



Western Australian Certificate of Education Examination, 2014

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 fluid/tape, 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 total exam
Section One: Multiple-choice	20	20	20	20	10
Section Two: Short answer Extended answer	8	8	90	70	50
	1	1			
Section Three: Response/Production	1	1	70	60	40
				Total	100

Instructions to candidates

- The rules for the conduct of Western Australian external examinations are detailed in the *Year 12 Information Handbook 2014*. Sitting this examination implies that you agree to abide by these rules.
- 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 and Three: Answer **all** questions. Write your answers in this Question/Answer Booklet.

- 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.
- 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 that you are continuing to answer at the top of the page.

See next page

Section One: Multiple-choice

10% (20 Marks)

This section has **20** 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. The acronym 'GUI' stands for
 - (a) Graphical User Icon.
 - (b) Graphic User Industry.
 - (c) Geometric User Icon.
 - (d) Graphical User Interface.

2. Which of the following is an example of biometric security?
 - (a) fingerprint
 - (b) password
 - (c) passport
 - (d) swipe

3. The *Freedom of Information Act 1982* describes an individual's right to access information held by
 - (a) government or public or private companies.
 - (b) public or private companies.
 - (c) government ministers and most government agencies.
 - (d) government agencies and public companies.

4. Which of the following CPU specifications would result in the fastest machine, given the rest of the specifications were the same?
 - (a) Pentium D 820 2.9GHz
 - (b) i7-860 2.8GHz
 - (c) i5-436 3GHz
 - (d) AMD Phenom II X2 550 3GHz

5. Which of the following data has neither currency nor accuracy?
 - (a) This year is 2013.
 - (b) Last year was 2013.
 - (c) This year is 2014.
 - (d) Last year was 2014.

See next page

6. New mobile technologies allow for the faster transfer of text, images and videos in addition to voice. Which technological development has facilitated this additional capacity?
- (a) The mobile phones are more compact and this allows for more efficient data transfer.
 - (b) The mobile phones have colour screens and cameras and these improve the user experience.
 - (c) The telecommunication providers have installed more base stations and this results in more efficient data transfer.
 - (d) The mobile phones transfer data at a higher frequency and this allows more efficient data transfer.
7. In the design of products or services, which of the following is an appropriate sequence of steps?
- (a) concept generation, screening, preliminary design, evaluation and improvement, prototyping and final design
 - (b) preliminary design, concept generation, screening, evaluation and improvement, prototyping and final design
 - (c) concept generation, screening, preliminary design, prototyping and final design, evaluation and improvement
 - (d) prototyping and final design, screening, concept generation, preliminary design, evaluation and improvement
8. 'Intellectual property' applies to
- (a) patents.
 - (b) designs.
 - (c) copyrighted materials.
 - (d) all of the above.
9. Which of the following is **not** an advantage of using an online collaborative tool?
- (a) It allows face-to-face communication.
 - (b) It saves time.
 - (c) It saves money.
 - (d) It requires a fast internet connection.
10. An emerging trend that means users can access and run software remotely and no longer need to store software applications locally on their hardware, involves
- (a) web-based applications.
 - (b) storage applications.
 - (c) office applications.
 - (d) design applications.

11. A file containing predefined settings that can be used to create a file using a company's brand is called a
- (a) blueprint.
 - (b) template.
 - (c) pattern.
 - (d) style.
12. A video project usually starts with an outline and a _____ that describes the sequence of events.
- (a) flow chart
 - (b) concept map
 - (c) storyboard
 - (d) flow plan
13. The process of evaluating software to assess its usability is called
- (a) sketching.
 - (b) evaluating.
 - (c) benchmarking.
 - (d) testing.
14. A differential backup system backs up files changed since the last
- (a) backup.
 - (b) system restart.
 - (c) full backup.
 - (d) software update.
15. Online defamation involves
- (a) damage to the character or reputation of an individual or business on the basis of untruths published on the internet by an individual.
 - (b) a truthful attack on the good name of a business or individual by a competitor on the internet.
 - (c) a factual negative campaign against a business or individual by a disgruntled employee on the internet that causes damage.
 - (d) promotion of the character or reputation of an individual or business on the basis of untruths published on the internet by an individual.

16. The principal motivation behind Web 2.0 is to
- (a) facilitate mobile internet applications.
 - (b) enable dynamic web pages.
 - (c) permit faster access to the WWW.
 - (d) reduce the amount of storage required for web sites.
17. The principal reason for installing a firewall on a computer is to
- (a) protect the computer from theft.
 - (b) determine which users can log onto the computer.
 - (c) control the network traffic into and out of the computer.
 - (d) extend the usable lifetime of the computer.
18. When outsourcing an information technology service, what document allows you to hold the provider accountable for their performance?
- (a) Service Level Agreement
 - (b) Contract of Service
 - (c) Licence Agreement
 - (d) Globalisation Contract
19. The protocol HTTP is primarily used in the area of
- (a) online games.
 - (b) file transfer.
 - (c) word processing.
 - (d) hypermedia.
20. Which type of computer network commonly uses 802.3 ethernet?
- (a) LAN
 - (b) WAN
 - (c) Wireless
 - (d) VPN

End of Section One

See next page

Section Two: Short and extended answer**50% (70 Marks)**

This section has **nine (9)** questions, **eight (8)** short answer questions worth 35% and **one (1)** extended answer question worth 15%. 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 that you are continuing to answer at the top of the page.

