2015 Information Systems

Advanced Higher

Finalised Marking Instructions

Part One: General Marking Principles for: Information Systems Advanced 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.

(b) Marking should always be positive ie, marks should be awarded for what is correct and not deducted for errors or omissions.

GENERAL MARKING ADVICE: Information Systems Advanced Higher

The marking schemes are written to assist in determining the "minimal acceptable answer" rather than listing every possible correct and incorrect answer. The following notes are offered to support Markers in making judgements on candidates' evidence, and apply to marking both end of unit assessments and course assessments.

Part Two: Marking Instructions for each Question

Section I

Question			Expected Answer(s)	Max Mark	Additional Guidance
1.	**(a)**		For example: Describes a process that involves revisiting and revising earlier stages in the sequence in order to make changes to the system or rectify errors. **1 mark**	**1 KU** **DBAD 1.1**	
1.	**(b)**	**(i)**	For example: Provides the project manager with the tools necessary to make sure the task is completed successfully on time. **1 mark**	**1 KU** **DBAD 2.2**	
1.	**(b)**	**(ii)**	For example: • Time − start date/completion date. • Resources − personnel, hardware/ software. • Costs/budget − individual task costs, overall project cost. **1 mark each of 2; max 2 marks.**	**2 KU** **DBAD 2.2**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
1.	**(c)**	**(i)**	For example: • Investigating the details that are held on various company documents provides the analyst with essential information about how data is processed and stored within the existing system. • Documents are very important because they represent the flow of information within the existing system. Each document will have its own cycle of creation, amendment, use and deletion. • Indicates the layout of any forms and reports that need to be created. • Background information from company policies. **1 mark for any 2 valid points; max 2 marks.**	**2 KU** **DBAD 2.3**	
1.	**(c)**	**(ii)**	Any one from: • Interviews • Questionnaires • Observation **1 mark for any of the above.**	**1 KU** **DBAD 2.3**	
1.	**(c)**	**(iii)**	Any one from: • Departmental objectives. • Description of components in existing system. • Organisational procedures. Other answers possible. **1 mark for any of the above bullets.**	**1 KU** **DBAD 2.4**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
1.	**(d)**	**(i)**	For example: • The new system may have to be compatible with other systems and files already existing in the business • Restrictions on development time • Budget/cost restrictions • Legal restrictions • Technical restrictions Other answers acceptable **1 mark for any acceptable answer.**	**1 KU** **DBAD 2.4**	
1.	**(d)**	**(ii)**	For example: • Functional requirements • Processes to be performed • Inputs to be accepted • Outputs to be produces **1 mark for any acceptable answer**	**1 KU** **DBAD 2.5**	
2.	**(a)**		For example: • The logical design provides a detailed description of all processes in the system. The logical design is independent of any particular database software and all physical constraints. For example: • logical DFD Other answers possible **1 mark for explanation and 1 mark suitable item; max 2 marks.**	**2 KU** **DBAD 4.1.2**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
2.	**(b)**		For example: • A structure chart is a hierarchical diagram that shows the relationships between the functions and actions that take place within a process. **(1)** This includes rectangles used to show each separate function or action and lines are used to connect the rectangles and indicate the hierarchy. **(1)** • A structure chart will show the sequence of events or activities, any repetition (or iteration) of events, any events that provide options (ie selection). **(2)** Other answers are possible eg flowchart. **1 mark for appropriate technique; 1 mark for accurate description; max 2 marks.**	**2 KU** **DBAD** **4.1.4**	
2.	**(c)**	**(i)**	For example: • Testing of the individual parts (components) which make up the Database system. For example, a table could be tested to check all validation is correct. **1 mark for each correct explanation.**	**1 KU** **DBIT 2.1**	
2.	**(c)**	**(ii)**	For example: • The completed database is tested on the client's system and any errors/bugs logged. **1 mark for each correct explanation.**	**1 KU** **DBIT 2.1**	
2.	**(c)**	**(ii)**	For example: • Summary of results. • Rectifying errors and bugs. **1 mark for either bullet.**	**1 KU** **DBIT 2.1**	

<table>
<tr><th colspan="3">Question</th><th>Expected Answer(s)</th><th>Max Mark</th><th>Additional Guidance</th></tr>
<tr><td>2.</td><td>(d)</td><td></td><td>For example:
The purpose of evaluation is to determine the information system’s accuracy in comparison to the specification, its ease of use and its maintainability.

1 mark for each of two points – comparison, ease of use, maintainability; max 2 marks.</td><td>2 KU
DBIT 4.2</td><td></td></tr>
<tr><td>2.</td><td>(e)</td><td></td><td>corrective.

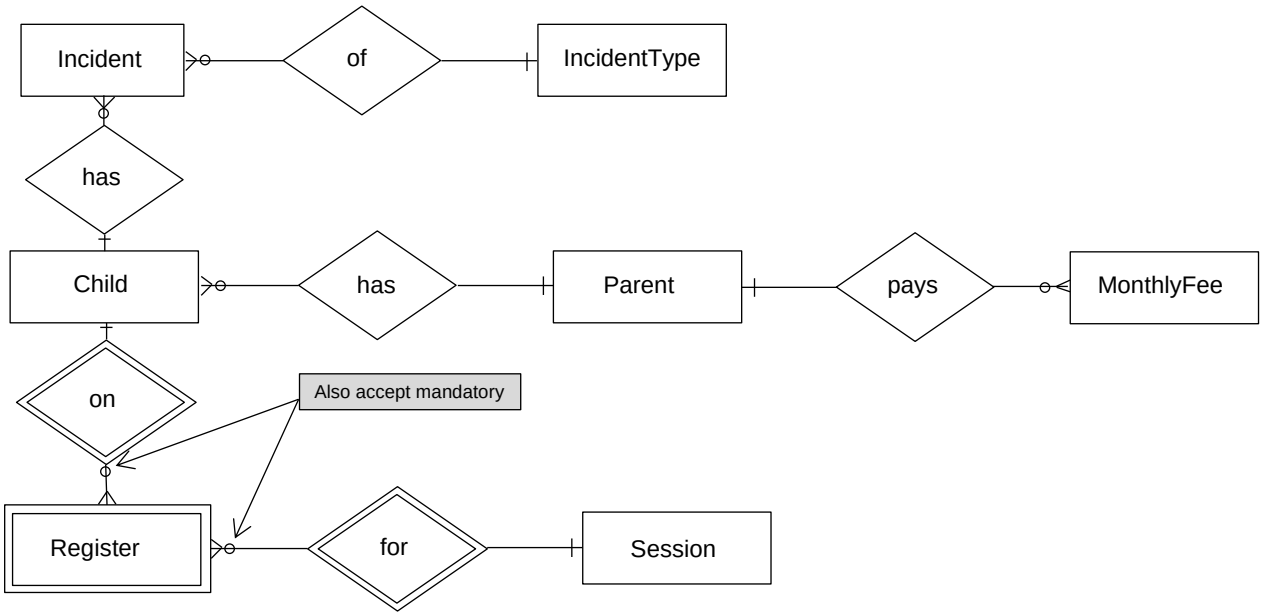
1 mark.</td><td>1 KU
DBIT 4.2</td><td></td></tr>
<tr><td>3.</td><td>(a)</td><td></td><td>Correct events are indicated in the completed EEM below.

