customer, can sort on variety of fields* **1 mark for each example to max of 2 marks**
- (ii) *Can find most popular video, can see customers who return videos late, can produce letters for overdue videos, produce selection lists for customers* **PS**
UI
1 mark for each example to max of 2 marks
- (b) (i) *Password protection*
- (ii) *Backups* **PS**
DS
13. (a) (i) *Database. 1 mark* Volume of data, able to sort, search. (Other software and correct justification acceptable.) **PS**
DS
- (ii) *Presentation software 1 mark* **UI**
- (b) (i) *Create a webpage from the data, store on a fileserver, copy to disks*
1 mark for any of the above or acceptable alternative
- (ii) *Web: everyone can access data simultaneously (and from home),* **PS**
Fileserver: all can obtain copy across network **UI**
Disks: everyone gets a copy, can take home. **DS**
- (c) *Training for all/provision of free computers/library access or any other acceptable answer. 1 mark* **PS**
UI

14. (a) *Speed – the operation will be faster as no communication between systems is needed*
Accuracy – Data not transferred, fewer mistakes, so more accurate
Efficiency – Increased speed and accuracy means greater efficiency – more done in less time
1 mark per correct response
- PS**
UI
- (b) *less travelling, less traffic on the road*
more leisure time so increased wellbeing
cheaper goods so higher living standard
less social interaction, so more distress.
1 mark per correct response to a max of 2 marks
- KU**
UI
- (c) *Text block*
Graphic or photograph
Hyperlink or button
Animation
or other acceptable response.
1 mark per correct response to a max of 3 marks
- KU**
UI
- (d) *Any two from:*
- *Obtain information lawfully*
 - *Information used for specified purposes only*
 - *Information should not be disclosed*
 - *Information should be relevant*
 - *Information should be accurate and up to date*
 - *Information should not be kept longer than necessary*
 - *Data subject has right to see information*
 - *Information must be changed if wrong*
- 1 mark per correct response to a max of 2 marks**
- KU**
UI

[END OF SECTION 2]

SECTION 3

Type/Source

PART A—Applied Multimedia

15. (a) *how technical the content will need to be for audience appropriateness of language*
overall appearance of presentation
any other valid reason
1 mark per valid response to a max of 2 marks PS
AM
- (b) (i) *kiosk, WWW, CD-ROM/DVD*
1 mark for each to a max of 2 marks KU
AM
- (ii) *Updating easy (kiosk, WWW)*
Large data capacity (kiosk, WWW, CD-ROM/DVD)
answer should be relevant to choice made
1 mark for any correct response PS
AM
16. (a) *any 2 of: structure, navigation*
2 marks KU
AM
- (b) (i) *menus, form fill-in*
- (ii) *secure server, encryption*
1 mark per correct response to a max of 2 marks
or alternative correct response PS
AM
UI
KU
UI
- (c) *Computer Misuse Act 1990* KU
UI
17. (a) *Web authoring package* **1 mark** PS
Suitable for inserting anchors and hyperlinks, can produce Web pages **1 mark** UI
- (b) (i) *anchors to go direct from list to individual details* **1 mark** PS
2b
- (ii) *hyperlinks to go from Steven’s site to individual players’ own sites*
1 mark PS
2b
AM
- (c) *any one of: create table, alter alignment*
1 mark PS
AM
18. (a) *CD-ROM or DVD*
storage capacity
1 mark for media, 1 mark for reason KU
AM
- (b) *colour depth reduced, colour resolution reduced*
1 mark for each correct response to a max of 2 marks PS
AM
- (c) *No – Breach of copyright*
Yes – Has to get permission of copyright owner
1 mark for justification KU
AM

- | | | <i>Type/Source</i> |
|------------|--|--------------------------------|
| 19. | <p>(a) <i>Advantage: enliven a dull presentation; enhance written text of presentation, etc</i> 1 mark</p> <p><i>Disadvantage: volume can be too loud, inappropriate to content, file size, copyright etc</i> 1 mark</p> | <p>KU
AM</p> |
| | <p>(b) (i) <i>hardware: sound card, high quality speakers</i>
1 mark per correct response to a max of 2 marks</p> | <p>PS</p> |
| | <p>(ii) <i>software: increase sample rate, increase sample resolution</i>
1 mark</p> | <p>PS
AM</p> |

