

Applied ICT

Advanced GCE AS H515/H715

Advanced Subsidiary GCE AS H115/H315

Mark Schemes for the Units

June 2007

H115/H315/MS/R/07

OCR (Oxford, Cambridge and RSA Examinations) is a unitary awarding body, established by the University of Cambridge Local Examinations Syndicate and the RSA Examinations Board in January 1998. OCR provides a full range of GCSE, A level, GNVQ, Key Skills and other qualifications for schools and colleges in the United Kingdom, including those previously provided by MEG and OCEAC. It is also responsible for developing new syllabuses to meet national requirements and the needs of students and teachers.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

© OCR 2007

Any enquiries about publications should be addressed to:

OCR Publications
PO Box 5050
Annesley
NOTTINGHAM
NG15 0DL

Telephone: 0870 870 6622
Facsimile: 0870 870 6621
E-mail: publications@ocr.org.uk

CONTENTS

Advanced GCE ICT (Double Award)(H715)

Advanced GCE ICT (H515)

Advanced Subsidiary GCE ICT (Double Award)(H315)

Advanced Subsidiary GCE ICT (H115)

MARK SCHEMES ON THE UNITS

Unit	Content	Page
G041	How organisations use ICT	1
G054	Software development	16
G055	Networking solutions	34
*	Grade Thresholds	48

**Mark Scheme G041
June 2007**

MARKING INSTRUCTIONS FOR APPLIED GCE IN ICT EXAMINERS

These instructions supplement the general marking guidelines for ICT Examiners. Where they differ from the general guidelines, the instructions given here must be followed.

Standardisation

Before the standardisation meeting, mark, in pencil, at least ten scripts from a range of centres. Note any issues requiring discussion or clarification and raise these at the appropriate point during the standardisation meeting.

During the standardisation meeting, make careful note of any additions or changes to the mark scheme so that you can use it to mark the photocopied scripts provided.

At the end of the meeting (or soon after it) you will be provided with a final version of the mark scheme. You should destroy any previous version and mark strictly in accordance with the final mark scheme.

As soon as possible after the standardisation meeting, mark ten scripts using red ink and send them to your Team Leader.

Do not continue marking until your Team Leader tells you to do so. S/he will give you feedback on any aspects of your marking that needs attention. At this stage your Team Leader may request a further sample of ten scripts. Again, you should not mark any further scripts until you are told you can.

If your Team Leader's marks for these **standardisation** scripts differ from your own, enter her/his marks for these scripts on the appropriate MS2.

When you are told you can continue marking, continue to apply the mark scheme as carefully and accurately as you did for the sample.

Take careful note of the batch dates and organise your marking so that you can meet these deadlines.

Marking - general

Only mark in red ink.

Mark strictly to the mark scheme agreed at the standardisation meeting.

If you find an answer that you feel is correct but which does not fit any of the answers on the mark scheme, contact your Team Leader for advice.

Marking tasks

All papers allow marks for the pre-release tasks:

- indicate clearly with a tick (✓) where each mark is awarded – if appropriate
 - count the number of ticks and enter the number in the Tasks boxes on the front of the question paper.
- graded response tasks -indicate clearly how a mark band has been achieved
 - AO4 + 1/2/3 – identifies mark for evaluation (1-3 marks)
 - CS – response has been applied to case study
 - P/E/+/- - identifies points/expansions, positive and negative points
 - H/M/L + mark – identifies mark band and mark for content
 - add AO4 and H/M/L mark together to get total mark for the task and enter in the Tasks boxes on the front of the question paper
- indicate that each page has been looked at by putting a diagonal line across the bottom right-hand corner of any page where no marks are awarded.

Marking the questions

Only answers to questions written on the Question Paper should be marked.

Indicate clearly with a tick **exactly** where each mark is awarded. The number of ticks must equal the number of marks.

Write the number of marks from the question paper in the right-hand margin level with the bottom of the lines/space for the answer.

Make sure you do not give marks twice for the same points or exceed the number of marks available. Write **Max** next to the last tick to indicate where the mark limit for the question/part question has been met, especially if there are further points worthy of credit.

Total the marks for the whole question (**not** part questions) and write this in a circle, in the right-hand margin of the question paper, at the end of the question. There should be a circled mark for each question.

Mark any answer that is clearly wrong with a cross (✗).

Draw a line on the right-hand side of any answer that does not contain any points worthy of credit and/or use the abbreviations provided. It must be clear that you have read **all** the answers given.

Do not write anything on the question paper or pre-release tasks other than the approved abbreviations given over the page.

^	Something vital to the mark point has been omitted.
BOD	Benefit of the doubt given.
NBOD	Benefit of the doubt <u>not</u> given.
CON	Candidate contradicts him/herself.
NAQ	Candidate has not answered the question as set.
MTP	Candidate has missed the point of the question.
W	Candidate is working towards a mark but has not given enough to receive credit at this point.
NE	Not enough for the candidate to receive credit.
TV	Answer is too vague to receive credit.
FTC	Follow-through credit. When an earlier wrong answer has been penalised, this may be used to show that credit can now be given to a part of the script which depends on that earlier wrong answer. This avoids penalising a candidate twice for the same error, but <u>should only be used where specified by the PE.</u>
MAX	Shows that the maximum number of marks for a part-question or question has been awarded (even though the answer may contain further correct points).
R	The point repeats one already awarded credit.
JE	Candidate has <i>just</i> given enough to be awarded a mark.

Examiners may also underline the key words or phrases that contribute to the answer being worthy of credit or which confirm that the answer is wrong.

Transferring marks

Transfer the circled 'whole question' marks to the appropriate boxes on the front of the question paper.

Total the marks and enter this number in the Total box.

Check you have transferred and totalled the marks correctly.

Get your checker to check that

- the number of marks awarded for each task/question/part question equals the number of ticks
- task and question totals are correct
- marks are correctly transferred to the front of the question paper
- the question paper total is correct.

Transfer the totals onto the Centre MS2, taking care that the correct mark is written beside each candidate and that the lozenges are filled in correctly.

Get your checker to check that you have completed the MS2 correctly.

Send MS2s to Cambridge as soon as they are ready using the labels provided– you do not need to wait for the batch dates.

Never send scripts and MS2s in the same package.

If you are unsure what to do at any stage:

- look in the Instructions for Examiners handbook
- look at the Marking Guidelines for ICT Examiners
- contact your Team Leader, Principal Examiner, Chief Examiner or the ICT Subject Team for advice.

There are 100 marks available for this test. They are allocated as follows:

- Tasks 2 and 3 30
- Section A of the test paper 50
- Section B of the test paper 20

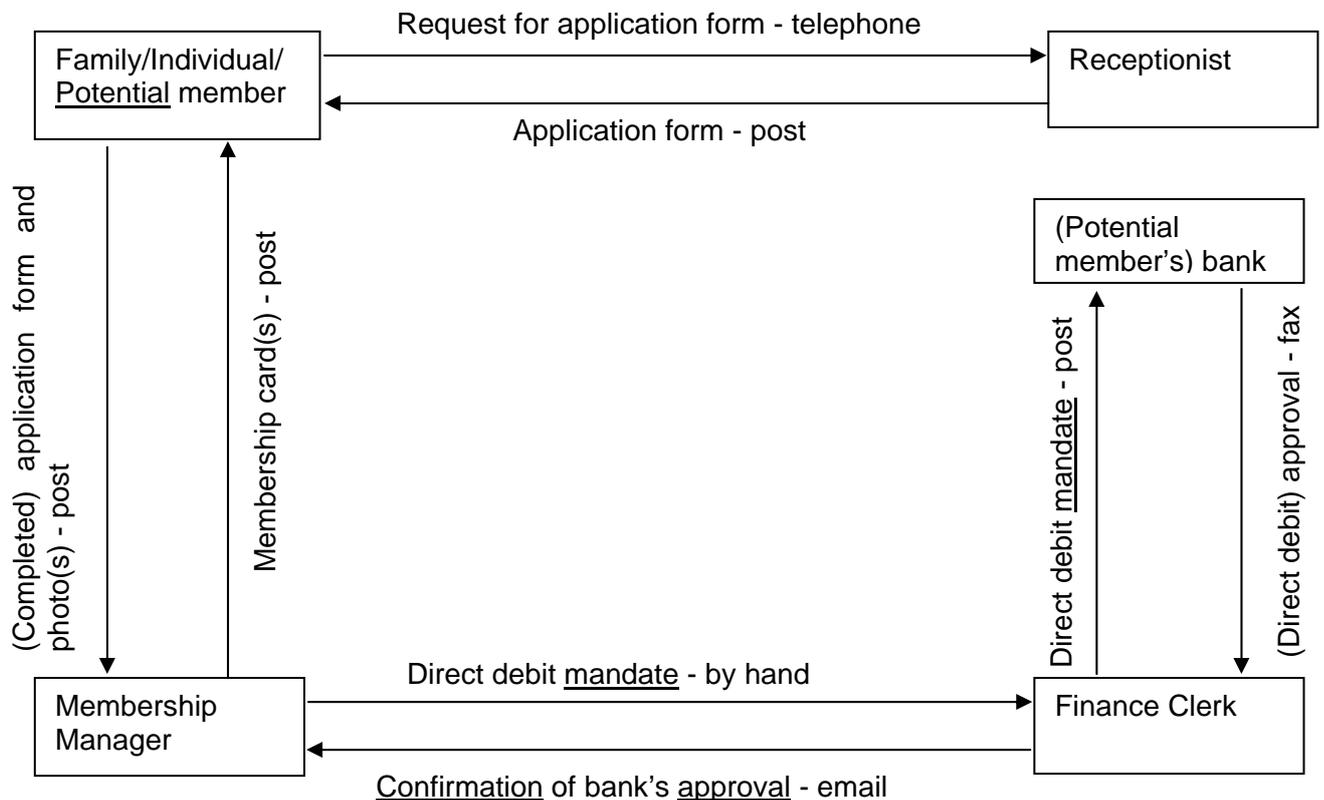
Task 2

1 mark each for boxes labelled

- Family/Individual/Potential member
 - Receptionist
 - Membership Manager
 - Finance Clerk
 - (Potential member's) bank
- plus labelled arrows to show the following information flows (1 mark each) and methods (1 mark each)
Max 15 marks.