Suggested working time: 90 minutes.

Short answer**35% (50 marks)****Question 21****(6 marks)**

A graphical user interface can include features to provide inclusivity for various target audiences. Describe **three** such features and, for each, state the intended target audience. Each target audience must be different.

Feature one: _____

Target audience one: _____

Feature two: _____

Target audience two: _____

Feature three: _____

Target audience three: _____

Question 22

(5 marks)

(a) Describe the term 'digital convergence'.

(2 marks)

(b) Provide **three** examples of convergence trends in contemporary technologies, one of which relates to hardware, one to software and one to communications technology.

(3 marks)

Hardware: _____

Software: _____

Communications: _____

Question 23

(7 marks)

- (a) Explain what is meant by a 'prototype' in the development of a digital product. (2 marks)

- (b) Provide **two** reasons for prototyping in the development of a digital product. (2 marks)

One: _____

Two: _____

- (c) List **three** common differences between the development of the prototype and the development of the product, when using a structured project management approach.

(3 marks)

One: _____

Two: _____

Three: _____

Question 24

(5 marks)

(a) Describe the term 'data mining'.

(2 marks)

(b) Provide an example of how data mining might be used in each of the following. (3 marks)

Medical imaging: _____

Advertising: _____

Anti-terrorism: _____

Question 25

(6 marks)

(a) Explain the term 'online censorship'.

(2 marks)

(b) Describe briefly **two** forms of online censorship of information.

(2 marks)

One: _____

Two: _____

(c) Describe briefly **two** possible impacts of online censorship of information.

(2 marks)

One: _____

Two: _____

Question 26

(6 marks)

Provide **three** ways in which ICT systems can improve productivity in the workplace, and give an example of each.