[END OF SECTION 3—PART A]

SECTION 3

Type/Source

PART B—Expert Systems

20. (a) *To ask questions and obtain answers from the user*
To display advice
To justify questions and answers
1 mark for each to a max of 3 marks KU
ES
- (b) *Knowledge Base, Inference Engine*
1 mark for each to a max of 2 marks KU
ES
- (c) *Two of*
- *Knowledge engineer for entering data wrong*
 - *Human expert for providing wrong information*
 - *Tracy for not inputting data correctly*
- 1 mark for both people and 1 mark for each justification to a max of 3 marks.** PS
ES
UI
21. (a) *catering*
1 mark PS
ES
- (b) *Knowledge Acquisition + description*
Knowledge Representation + description
System Validation + description
1 mark for each name and description KU
1 mark for all 3 names with no descriptions ES
- (c) *An expert system shell is a program with a user interface, an inference engine*
1 mark KU
ES
- (d) (i) *Forward chaining is when you know the initial facts working to a conclusion*
Backward chaining is starting with the conclusion and working to find the facts to justify it.
1 mark for each KU
ES
- (ii) *Either with appropriate justification*
*Look at type of people eg old folk, children, time of day of meal and time of year and then work **forward** to choose type of meal to suit*
No marks for type – 2 marks for correct justification PS
ES

	<i>Type/Source</i>
22. (a) <i>Diagnose</i>	
<i>Categorise</i>	
<i>Planning</i>	PS
1 mark for each to a max of 3 marks	ES
(b) <i>How justification – how did the expert system come to that conclusion.</i>	PS
	ES
(c) <i>eg</i>	
<i>IF temperature is normal</i>	
<i>AND pulse is slow</i>	
<i>AND skin is clammy</i>	
<i>AND is not conscious</i>	
<i>THEN patient has fainted</i>	PS
3 marks for a correct set	ES

[END OF SECTION 3—PART B]

SECTION 3

Type/Source

PART C—The Internet

23. (a) (i) *A Broadband connection (or ISDN) – 1 mark*
- (ii) *has a high bandwidth, a higher data transfer rate than a dial up connection, (broadband is also on all the time).* PS
1 mark for each advantage to a max of 2 marks IN
- (b) *Mail accounts/FTP management/web page construction/database support/e-commerce/dedicated server/DNS/Web hosting* KU
Any 2 correct for a max of 2 marks IN
24. (a) *The way by which data finds its way from the host computer to the user* KU
1 mark IN
- (b) (i) *Data is divided into segments of a predetermined size – known as a packet* 1 mark
- (ii) *Each packet has a Header (destination address) 1 mark so that it can find the way to its destination, where the data is then reassembled 1 mark* KU
1 mark per correct response to a max of 3 marks IN
- (c) *DNS (Domain Name System) 1 mark* KU
 IN
25. (a) *Filter Software* PS
1 mark IN
- (b) (i) *Attaches it to the email 1 mark* PS
 IN
 UI
- (ii) *In his mailbox OR on a mail server 1 mark* KU
 IN
- (c) (i) *Information poor – those who have neither access to, nor training in using, computers 1 mark* KU
 IN
- (ii) *Investment should be made in equipping and training people in poorer countries*
OR
Donate old equipment
1 mark PS

- | | | |
|-----|--|----------------|
| 26. | (a) <i>Meta – searches several engines at the same time</i> 1 mark
<i>Subject based searches specific sites</i> 1 mark | PS
IN
UI |
| | (b) <i>Subject gateway – index of pre-saved suitable sites so high relevance,</i> 1 mark
<i>but only giving links to a restricted number of relevant web sites</i> 1 mark | KU
IN
UI |
| | (c) <i>Use anti-virus software</i> 1 mark | PS
IN |
| 27. | (a) <i>TV based – cable</i>
<i>palm PC – infra red</i>
<i>Mobile phone – microwaves</i>
1 mark for each correct response to a max of 2 marks | PS
IN |
| | (b) <i>To aid neat columnar design OR stop overflow of text when resizing the page</i>
1 mark | KU
IN |
| | (c) <i>Using a Hyperlink/relative addressing – containing the address of page relative to the page you are on</i> 1 mark | PS
IN |
| | (d) <i>Saves memory and speeds downloads</i> 1 mark | PS
IN |

