



Western Australian Certificate of Education Examination, 2012

Question/Answer Booklet

APPLIED INFORMATION TECHNOLOGY

Stage 3

Please place your student identification label in this box

Student Number: In figures

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In words

Time allowed for this paper

Reading time before commencing work: ten minutes

Working time for paper: three hours

Materials required/recommended for this paper

To be provided by the supervisor

This Question/Answer Booklet

Multiple-choice Answer Sheet

Number of additional
answer booklets used
(if applicable):

To be provided by the candidate

Standard items: pens (blue/black preferred), pencils (including coloured), sharpener,
correction tape/fluid, eraser, ruler, highlighters

Special items: nil

Important note to candidates

No other items may be taken into the examination room. It is **your** responsibility to ensure that you do not have any unauthorised notes or other items of a non-personal nature in the examination room. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.

Structure of this paper

Section	Number of questions available	Number of questions to be answered	Suggested working time (minutes)	Marks available	Percentage of exam
Section One: Multiple-choice	20	20	20	20	10
Section Two: Short answer	6	6	35	30	15
Section Three: Extended answer	2	2	50	50	25
Section Four: Production	1	1	75	68	50
				Total	100

Instructions to candidates

1. The rules for the conduct of Western Australian external examinations are detailed in the *Year 12 Information Handbook 2012*. Sitting this examination implies that you agree to abide by these rules.
2. Answer the questions according to the following instructions.

Section One: Answer all questions on the separate Multiple-choice Answer Sheet provided. For each question shade the box to indicate your answer. Use only a blue or black pen to shade the boxes. If you make a mistake, place a cross through that square then shade your new answer. Do not erase or use correction fluid/tape. Marks will not be deducted for incorrect answers. No marks will be given if more than one answer is completed for any question.

Sections Two, Three and Four: Answer all questions. Write answers in this Question/ Answer Booklet.
3. You must be careful to confine your responses to the specific questions asked and to follow any instructions that are specific to a particular question.
4. Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.
 - Planning: If you use the spare pages for planning, indicate this clearly at the top of the page.
 - Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question(s) that you are continuing to answer at the top of the page.

Section One: Multiple-choice**10% (20 Marks)**

This section has **20** questions. Answer **all** questions.

Answer all questions on the separate Multiple-choice Answer Sheet provided. For each question shade the box to indicate your answer. Use only a blue or black pen to shade the boxes. If you make a mistake, place a cross through that square then shade your new answer. Do not erase or use correction fluid/tape. Marks will not be deducted for incorrect answers. No marks will be given if more than one answer is completed for any question.

Suggested working time: 20 minutes.

1. A touchphone or smartphone is an example of
 - (a) laptop technology.
 - (b) convergence technology.
 - (c) network technology.
 - (d) satellite technology.

2. When a business purchases computer hardware, which of the following is an environmental consideration?
 - (a) interoperability
 - (b) storage capacity
 - (c) disposability
 - (d) bus speed

3. The main feature of a multi-core processor is that it
 - (a) is made from multiple silicon chips.
 - (b) has multiple processing units.
 - (c) has its Central Processing Unit (CPU) and memory on the same chip.
 - (d) has multiple memory units.

4. A newer version of software is said to be 'backward' compatible if it can
 - (a) process files generated by previous versions.
 - (b) generate files suitable for processing by previous versions.
 - (c) be run to restore previous states of the application.
 - (d) be installed in any order on a system.

5. Which of the following affects the functioning of Information Communication Technology (ICT) equipment within a networked environment?
 - (a) user interface
 - (b) graphic file type
 - (c) transmission rate
 - (d) Central Processing Unit (CPU)

See next page

6. A student uses their phone to take a photograph of another student without their permission. The photograph is then uploaded to a public photo album on a social networking site. Which Act has been breached?
- (a) Privacy Act
 - (b) Occupation Safety and Health (OSH) Act
 - (c) Accuracy Act
 - (d) Copyright Act
7. Which of the following should **not** be taken into consideration when selecting software?
- (a) ease of use
 - (b) design
 - (c) packaging
 - (d) technical capabilities
8. A toy library maintains a customer database. Every new customer is asked to complete a form providing their contact details. Each time a customer borrows a toy, they are asked to confirm their address details and updates are made as needed. Which statement about the data is true?
- (a) The data quality is good as it is stored in an electronic database.
 - (b) The data quality is good because the data stored is constantly revised.
 - (c) The data quality is poor because much of the data could be out of date and there is no way of checking.
 - (d) The data quality is poor because there are no verification procedures in place to ensure it is accurate.
9. Which of the following is an important consideration in using the internet to transfer graphic files?
- (a) colour scheme
 - (b) postscript capability
 - (c) bit-mapped colours
 - (d) size of file
10. When using computing technologies in the workplace, employees are usually required to sign
- (a) an appropriate user policy.
 - (b) a service level agreement.
 - (c) an approved site agreement.
 - (d) an anti-bullying contract.