One: _____

Example: _____

Two: _____

Example: _____

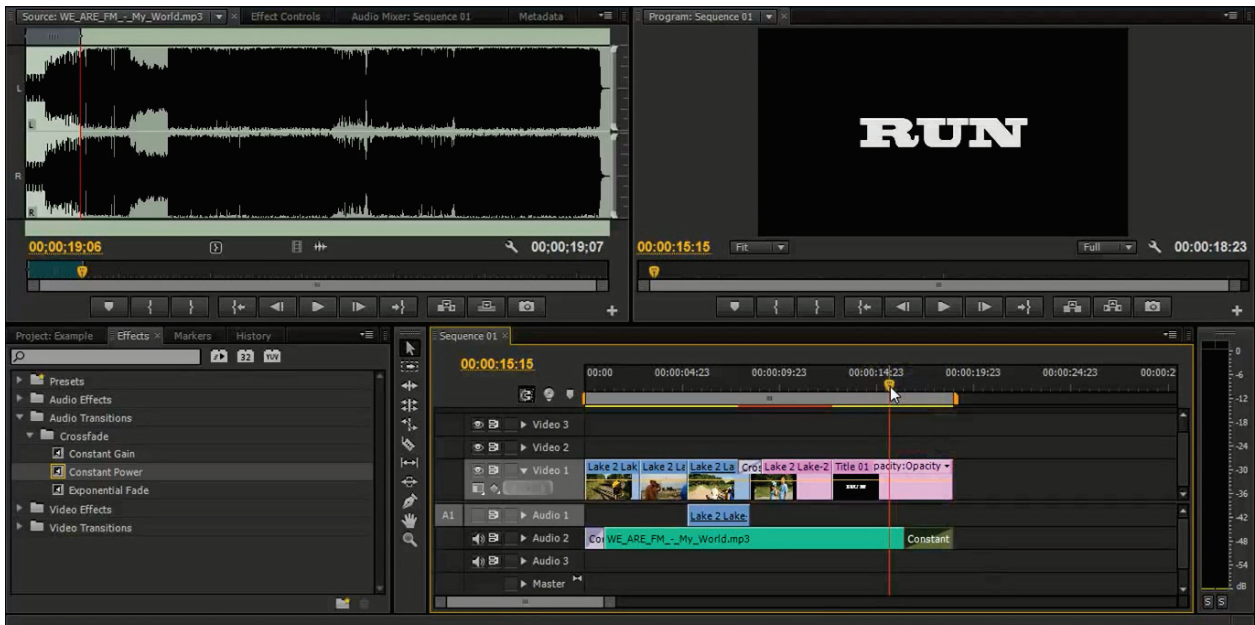
Three: _____

Example: _____

Question 27

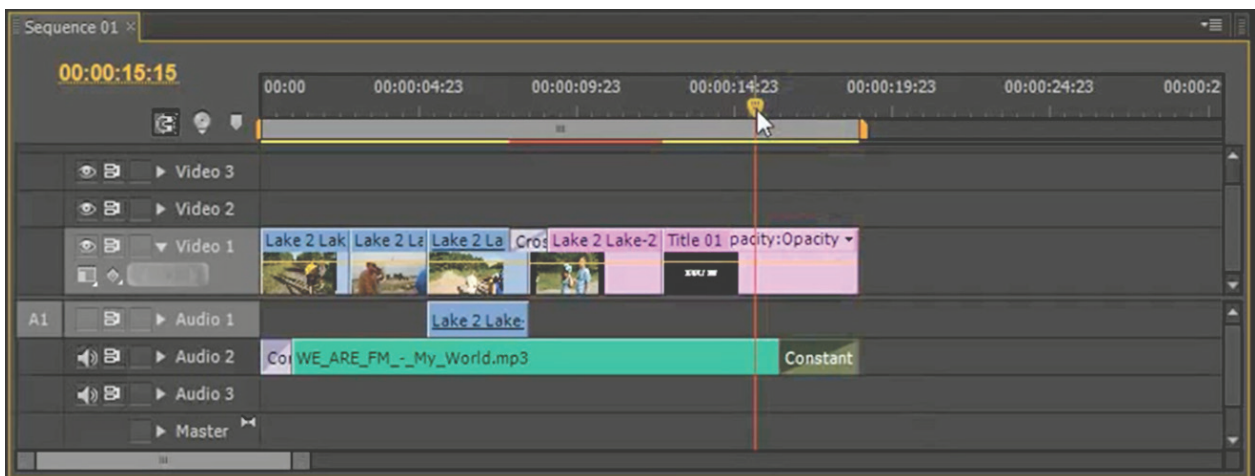
(7 marks)

All video editing software applications have similar features.



The screen shot below is an enlargement of Sequence 01 from the screen shot above. On the enlargement below, identify clearly the following **seven** features:

- audio
- video with linked audio
- image
- video transition
- time line
- playhead
- title.



See next page

Question 28

(8 marks)

A company has recently expanded its business to a building on the adjoining property, about 150 metres away. The new location will have a computer network consisting of ten workstations and three printers. It will also require access to the existing network in the original building.

- (a) What network protocol would you use in the new location? Justify your recommended protocol in terms of cost, technical aspects and location. (4 marks)

Protocol: _____

Justification: _____

- (b) What network protocol would you use to link the two locations together? Justify your recommended protocol in terms of cost, technical aspects and location. (4 marks)

Protocol: _____

Justification: _____

Extended Answer

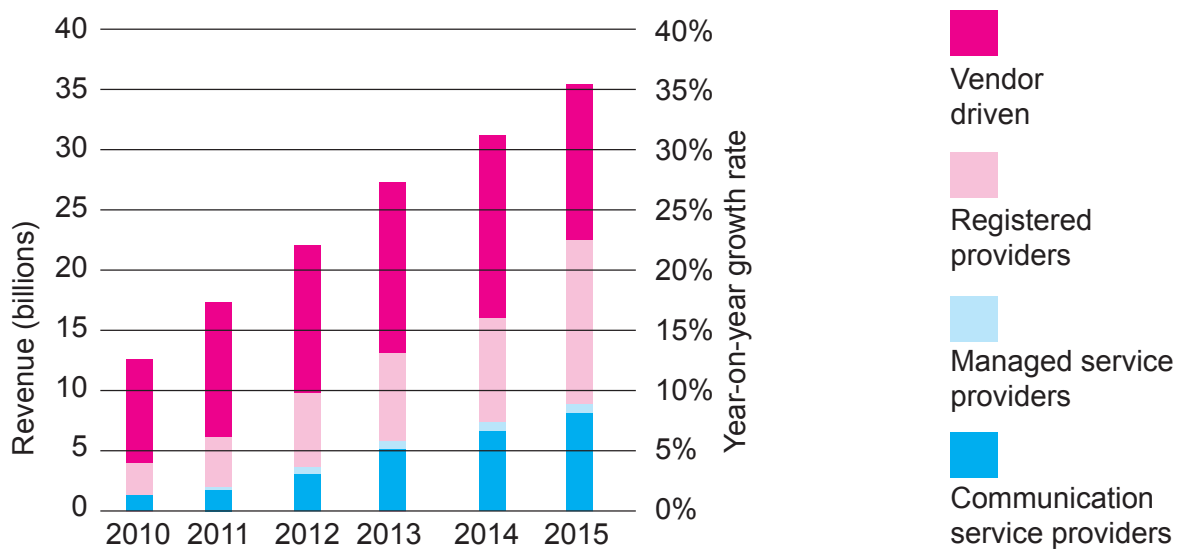
15% (20 marks)

Question 29

(20 marks)

Analysts suggest that the use of cloud computing services is likely to trend upward, with an increasing number of organisations choosing to host their data and technology services online. The impacts of such technology, however, must be explored, understood and managed to ensure that all stakeholders’ rights are protected. Many companies have private cloud facilities where they can control and secure their data. This avoids reliance on shared public cloud services, which have their own terms and conditions of use.

Enterprise cloud-based service revenue by sales channel, worldwide, 2010–2015



An application design company uses two forms of cloud computing services:

- Infrastructure as a Service (IaaS) – to host its servers and store its data; and
- Software as a Service (SaaS) – to provide flexible, cost effective access to software tools for its employees.