<table>
<tr><th>Events \ Entities</th><th>Customer</th><th>Product</th><th>Basket</th><th>BasketItem</th><th>Order</th><th>OrderItem</th></tr>
<tr><td>Visitor browses online catalogue</td><td></td><td>R</td><td></td><td></td><td></td><td></td></tr>
<tr><td>First item added to shopping basket</td><td>(R)</td><td>R</td><td>C</td><td>C</td><td></td><td></td></tr>
<tr><td>Additional item added to shopping basket</td><td></td><td>R</td><td>M or R</td><td>C</td><td></td><td></td></tr>
<tr><td>Item removed from shopping basket</td><td></td><td></td><td>(D or R)</td><td>D</td><td></td><td></td></tr>
<tr><td>Existing customer proceeds to checkout</td><td>R</td><td></td><td>R</td><td>R</td><td>C</td><td>C</td></tr>
<tr><td>New customer proceeds to checkout</td><td>C</td><td></td><td>R</td><td>R</td><td>C</td><td>C</td></tr>
<tr><td>Customer pays for order and completes checkout process; order status set to ‘confirmed’</td><td>(R)</td><td>(R)</td><td>D</td><td>D</td><td>M</td><td>(R)</td></tr>
</table>
Award 1 mark each for accurate recording of events listed. Max 7 marks.

Note that the solution above indicates only mandatory actions that are required. Candidates should not be penalised for indicating non-mandatory activities which are indicated in brackets.</td><td>7</td><td></td></tr>
</table>

Question			Expected Answer(s)	Max Mark	Additional Guidance
3.	**(b)**	**(i)**	Create event for Product has been omitted. **Award 1 mark.**	**1**	
3.	**(b)**	**(ii)**	For example: *Iteration*: events can be repeated during the life of the record. An example of this is change product price. *Selection*: events can be optional. An example of this is delete product from catalogue. **Award 1 mark each for accurate explanation of events. Max 2 marks.**	**2 PS DBAD 3.3.2**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
4.	**(a)**		• Cardinality: award 3 marks for 6 correct; award 2 marks for 5, 4 correct; award 1 mark for 3, 2 correct; else award 0 marks. Max 3 marks. • Optionality: award 3 marks for 6 correct; award 2 marks for 5, 4 correct; award 1 mark for 3, 2 correct; else award 0 marks. Max 3 marks. • Weak relationships and entity: award 2 marks for all correct; 1 mark for 2 correct; deduct 1 mark for unnecessary weak relationships/entities indicated. Max 2 marks. **Max 8 marks.**	**8 PS DBAD 3.2.1**	



Question			Expected Answer(s)	Max Mark	Additional Guidance
4.	**(b)**	**(i)**	For example: • Restricted choice (M or F) Other answers possible **1 mark.**	**1 PS DBIT 3.2.2**	
4.	**(b)**	**(ii)**	For example: • Age>2 and Age<6 • Age>=3 and Age<=5 • Marks awarded for sensible age range with use of AND Other answers possible **1 mark.**	**1 PS DBIT 3.2.2**	
4.	**(c)**		For example: • Tables would be needed to store details displayed in the summary. • Query would be needed to extract the details matching each parent. • Report would be needed to create summary layout. **1 mark for any correct components; max 2.**	**2 PS DBIT 3.1**	
4.	**(d)**		For example: • how the system acts when the Finish Time is after the Start Time; • how the system acts when the Finish Time is the same as the Start Time; • how the system acts when the Finish Time is before the Start Time; Accept also answers that refer to normal, extreme and exceptional test data values. For example: • Normal: 12.30, 16.45 • Extreme: 24.00, 00.00 • Exceptional: 09.64, 25.30, text values. **1 mark for each bullet; max 3.**	**3 PS DBIT 2.2**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
5	(a)			3 PS DBAD 3.1	

FlightCode
DepartureDate
DepartureTime
DepartureAirport
ArrivalDate
ArrivalTime
ArrivalAirport
Carrier
Aircraft
BoardingGate

Part (a)
Award 1 mark for correct19 attributes listed; award 1 mark for single list with correct PK; award 1 mark for repeating attributes correct; max 3 marks.

Part (b)
1NF: Award 1 mark for removal of the repeating group; award 1 mark for correct FK; award 1 mark for correct PK of new entity; max 3 marks.

BoardingTime
BookingRef
Passenger
FrequentFlyer
SqrNbr
SeatNumber
Class
MealOption
TagID

2NF: Award 1 mark each for removal of both partial dependencies; award 1 mark each for indicating both FKs correctly; award 1 mark each for indicating PK of new entities correctly; max 6 marks.

3NF: Award 1 mark for removal of transitive dependency; award 1 mark for correctly indicating FK; award 1 mark for correct PK of new entity; max 3 marks.