[END OF SECTION 3—PART C]

[END OF SPECIMEN MARKING INSTRUCTIONS]

Specimen Coursework Task

Intermediate 2 Information Systems

Valid from session 2005/2006

Coursework Task

Subject: Information Systems

Level: Intermediate 2

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Section 1

Organisation and conditions for assessment

Organisation and conditions for assessment

The assessment is designed to test the candidates' ability to apply knowledge and understanding and practical skills, developed through study of the Database Systems and Using Information units. The mark out of 30 should be submitted to the SQA unscaled. This will be combined with the examination mark out of 70 to establish the candidate's overall grade of award. This mark should also be used in preparation of estimate grades.

The notional design length for the assessment is 8 – 10 hours. However, a candidate may be allowed longer than this if required.

The task has been split into 2 parts.

- Part 1 should be issued and completed before Part 2 is issued to the candidates.
- It is essential that no matter which alternative application the candidate has suggested, they must use a database application for Part 2.

The assessment is to be undertaken under "open book" conditions, but under supervision by the tutor to ensure that the work submitted is the candidate's own work. The tutor may give the candidate hints and/or help if requested. Any such help should be reflected in the marks awarded. Once the task has been completed and marked, it should not be returned to the candidate for further work.

Part 2 requires a data file which can be downloaded from the SQA web site.

Section 2

Coursework Task

Coursework Task

Intermediate 2 Information Systems Coursework Task 2004-2005

Part 1

Radio Isles is a radio station that broadcasts throughout the islands in the West of Scotland. The radio station's DJs have been complaining that they don't have enough information about the songs when choosing which songs to play or talking about them 'on-air'.

The requirements of the radio station are:

- to store the information that the DJs require. For example:

Title	The Long Goodbye
Artist	Ronan Keating
Chart Position	03
Week Ending	4/5/03
Number of Weeks	5
Duration	00:05:48

- to be able to add additional information as it becomes available
- to be able to quickly find the information about any song
- to create ordered 'Top 40' song lists
- to select the information the DJs require and present the information using different screen designs.

Radio Isles have asked you to recommend a suitable type of information system that will meet their needs.

What you have to do

Tasks		Evidence required
1	Your assessor will give you access to a <i>database</i> application. Evaluate the suitability of this <i>database</i> application to meet the above needs in terms of: <ul style="list-style-type: none">• range of data objects• range of operations• human computer interface (HCI).	Report on suitability of database application.
2	Choose one other TYPE of application package and evaluate its suitability to meet the above needs in terms of: <ul style="list-style-type: none">• range of data objects• range of operations• human computer interface (HCI).	Report on suitability of alternative application.
3	Describe a backup strategy for the information system that you have recommended.	Report on backup strategy.

Part 2

Six months have elapsed since you made your recommendation. In that time, Radio Isles has created a database of chart songs.

The radio station has realised that it would also be useful to have information about each of the artists stored in the database. As each artist can have many songs it has been decided to create a separate table and link the two together using the Artist field. The information required about each artist will consist of:

Field name	Field type	Sample data
Artist	Text	Marvin the Depressing Robot
Members	Text	Sally Emerson DeVille
Date of first recording	Date	13/07/1998
Home Town	Text	Vancouver, Canada
Fan Club	Text	Yes

What you have to do:

Tasks		Evidence required
1	Using a database, create a table of the artist details as designed above. (A list of the artist details is given below).	Printout of the artist details table.
2	Add details of 1 artist/group of your own choice to the artist details datafile. (The information does not need to be accurate, you can make it up if you wish.)	
3	The Fan Club field can only contain Yes or No. Alter the table so that Fan Club field has a restricted choice validation check performed on it and the data can be entered without typing.	
4	Ensure that your name and class are clearly seen as a footer, then print out a copy of the entire contents of the artist details table.	

Artist details information

Artist	Members	Date of first recording	Home Town	Fan Club
Westlife	Bryan McFadden Nicky Byrne Shane Filan Mark Feehily Kian Egan	30/03/1998	Sligo, Ireland	Yes
Madonna	Madonna Louise Ciccone	14/07/1982	Bay City, Michigan	Yes
Evanescence	Amy lee Terry Balsamo John LeCompt Rocky Gray Will Boyd	24/10/1999	Little Rock, Arkansas	No
50 Cent	Curtis Jackson	22/10/1999	New York	No
Stereophonics	Kelly Jones Richard Jones Stuart Cable	03/03/1996	Cwmaman, Wales	Yes

What you have to do (continued):

Your assessor will give you a copy of the 'Chart Songs' table. This is the main table and the 'Artist details' table has to be linked to it.