11. Which of the following is a common network topology for Local Area Networks (LANs)?
- (a) scalar
 - (b) web
 - (c) star
 - (d) satellite
12. Which of the following would protect software from a series of potentially damaging instructions within an application?
- (a) disk backup tool
 - (b) disk fragmenter
 - (c) word processor
 - (d) anti-virus tool
13. Which of the following could be used to manage the security of data?
- (a) real-time data processing
 - (b) disaster recovery plan
 - (c) Occupational Safety and Health (OSH) plan
 - (d) evacuation plan
14. If a company wanted to employ a citizen from another country as an Information Communication Technology (ICT) specialist, which of the following must it consider?
- (a) union membership
 - (b) Occupational Safety and Health (OSH)
 - (c) age of the specialist
 - (d) visa restrictions
15. Comparing the performance of software to a set of industry agreed standards is referred to as
- (a) overclocking.
 - (b) benchmarking.
 - (c) standardisation.
 - (d) maintenance.
16. A company has collected information from its customers, advising them via an acceptance of terms and conditions that the information is for the company's use only. Another company offers to buy this information to enable it to send out advertising materials. This is an appropriate practice when the
- (a) customers sign off that they agree to their information being shared.
 - (b) customers get a percentage of the selling fee.
 - (c) customers like the products being advertised.
 - (d) companies have an informal agreement.

17. What is an advantage of storing your data with another company on the internet?
- (a) your data is checked by an independent person
 - (b) your data is available to you anywhere at any time
 - (c) you do not have to worry about your data being secure
 - (d) the speed of your internet connection is guaranteed
18. A business negotiates an agreement with an Information Communication Technology (ICT) company that outlines the availability of its services, its response times to help requests and other support and supply services. This is commonly called a
- (a) Business Support Contract.
 - (b) Disaster Recovery Plan.
 - (c) Service Level Agreement.
 - (d) Call Centre Agreement.
19. Which of the following **best** explains why Portable Document Files (PDFs) are typically placed on internet sites?
- (a) they are compressed, yet still maintain all their information
 - (b) they are easily edited by all software
 - (c) they can be modified with open source software
 - (d) they are the fastest loading file type
20. When a manual system is converted to an automated system, one of the impacts of the conversion is
- (a) faster implementation time.
 - (b) smaller office space.
 - (c) increased staff levels.
 - (d) increased productivity.

End of Section One

See next page

Section Two: Short answer

15% (30 Marks)

This section has **six (6)** questions. Answer **all** questions. Write your answers in the spaces provided.

Spare pages are included at the end of this booklet. They can be used for planning your responses and/or as additional space if required to continue an answer.

- Planning: If you use the spare pages for planning, indicate this clearly at the top of the page.
- Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question(s) that you are continuing to answer at the top of the page.

Suggested working time: 35 minutes.

Question 21

(4 marks)

(a) What is meant by the term 'digital divide'?

(1 mark)

(b) Identify **three** issues associated with the digital divide.

(3 marks)

Question 22

(6 marks)

(a) What is the purpose of using a disk fragmentation tool?

(1 mark)

(b) State **two** advantages of using a disk fragmentation tool.

(2 marks)

(c) State **two** strategies that can be used to increase available disk space, without losing data.

(2 marks)

(d) What is meant by the term 'incremental backup'?

(1 mark)

Question 23

(4 marks)

(a) What is the purpose of a requirements analysis when constructing a software system?

(1 mark)

(b) Identify **three** methods used in conducting a requirements analysis.

(3 marks)

Question 24

(6 marks)

Identify **three** types of intellectual property. Provide an example of how each can be breached in the Information Communication Technology (ICT) industry.

One: _____

Example: _____

Two: _____

Example: _____

Three: _____

Example: _____

Question 25

(6 marks)

Identify and describe **three** commonly used network protocols.

One: _____

Two: _____

Three: _____

Question 26

(4 marks)

(a) What is the purpose of data mining? (1 mark)

(b) Identify **three** ways in which a company could use the information gained from data mining to inform the marketing of its products. (3 marks)

End of Section Two

See next page

Section Three: Extended answer

25% (50 Marks)

This section contains **two (2)** questions. You must answer **both** questions. Write your answers in the spaces provided.

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Suggested working time: 50 minutes.