Question			Expected Answer(s)	Max Mark	Additional Guidance
5	(b)			12 PS DBAD 3.1	

1NF

FlightCode
DepartureDate
DepartureTime
DepartureAirport
ArrivalDate
ArrivalTime
ArrivalAirport
Carrier
Aircraft
BoardingGate
BoardingTime

FlightCode*
DepartureDate*
BookingRef
Passenger
FrequentFlyer
SequenceNumber
SeatNumber
Class
MealOption
TagID

2NF

FlightCode*
DepartureDate
ArrivalDate
Aircraft
BoardingGate
BoardingTime

FlightCode
DepartureTime
DepartureAirport
ArrivalTime
ArrivalAirport
Carrier

FlightCode*
DepartureDate*
BookingRef*
SequenceNumber
SeatNumber
Class
MealOption
TagID

BookingRef
Passenger
FrequentFlyer

3NF

FlightCode*
DepartureDate
ArrivalDate
Aircraft
BoardingGate
BoardingTime

FlightCode
DepartureTime
DepartureAirport
ArrivalTime
ArrivalAirport
Carrier

FlightCode*
DepartureDate*
BookingRef*
SequenceNumber
SeatNumber*
MealOption
TagID

SeatNumber
Class

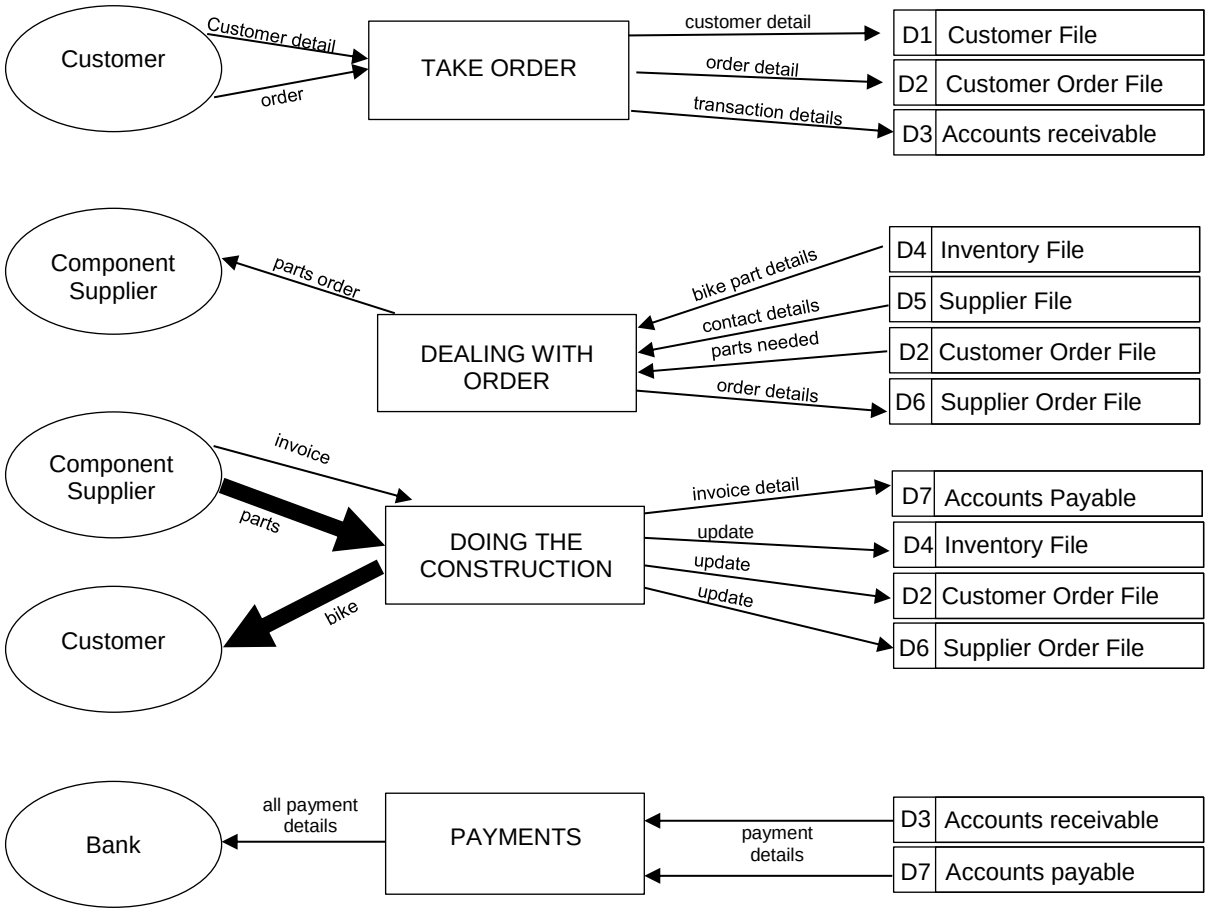
BookingRef
Passenger
FrequentFlyer

[END OF SECTION I]

Section II

Part A – Information Systems Interfaces

Question			Expected Answer(s)	Max Mark	Additional Guidance
6	(a)			11 PS DBAD 3.4	



Question			Expected Answer(s)	Max Mark	Additional Guidance

6.	**(a)**		**(cont)**
			
			Total of 18 data flows and 2 physical flows, 7 data stores, 3 external entities and 4 processes in correct solution.
			• 4 processes correct and 3 entities correct, 1 mark
			• 7 data stores correct, 1 mark
			• 2 physical flows correct, 1 mark
			• Award marks for data flows as follows:
			  ○ 18,17,16 data flows correct, 8 marks
			  ○ 15,14 correct, 7 marks
			  ○ 13,12 correct, 6 marks
			  ○ 11,10 correct, 5 marks
			  ○ 9,8 correct, 4 marks
			  ○ 7,6 correct, 3 marks
			  ○ 5,4 correct, 2 marks
			  ○ 3,2 correct, 1 mark
			
			Max 11 marks
			Note: candidates may provide an additional data flow to deal with bike design on the 1st process and the separate payments in process 4.		