Note:

- Arrows should only be awarded points if they are drawn to and from the correct boxes.
- Marks may be awarded for unconventional diagrams provided they isolate the senders and receivers of information.
- Do not award marks for flow diagrams or series of text boxes linked by arrows.
- Marks cannot be awarded for 'How' if the information is not identified/is incorrect but can be awarded if information is essentially correct but vague or incomplete.
- Labels should not be awarded marks if they are contained within the description of a process.
- If lines cross, mark labels as long as it is clear where each arrow goes.
- Marks should only be awarded for labels that can be unambiguously linked to a single arrow.



[15]

Task 3

A04 is assessed through this task.

A04 Marks	Guidance
3	A strength and a weakness in the method(s) used identified or suggestions for improving own performance.
2	A strength <u>or</u> weakness in the method(s) used identified.
1	Some comment made on the method(s) used.

The quality of written communication is assessed through this task.

Tiered response based on:

Coded	Marks	Guidance
H	9-12	<p>Candidates will show a clear understanding of the task and include detailed explanations of the implications of the Health and Safety at Work Act (1974) and subsequent Health and Safety Regulations with both positive and negative effects on staff.</p> <p>Examples are applied to the organisation and staff of KFSC.</p> <p>The information will be presented in a structured and coherent form. There will be few if any errors in spelling, grammar and punctuation. Any technical terms will be used appropriately and correctly.</p>
M	5-8	<p>Candidates will show an understanding of the task and may include some explanations of the implications of the Health and Safety at Work Act (1974) and subsequent Health and Safety Regulations with positive or negative effects on staff.</p> <p>Some examples are applied to the organisation and staff of KFSC.</p> <p>The information will be presented in a structured format. There may be occasional errors in spelling, grammar and punctuation. Any technical terms will be mainly correct.</p>
L	1-4	<p>Candidates will demonstrate a limited understanding of the task.</p> <p>Information may be a list of points, with little or no explanations or application to KFSC.</p> <p>Information will be poorly expressed and there will be a limited, if any, use of technical terms.</p> <p>Errors of grammar, punctuation and spelling may be intrusive.</p>

Candidates who simply state the requirements of the Health and Safety at Work Act and Regulations without applying them to KFSC can only be awarded the lowest mark band.

To include consideration of – examples must relate to specific personnel and activities within KFSC:

- KFSC need to
 - balance risks against time, cost etc of taking measures to avoid them
 - carry out health and safety assessment
 - implement health and safety measures found necessary
 - keep record of findings and arrangements made
 - draw up health and safety policy and bring to attention of staff
 - appoint competent people to help implement health and safety arrangements
 - set up emergency procedures
 - provide information and training.
- staff need to
 - take reasonable care of own health and safety and that of others
 - co-operate with employer on health and safety
 - use work items, including protective equipment, correctly
 - not interfere with or misuse anything provided for their health and safety
- in relation to computer equipment KFSC need to
 - analyse work stations to assess and reduce risk
 - ensure workstations meet minimum requirements
 - plan employees' work so that there are breaks or changes in activity
 - arrange eye tests on request and provide spectacles if special ones are needed
 - provide health and safety training and information
- positive impact on staff
 - know they are working in a safe environment
 - will be provided with equipment needed
 - will be provided with necessary training
 - can request free eye tests if working with VDU
 - may have legal redress if breach of H&S rules causes injury
- negative impact on staff
 - must be aware of H&S rules and follow them
 - may have to use/wear protective equipment they don't want to
 - following H&S rules may make tasks take longer/more complex

[15]

Annotation:

- CS – response has been applied to case study
- P – identifies points
- E – identifies expansions/explanations
- +/- – identifies positive/negative point

Section A

1 Any **one** job function and matching tasks from

- receptionist (1) plus **four** of
 - check availability of facility or class
 - take bookings from members
 - check in members
 - check in non-members
 - take payments from non-members
 - receive requests for membership application forms
 - post application forms to potential members
 - letting people into centre
 - block booking facilities for an event

One mark per point to max four

- coach (1) plus **four** of
 - provide classes for different sports and activities
 - provide individual training
 - oversee use of facilities
 - check correct use of facilities
 - check who is using facilities
 - ask for booking confirmation slips

- sales (assistant) (1) plus **four** of
 - serving customers
 - operating EPOS terminals
 - scanning barcodes
 - answering customer queries
 - keeping shelves and racks filled
 - letting shop manager know if stock level low

One mark per point to max four

[5]

2 Any **five** of

- responsible for running sports facilities
- management of coaches / lifeguards
- negotiating (maintenance) contracts
- renegotiating contracts as necessary
- telephones / contacts / alerts maintenance company if problem
- explains nature of problem
- agrees estimate for work required
- organising events including:
 - deciding what type of event will be held
 - sending memo to receptionist
 - sending memo to admin assistant
 - telephoning potential sponsors
 - receiving application forms

One mark per point to max of five

[5]

- 3 Any **four** of
Method
- application form
 - posted to (potential) members
 - filled in and posted back
- Information
- type of membership required
 - personal details of (potential member) / more than one example, e.g. name and DOB
 - contact details of (potential member) / more than one example e.g. address and telephone
 - personal details of others in family (family membership only)
 - photograph of (potential member(s))
 - bank details

One mark per point to max four

To achieve maximum marks there must be at least one point from each section. **[4]**

- 4 a i Any **two** of
- date
 - description/item/facility
 - price
 - duration
- One mark each to max two **[2]**

- ii An explanation that includes any **four** of
- member asked which facility or class they want to book
 - asked when they want to book
 - receptionist selects from dropdown lists
 - enters membership number
 - clicks button to make booking
 - costs added to member's account on check in
- One mark per point to max of four **[4]**

- b A description that includes any **three** of
- look up type of membership
 - look up date, description and price of bookings
 - add up/total booking prices
 - add monthly membership fee
 - calculate and add VAT
- One mark per point to max of three **[3]**

- c Two outputs and matching descriptions
Output individual itemised account (1)
plus any **two** of
- name and address of KFSC
 - date of account
 - membership details (number, name and address)
 - booking details (date, description and price of each)
 - payment details (total without VAT, the VAT payable and amount due)
 - when money will be debited
 - instruction to check and report discrepancies

One mark per point to max of two

Do not award marks for a simple list of the individual items shown in Appendix 3.

- Output** summary list (1)
 Plus any **two** of
- all membership numbers
 - with members' names
 - and amount due from each
- One mark per point to max of two

[6]

5 A description to a maximum of **ten** from **hardware**

- two electronic point of sale (EPOS) terminals (1) with barcode readers (1) and chip and pin card readers (1)
- (dedicated) server (1) connected to EPOS terminals (1)
- telephone connection to banking system (1st) for authorisation of card payments (1)

software

- database (1) containing stock data (1) held on server (1)
- communications software (1) to link to bank for all authorisation of card payments (1)

input data

- product code (1st) scanned in from barcode (1)
- member discount key pressed (1st) if a member (1)
- amount tendered (1) if paying by cash (1)
- card details from chip (1) PIN (keyed in) (1)

outputs

- EPOS terminal screen / customer receipt / till roll (1st) shows product description and price / amount due / change due / sub-total and discount (1)
- (two copies of) card receipt (1st) if paying by card (1) shows card type / part of card number / card expiry date / authorisation code / amount debited (1)
- details of day's sales (1) printed out at end of day (1)

processes

- looks up item description and price (1st) from stock database (1)
- all item prices added (1st) when sub-total key pressed (1)
- 10% discount calculated and subtracted (1st) when member discount key pressed (1)
- amount due subtracted from amount tendered (1st) if paying by cash (1)
- card validated (1st) by banking system (1)
- check PIN (and card match) (1st) to approve transaction (1)
- 'number-in-stock' field in stock database reduced by one (1st) for each item purchased (1)

To achieve maximum marks there must be at least one point from each section. [10]

6 a Any **one** of

- booking can be looked up by booking number (1) or by membership number and facility (1)
- arrival of member confirmed by clicking a button (1) so booking confirmation slip can be printed (1)
- link to membership database (1) allows addition of costs to members' accounts (1)
- receptionist controls who enters the centre (1) so know who is there/increased security (1)
- booking confirmation slip shows what is booked (1) which can be checked by coaching staff (1)

Up to **two** marks each to max of two

[2]