Question 27

(25 marks)

A company called Tickets-Online sells rock music concert tickets via an internet-based booking system. Customers can print their tickets from the web or collect them from the venue on the day of the event. The company is concerned about tickets being illegally on-sold via auction sites or collected by the wrong people on the day. To reduce this risk, Tickets-Online collects and stores customers' personal information when they book their tickets, including credit card details, date of birth, driver's licence number and address. All this information and the online purchasing system are run and stored on servers owned and controlled by Tickets-Online.

Tickets-Online are aware that security is an issue due to the sensitive and personal nature of the information stored.

- (a) Tickets-Online has installed its servers in a locked room with a biometric lock. List and explain **four** other measures it should take to help protect the data and the hardware on which it is stored. (8 marks)

(c) Tickets-Online engages in the activities listed below. Identify and explain the appropriate legislation that relates to each activity. (6 marks)

- publishing videos and images on its website

- emailing customers after an event

- using data collected from customers

(d) The personal and financial data entered into the Tickets-Online database system includes customers' credit card details, date of birth, driver's licence number and address. Describe **one** quality assurance process that could be implemented to ensure this data is accurate and usable. (2 marks)

Question 28

(25 marks)

Many banks and financial institutions encourage their customers to manage their accounts online. This enables customers to conduct financial transactions anywhere and at anytime.

- (a) Complete the table below by listing **two** advantages and **two** disadvantages of online banking for a bank, bank employees and bank customers. (12 marks)

Bank	Advantages	Disadvantages

Bank employee	Advantages	Disadvantages

Customer	Advantages	Disadvantages

- (b) A bank's Information Communication Technology (ICT) Manager has become aware that many employees are working at computers for extended periods of time. What relevant Act should the manager consider? Describe **two** strategies the manager should consider in this situation to ensure compliance with this legislation. (5 marks)

- (c) Describe **three** ways in which the bank could ensure employees develop and maintain the skills necessary to use its new or improved software systems. (3 marks)

- (d) A bank employee has been provided with the opportunity to participate in video conferencing. Describe and justify the desktop computer system they would require.

(5 marks)

End of Section Three

See next page

Section Four: Production

50% (68 Marks)

There is **one (1)** question in this section. You must answer **all** parts of the question.

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- **Continuing an answer:** If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question(s) that you are continuing to answer at the top of the page.

Suggested working time: 75 minutes.

Question 29

(68 marks)

For this question, you are required to review and then redesign a web page. You are also required to outline and create a design for a related promotional product.

- (a) Identify the target audience for the website provided on page 18. Explain how **two** features of the website specifically engage the target audience. (7 marks)

For copyright reasons the image cannot be reproduced in the online version of this document but may be viewed at <http://www.fine-art-dealer.com/>

See next page

- (b) Identify **two** compositional rules used by the website designer. Describe how effectively they have been used. (6 marks)

- (c) Review the screen capture of the website on page 18. Identify **five** design principles or elements of design that could have been used more effectively. Circle each design principle or element of design and label it with a number in the white space surrounding the screen capture.

Explain how each identified design principle or element of design could have been used more effectively. (15 marks)