6.	**(b)**	**(i)**	For example: Social as more people want to be able to browse, buy at any time. Technological as technology has changed with more people owning new hardware with its associated software. Economic- the company needs to enter this market or be left behind financially. **Any two, 1 mark each; max 2 marks.**	**2 KU** **ISI 1.1**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
6.	**(b)**	**(ii)**	For example: To check that the proposal is cost effective or not. It will be relatively cheap to abandon the project after the feasibility study before spending more on the development. **Any 1 point; max 1 mark.**	**1 KU** **DBAD 2.1**	
6.	**(b)**	**(iii)**	The developers and future clients. For example: Decisions need to be made about: • Design metaphor (desktop? browser?) • Key screen layouts, • Navigation between screens, • Colour scheme and key graphics **Award 1 mark for who is involved; award 1 mark each for any two points; max 3 marks.**	**3 KU** **ISI 3.1**	
6.	**(b)**	**(iv) A**	For example: • Help button • Simple clear design with few options • Other answers acceptable **Any two, 1 mark each; max 2 marks.**	**2 PS** **ISI 3.2**	
6.	**(b)**	**(iv) B**	There are few complex procedures Other answers acceptable. **1 mark.**	**1 PS** **ISI 3.2**	
6.	**(b)**	**(v)**	Touch sensitive screen is used. **1 mark.**	**1 PS** **ISI 1.3**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
7.	**(a)**	**(i)**	Eg. State Transition Diagram State Transition Diagrams focus on events, actions and transitions between system states. **Answer should provide justification for method selected; justification should refer to the scenario; 1 mark each for any 2 valid points; max 2.**	**2 PS** **ISI 3.5**	
7.	**(a)**	**(ii)**	Eg Storyboard The storyboard will show the scrolling sequence of the images. Storyboard will indicate the layout and detail of each information screen. **Mark as indicated; max 2.**	**2 PS** **ISI 3.4**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
7.	**(b)**	**(i)**	Feature set may include:- • Buttons to move to appropriate pages – Home, Haggis, etc; • Search facility; • Movie player function; • Hyperlink to Home page **Award 1 mark each bullet; max 3.**	**3 PS** **ISI 4.3.3**	
7.	**(b)**	**(ii)**	Syntax is how you do something, in this case, click a hyperlink to select a food option. **(1)** Semantics is the effect/meaning, therefore, the hyperlink will take you to the correct part of the website. **(1)** **Answer should provide justification for method selected; justification should refer to the scenario; 1 mark each for any 2 valid points; max 2.**	**2 PS** **ISI 1.4**	
7.	**(b)**	**(iii)**	Sample answer, other answers possible. Although the interface is easy to use, users find it slow to use. This means that alternatives to the point and click need to be found. **(1)** One valid suggestion, for example: • Redesign website to make it quicker to load **(1)** • Add new servers **(1)** • Remove banner/video **(1)** • Improve connection speed **(1)** **1 mark for justification with reference to chart; 1 mark for appropriate suggestion; max 2 marks.**	**2 PS** **ISI 4.2.1** **4.2.2** **4.2.5**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
8.	**(a)**		For example: • Fixed in one position • Non portable • Screen size • Other possible answers **Award 1 mark each for any valid answer. Max 2 marks.**	**2 KU** **ISI 1.2**	
8.	**(b)**	**(i)**	This is an example of form filling. The email address is typed. **Award 1 mark each for any valid answer. Max 2 marks.**	**1 PS** **ISI 1.3**	
8.	**(b)**	**(ii)**	The user is directly manipulating a graphical object on the screen. **Award 1 mark for correctly describing the method of interaction.**	**1 PS** **ISI 1.3**	
8.	**(b)**	**(iii)**	For example: Feedback indicated that users made lots of spelling errors and typos which led to repeated re-entry of e and user frustration **(1)** Use of a drop-down list would reduce the number of errors because the options available are already typed – all the user needs to do is select the appropriate ones from the list available. **Award 1 mark for use made of feedback; award 1 mark for explanation how drop-down list restricts the scope for error and therefore reduce number of user errors. Max 2 marks.**	**2 PS** **ISI 1.2**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
8.	**(c)**	**(i)**	For example: • Natural language querying • Speech recognition Candidates are expected to provide an accurate description of the feature selected. **Award 1 mark for selection of an appropriate feature; award 1 mark for an accurate description of the feature. Max 2 marks.**	**2 KU** **ISI 2.2.2**	
8.	**(c)**	**(ii) A**	Agent-based interface. **Award 1 mark.**	**1 PS** **ISI 2.2.1**	
8.	**(c)**	**(ii) B**	For example: During usability testing, users would wear a headset with sensors which would be used to follow user eye and head movements as they used the kiosk. **Award 1 mark.**	**1 KU** **ISI 4.1.4**	
8.	**(c)**	**(ii) C**	Adherence to standards. **Award 1 mark.**	**1 KU** **ISI 4.3.5**	
8.	**(c)**	**(iii)**	For example: Kiosks provide a list of recommended books that are based on the member's preferences. Other suggestions possible. **Award 1 mark for description of any valid suggestion.**	**1 PS** **ISI 2.2.1**	
8.	**(c)**	**(iv)**	• User guide • Online tutorial **Award 1 mark.**	**1 KU** **DBIT 3.2**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
8.	**(d)**		For example: Using a phased conversion, the kiosk services could be introduced one at a time. This means that library members would be able to familiarise themselves with individual services and gain confidence in them gradually. **Award 1 mark for description of phased conversion; award 1 mark for benefit for library members. Max 2 marks.**	**2 PS** **DBIT 3.2**	
8.	**(e)**		For example: Librarians or other members of staff would ask kiosk users questions from the survey. Member responses would be noted by the librarians. **Award 1 mark each for any 2 relevant points. Max 2 marks.**	**2 KU** **ISI 4.4.1**	
9.	**(a)**	**(i)**	For example: Paper (or electronic) drawings would show the appearance of the screens whenever any of the buttons were pressed. **1 mark.** This would indicate what data had to be entered, how the data would be displayed and the fonts used, colour scheme etc **1 mark.**	**2 KU** **ISI 3.4** **3.6**	
9.	**(a)**	**(ii)**	For example: The end user sees the application as it develops and therefore changes can be made early in the development cycle preventing major expensive redevelopment later in the project. **Max 1 mark.**	**1 KU** **ISI 3.6**	