- b Any **two** of
- no control once member inside centre (1) so people can use facilities they have not booked (1)
 - relies on coaches checking booking slips (1) they are often too busy to do so (1)
 - lost revenue/danger of overcrowding (1) if members use other facilities or stay too long (1)
 - at busy times members might have to wait to be let in (1) causing them to be frustrated/dissatisfied with the centre (1)
 - booking confirmation slips may be lost or damaged (1) because members involved in strenuous activities/may not have anywhere to keep them safe (1) so not easy to check if members using facility they have booked (1)
- Up to **two** marks each to max of four **[4]**
- c i Any suitable improvement suggested and explained
eg
- use a chip on membership card to store booking details (1) linked to booking system to record when member checks in (1)
 - card entry system to each facility (1) only allows entry at booked times (1)
 - card reader on exit to check out (1) display screens to show when bookings have expired if member not checked out (1)
- Up to **two** marks each to max of two **[2]**
- ii A suitable benefit explained that matches the improvement
eg
- only members with valid booking can enter facility (1) so coaches do not need to check booking confirmation slips (1)
 - members do not need to check in with receptionist (1) so less receptionists needed (1)
 - if members overstay (1) extra cost can be added to account (1)
- Up to **two** marks each to max of two **[2]**
- iii A suitable problem identified that matches the improvement
eg
- need to extend network
 - much additional equipment required
 - system would be expensive to set up
 - may need to install barriers to some facilities
 - membership cards would need to be made by specialist firm
 - members who book by phone would need to get booking put on card when they arrive
 - if system fails facilities cannot be used
 - may still be difficult to check whether member has stayed too long/may forget to check out
 - staff would also need cards to move around the centre
- One** mark each to max of one **[1]**

Section B

- 7 a Any **two** of
- product/item code
 - quantity
 - colour
 - size
 - length
- One** mark per point to max of two **[2]**

- b An explanation that includes **three** of:
- look up product description / unit price
 - multiply unit price by quantity to give item total (1) add item totals to give net total (1) OR calculate total price (1)
 - calculate / add VAT
 - look up and include customer details
 - add postage and packing if applicable
 - subtract discount if applicable
- One** mark each to max three **[3]**

- 8 **Uses**
Any **two** possible uses
eg
- to send marketing materials to customers (1) by sending same email to all email addresses on mailing list (1)
 - to respond to individual customers (1) when contacted with a query or complaint (1)
 - to send confirmation of purchase (1) when goods bought from website (1)
 - to request availability for meeting (1) by emailing all staff involved (1)
- Two** marks each to max of four

- Problems**
Any **two** possible problems
eg
- increased risk of viruses (1) from opening email attachments (1)
 - staff may receive large numbers of emails (1) distracting them from other work (1)
 - large numbers of unsolicited emails (SPAM) (1) may clog up and slow down systems (1)
 - staff may use emails for personal use (1) rather than getting on with work (1)
- Two** marks each to max of four

[8]

- 9 a Any **one** of
- paint spraying
 - car assembly
 - moving materials/parts
 - quality control
- One mark [1]
- b Any **two** of
- increased quality of product (1) because robots do the task consistently well/do not get tired (1)
 - more cars can be produced in a given time (1) because robots do not need to take breaks (1)
 - 24 hour production economically viable (1) less staff needed to work at night when wages higher (1)
 - pace of production more predictable (1) so just-in-time systems can be used (1) just-in-time manufacturing reduces costs (1) because less warehouse space needed/less money tied up in stock (1)
 - fewer workers are needed (1) so reduced wage bill (1)
- Up to **two** marks each to max four [4]
- c Any **one** of
- problems with lack of human intervention (1) robots cannot think for themselves/react to sudden changes (1)
 - initial cost of equipment (1) robots are expensive to buy and install (1) may require complete redesign of production line (1)
 - reliance on systems (1) if system fails, production will stop (1)
 - need skilled staff to program and maintain (1) at higher wages than production workers (1)
- Up to **two** marks each to max two [2]

**Mark Scheme G054
June 2007**

MARKING INSTRUCTIONS FOR APPLIED GCE IN ICT EXAMINERS

These instructions supplement the general marking guidelines for ICT Examiners. Where they differ from the general guidelines, the instructions given here must be followed.

Standardisation

Before the standardisation meeting, mark, in pencil, at least ten scripts from a range of centres. Note any issues requiring discussion or clarification and raise these at the appropriate point during the standardisation meeting.

During the standardisation meeting, make careful note of any additions or changes to the mark scheme so that you can use it to mark the photocopied scripts provided.

At the end of the meeting (or soon after it) you will be provided with a final version of the mark scheme. You should destroy any previous version and mark strictly in accordance with the final mark scheme.

As soon as possible after the standardisation meeting, mark ten scripts using red ink and send them to your Team Leader.

Do not continue marking until your Team Leader tells you to do so. S/he will give you feedback on any aspects of your marking that needs attention. At this stage your Team Leader may request a further sample of ten scripts. Again, you should not mark any further scripts until you are told you can.

If your Team Leader's marks for these **standardisation** scripts differ from your own, enter her/his marks for these scripts on the appropriate MS2.

When you are told you can continue marking, continue to apply the mark scheme as carefully and accurately as you did for the sample.

Take careful note of the batch dates and organise your marking so that you can meet these deadlines.

Marking - general

Only mark in red ink.

Mark strictly to the mark scheme agreed at the standardisation meeting.

If you find an answer that you feel is correct but which does not fit any of the answers on the mark scheme, contact your Team Leader for advice.

Marking tasks

All papers allow marks for the pre-release tasks:

- indicate clearly with a tick (✓) where each mark is awarded – if appropriate
 - count the number of ticks and enter the number in the Tasks boxes on the front of the question paper.
- graded response tasks -indicate clearly how a mark band has been achieved
 - AO4 + 1/2/3 – identifies mark for evaluation (1-3 marks)
 - CS – response has been applied to case study
 - P/E/+/- - identifies points/expansions, positive and negative points
 - H/M/L + mark – identifies mark band and mark for content
 - add AO4 and H/M/L mark together to get total mark for the task and enter in the Tasks boxes on the front of the question paper
- indicate that each page has been looked at by putting a diagonal line across the bottom right-hand corner of any page where no marks are awarded.

Marking the questions

Only answers to questions written on the Question Paper should be marked.

Indicate clearly with a tick **exactly** where each mark is awarded. The number of ticks must equal the number of marks.

Write the number of marks from the question paper in the right-hand margin level with the bottom of the lines/space for the answer.

Make sure you do not give marks twice for the same points or exceed the number of marks available. Write **Max** next to the last tick to indicate where the mark limit for the question/part question has been met, especially if there are further points worthy of credit.

Total the marks for the whole question (**not** part questions) and write this in a circle, in the right-hand margin of the question paper, at the end of the question. There should be a circled mark for each question.

Mark any answer that is clearly wrong with a cross (✗).

Draw a line on the right-hand side of any answer that does not contain any points worthy of credit and/or use the abbreviations provided. It must be clear that you have read **all** the answers given.

Do not write anything on the question paper or pre-release tasks other than the approved abbreviations given over the page.

^	Something vital to the mark point has been omitted.
BOD	Benefit of the doubt given.
NBOD	Benefit of the doubt <u>not</u> given.
CON	Candidate contradicts him/herself.
NAQ	Candidate has not answered the question as set.
MTP	Candidate has missed the point of the question.
W	Candidate is working towards a mark but has not given enough to receive credit at this point.
NE	Not enough for the candidate to receive credit.
TV	Answer is too vague to receive credit.
FTC	Follow-through credit. When an earlier wrong answer has been penalised, this may be used to show that credit can now be given to a part of the script which depends on that earlier wrong answer. This avoids penalising a candidate twice for the same error, but <u>should only be used where specified by the PE.</u>
MAX	Shows that the maximum number of marks for a part-question or question has been awarded (even though the answer may contain further correct points).
R	The point repeats one already awarded credit.
JE	Candidate has <i>just</i> given enough to be awarded a mark.

Examiners may also underline the key words or phrases that contribute to the answer being worthy of credit or which confirm that the answer is wrong.

Transferring marks

Transfer the circled 'whole question' marks to the appropriate boxes on the front of the question paper.

Total the marks and enter this number in the Total box.

Check you have transferred and totalled the marks correctly.

Get your checker to check that

- the number of marks awarded for each task/question/part question equals the number of ticks
- task and question totals are correct
- marks are correctly transferred to the front of the question paper
- the question paper total is correct.

Transfer the totals onto the Centre MS2, taking care that the correct mark is written beside each candidate and that the lozenges are filled in correctly.

Get your checker to check that you have completed the MS2 correctly.

Send MS2s to Cambridge as soon as they are ready using the labels provided– you do not need to wait for the batch dates.

Never send scripts and MS2s in the same package.

If you are unsure what to do at any stage:

- look in the Instructions for Examiners handbook
- look at the Marking Guidelines for ICT Examiners
- contact your Team Leader, Principal Examiner, Chief Examiner or the ICT Subject Team for advice.