One: _____

Two: _____

Three: _____

Four: _____

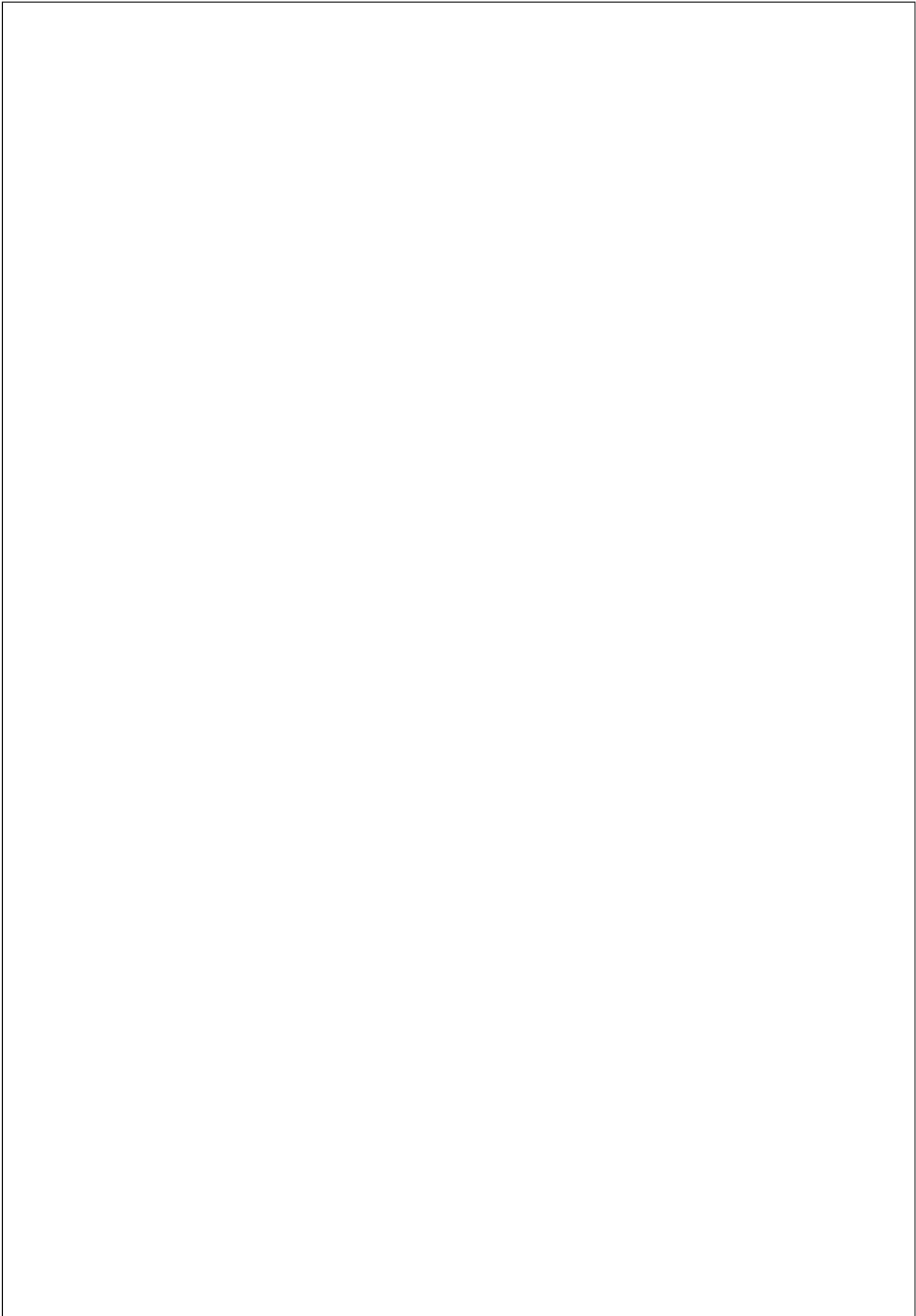
Five: _____

(d) Charles Stacey Fine Art has engaged you to design **one** of three new pages for its current website.

- online sales
- live video link to auctions
- a virtual gallery

Using the current look and feel and design style of the website, create the new page. You must provide evidence that a design methodology has been used to document your ideas, for example drafts, clear sketches, dimensions and annotations. (15 marks)

Design of Charles Stacey Fine Art's new web page



See next page

Additional working space for design of Charles Stacey Fine Art's new web page
(Note: Further working space is provided on pages 32 and 33.)



(e) Charles Stacey Fine Art has decided to increase its market share by developing a range of promotional products including the following.

- clothing
- fashion accessories
- food
- beverages
- giftware, e.g. cups, key rings, pens, glassware and china