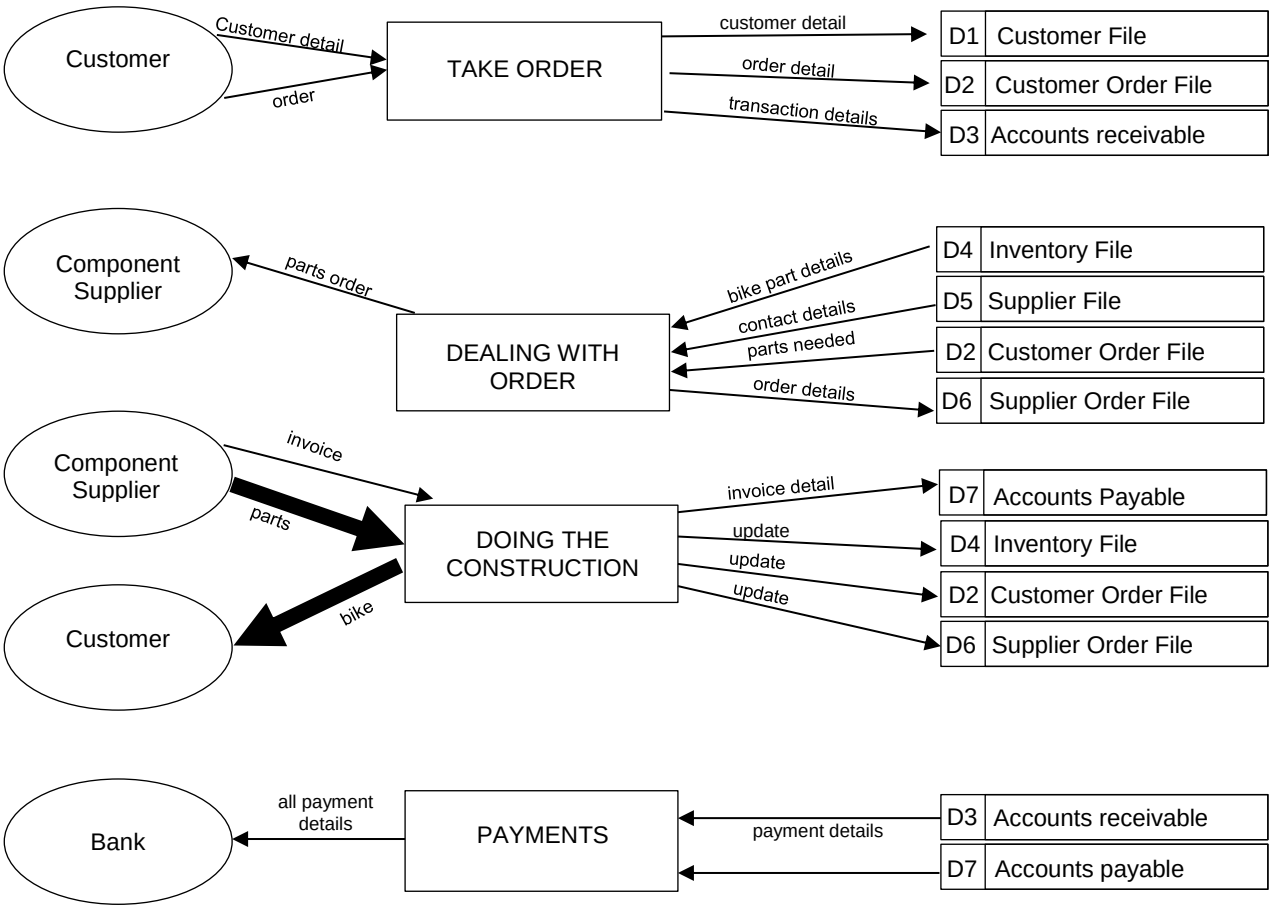
Question			Expected Answer(s)	Max Mark	Additional Guidance
9.	**(a)**	**(iii)**	For example: In a horizontal prototype, all the details of colour, fonts, layout, buttons etc is shown but there is no functionality. **(1)** In a vertical prototype, some functionality for one of the options is present eg if the weight button is clicked and data entered, it would show the correct output when the charts button is clicked **(1)** **Max 2 marks – reference must be made to this particular app.**	**2 PS** **ISI 3.6**	
9.	**(a)**	**(iv)**	For example: • Difficult to do as the phone has a very small screen so that it may have to be passed between participants, making it difficult to see what is happening. • It is a suitable method as the interaction between the two participants can bring out more insights than from a single person. **Award 1 mark for explanation of co-discovery; award 1 mark for justification of assessment made. Max 2 marks.**	**2 PS** **ISI 4.1.2**	
9.	**(b)**		For example: The walkthrough would be carried out by a member of the development team or another expert. **(1 mark)** He or she adopts the role of a user and works through a set of tasks noting any problems that arise because of poor interface design. **(1 mark)** **Max 2 marks.**	**2 KU** **ISI 4.3.2**	
9.	**(c)**		For example: Users fill in logs on paper, commenting on the interface, as they use the app. **(1 mark)** This may not be appropriate since the app is on the mobile phone- recording comments would mean interrupting the task. **(1 mark)** **Max 2 marks.**	**2 PS** **ISI 4.4.4**	

[END OF SECTION II – PART A]

Section II

Part B – Online Database Systems

Question			Expected Answer(s)	Max Mark	Additional Guidance
10.	**(a)**			**11 PS DBAD 3.4**	



Question			Expected Answer(s)	Max Mark	Additional Guidance

10.	**(a)**		(cont)
			
			Total of 18 data flows and 2 physical flows, 7 data stores, 3 external entities and 4 processes in correct solution.
			• 4 processes correct and 3 entities correct, 1 mark
			• 7 data stores correct, 1 mark
			• 2 physical flows correct, 1 mark
			• Award marks for data flows as follows:
			  ○ 18,17,16 data flows correct, 8 marks
			  ○ 15,14 correct, 7 marks
			  ○ 13,12 correct, 6 marks
			  ○ 11,10 correct, 5 marks
			  ○ 9,8 correct, 4 marks
			  ○ 7,6 correct, 3 marks
			  ○ 5,4 correct, 2 marks
			  ○ 3,2 correct, 1 mark
			
			Max 11 marks
			Note: candidates may provide an additional data flow to deal with bike design on the 1st process and the separate payments in process 4.		