There are 100 marks available for this test. They are allocated as follows:

- Tasks 2, 3 and 4 30
- Section A of the test paper 50
- Section B of the test paper 20

Task 2 (15 marks)

3 marks available for L0 DFD (See example DFD)

1 mark each for:

- admin office **and** customer
- boat yard (must be central node)
- logical flow of information

9 marks available for L1 DFD (See example DFD)

1 mark each for:

- Consistency of symbols
- External entities customer **and** Admin Office identified
- Logical order of processes

1 mark for each process with associated flows / data store (MAX 6)

Evaluation – 3 marks available

Mark	
1	Some comment on method(s) used to develop DFD
2	A strength / weakness in method(s) used identified
3	A strength and weakness in method(s) used identified

Task 3 (10 marks)

1 mark for consistency

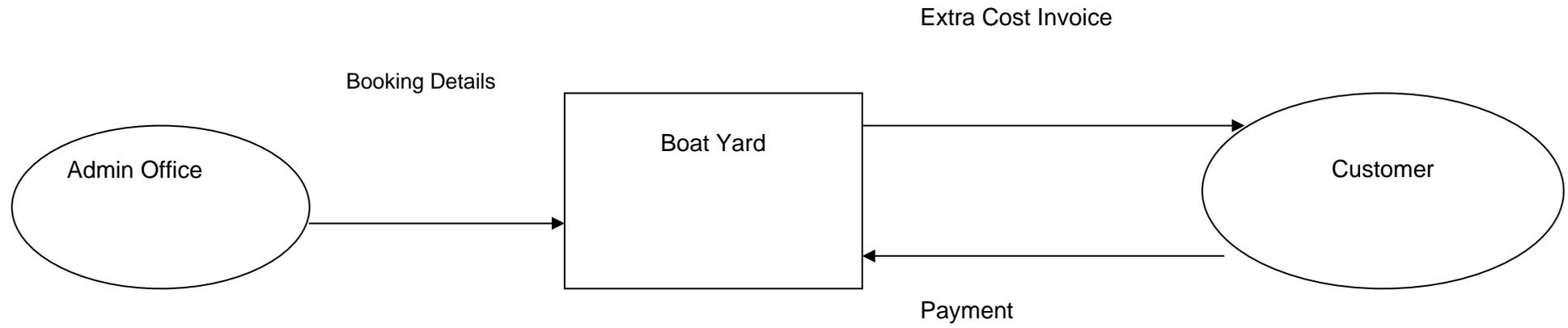
1 mark per entity shown for BOAT, CUSTOMER, BOAT RECORDS, BOOKING (Max 4)

1 mark for correctly defined relationships (Max 3)

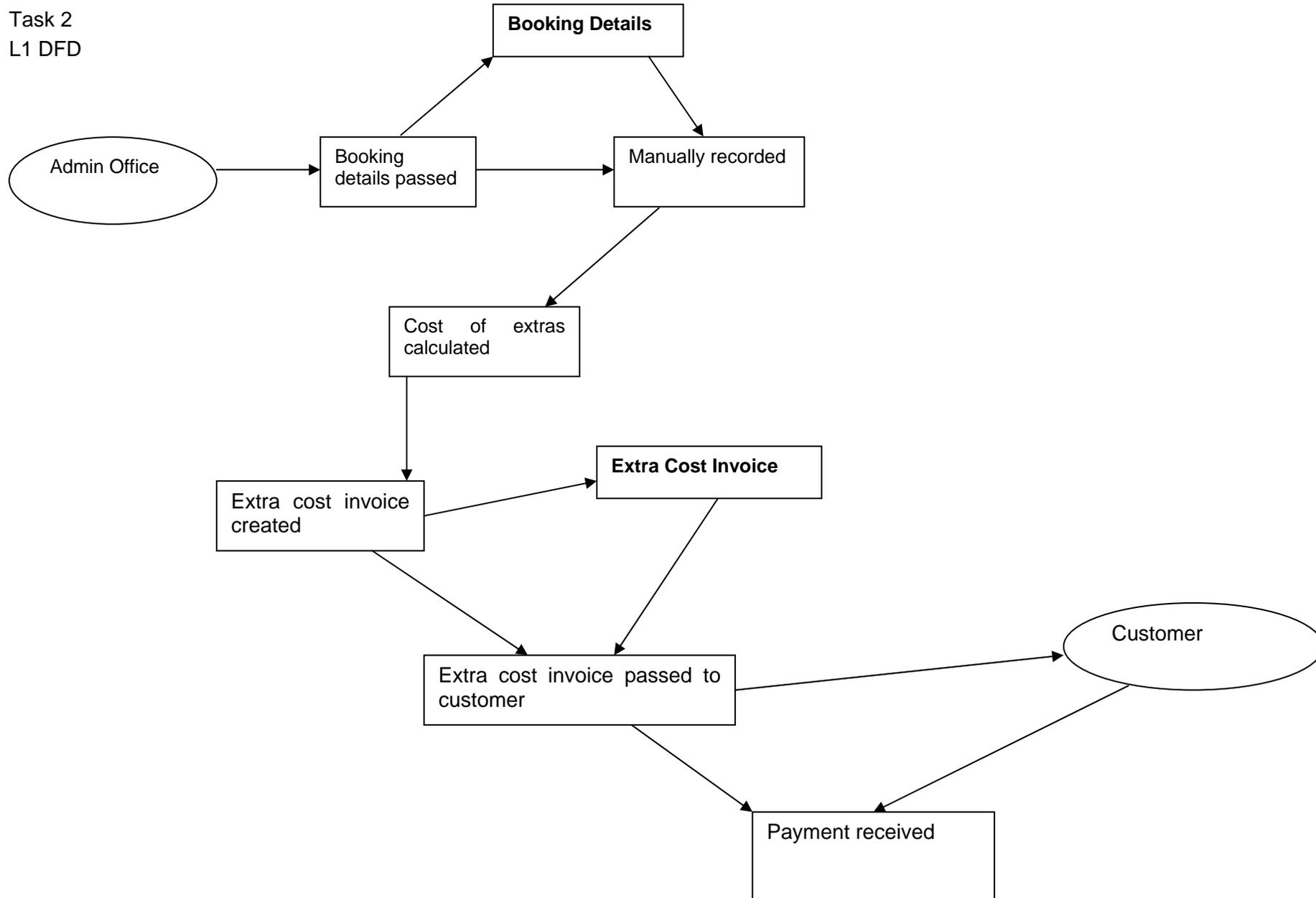
1 mark for correct identification of primary keys