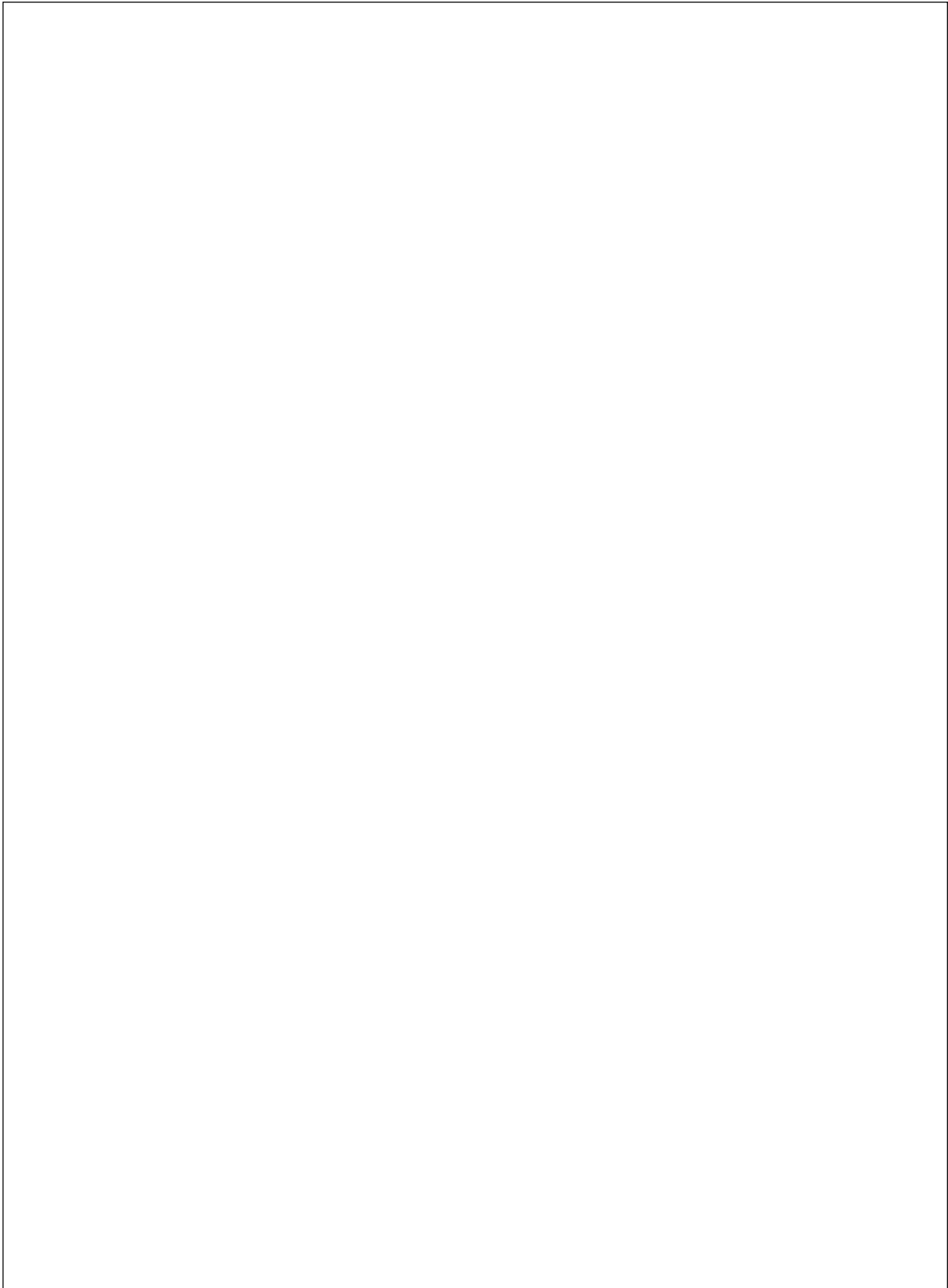
As a designer, you have been requested to outline

- the product you intend to promote.
- the target audience for the product.
- what new or emerging technology/medium you will use to promote the product (you are **not** restricted to a website).
- how you will use **two** design principles and underlying elements of design to promote the product. (10 marks)

- (f) Based on your outline in Question 29(e), create the innovative design that will promote your selected product. Using the space below, sketch your design and annotate relevant design principles and elements of design.

(Note: Further working space is provided on pages 34 and 35.)

(15 marks)