Tasks		Evidence required
5	Link the 'Artist details' table to the 'Chart Songs' table using the 'Artist' field as the primary key.	Print out of list of songs and artist details as specified in 9.
6	In your database package, create a screen design for the Chart Songs table that will show all the information about a song as well as all the information about the artist. (The layout of the information is left up to you, but should be attractive, easy to use and all information clearly seen. You should also ensure that your name and class are included as a footer.)	
7	Alter the format of the Week Ending field so that the date is displayed as Thursday 25 December 2003 instead of 25/12/03.	
8	Add the following record to the database Chart Position: 1 Week Ending: 07/03/2004 Artist: Westlife Title: Obvious Number of Weeks: 3 Duration: 00:03:58	
9	Using the screen design you created in step 6, print out a list of all songs that last less than 4 minutes and for which the artist has a fan club.	
10	The DJs wish a list of all the songs that got to Chart Position 01. The songs should be listed in order of the number of weeks, highest first. Where two or more songs have the same number of weeks, they should be listed in order of the date it was in the charts, most recent first. Part of this list is shown below. Print out this ordered list.	Print out of list of songs that got to position 01 in order of weeks and week ending.

Cha..	Week Ending	Artist	Title	Weeks	Duration
01	25/05/2003	Busted	Crashed the Wedding	1	00:03:13
01	16/03/2003	Kylie Minogue	Slow	1	00:03:05
01	10/08/2003	Daniel Bedingfield	Never Gonna Leave Your Side	2	00:04:21
01	07/03/2004	Westlife	Obvious	3	00:03:58
01	14/12/2003	The Black Eyed Peas	Where is the Love	3	00:03:56
01	09/11/2003	Fatman Scoop feat Crooklyn Clan	Be Faithful	3	00:04:42

Collect all your printouts in the order they were asked for and hand them to your assessor.

Section 3

Marking guidelines

Marking guidelines

Name		Date	
------	--	------	--

Topic		Possible marks	Marks gained	Comment
Evaluate Database application	Suitability of objects	2, 1, 0		
	Suitability of operations	2, 1, 0		
	Suitability of HCI	2, 1, 0		
Evaluate alternative application	Suitability of objects	2, 1, 0		
	Suitability of operations	2, 1, 0		
	Suitability of HCI	2, 1, 0		
Backup Strategy	Description of backup strategy	2, 1, 0		

Creation of Artist Details table	Creation of table	2, 1, 0		
	Add own artist	1, 0		
	Restricted Choice Field	1, 0		
	Easy data entry method	1, 0		
Linking of tables	Tables linked correctly	2, 1, 0		
	Layout showing all information which is:			
	• attractive	1, 0		
	• easy to use	1, 0		
	• all information clear.	1, 0		
	Date field format changed	1, 0		

Testing Suitability	Add extra Record	1, 0		
	Select songs that last less than 4 minutes and have a fan club	2, 1, 0		
	Select songs that reached number 01 and order then by weeks and date	2, 1, 0		

Overall total		30		
---------------	--	----	--	--

Notes: where marks are allocated as 2,1,0:

2 = achieved successfully without assistance

1 = achieved partially without assistance, or completed with some assistance or hints

0 = not achieved, or completed only with significant assistance

Appendix A

Sample solutions

Sample solutions

Part 1

1

Name	<i>A. N. Other</i>	Date	<i>June 2004</i>
-------------	--------------------	-------------	------------------

Type of package	<i>Database</i>	Name of package	<i>FileMaker Pro</i>
------------------------	-----------------	------------------------	----------------------

Range of Data objects

The database application has the ability to store the required information (Chart position, Week Ending, Artist, Title, Number of Weeks and Duration) as it contains different field types eg text, number, date and time which would allow the information to be stored in the correct format. Each song could be stored as a separate record, with extra records being able to be added as additional information becomes available.