1 mark for correct identification of foreign keys

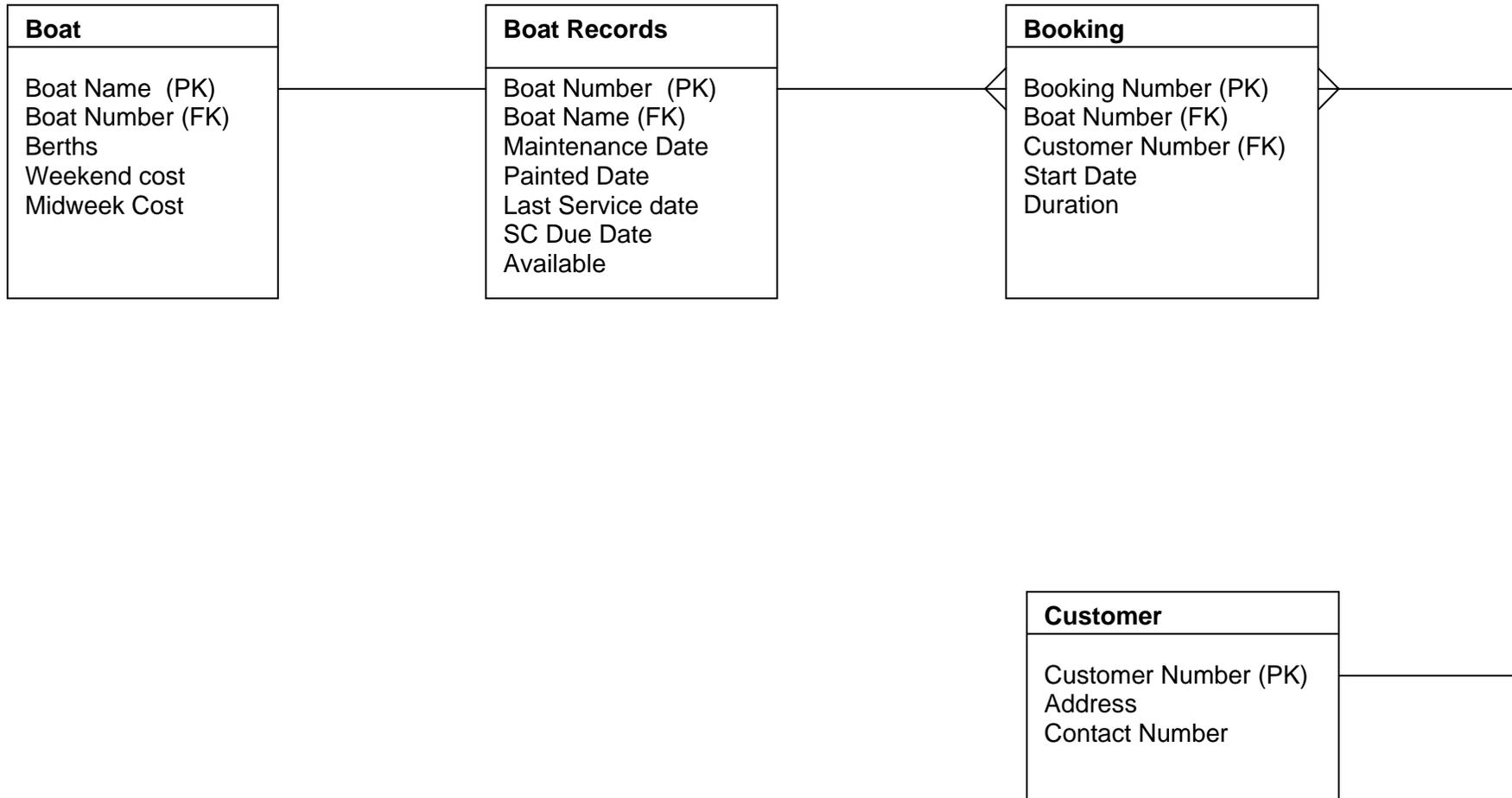
Task 2
Level 0 DFD



Task 2
L1 DFD



Task 3
ERD

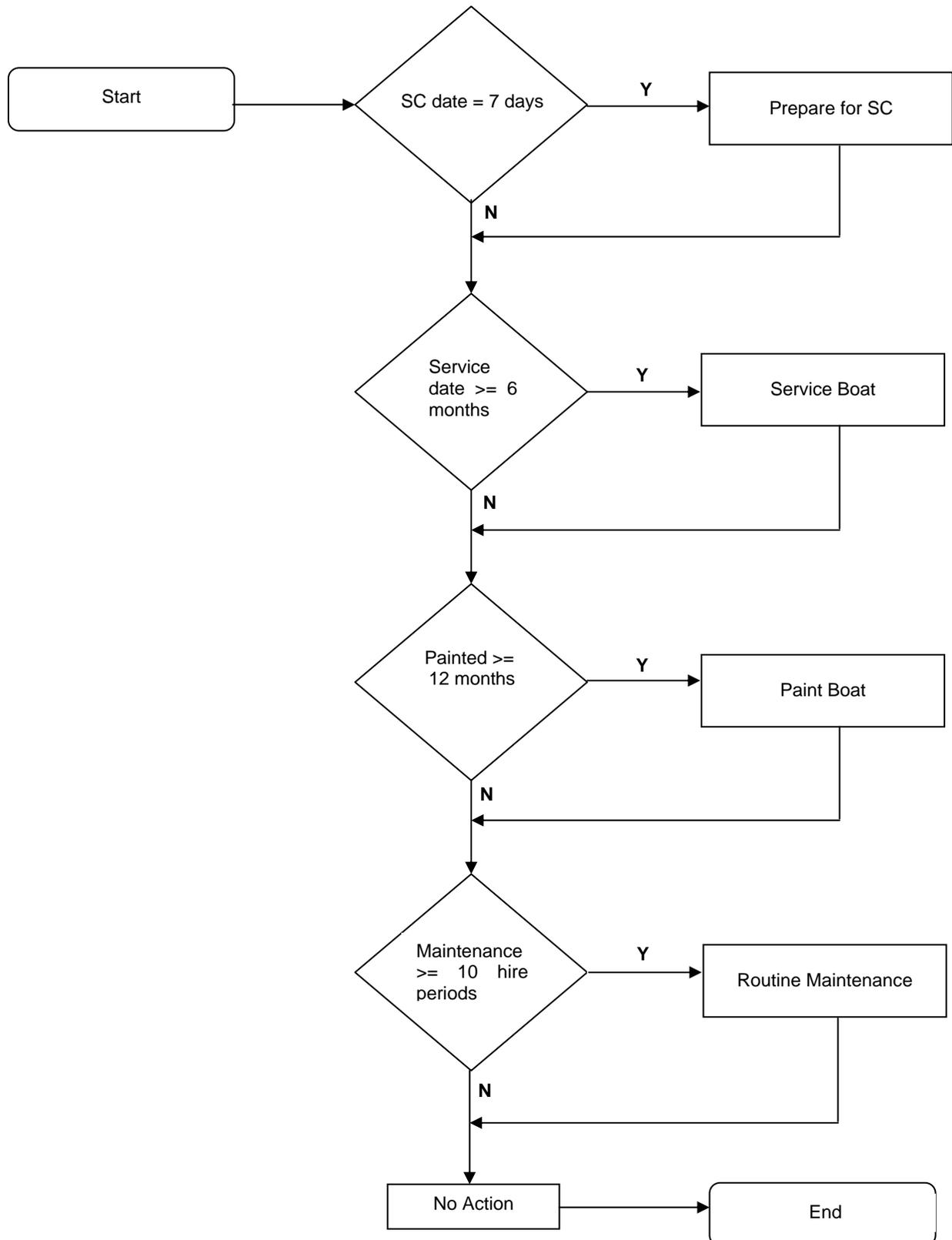


Task 4 (5 marks)

See example flowchart

1 mark for start and end defined

1 mark for each correct decision with associated process (Max 4)



Section A

Question	Part	Answer	Mark
1		<p>Describe two other purposes of the proposed system.</p> <p><i>Any 2 from:</i> <i>Max 2 marks each</i></p> <p>To solve the problems caused by the current system (1) Example of problems give (1) To produce reports as defied by owner of CC (1) example of reports given (1) To improve communication (1st) between office and boat yard (1) To increase security of <u>data</u> held (1) company accounts / staff records (1) determine access levels (1)</p>	[4]
2		<p>State three other functional requirements of the proposed system.</p> <p><i>Any 3 from:</i></p> <p>To keep records/reports of all bookings (made by customers) (1) To calculate <u>and</u> print invoices (1) To keep a database of customers, boats, boat records, bookings (1) (Must have at least 2 identified) To record payments / keep accounts (1) To produce reports on the revenue from each boat (1)</p>	[3]
3	a	<p>Describe the budget constraints that have been defined by Canal Capers.</p> <p>Budget set of £40,000 (1) For hardware and software (1)</p>	[2]
	b	<p>Identify one other process constraint that has been defined by Canal Capers.</p> <p>Time (1)</p>	[1]
	c	<p>Describe how this has been defined by Canal Capers.</p> <p>Must be implemented (1) Within 20 weeks (1)</p>	[2]

- 4 **Describe two problems caused by the current system at Canal Capers that are having a direct impact on customers.**

Max 2 per description, any 2 from:

Narrow boats are being 'double-booked' (1) lack of communication between Admin and Boat yard (1)
 Narrow boats being out of the water (1) due to routine maintenance / painted (1) still being booked out to customers (1)
 Narrow Boats being prepared for Safety Certificates (1) still being booked out to customers (1)

[4]

- 5 **Describe two other user requirements of Canal Capers.**

Max 3 per description, any two from:

Improve communication (1) between the 2 sites / internal (1) external communication (1) through the use of e-mail (1)
 Ability to produce reports (1) examples of reports given (up to two marks)
 Be able to develop a website (1) with secure area (1) for customer booking (1)

[6]

- 6 a **Identify one method of investigation suitable for use at The Boat Yard of Canal Capers, giving two reasons for your choice.**

1 for method, up to 2 for reasons.

Observation (1st) observing someone doing their job is better than asking someone to describe it (1) by observing nothing is forgotten (1)
 Can identify any delays in processing data / information (1) can see working practices (1)

Document Analysis (1st) useful when developing a system to convert manual to computerised (1) to see format / layout (1) to ensure consistency (1) good strategy for obtaining factual information (1)

Questionnaires (1st) the same questions can be asked (1) enabling statistical analysis (1) anonymity of respondents (1) may lead to honest answers (1)

[3]

- b **Identify one method of investigation suitable for use at the Admin Offices of Canal Capers giving two reasons for your choice.**

1 for method, up to 2 for reasons.

Document Analysis (1st) useful when developing a system to convert manual to computerised (1) to see format / layout (1) to ensure consistency (1) good strategy for obtaining factual information (1)

Interviewing (1st) questions can be modified as information is given (1) facility for additional information to be identified (1) interviewee feels 'important' (1) creates a rapport with interviewee (1)

Questionnaires (1st) the same questions can be asked (1) enabling statistical analysis (1) anonymity of respondents (1) may lead to honest answers (1)

[3]

7

Explain, using examples from Canal Capers, two methods that could be used to achieve this user requirement.

Band	Mark Range	
H	8 – 10	<p>Candidates will show a clear understanding of the question. The methods are described with detailed explanations given.</p> <p>Examples relate to Canal Capers.</p> <p>The information will be presented in a structured and coherent form. There will be few if any errors in spelling, grammar and punctuation. Technical terms will be used appropriately and correctly.</p>
M	4 – 7	<p>Candidates will show an understanding of the question. The methods are described with some explanation given.</p> <p>Some examples given relate to Canal Capers</p> <p>The information will be presented in a structured format. There may be occasional errors in spelling, grammar and punctuation. Technical terms will be mainly correct.</p>
L	1 – 3	<p>Candidates will demonstrate a limited understanding of the question.</p> <p>Information may be a list of points, with the two methods identified but with little or no explanation.</p> <p>Information will be poorly expressed and there will be a limited, if any, use of technical terms.</p> <p>Errors of grammar, punctuation and spelling may be intrusive.</p>

For example:

Access Levels - different groups of staff within CC would have access to the data / information needed to complete their jobs e.g. Owner requires access to all information / data to maintain a complete 'picture' of CC, personnel records need to be kept confidential / DPA only owner and staff member can see their records

User Names / Passwords - determines access to information / data. Each staff member has a unique password made up of letters and numbers regularly changed, not a recognisable / memorable word reduces risk of hacking.