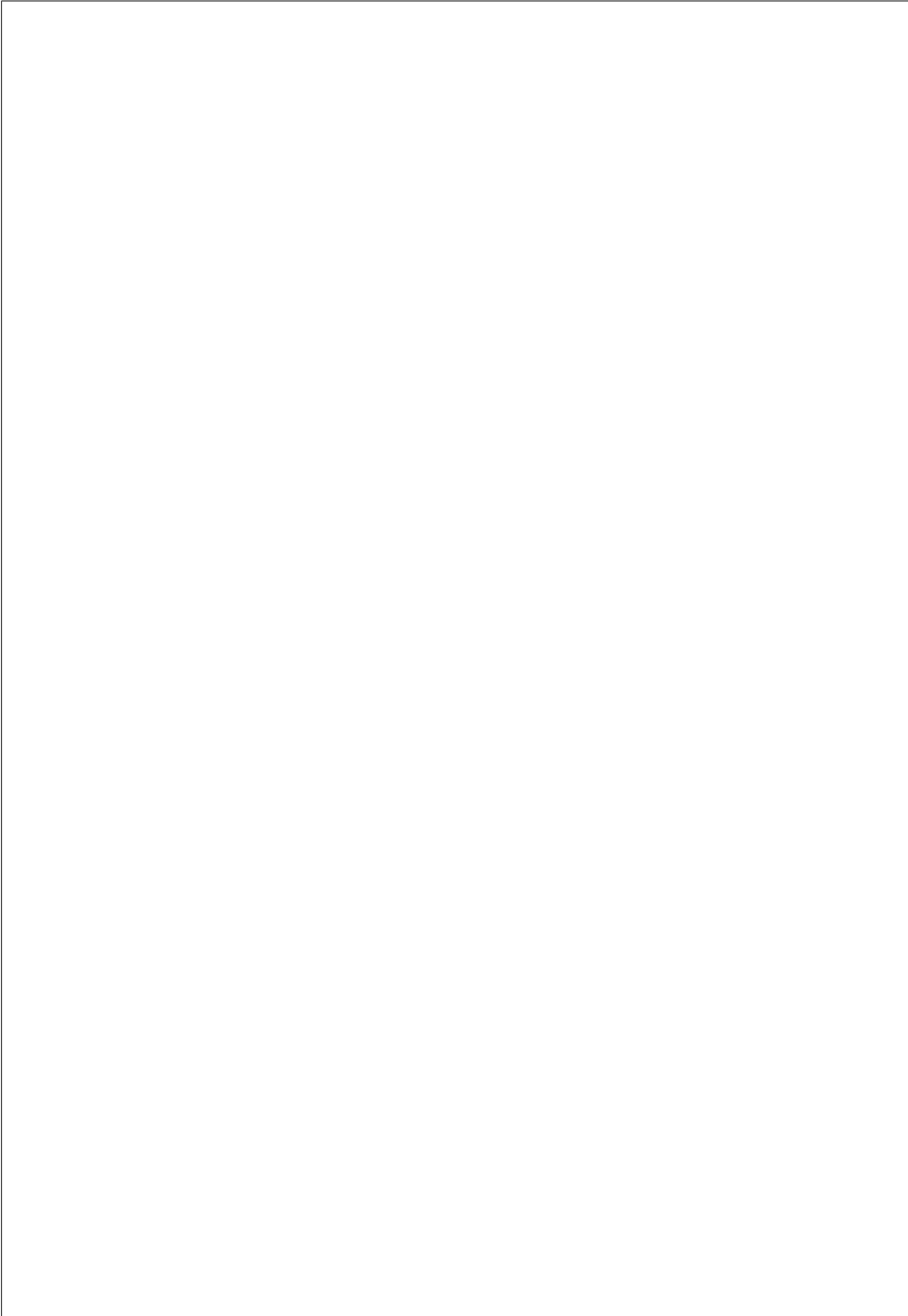


End of questions

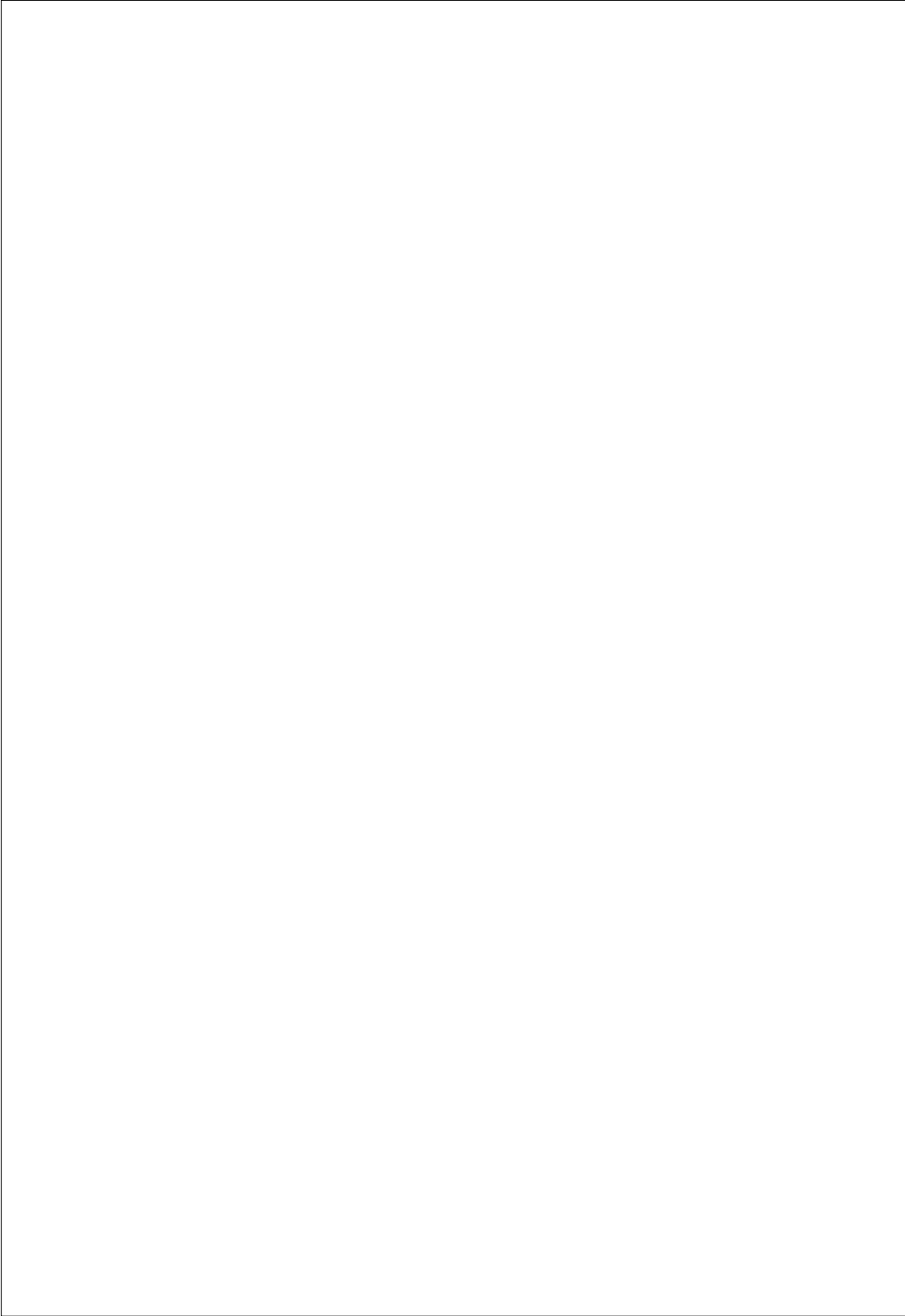
Design

A large, empty rectangular box with a thin black border, occupying most of the page below the 'Design' label. It is intended for the student to draw or create a design.