The company is now planning to expand its use of cloud computing services to provide an online resource by exploring Platform as a Service (PaaS). PaaS will be used to facilitate the design, testing and deployment of the applications it develops for clients.

(a) Describe the term ‘cloud computing’ and give **three** examples of its use in business.

(5 marks)

One: _____

Two: _____

Three: _____

Question 29 (continued)

- (b) Provide **five** advantages and **five** disadvantages to the company of using the cloud for data storage. (10 marks)

Advantage	Disadvantage
One:	One:
Two:	Two:
Three:	Three:
Four:	Four:
Five:	Five:

- (c) Public and private cloud deployment are options to consider for the management of an organisation's data. Describe the difference between public and private cloud infrastructures. (2 marks)

- (d) Describe **three** ways in which a provider of a data centre offering cloud services would provide physical security to protect against human and natural threats. (3 marks)

End of Section Two

See next page

Section Three: Response/Production

40% (60 Marks)

This section contains **one (1)** question. Write your answers in the spaces provided.

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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 that you are continuing to answer at the top of the page.

Suggested working time: 70 minutes.

Question 30

(60 marks)

Your family friend, who is a photographer and very successful in selling his works, is now being asked by fellow photographers if they can display their work on his website. He wants to display photographs contributed by people from around the world for others to view and possibly purchase. His website is based on the BlueMasters template shown on page 19.

- (a) Your friend has heard of W3C but is unsure as to how it may affect his web pages. He has asked you to state the full name of, and describe the purpose of, W3C. (2 marks)

- (b) HTML and CSS are the basic technologies for building web pages via templates, as shown in the example on page 19. Expand the acronyms HTML **and** CSS and explain how each contributes to the web experience. (4 marks)

HTML: _____

CSS: _____

- (c) What is the purpose of scripting (Javascript) in a web page as demonstrated by the gallery in the example on page 19? (2 marks)

BlueMasters template – home page



Question 30 (continued)

- (d) Name **two** graphic formats that, according to the W3C, are a standard for web page use. (2 marks)

One: _____

Two: _____

- (e) Provide **one** feature that ensures a well-designed web page or app is inclusive for an international audience. (1 mark)

- (f) Web-enabled mobile devices (such as smart phones and tablets) provide a range of advantages and capabilities to the user.

List **three** challenges that you might face as a designer of the content for such a mobile device. (3 marks)

One: _____

Two: _____

Three: _____

- (g) The BlueMasters design template uses a number of standards and/or conventions as recognised by W3C. The screen shot is repeated on page 21 to allow easy reference. Complete the table below by listing a different standard and/or convention in each cell. The first one has been completed for you. (5 marks)

	W3C standard/convention
One	Template title
Two	
Three	
Four	
Five	
Six	

BlueMasters template – home page



See next page

Question 30 (continued)

- (h) Identify **three** possible target audiences of this website. For each, state **one** feature or characteristic of that audience that will influence your choice of the website's structure and design. Give **one** example of how you intend to use that feature or characteristic.

(9 marks)

One: _____

Feature/characteristic: _____

Example of use: _____

Two: _____

Feature/characteristic: _____

Example of use: _____

Three: _____

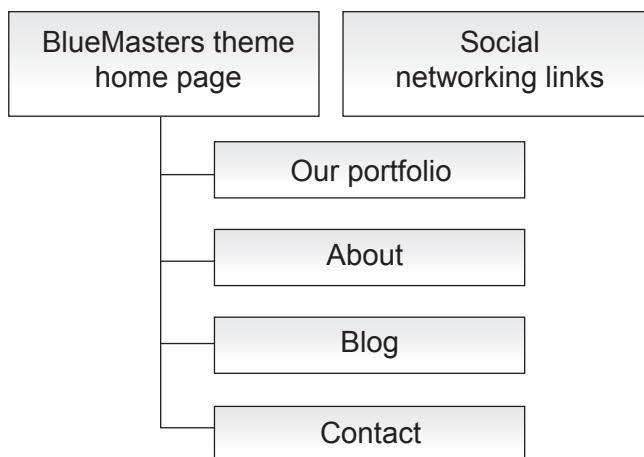
Feature/characteristic: _____

Example of use: _____

Your friend the photographer has now asked you to design a website to showcase this photographic work to an international audience. Your website will be based on the BlueMasters template.