Physical Security - for example locks on doors / windows, back-ups of data / information held off-site, blinds at windows. [10]

- 8 a **Identify the most suitable device for storing these records, justifying your choice.**
1 for device, up to 2 for justification.
For example:
- Hard Disk (drive) (1st mark)
- Large storage space needed (1) speed of access important (1) [3]
- b **Identify the most suitable device for backing-up this data, justifying your choice.**
1 for device, up to 2 for justification. For example:
- Tape (1st mark) can hold large amounts of data (1) removable (1)
 External hard drive (1st mark) can be used for real time replication (1)
 can be removed from offices to ensure safekeeping (1) [3]
- c **Identify the most suitable method of data capture that would be used at The Boat Yard. Give a reason for your choice.**
1 for method, up to 2 for justification, for example:
- Keyboard (1st) very little training needed (1) direct input of data / information into system (1) macros can be set up to ease data entry
- Scanner (1st) scan documents such as safety certificates (1) to keep records and back-ups of paper based documents (1)
- Touch screen (1st) environment in boat yard may lead to malfunctioning of keyboards (1) little training needed (1) [3]
- d **The administration office produces invoices for customers. Identify the most suitable device for this task, justifying your choice.**
1 for device, up to 2 for justification, for example
- Printer (1st mark) keep paper copies of invoices(1) need to be posted to customers / customer needs a copy (1) [3]

Section B

Question Answer Mark

9 Explain how the following pieces of documentation may be used at a future time in the life of the system:

Max 2 per documentation

i Security Details

To maintain current access rights (1) to reassign access to different parts of the system (1) to ensure that security is not compromised (1)

[2]

ii Version Details

To ensure most up-to-date version is used (1) to be able to track changes (1) made through different versions (1)

[2]

10 Explain the following types of maintenance.

Max 2 per type:

i Adaptive

Changes (1) made to the system as a result of changes (1) in the real world / company procedures (1) for example as a result in a change in VAT rate

[2]

ii Corrective

Carried out when errors (1) in the system have been identified (1) Usually provided as a 'patch' (1) usually as a result of data not being processed correctly (1) or produces the correct output (1) fixes an identified problem (1)

[2]

11 i

	Rule 1 (1)	Rule 2 (1)	Rule 3 (1)	Rule 4 (1)
Conditions				
No. of bedrooms => 3?	Y	Y	N	N
Journey time > 3 hours (1)	Y	N	Y	N
Actions				
Large Van	X	X		
2 drivers (1)	X		X	

[6]

- ii **Evaluate the use of decision tables as a tool in the systems life cycle.**

**Any 6 from, MAX 5 if only advantages / disadvantages given.
MAX 2 for a description**

Very simple method of showing actions (1) that take place under given rules (1) shows conditions/rules/actions (1) covers all/unique combinations (1)

Advantages:

All combinations of rules have to be considered (1) easy to see if all rules have been identified (1) Standard layout is defined (1) all levels of end-users can understand the information (1)

Easy to write structured English (1) by referring to the decision table less likely to omit any combinations of rules / actions (1)

Disadvantages:

If many rules defined (1) may be difficult to ensure correct combinations (1)

May lead to redundancy (1) two or more rules may exist with the same actions required (1)

[6]

Task 3 – from January 2007 – (not included in January 2007 mark scheme)

Name	Boat		
Description	The table that contains all general information about a narrow boat		
Aliases	None		
Relationships	Boat Records	1:1	
Attributes			
Name	Type/Format	Length	Key
Boat_Name	Text/String	30	Primary Key
Boat_Number	Integer	10	Foreign Key
Berths	Integer	5	
Weekend_cost	Currency	10	
Midweek_cost	Currency	10	

Name	Customer		
Description	The table that contains all information about a customer who has booked a narrow boat		
Aliases	None		
Relationships	Booking	1:M	
Attributes			
Name	Type/Format	Length	Key
Customer_Number	Text/String/Number/Integer	30	Primary Key
Customer_surname	Text	20	
Customer_firstname	Text	20	
Address 1	Text/String	30	
Address 2	Text/String	30	
Postcode	Text/String	10	
Contact Number	Text/String	15	

Name	Boat Records		
Description	The table that contains maintenance information about a narrow boat		
Aliases	None		
Relationships	Boat	1:1	
	Booking	1:M	
Attributes			
Name	Type/Format	Length	Key
Boat_Number	Integer	10	Primary Key
Boat_Name	Text/String	30	Foreign Key
Maintenance_date	Date	10	
Painted_date	Date	10	
Last_service_date	Date	10	
SC_due_date	Date	10	
available	Boolean	2	

Name	Booking		
Description	The table that contains all information about a specific booking.		
Aliases	None		
Relationships	Boat Records	M: 1	
	Customer	M: 1	
Attributes			
Name	Type/Format	Length	Key
Booking_Number	Text/String/Number/Integer	10	Primary Key
Boat_Number	Integer	10	Foreign Key
Customer_Number	Text/String/Number/Integer	30	Foreign Key
Start_date	Date	10	
Duration	Integer	5	

Mark Scheme G055
June 2007

MARKING INSTRUCTIONS FOR APPLIED GCE IN ICT EXAMINERS

These instructions supplement the general marking guidelines for ICT Examiners. Where they differ from the general guidelines, the instructions given here must be followed.

Standardisation

Before the standardisation meeting, mark, in pencil, at least ten scripts from a range of centres. Note any issues requiring discussion or clarification and raise these at the appropriate point during the standardisation meeting.

During the standardisation meeting, make careful note of any additions or changes to the mark scheme so that you can use it to mark the photocopied scripts provided.

At the end of the meeting (or soon after it) you will be provided with a final version of the mark scheme. You should destroy any previous version and mark strictly in accordance with the final mark scheme.

As soon as possible after the standardisation meeting, mark ten scripts using red ink and send them to your Team Leader.

Do not continue marking until your Team Leader tells you to do so. S/he will give you feedback on any aspects of your marking that needs attention. At this stage your Team Leader may request a further sample of ten scripts. Again, you should not mark any further scripts until you are told you can.

If your Team Leader's marks for these **standardisation** scripts differ from your own, enter her/his marks for these scripts on the appropriate MS2.

When you are told you can continue marking, continue to apply the mark scheme as carefully and accurately as you did for the sample.

Take careful note of the batch dates and organise your marking so that you can meet these deadlines.

Marking – general

Only mark in red ink.

Mark strictly to the mark scheme agreed at the standardisation meeting.

If you find an answer that you feel is correct but which does not fit any of the answers on the mark scheme, contact your Team Leader for advice.

Marking tasks

All papers allow marks for the pre-release tasks:

- indicate clearly with a tick (✓) where each mark is awarded – if appropriate
 - count the number of ticks and enter the number in the Tasks boxes on the front of the question paper.
- graded response tasks -indicate clearly how a mark band has been achieved
 - AO4 + 1/2/3 – identifies mark for evaluation (1-3 marks)
 - QWC + 1/2/3 – identifies mark for QWC (1-3 marks)
 - CS – response has been applied to case study
 - P/E/+/- - identifies points/expansions, positive and negative points
 - H/M/L + mark – identifies mark band and mark for content
 - add AO4, QWC and H/M/L mark together to get total mark for the task and enter in the Tasks boxes on the front of the question paper
- indicate that each page has been looked at by putting a diagonal line across the bottom right-hand corner of any page where no marks are awarded

Marking the questions

Only answers to questions written on the Question Paper should be marked.

Indicate clearly with a tick **exactly** where each mark is awarded. The number of ticks must equal the number of marks.

Write the number of marks from the question paper in the right-hand margin level with the bottom of the lines/space for the answer.

Make sure you do not give marks twice for the same points or exceed the number of marks available. Write **Max** next to the last tick to indicate where the mark limit for the question/part question has been met, especially if there are further points worthy of credit.

Total the marks for the whole question (**not** part questions) and write this in a circle, in the right-hand margin of the question paper, at the end of the question. There should be a circled mark for each question.

Mark any answer that is clearly wrong with a cross (✗).

Draw a line on the right-hand side of any answer that does not contain any points worthy of credit and/or use the abbreviations provided. It must be clear that you have read **all** the answers given.

Do not write anything on the question paper or pre-release tasks other than the approved abbreviations given over the page.

^	Something vital to the mark point has been omitted.
BOD	Benefit of the doubt given.
NBOD	Benefit of the doubt not given.
CON	Candidate contradicts him/herself.
NAQ	Candidate has not answered the question as set.
MTP	Candidate has missed the point of the question.
W	Candidate is working towards a mark but has not given enough to receive credit at this point.
NE	Not enough for the candidate to receive credit.
TV	Answer is too vague to receive credit.
FTC	Follow-through credit. When an earlier wrong answer has been penalised, this may be used to show that credit can now be given to a part of the script which depends on that earlier wrong answer. This avoids penalising a candidate twice for the same error, but should only be used where specified by the PE.
MAX	Shows that the maximum number of marks for a part-question or question has been awarded (even though the answer may contain further correct points).
R	The point repeats one already awarded credit.
JE	Candidate has <i>just</i> given enough to be awarded a mark.

Examiners may also underline the key words or phrases that contribute to the answer being worthy of credit or which confirm that the answer is wrong. However, care will be needed as candidates often use underlining to indicate an answer in pre-prepared material. Some also use red ink for this.

Transferring marks

Transfer the circled 'whole question' marks to the appropriate boxes on the front of the question paper.

Total the marks and enter this number in the Total box.

Check you have transferred and totalled the marks correctly.

Get your checker to check that

- the number of marks awarded for each task/question/part question equals the number of ticks
- task and question totals are correct
- marks are correctly transferred to the front of the question paper
- the question paper total is correct.

Transfer the totals onto the Centre MS2, taking care that the correct mark is written beside each candidate and that the lozenges are filled in correctly.

Get your checker to check that you have completed the MS2 correctly.

Send MS2s to Cambridge as soon as they are ready using the labels provided– you do not need to wait for the batch dates.

Never send scripts and MS2s in the same package.

If you are unsure what to do at any stage:

- look in the Instructions for Examiners handbook
- look at the Marking Guidelines for ICT Examiners
- contact your Team Leader, Principal Examiner, Chief Examiner or the ICT Subject Team for advice.