Range of Operations

The database application contains all of the required operations. It has powerful search facilities that allow for multiple field searches. This will allow the DJs to quickly find the information and display only the information they require. Likewise, it has powerful sorting facilities that allow for multiple field sorts that will allow ordered song lists to be created. Lastly, it has powerful layout facilities that allow the some or all of the information to be displayed in different ways.

Human Computer Interface

The database application has a very simple to use HCI as it uses a Graphical User Interface. It uses windows, icons, menus and pointers. It has extensive toolbars that can be customised to your own requirements, as well as keyboard shortcuts that would speed up production of the datafiles. The database application allows different searches and sorts to be stored, which means that operations like putting the top 40 records in order would be simplified.

Suitability of Package	<i>Yes</i>
-------------------------------	------------

Name	A. N. Other	Date	June 2004
Type of package	<i>Presentation</i>	Name of package	<i>Ibuild Lite</i>
Range of Data objects			
<p><i>The presentation application has the ability to store the required information (Chart position, Week Ending, Artist, Title, Number of Weeks and Duration). Unfortunately all the information would just be stored as text as the presentation package doesn't recognise the different information types eg text, number, date and time. Each song could be given a separate screen in the presentation, with additional screens being added, as the additional information becomes available.</i></p>			
Range of Operations			
<p><i>The presentation application has only one of the required operations. It has powerful screen layout facilities that allow the information to be displayed in different ways. Unfortunately it has no search facilities to find information quickly about a song. Likewise, it has no sort facilities that would allow ordered lists to be created.</i></p>			
Human Computer Interface			
<p><i>The presentation application has a very simple to use HCI as it uses a Graphical User Interface. It uses windows, icons, menus and pointers. It has extensive toolbars that can be customised to your own requirements, as well as keyboard shortcuts that would speed up production of the presentation. The presentation package also comes with a wide range of templates that give a professional appearance without having to design the layout yourself. Lastly, it has a wizard that can help you set up your presentation easily.</i></p>			
Suitability of Package	<i>No</i>		

Name	A. N. Other	Date	June 2004
-------------	--------------------	-------------	------------------

Backup Strategy

It is important that the information stored is not lost. For this reason I would recommend a 3 step backup strategy:

- *Backups of the information should be made regularly*
- *Backups should be made using a different storage medium*
- *The backups should be stored in a safe, secure place.*

Part 2

1, 2, 3 and 4

Artist	Members	Date of first recording	Home Town	Fan Club
Westlife	Bryan McFadden Nicky Byrne Shane Filan Mark Feehily Kian Egan	30/03/1998	Sligo, Ireland	<input checked="" type="radio"/> Yes <input type="radio"/> No
Madonna	Maddona Louise Ciconne	14/07/1982	Bay City, Michigan	<input checked="" type="radio"/> Yes <input type="radio"/> No
Evanescence	Amy Lee Terry Balsamo John LeCompt Rocky Gray Will Boyd	24/10/1999	Little Rock, Arkansas	<input type="radio"/> Yes <input checked="" type="radio"/> No
50 Cent	Curtis Jackson	22/10/1999	New York	<input type="radio"/> Yes <input checked="" type="radio"/> No
Stereophonics	Kelly Jones Richard Jones Stuart Cable	03/03/1996	Cwmaman, Wales	<input checked="" type="radio"/> Yes <input type="radio"/> No
My Artist	Me My brother My sister	01/04/2004	Glasgow, Scotland	<input checked="" type="radio"/> Yes <input type="radio"/> No

Chart Position	01	Members Bryan McFadden Nicky Byrne Shane Filan Mark Feehily Kian Egan	
Week Ending	Sunday 12 October 2003		
Artist	Westlife		
Title	Mandy		Home Town Sligo, Ireland
Weeks	1		Date of first recording 30/03/1998
Duration	00:03:02		Fan Club <input checked="" type="radio"/> Yes <input type="radio"/> No

Chart Position	02	Members Madonna Louise Ciccone	
Week Ending	Sunday 07 December 2003		
Artist	Madonna		
Title	American Life		Home Town Bay City, Michigan
Weeks	3		Date of first recording 14/07/1982
Duration	00:03:27		Fan Club <input checked="" type="radio"/> Yes <input type="radio"/> No