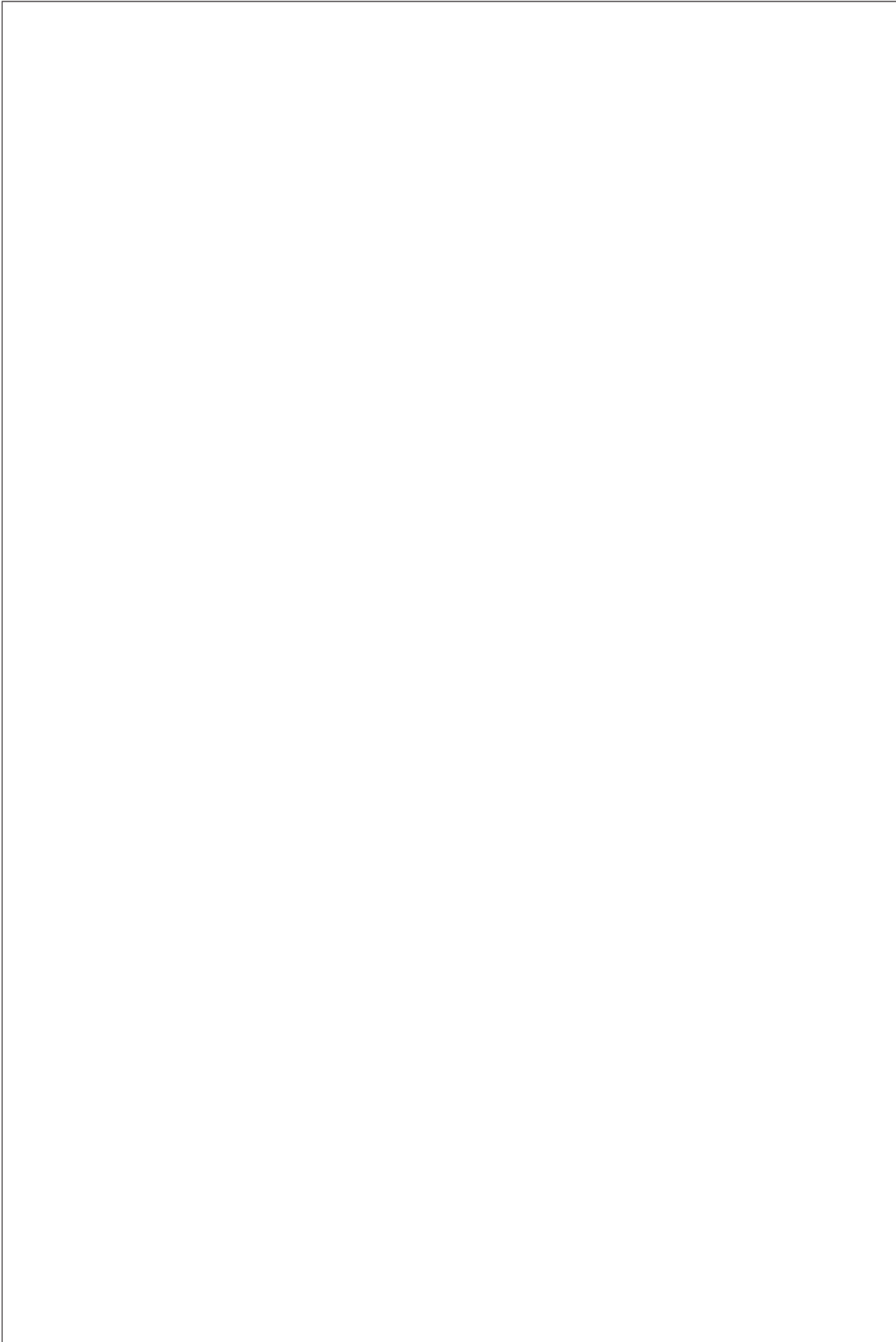
- (i) Discuss how **two** of the principles of design used in the BlueMasters template home page interrelate to engage the target audience. (4 marks)

- (j) The BlueMasters template uses the following partial site map to show navigation and layout. Complete the map for this template by adding **three** new features, so that it shows the structure of your website design. (3 marks)