There are 100 marks available for this assessment. They are allocated as follows:

- Tasks 2 and 3 30 marks
- Section A of the test paper 50 marks
- Section B of the test paper 20 marks

Pre-release material

Task 2

Network diagram showing a physical ring topology

Any **six** of:

- file server in a secure location
- print server
- mail server
- applications server
- network printer
- receivers/transmitters
- repeaters
- monitor station
- Multi station Access Unit (MAU)
- UPS
- cabling positioned safely eg not across walkways

1 mark each to a maximum of 6

[6]

Cable and connectors

1 mark for matching cable and connector

(eg UTP/RJ-45, STP/RJ-45, Fibre/ST/SC)

1 mark for appropriate cable and connector for Rolling Rocks network

(eg UTP/RJ-45, Wireless/STP/RJ-45)

(do **not** accept fibre or wireless)

1 mark for description of suitability of cable and connector choice

(eg covers required distances, acceptable speed)

[3]

Connecting Equipment

1 mark for identification of appropriate connecting equipment

(eg receiver/transmitter, monitor station, MAU, network interface card)

1 mark each for description of suitability of connecting equipment from:

- fits ring topology or fits Token Ring for MAU (1)
- justification (eg
 - receiver allows machine to receive from previous machine in the ring
 - transmitter allows machine to send data on to next machine in the ring.
 - monitor station checks that data is not stuck on ring.
 - NIC/MAU controls access to network media) (1)

Max 2 marks

[3]

Any other additional hardware

Any two items of additional hardware identified from:

- extra PCs
- network printer
- scanner
- backup device
- file server machine
- print server machine
- applications server machine
- mail server machine
- network interface cards (if not awarded for connecting equipment)
- UPS
- repeater

1 mark each to a maximum of 2

1 mark each for description of suitability of up to two hardware items from:

- extra PCs – one for each employee
- network printer – no need for server – direct access to print queue for all users
- scanner – to allow easier input of images for brochure
- backup device – data security for file server
- file server machine – central storage of database and other data
- print server machine – dedicated machine for managing print queues, less processing for printing on individual machines
- applications server machine – less copies of software needed
- mail server machine – management of mail traffic
- network interface cards – control access to network media (if not awarded for connecting equipment)
- UPS – allow continuous operation, reduce risk of loss of data due to power fluctuations
- repeater – allows data to travel longer distances

1 mark each up to a maximum of 2 marks

[4]

Any additional software

1 mark for any one item of additional software/configuration identified

- network operating system
- server operating system
- client operating system
- network drivers
- protocols
- email software
- browser software
- anti-virus software

1 mark for description of suitability of software item chosen from:

- network operating system – controls operation of entire network
- server operating system – controls operation and communication for server machine
- client operating system – controls operation and communication for client machines
- network drivers – deals with operation of network interface cards
- protocols – (eg NetBEUI, TCP/IP) settings for communication on network
- email software – allows internal communication between users on the network
- browser software – access to web pages
- anti-virus software – protects the network

[2]

Evaluation (AO4)

Some comment is made on method(s) used (1)

A strength or a weakness in the method(s) used is identified (1)

A strength and a weakness in the method(s) used is identified (1)

Max 3 marks

[3]

Task 3

1 mark for either of:

- Dial up
- Broadband

[1]

Any **two** of:

- Always on (Broadband)
- Can still make and receive telephone calls (Broadband)
- Fixed monthly cost (Broadband)
- Fast connection suitable for sharing and fast downloads (Broadband)
- Easier to set up using existing telephone line (Dial-up)
- Can make it cheaper by using it less (Dial-up)

Up to 2 marks (must relate to recommended method)

[2]

1 mark for either of:

- Router (Broadband)
- Modem (Dial-up or Broadband)

[1]

Any **two** of:

- Connection charge to ISP (Broadband)
- Cost of router (Broadband)
- Monthly charge to ISP (Broadband or Dial-up)
- Cost of calls (Dial-up)
- Cost of modem (Dial-up)

Up to max 2 marks

[2]

Quality of written communication (QWC)

For 1 mark: errors in grammar, punctuation and spelling may be present.

For 2 marks: a few errors in grammar, punctuation and spelling may remain.

For 3 marks: is virtually free of errors of grammar, punctuation and spelling.

[3]

Section A

1 Any **three** of:

- keeping security software up to date
- central backing up equipment/media
- network management staff/maintenance contract
- updating software throughout network
- staff training

1 mark for each up to max 3

[3]

2 1 mark for identification and 1 mark for expansion of any **two** of:

- needs managing (1) may need to employ someone to do this (1)
- viruses can spread more easily (1) through shared data and software (1)
- workforce can become dependent on network (1) work stops if network breaks (1)
- extra expense (1) installation requires extra hardware and software (1)
- less secure than stand alone (1) access across network is possible (1)

[4]

3 Any **two** of:

- central control of all data should help security
- it will be easier to install new software on the server only
- all data is kept together and can be accessed from any machine
- all machines will be the same – a profile follows a user rather than being installed on a machine
- easier backup from server

1 mark for each up to a maximum of 2

[2]

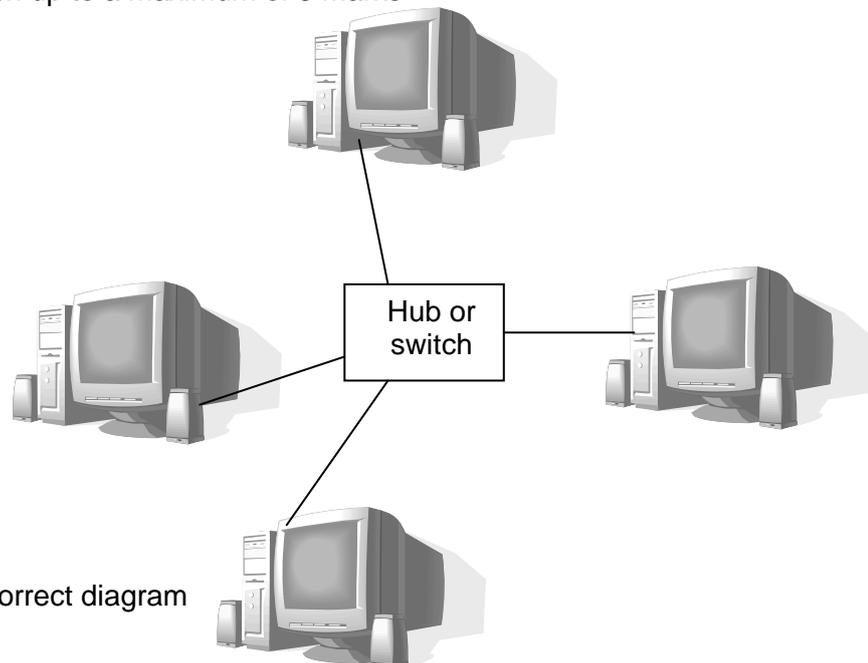
4 (a) Any **three** of:

- all computers connected to backbone cable
- terminators at each end of backbone cable
- data is broadcast on the backbone cable
- data travels on the backbone cable in both directions
- coaxial cable connects network

1 mark for each up to a maximum of 3 marks

[3]

(b) (i)



1 mark for a correct diagram

[1]

- (ii) Any **three** of:
- all computers are connected to a central hub or switch
 - UTP/STP/Fibre Optic cable connects computers to hub or switch
 - hub broadcasts data/switch makes a virtual circuit between communicating nodes
 - all data must pass through the hub/switch
 - data travels in both directions
- 1 mark for each to a maximum of 3 marks **[4]**

- (c) 1 mark for each advantage, disadvantage or statement of suitability. Extra mark for explanation.

Star advantages:

- very easy to add new nodes (1) just plug them into the hub or switch (1) without disrupting the network (1)
- quite fast data transfer (1) between machines on the network (1)
- can cover long distances (1) with the right type of cable (1)
- allows for the network to still be operational (1) even if one cable fails (1)
- fault finding quite easy (1) can isolate a faulty cable or connection (1)

Star disadvantages:

- dependent on the hub/switch (1) if this breaks so does the whole network (1)
- cost (1) quite a lot of cable required (1)
- many cables (1) health and safety issue (1)

Suitability:

- suitable for Rolling Rocks (1) because it is expandable (1)
- suitable for Rolling Rocks (1) because it is fast enough (1)
- suitable for Rolling Rocks (1) because it is reliable (1)
- not suitable for Rolling Rocks (1) because it will be too expensive (1)

(must have at least one advantage, one disadvantage and a statement of suitability)
Max 6 marks **[6]**

- 5 (a) Either of:
- SC connector
 - ST connector
- 1 mark **[1]**
- (b) 1 mark for any of:
- glass (strand)
 - uses light beams to represent data
 - one or more strands in each cable
 - not subject to electrical interference
 - not subject to corrosion
 - rapid transmission of data
 - outer plastic sheath
- 1 mark **[1]**