Chart Position	03	Members Bryan McFadden Nicky Byrne Shane Filan Mark Feehily Kian Egan	
Week Ending	Thursday 20 February 2003		
Artist	Westlife		
Title	Tonight/Miss You Nights		Home Town Sligo, Ireland
Weeks	2		Date of first recording 30/03/1998
Duration	00:03:47		Fan Club <input checked="" type="radio"/> Yes <input type="radio"/> No

Chart Position	03	Members Madonna Louise Ciccone	
Week Ending	Sunday 15 June 2003		
Artist	Madonna		
Title	Die Another Day		Home Town Bay City, Michigan
Weeks	2		Date of first recording 14/07/1982
Duration	00:03:35		Fan Club <input checked="" type="radio"/> Yes <input type="radio"/> No

Chart Position	01	Members Bryan McFadden Nicky Byrne Shane Filan Mark Feehily Kian Egan	
Week Ending	Sunday 07 March 2004		
Artist	Westlife		
Title	Obvious		Home Town Sligo, Ireland
Weeks	3		Date of first recording 30/03/1998
Duration	00:03:58		Fan Club <input checked="" type="radio"/> Yes <input type="radio"/> No

Cha...	Week En...	Artist	Title	Weeks	Duration
01	12/10/03	Westlife	Mandy	1	00:03:02
01	28/09/03	Blu Cantrell feat Sean Paul	Breathe	1	00:03:55
01	31/08/03	Michael Andrews feat. Gary Jules	Mad World	1	00:05:18
01	06/07/03	Busted	You Said No	1	00:03:06
01	25/05/03	Busted	Crashed the Wedding	1	00:03:13
01	16/03/03	Kylie Minogue	Slow	1	00:03:05
01	10/08/03	Daniel Bedingfield	Never Gonna Leave Your Side	2	00:04:21
01	07/03/04	Westlife	Obvious	3	00:03:58
01	14/12/03	The Black Eyed Peas	Where is the Love	3	00:03:56
01	09/11/03	Fatman Scoop feat Crooklyn Clan	Be Faithful	3	00:04:42
01	05/10/03	Beyonce Knowles	Crazy in Love	3	00:03:47
01	03/08/03	Sugababes	Hole In The Head	3	00:03:39
01	08/06/03	Evanescence	Bring Me to Life	3	00:03:07
01	01/06/03	Room 5 feat Oliver Cheatham	Make Luv	3	00:03:37
01	18/05/03	Will Young	Leave Right Now	3	00:02:41
01	26/01/03	Christina Aguilera	Beautiful	3	00:03:43
01	02/11/03	Ozzy And Kelly Osbourne	Changes	4	00:03:47
01	06/04/03	R. Kelly	Ignition	4	00:03:44
01	09/03/03	Tomcraft	Loneliness	4	00:03:55
01	02/03/03	Gareth Gates feat. The Kumars	Spirit in the Sky	4	00:03:06
01	02/03/03	TATU	All The Things She Said	4	00:02:56
01	18/08/03	Elton John	Are You Ready For Love	5	00:03:36
01	19/01/03	David Sneddon	Stop Living the Lie	5	00:03:28

Appendix B

Photocopy master

Appendix C

Advice on recording and retention of evidence

Advice on recording and retention of evidence

For each candidate, the following evidence should be retained for possible moderation by SQA:

- 1 written reports and hard copies as detailed in the Coursework task
- 2 completed marking grid.

The summary form overleaf may be copied for each candidate undertaking the Intermediate 2 Information Systems course.

Intermediate 2 Information Systems

Candidate assessment summary

Name _____ Year of presentation _____

Centre _____ Candidate number _____

Unit assessment

Unit title	Mark		Date passed	Initials
	1 st attempt	2 nd attempt		
Assessment 1 (Outcome 1)				
Assessment 2 (Outcome 2)				

Unit title	Mark		Date passed	Initials
	1 st attempt	2 nd attempt		
Assessment 1 (Outcome 1)				
Assessment 2 (Outcome 2)				

Unit title	Mark		Date passed	Initials
	1 st attempt	2 nd attempt		
Assessment 1 (Outcome 1)				
Assessment 2 (Outcome 2)				

Course assessment

	Mark	Date completed	Initials
Coursework task (out of 30)			
Estimate examination mark (out of 70)			
Total (out of 100)		Teacher/lecturer signature	
Estimate grade			