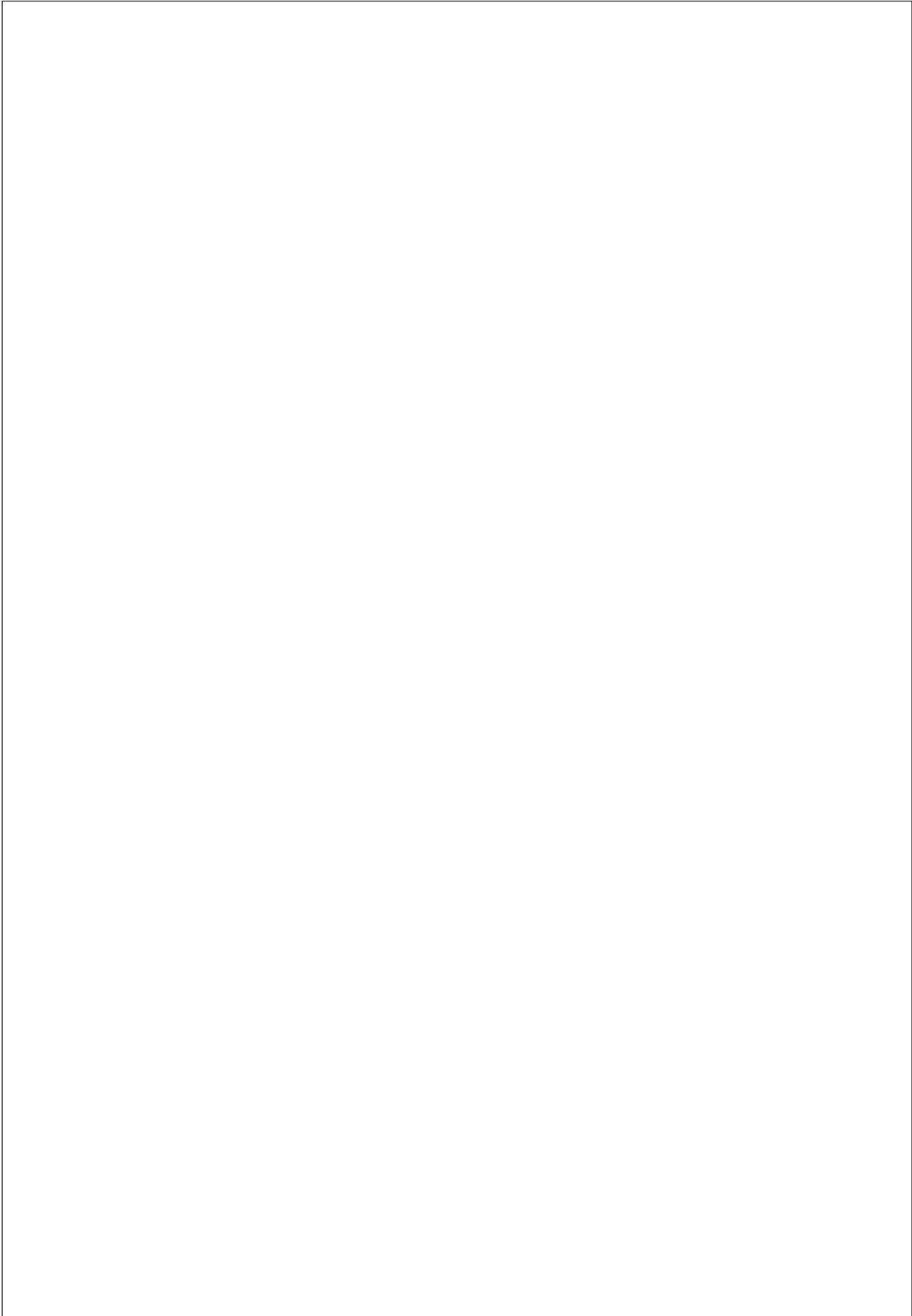


Question 30 (continued)

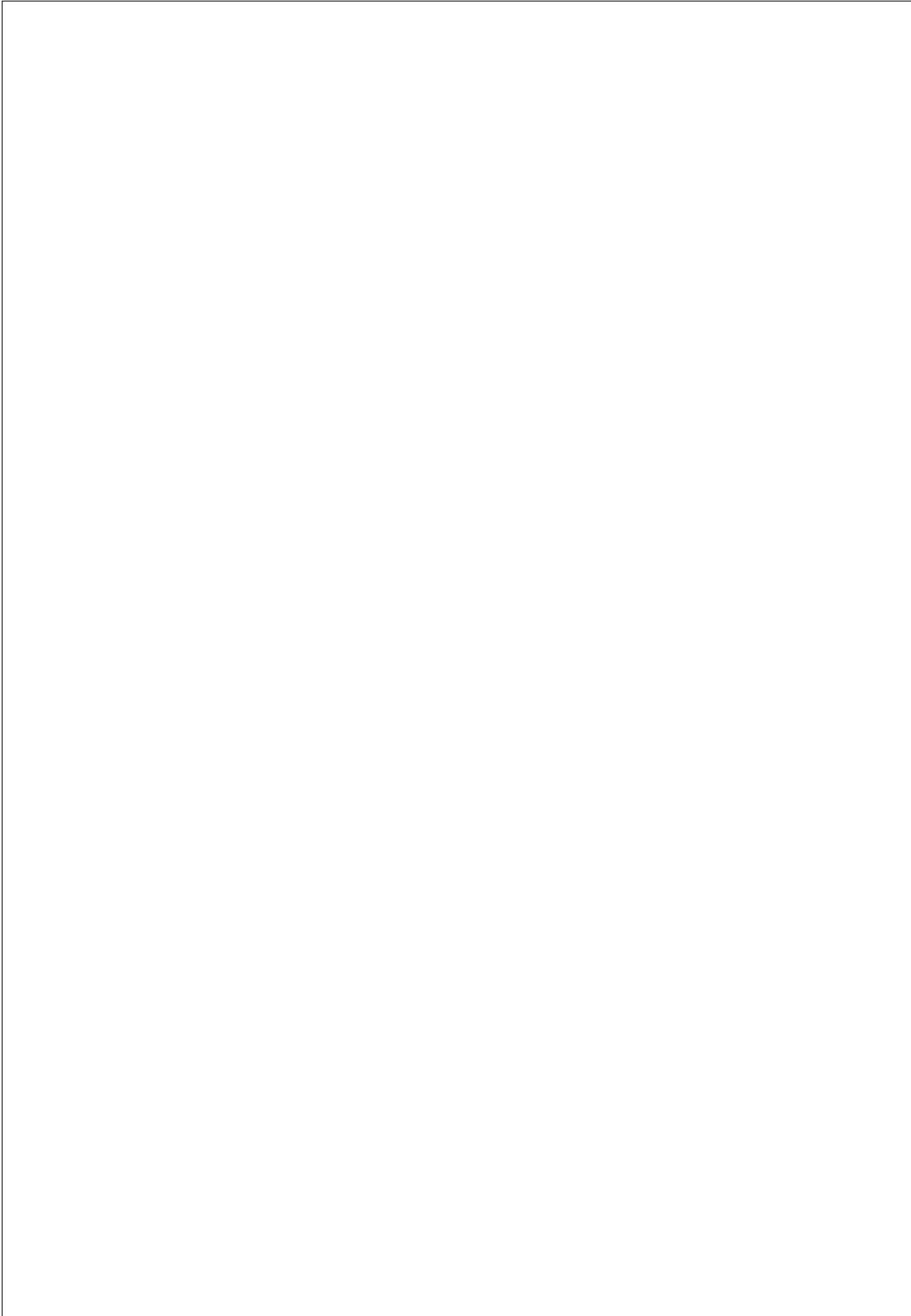
- (k) You are now required to design the home page in the space provided on page 25. You need to ensure that the design will assist your photographer friend to meet his intended goals: to display photographs contributed by people from around the world for others to view, and possibly purchase. You need to make appropriate annotations to your design that demonstrate your understanding of the use of the following:
- an appropriate (e.g. wireframe) design that shows the layout and structure of your intended presentation (5 marks)
 - elements and principles of design and the interrelationships between them (6 marks)
 - logical organisation of content (3 marks)
 - relevant W3C standards and conventions used (2 marks)
 - user-generated content (e.g. blogs, comments, contact forms and the legal and ethical impact for the site owner) (3 marks)
 - 'help' features that you have included and how these will assist the target audience/s. (6 marks)