- (c) 1 mark for identification and 1 mark for expansion of any of:
- high cost (1) not justified for small network (1)
 - high transmission speeds (1) probably not necessary (1)
 - indoors (1) so corrosion of cable not a problem (1)
 - long distance transmission (1) not necessary (1)
- 1 mark for point 1 for expansion [2]
- 6 (a) Any of:
- receives packet of data then broadcasts to all nodes
 - amplifies the signal as it broadcasts it
 - connects nodes
 - provides a central connection point
 - layer 1 device
- 1 mark for each up to max 2 [2]
- (b) Any of:
- used to connect two networks
 - can connect LAN/WAN or LAN/LAN or WAN/WAN
 - converts between protocols on each network
 - can monitor network usage
- 1 mark for each up to max 2 [2]
- (c) Any of:
- constant supply of electricity
 - prevents unexpected loss of power
 - prevents unexpected surges in power
 - used for important equipment (like a server)
 - protects systems
- 1 mark for each up to max 2 [2]
- (d) Any of:
- stores all network files
 - receives requests from users for data
 - sends data to users
 - stores data as requested by users
- 1 mark for each up to max 2 [2]
- 7 (a) Any of:
- programmable protocol using an API
 - uses MAC addressing
 - suitable for high speed transmission on LAN
 - works on Token Ring and Ethernet technologies
 - enhanced version of NetBIOS
 - non-routable protocol
 - splits data into frames
- 1 mark for each up to max 2 [2]
- (b) Any of:
- commonly used on PC systems
 - suitable for (high speed) transmission on LAN
 - can be easily configured through API
 - can work on a gateway with TCP/IP for connection to the Internet
- 1 mark for each up to max 2 [2]

- 8 (a)** Any of:
- someone who accesses data to which they have no rights
 - someone who accesses data in order to cause damage
 - someone who accesses data to gain information
 - someone who uses their knowledge and software tools to gain unauthorised access
- 1 mark **[1]**
- (b)** Any of:
- by guessing or cracking passwords to gain access
 - by introducing a Trojan horse or virus
 - by physically accessing computer systems
 - using software tools
 - exploiting software bugs
 - exploiting errors in security setup
 - use/knowledge of backdoors
- 1 mark for each up to max 3 **[3]**
- (c)** Any of:
- firewall (1) at point of connection to Internet (1) run at regular intervals (1) updated regularly (1)
 - anti-virus software (1) installed on every machine in the network (1)
 - policies (1) to ensure that passwords are secure (1)
 - staff training (1) to ensure users log off (1)
 - physical protection (1) ensure locks on rooms and on equipment (1)
 - make sure software is up to date (1) patched to remove bugs (1)
 - ensure default users removed (1) and default passwords changed (1)
- 1 mark for each point to max 2 then 1 mark for expansion of each point **[4]**
- 9** 1 mark for point and 1 mark for expansion, eg:
- wider audience (1) anyone can look at pages (1) available all the time (1)
 - search engines (1) allow new customers to find it (1)
 - fixed costs – one off (1) not per customer like post (1)
 - easily updated (1) when prices/stock levels change (1)
 - compete with larger companies (1) on equal footing (1) no indication of size (1)
- 1 mark for point to max 2 then 1 mark for expansion of each point
(Do not accept easier, quicker, cheaper). **[4]**

Section B

- 10 (a)** Any of:
- secure access to network (1) from anywhere (1)
 - wide availability of communications links (1) of any type (1)
 - secure transfer of data (1) using encryption (1)
 - remote access to network (1) as if in the office (1)
- 1 mark for point and 1 mark for expansion **[2]**
- (b)** Any of:
- could be security issues (1) if secure protocols not used (1)
 - access might be difficult (1) in remote areas (1) unable to find a connection (1)
 - more users (1) slower network (1)
 - limited technical support (1) for end user (1)
- 1 mark for point and 1 mark for expansion **[2]**
- (c)** Any **two** of:
- network interface card/wireless adapter card
 - modems
 - routers
 - proxy server
- 1 mark each up to a max of 2 **[2]**
- 11** Any **one** from each definition to max 2 marks
- Dial-up = connect using standard telephone call = Broadband = permanent connection
 - Dial-up = use a modem – Broadband = use a router
 - Dial-up = low speed connection – Broadband = high bandwidth
 - Dial-up = can't use telephone and Internet at same time – Broadband = can use both at the same time
 - Dial-up = one computer – Broadband = multiple connections **[2]**
- 12** Any **two** of:
- Token circulates ring (1) is picked up by a node wanting to transmit (1)
 - uses STP (1) and RJ45 connectors (1)
 - also uses fibre optic (1) and SC or ST connectors (1)
 - IEEE 802.5 (1) defines standard (1)
 - All nodes have equal access (1) one node cannot transmit twice in a row (1)
 - Token and data circulate ring in one direction only (1) no collisions so fast (1)
- 1 mark for point and 1 mark for expansion **[4]**
- 13** Any of:
- used to check that a packet has been received (1) TTL has expired (1)
 - TTL set on transmission (1) to start timing (1)
 - packet removed (1) if TTL expires (1)
- 1 mark for point and 1 mark for expansion **[2]**
- 14** Any **four** of:
- force regular change of password
 - do not allow passwords to be repeated

- set minimum length of password
- limit number of guesses allowed
- passwords must include both numbers and letters
- password must use both upper and lower case letters
- password must be non-dictionary words
- train staff in keeping passwords secure

1 mark each to max 4 marks

[4]

15 Any **two** of:

- use an easily understandable file-naming system
- use a suitable directory structure
- set access rights to restrict access to logs
- set access rights to restrict access to folders containing logs

1 mark each to max 2 marks

[2]

**Applied GCE (H115/315/515/715)
June 2007 Assessment Series**

Coursework Unit Threshold Marks

Unit		Maximum Mark	a	b	c	d	e	u
G040	Raw	50	45	40	35	30	25	0
	UMS	100	80	70	60	50	40	0
G042	Raw	50	44	39	34	29	25	0
	UMS	100	80	70	60	50	40	0
G043	Raw	50	44	39	34	29	24	0
	UMS	100	80	70	60	50	40	0
G044	Raw	50	43	38	33	28	24	0
	UMS	100	80	70	60	50	40	0
G045	Raw	50	43	38	33	28	24	0
	UMS	100	80	70	60	50	40	0
G046	Raw	50	43	38	33	28	24	0
	UMS	100	80	70	60	50	40	0
G047	Raw	50	43	38	33	28	24	0
	UMS	100	80	70	60	50	40	0
G049	Raw	50	45	40	35	30	25	0
	UMS	100	80	70	60	50	40	0
G050	Raw	50	45	40	35	30	25	0
	UMS	100	80	70	60	50	40	0
G051	Raw	50	45	40	35	30	25	0
	UMS	100	80	70	60	50	40	0
G052	Raw	50	45	40	35	30	25	0
	UMS	100	80	70	60	50	40	0
G053	Raw	50	45	40	35	30	25	0
	UMS	100	80	70	60	50	40	0
G056	Raw	50	45	40	35	30	25	0
	UMS	100	80	70	60	50	40	0
G057	Raw	50	45	40	35	30	25	0
	UMS	100	80	70	60	50	40	0
G058	Raw	50	45	40	35	30	25	0
	UMS	100	80	70	60	50	40	0
G059	Raw	50	45	40	35	30	25	0
	UMS	100	80	70	60	50	40	0

Examined Unit Threshold Marks

Unit		Maximum Mark	a	b	c	d	e	u
G041	Raw	100	71	63	55	48	41	0
	UMS	100	80	70	60	50	40	0
G048	Raw	100	83	73	63	53	44	0
	UMS	100	80	70	60	50	40	0
G054	Raw	100	68	60	52	45	38	0
	UMS	100	80	70	60	50	40	0
G055	Raw	100	71	63	55	47	39	0
	UMS	100	80	70	60	50	40	0

Specification Aggregation Results

Uniform marks correspond to overall grades as follows.

Advanced Subsidiary GCE (H115):

Overall Grade	A	B	C	D	E
UMS (max 300)	240	210	180	150	120

Advanced Subsidiary GCE (Double Award) (H315):

Overall Grade	AA	AB	BB	BC	CC	CD	DD	DE	EE
UMS (max 600)	480	450	420	390	360	330	300	270	240

Advanced GCE (H515):

Overall Grade	A	B	C	D	E
UMS (max 600)	480	420	360	300	240

Advanced Subsidiary GCE (Double Award) (H315):

Overall Grade	AA	AB	BB	BC	CC	CD	DD	DE	EE
UMS (max 1200)	960	900	840	780	720	660	600	540	480

Cumulative Percentage in Grade

Advanced Subsidiary GCE (H115)

A	B	C	D	E	U
2.9	13.6	34.1	59.9	80.2	100.0
There were 9455 candidates aggregating in June 2007.					

Advanced Subsidiary GCE (Double Award) (H315)

AA	AB	BB	BC	CC	CD	DD	DE	EE	U
1.7	5.0	9.6	18.0	27.6	37.3	51.2	65.8	79.3	100.0
There were 1103 candidates aggregating in June 2007.									

Advanced GCE (H515)

A	B	C	D	E	U
5.4	22.3	49.7	74.6	92.1	100.0
There were 6054 candidates aggregating in June 2007.					

Advanced GCE (Double Award) (H715)

AA	AB	BB	BC	CC	CD	DD	DE	EE	U
1.8	4.5	11.7	21.4	32.7	46.7	62.0	77.3	90.8	100.0
There were 1145 candidates aggregating in June 2007.									

For a description of how UMS marks are calculated see;
http://www.ocr.org.uk/exam_system/understand_ums.html

Statistics are correct at the time of publication.

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

(General Qualifications)

Telephone: 01223 553998

Facsimile: 01223 552627

Email: helpdesk@ocr.org.uk

www.ocr.org.uk

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored

Oxford Cambridge and RSA Examinations
is a Company Limited by Guarantee
Registered in England
Registered Office; 1 Hills Road, Cambridge, CB1 2EU
Registered Company Number: 3484466
OCR is an exempt Charity



OCR (Oxford Cambridge and RSA Examinations)
Head office
Telephone: 01223 552552
Facsimile: 01223 552553