10.	**(b)**		For example, accurate description of: • Basket • Payment and ordering System • Security on Site • Secure payment Other features possible **Any two features, 1 mark each. Max 2 marks.**	**2 KU** **ODB 1.1.3**	
10.	**(c)**		• Accurate description of CMS features: • Keeps content separate from style, allowing easy changes to design of website. • Allows different users, different levels of access, making it easier to control changes. Other valid answers possible **Any two features, 1 mark each. Max 2 marks.**	**2 KU** **ODB 1.1.1**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
10.	**(d)**	**(i)**	For example: Invoice from supplier company is translated into an EDI formatted document **(1 mark)** which is then transmitted to the Bike Company. **(1 mark)** Translation software is then used to convert the document back into another file which will be able to be read by the Bike Company's system. **(1 mark)** **Max 3 marks as indicated.**	**3 KU** **ODB 1.3.1** **1.3.2**	
10.	**(d)**	**(ii)**	Generally cost less **(1 mark)** Generally faster than EDI-VAN **(1 mark)** **Max 2 marks as indicated.**	**2 KU** **ODB 1.3.3**	
10.	**(e)**		For example: Many people (perhaps especially the young) use social media, **(1 mark)** allowing the company to access different groups of potential customers with targeted information/advertisements. **(1 mark)** Many alternative answers possible. For example: • Increase potential market • Means of publicity • Increased sale **1 mark each for any valid points that justify the decision; max 2 marks.**	**2 PS** **ODB 1.1.2**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
11.	**(a)**		For example: Server tools would provide a graphical interface for the librarian. This means that the library staff would be able to edit the structure of the member table without needing to have detailed knowledge of SQL. **Award 1 mark each for any 2 relevant points. Max 2 marks.**	**2 KU** **ODB 2.2.2**	
11.	**(b)**	**(i)**	For example: • The form element states the action and method to be used • The form element creates a form to gather input from the user • The input gathered by the form is then processed using a script • the action refers to the name of the script that will receive the data entered into the form • the method refers to how the form data will be transmitted. **Award 1 mark each for accurate description of any 2 valid points. Max 2 marks.**	**2 KU** **ODB 4.3.1**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
11.	**(b)**	**(ii)**	<input type = “radio” name = “preferred date” value = “2 days prior to due date”> Note: for name attribute, accept any reasonable identifier. **Award 1 mark for correct type; award 1 mark for name; award 1 mark for correct value. Max 3 marks.**	**3 PS ODB 4.3.2**	
11.	**(c)**		• User guide • online tutorial **Award 1 mark.**	**1 KU DBIT 4.1**	
11.	**(d)**	**(i)**	For example: By providing a rating, members feel that their opinions are valued by the library. This enhances their experience as they feel that contribution counts and increases the feel-good factor. **Award 1 mark for description of ratings feature; award 1 mark for explanation of how this boosts member experience. Max 2 marks.**	**2 KU ODB 1.1.2**	
11.	**(d)**	**(ii) A**	For example: Members must give their permission for their name and home town details to be used by a third party; personal details are being transmitted electronically. **Award 1 mark for use made of personal details by LoveBooks; award 1 mark for use of EDI. Max 2 marks.**	**2 PS ODB 1.3.4**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
11.	**(d)**	**(ii) B**	For example: • Connects to the database server • Runs the script which executes the SQL query to insert rating details • Forms the query results • Other answers possible **Award 1 mark each for an accurate description of any 2 processes that are required. Max 2 marks.**	**2 PS ODB 4.2.1**	
11.	**(e)**		For example: Using a phased conversion, the kiosk services could be introduced one at a time. This means that library members would be able to familiarise themselves with individual services and gain confidence in them gradually. **Award 1 mark for description of phased conversion; award 1 mark for benefit for library members. Max 2 marks.**	**2 PS DBIT 3.2**	
12.	**(a)**		Database name, server name, port, driver program could have errors. **Any two, 1 mark each. Max 2 marks.**	**2 PS ODB 2.2.1**	
12.	**(b)**		<button type= “button” >Download</button> **or** <button type= “submit” >Download</button> **or even** <button >Download</button> **Also accept alternatives using <input> element eg** <input type= “submit” value = “Download”> **1 mark for button tags, 1 for Download. Max 2 marks.**	**2 PS ODB 4.3.3**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
12.	**(c)**	**(i)**	**1 PS** **ODB 3.2.1**		
			SELECT trackname, rundate, timemins FROM hillruns WHERE trackname = 'Pentlands Run' **……..;**		
			SELECT trackname, rundate, timemins FROM hillruns WHERE trackname = 'Pentlands Run' ORDER BY timemin**;** **Accept aslo:** ORDER BY timemin ASC;		
			1 mark		
12.	**(c)**	**(ii)**	strSQL = "SQL command given" objConnection.execute (strSQL) **or** S query_string = "SQL command given" mysqlquery (S query_string) **or** mysql_query("ORDER BY timemins"); **1 mark for identifying string, one for execution command. Max 2 marks.**	**2 PS** **ODB 4.1.3**	
12.	**(d)**	**(i)**	For example: It will show whether the project will be cost-effective or not before large amount of time and or expense is spent. **1 mark.**	**1 KU** **DBAD 2.1**	
12.	**(d)**	**(ii)**	For example: The developer can get help direct from the creator or supplier of the software either by phone or through their websites. The developer can get help from forums run by community of users. **1 mark each for any 2 answers. Max 2 marks.**	**2 KU** **ODB 1.2.4**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
12.	**(d)**	**(iii) A**	For example: • This is generally free • it may not be as robust as commercial software which may involve cost in fixing. **1 mark for any valid point.**	**1 KU** **ODB 1.2.1**	
12.	**(d)**	**(iii) B**	For example: • Reliability • Maintainability • Political interference • Allows access to the source code for checking Other valid answers possible **Any 2 points, 1 mark each. Max 2 marks.**	**2 PS** **ODB 1.2.2**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
13.	**(a)**	**(i)**	The output would display the field data for Description and Retail Price **(1)** for all tents which are 3 berth.**(1)** **1 mark for listing correct 2 fields displayed; 1 mark for selection of 3-berth tents. Max 2 marks.**	**2 PS ODB 3.2.1 3.2.2**	
13.	**(a)**	**(ii)**	SELECT tent.tentid, tent.colour, tent.retailprice, tent.carddiscountprice FROM tent **(1)** WHERE [tent.description] Is Null; **(1)** **or** SELECT tent.tentid, tent.colour, tent.retailprice, tent.carddiscountprice FROM tent **(1)** WHERE [tent.description] = " " **(1)** **or** SELECT tentid, colour, retailprice, carddiscountprice FROM tent **(1)** WHERE description IS NULL; **(1)** **Marks awarded as indicated. Max 2 marks.**	**2 PS ODB 3.2.1 3.2.2**	
13.	**(b)**	**(i)**	**SELECT comment.tentid, …….. FROM comment ……;** SELECT comment.tentid, Avg (comment.rating) FROM comment GROUP BY comment.tentid; **or** SELECT comment.tentid, AVG(rating) FROM comment GROUP BY tentid; **Award 1 mark for use of AVG function; award 1 mark for correct use of GROUP BY. Max 2 marks.**	**2 PS ODB 3.2.3 3.2.6**	