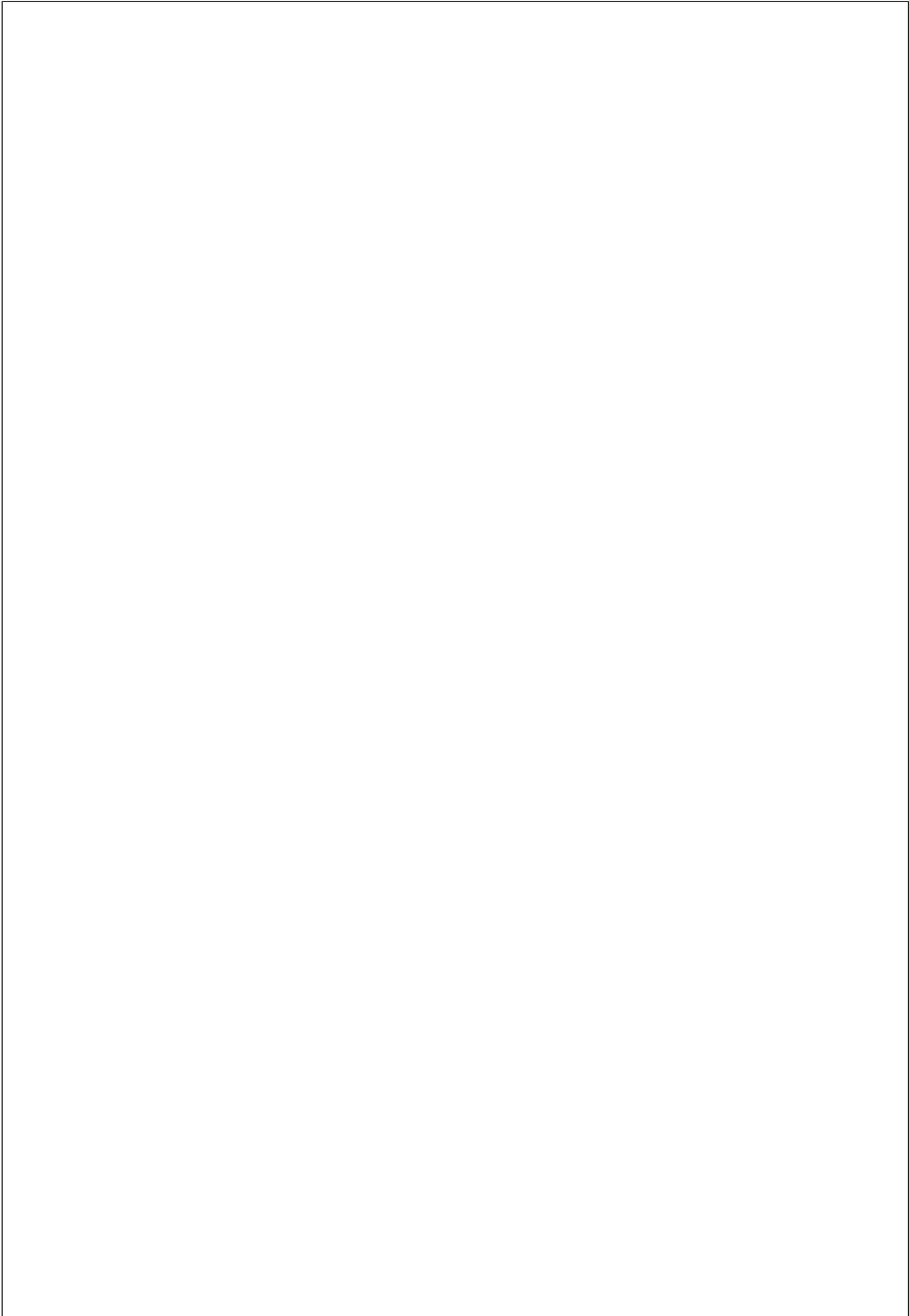
Design



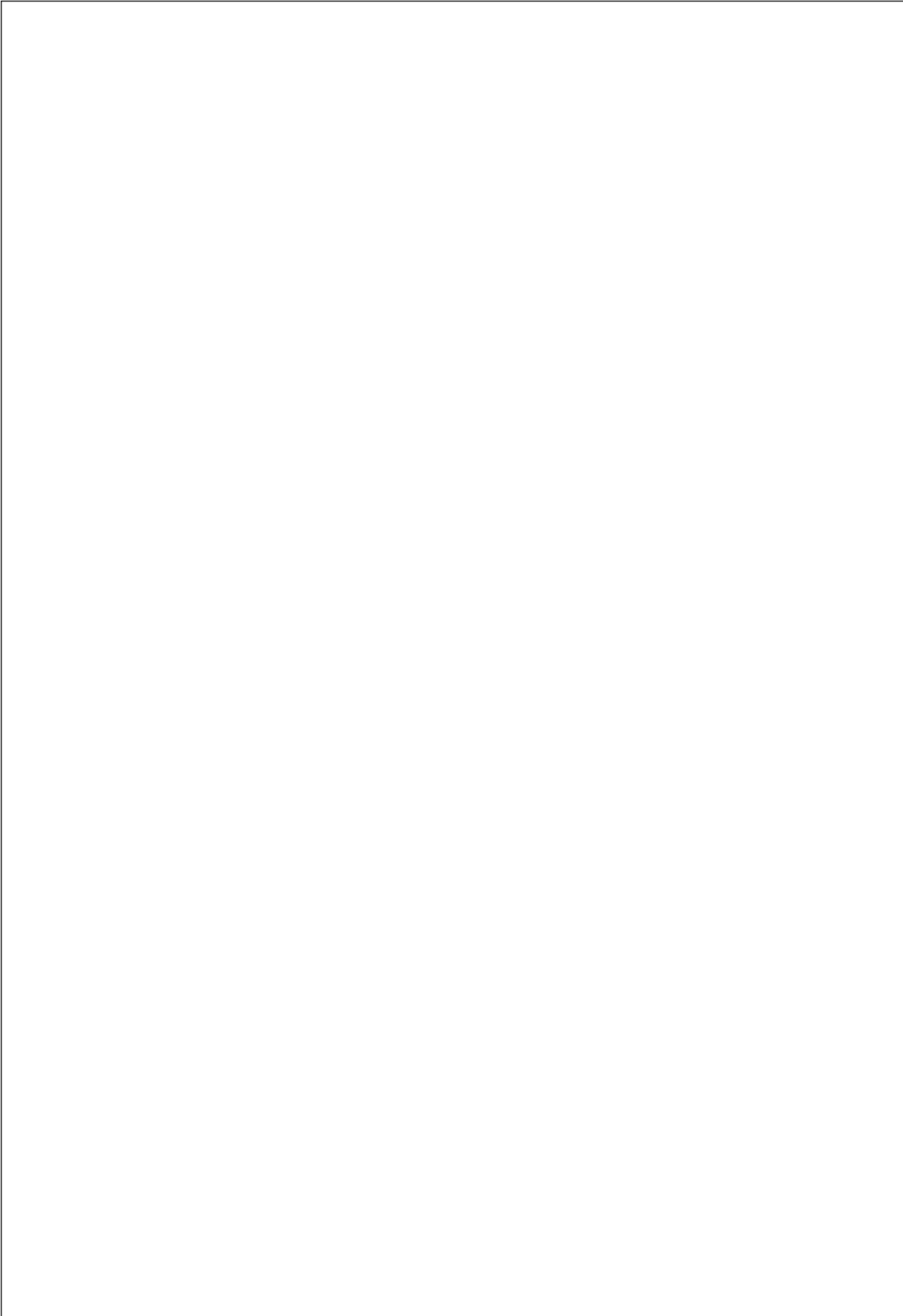
Additional working space



Additional working space



Additional working space



Additional working space

A large, empty rectangular box with a thin black border, occupying most of the page below the text. It is intended for students to provide additional working space for their answers.

ACKNOWLEDGEMENTS

Section Four

Question 29 *Charles Stacey Fine Art* [Home page of website]. (2005). Retrieved March 18, 2012, from www.fine-art-dealer.com/.

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