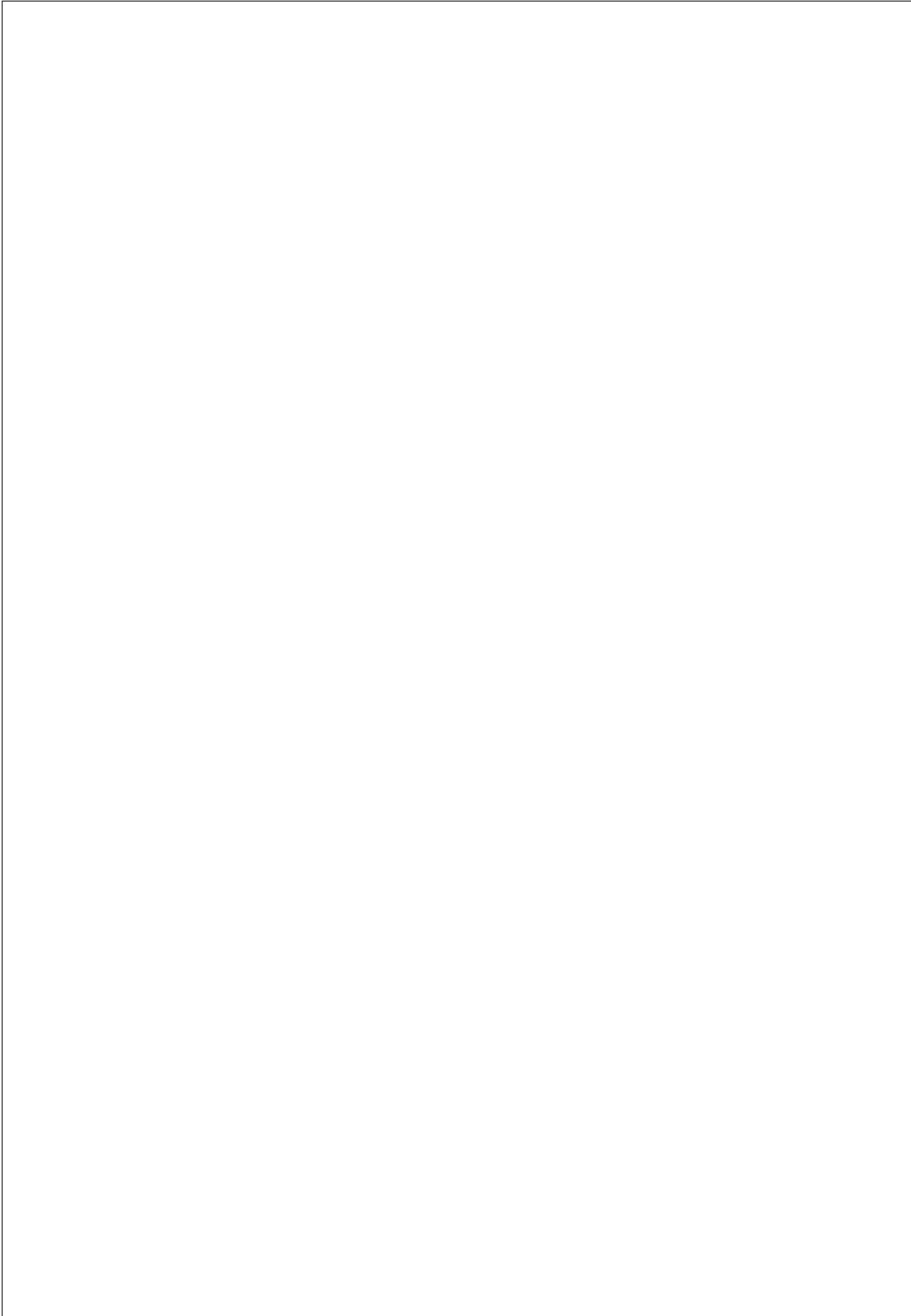
Additional working space



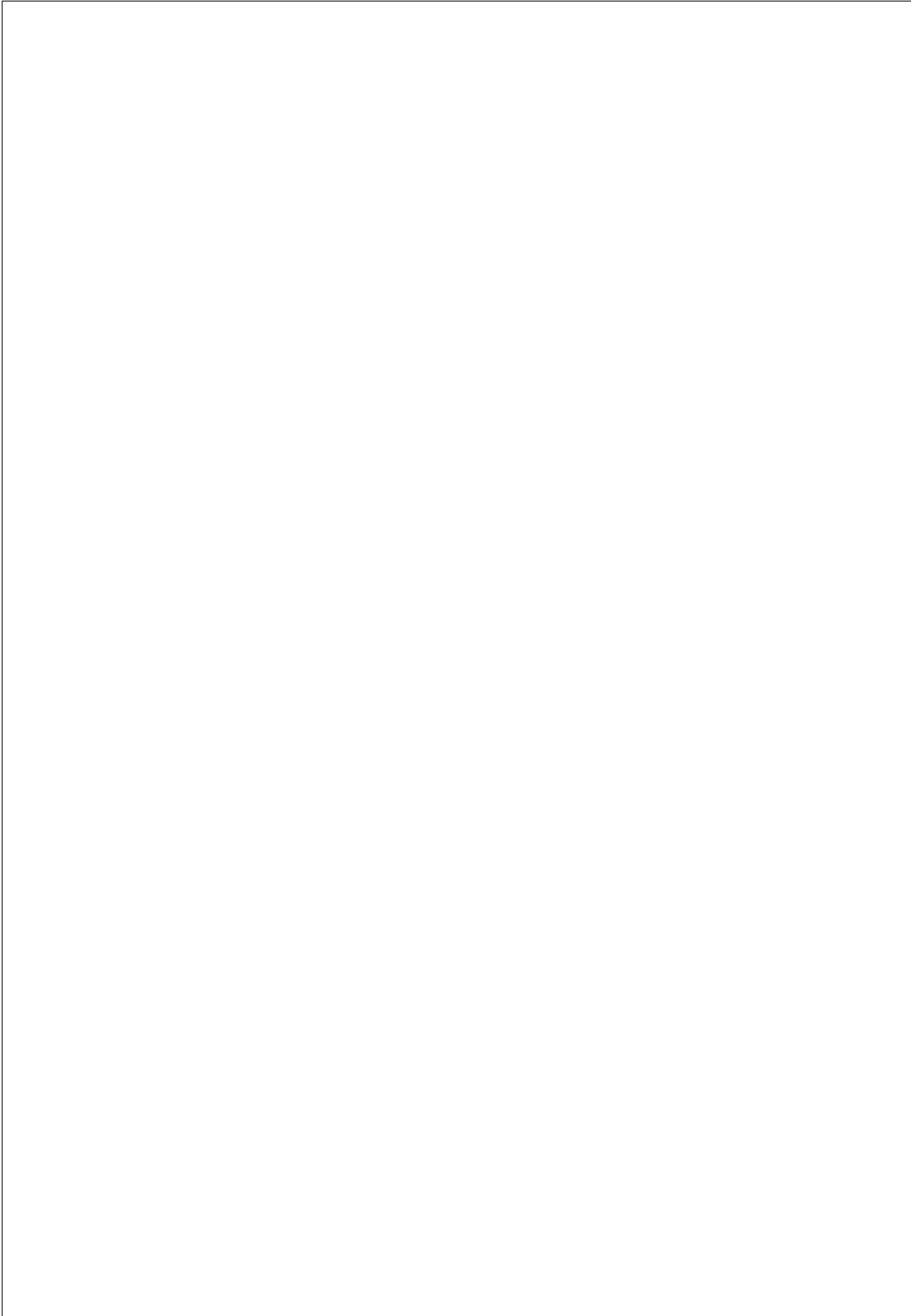
Additional working space



Additional working space



Additional working space



Additional working space



ACKNOWLEDGEMENTS

Section Two

Question 27 Adobe product screenshots reprinted with permission from Adobe Systems Incorporated.

Question 29 Adapted from: Analysis Mason. (2010). *Enterprise cloud-based revenue by sales channel, worldwide, 2010–2015* [Graph]. Retrieved March 25, 2014, from <http://blog.coherecomm.com/wp-content/uploads/2011/09/Projection.jpg>

Section Three

Question 30 (b), (c), (g) Fernandes, W. (n.d.). *BlueMasters for Drupal* [Image]. Retrieved March 25, 2014, from <https://drupal.org/project/bluemasters>

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