Question			Expected Answer(s)	Max Mark	Additional Guidance
13.	**(b)**	**(ii)**	**SELECT * FROM tent WHERE _____ (SELECT * FROM comment WHERE tent.tentid = comment.tentid);** SELECT * FROM tent WHERE NOT EXISTS (SELECT * FROM comment WHERE tent.tentid = comment.tentid); **1 mark**	**1 PS ODB 3.2.3 3.2.6**	
13.	**(c)**		DELETE FROM tent **(1)** WHERE tentid = 0005; **(1)** **or** DELETE FROM tent **(1)** WHERE tentid = 5; **(1)** **Marks awarded as indicated. Max 2 marks.**	**2 PS ODB 3.1**	

[END OF SECTION II – PART B]

Analysis of Questions

Section I

Question	Type	Marks	Source Unit	Content Statement	Core/Option
1 (a)	KU	1	DBAD	1.1	Core
1 (b) (i)	KU	1	DBAD	2.2	Core
1 (b) (ii)	KU	2	DBAD	2.2	Core
1 (c) (i)	KU	2	DBAD	2.3	Core
1 (c) (ii)	KU	1	DBAD	2.3	Core
1 (c) (iii)	KU	1	DBAD	2.4	Core
1 (d) (i)	KU	1	DBAD	2.5	Core
1 (d) (ii)	KU	1	DBAD	2.5	Core
2 (a)	KU	2	DBAD	4.1.2	Core
2 (b)	KU	2	DBAD	4.1.3	Core
2 (c) (i)	KU	1	DBIT	2.1	Core
2 (c) (ii)	KU	1	DBIT	2.1	Core
2 (c) (iii)	KU	1	DBIT	2.1	Core
2 (d)	KU	2	DBIT	4.2	Core
2 (e)	KU	1	DBIT	4.3	Core
3 (a)	PS	7	DBAD	3.3.1	Core
3 (b) (i)	PS	1	DBAD	3.3.2	Core
3 (b) (ii)	PS	2	DBAD	3.3.2	Core
4 (a)	PS	8	DBAD	3.2.1	Core
4 (b) (i)	PS	1	DBIT	3.2.2	Core
4 (b) (ii)	PS	1	DBIT	3.2.2	Core
4 (c)	PS	2	DBIT	3.1	Core
4 (d)	PS	3	DBIT	2.2	Core
5 (a)	PS	3	DBAD	3.1	Core
5 (b)	PS	12	DBAD	3.1	Core

Totals

KU	20
PS	40

Analysis of Questions

Section II Part A: Information Systems Interfaces

Question	Type	Marks	Source Unit	Content Statement	Core/Option
6 (a)	PS	11	DBAD	3.4	Core
6 (b) (i)	KU	2	ISI	1.1	Option
6 (b) (ii)	KU	1	DBAD	2.1	Core
6 (b) (iii)	KU	3	ISI	3.1	Option
6 (b) (iv)(A)	PS	2	ISI	3.2	Option
6 (b) (iv)(B)	PS	1	ISI	3.2	Option
6 (b) (v)	PS	1	ISI	1.3	Option
7 (a) (i)	PS	2	ISI	3.5	Option
7 (a) (ii)	PS	2	ISI	3.4	Option
7 (b) (i)	PS	2	ISI	4.3.3	Option
7 (a) (ii)	PS	3	ISI	1.4	Option
7 (a) (iii)	PS	2	ISI	4.2.1 4.2.2 4.2.5	Option
8 (a)	KU	2	ISI	1.2	Option
8 (b) (i)	PS	1	ISI	1.3	Option
8 (b) (ii)	PS	1	ISI	1.3	Option
8 (b) (iii)	PS	2	ISI	1.2	Option
8 (c) (i)	KU	2	ISI	2.2.2	Option
8 (c) (ii) (A)	PS	1	ISI	2.2.1	Option
8 (c) (ii) (B)	KU	1	ISI	4.1.4	Option
8 (c) (ii) (C)	KU	1	ISI	4.3.5	Option
8 (c) (iii)	PS	1	ISI	2.2.1	Option
8 (c) (iv)	KU	1	DBIT	4.1	Core
8 (d)	PS	2	DBIT	3.2	Core
8 (e)	KU	2	ISI	4.4.1	Option
9 (a) (i)	KU	2	ISI	3.4 3.6	Option
9 (a) (ii)	KU	1	ISI	3.6	Option
9 (a) (iii)	PS	2	ISI	3.6	Option
9 (a) (iv)	PS	2	ISI	4.1.2	Option
9 (b)	KU	2	ISI	4.3.2	Option
9 (c)	PS	2	ISI	4.4.4	Option

Totals

KU	20
PS	40
Core	15
Option	45

Analysis of Questions

Section II Part B: On-line Database Systems

Question	Type	Marks	Source Unit	Content Statement	Core/Option
10 (a)	PS	11	DBAD	3.4	Core
10 (b)	KU	2	ODB	1.1.3	Option
10 (c)	KU	2	ODB	1.1.1	Option
10 (d) (i)	KU	3	ODB	1.3.1 1.3.2	Option
10 (d) (ii)	KU	2	ODB	1.3.3	Option
10 (e)	PS	2	ODB	1.1.2	Option
11 (a)	KU	2	ODB	2.2.2	Option
11 (b) (i)	KU	2	ODB	4.3.1	Option
11 (b) (ii)	PS	3	DOBD	4.3.2	Core
11 (c)	KU	1	DBIT	4.1	Option
11 (d) (i)	KU	2	ODB	1.1.2	Option
11 (d)(ii)(A)	PS	2	ODB	1.3.4	Option
11 (d)(ii)(B)	PS	2	ODB	4.2.1	Option
11 (e)	PS	2	DBIT	3.2	Core
12 (a)	PS	2	ODB	2.2.1	Option
12 (b)	PS	2	ODB	4.3.3	Option
12 (c) (i)	PS	1	ODB	3.2.1	Option
12 (c) (ii)	PS	2	ODB	4.1.3	Option
12 (d) (i)	KU	1	DBAD	2.1	Core
12 (d) (ii)	KU	2	ODB	1.2.4	Option
12 (d)(iii)(A)	KU	1	ODB	1.2.1	Option
12 (d)(iii)(B)	PS	2	ODB	1.2.2	Option
13 (a) (i)	PS	2	ODB	3.2.1 3.2.2	Option
13 (a) (ii)	PS	2	ODB	3.2.1 3.2.2	Option
13 (b) (i)	PS	2	ODB	3.2.3 3.2.4	Option
13 (b) (ii)	PS	1	ODB	3.2.3 3.2.6	Option
13 (c)	PS	2	ODB	3.1	Option

Totals

KU	20
PS	40
Core	15
Option	45

Unit Content Statements – Core Units

Unit	Statement	Content
Database Analysis and Design (DBAD)	1. Overview of Life Cycle	1.1 Stages and Iterative Nature
	2. Techniques Involved	2.1 Feasibility Study
		2.2 Project Plan
		2.3 Investigative Techniques
		2.4 Results from Investigation
		2.5 Systems Specification
	3. Modelling Techniques	3.1 Normalisation
		3.2 3.2.1 E/R Modelling
		3.2.2 Data Dictionary
		3.3 3.3.1 Entity Event Matrix
		3.3.2 Entity Life History
		3.4 Data Flow Diagram
	4. Database Design	4.1 Techniques
		4.1.1 System refinement
		4.1.2 Logical/physical design
		4.1.3 Process description
		4.1.4 Screen layout design
Database Implementation and Testing (DBIT)	1. Overview of DB Implementation	1.1 Stages and Iterative Nature
	2. Testing	2.1 Types of Testing
		2.2 Contents of Test Plan
		2.3 Systematic Testing
	3. DB Development	3.1 Database development
		3.2 Conversion Techniques
	4. Documentation, Evaluation, Maintenance	4.1 Documentation
		4.2 Evaluation
		4.3 Maintenance

Content Statements – Information Systems Interfaces

Unit	Statement	Content
Information Systems Interfaces (ISI)	1. Interface Modes	1.1 Contributing Factors 1.2 Range of Interfaces (description) 1.3 Interface Modes 1.4 Syntax and Semantics
	2. Intelligent Interfaces	2.1 Trends and Characteristics 2.2 2.2.1 Predictive and Adaptive Predictive text Grammar/spell check Adaptive menus Agent-based interface 2.2.2 Natural Language Machine translation Natural language querying Command and control Speech driven software
	3. Interface Modelling and Design	3.1 LUCID 3.2 Classes of User 3.3 Comparison of Techniques 3.4 Storyboard 3.5 State Transition Diagram 3.6 Prototypes
	4. Usability Testing and Evaluation	4.1 Qualitative Techniques 4.1.1 Thinking aloud 4.1.2 Co-discovery 4.1.3 Question-asking 4.1.4 Eye tracking 4.2 Quantitative Techniques 4.2.1 Time to learn 4.2.2 Speed of task perform. 4.2.3 User error rates 4.2.4 User retention 4.2.5 Subjective user satisfac. 4.3 Inspection Methods 4.3.1 Heuristic evaluation 4.3.2 Walkthrough 4.3.3 Feature set 4.3.4 Consistency inspection 4.3.5 Adherence to standards 4.4 Inquiry Methods 4.4.1 Surveys 4.4.2 Questionnaires 4.4.3 User perform. data log 4.4.4 Self reporting logs

Content Statements – Online Database Systems

Online Database Systems (ODB)	1. Internet Developments	1.1 Applications 1.1.1 Content Management 1.1.2 Customer Relationship 1.1.3 E-Commerce 1.2 Open Source and Commercial 1.2.1 Cost effectiveness 1.2.2 Security 1.2.3 Flexibility and adaptability 1.2.4 Community of users 1.3 EDI 1.3.1 Transaction standarisation 1.3.2 Translation software 1.3.3 Communications 1.3.4 Legal restrictions
	2. Database Connectivity	2.1 Requirements 2.1.1 Username/password 2.1.2 Server address 2.1.3 Database name 2.2 Server Based Management Tools 2.2.1 Connect client to server 2.2.2 Edit table structures
	3. SQL	3.1 DML 3.2 DQL 3.2.1 SELECT Statement 3.2.2 Logical operators 3.2.3 Negating Conditions 3.2.4 Aggregate Functions 3.2.5 Sorting and Grouping 3.2.6 Joins
	4. Application Development	4.1 Server Side Scripting 4.1.1 Server connection 4.1.2 Database selection 4.1.3 Exe. query & extract results 4.2 Form Processing 4.2.1 Insert data 4.2.2 Amend data 4.3 HTML 4.3.1 <form> element 4.3.2 <input> element 4.3.3 <button> element

[END OF MARKING INSTRUCTIONS]