Queensland Core Skills (QCS) Test 2014
Paper 3 Short Response

Directions
Do not open this testpaper or start writing until the supervisor directs you to do so.

1. Time allowed: 2 hours
2. Perusal time: 10 minutes
3. Equipment:

<table>
<thead>
<tr>
<th>Permitted</th>
<th>Not permitted</th>
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<tbody>
<tr>
<td>pens (black ink)</td>
<td>own paper</td>
</tr>
<tr>
<td>pencils</td>
<td>dictionary</td>
</tr>
<tr>
<td>eraser</td>
<td>thesaurus</td>
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<td>ruler</td>
<td>electronic devices</td>
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<td>protractor</td>
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<td>drawing compass</td>
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<td>coloured pencils</td>
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<td>approved calculator</td>
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<td>pencil sharpener</td>
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</table>

You are not permitted to borrow or lend equipment.

4. This testpaper has 16 test items, numbered 1 to 16.
5. The 16 items are arranged within 8 units.
6. You may attempt the units in any order.
7. Write your responses in the spaces provided.
8. Write in sentences unless you are instructed to respond in a different manner.
9. Use black ink for written responses.
10. This testpaper must remain intact, i.e. pages or parts of pages may not be removed from it.
11. Sufficient space is provided for an appropriate response to each item. However, if you need more space to complete, rewrite or redraft a response, use the spare pages at the back of this testpaper. Be sure to:
   - label the spare page with the item number that relates to your response
   - cancel your incorrect response by ruling a single, diagonal line through your work; if you fail to do this, your original response will be marked
   - refer the marker to the appropriate page at the back.
12. Points to observe:
   - Pay particular attention to any instruction block (cue) in an item.
   - An item and star-value distribution is given as a fold-out on the back page. Use this to help you manage your time.
   - Respond to as many items as you can. Give your best attempt rather than leave a blank space; items left blank attract no credit.
   - Be vigilant about covering your responses.
13. You will be given a warning 30 minutes before finishing time.
    You will be given a final warning 10 minutes before finishing time.
UNIT ONE

A common type of die\(^1\) is a cube which has each face uniquely identified with one of the numbers 1 to 6. Dice are constructed so that the numbers on any two opposite faces add to seven. When a die is on a table there are five visible faces, the underside face would not be able to be seen.

Note: \(^1\)singular of dice

ITEM 1 [***]

I. Find the sum of the numbers on the five visible faces of the die shown above.

II. Two other dice with their numbers deliberately obscured are on a table as shown below. Owing to the way the dice are positioned, there are eight visible faces. Determine the greatest possible sum of the eight visible faces and show why that sum would be the greatest.

Give details of the reasoning used.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
</table>
UNIT TWO

If you have ever been fazed by the spelling of phased, or have confused the sound of I scream with ice-cream, you are not alone – a loan. Homophones are words of the same language that are pronounced alike but differ in spelling and meaning. The poem below illustrates the problem a spellchecker on a computer might have. It relies on users knowing when to write who’s rather than whose or genes rather than jeans.

Eye have a spelling chequer
It came with my pea sea
It plainly marques four my revue
Miss steaks eye can knot sea.

Eye strike a quay and type a word
And weight four it two say
Weather eye am wrong oar write
It shows me strait a weigh.

As soon as a mist ache is maid
It nose bee four two long
And eye can put the error write
Its rare lea ever wrong.

Eye have run this poem threw it
Shore your pleased two no
Its letter perfect in its weigh
My chequer tolled me sew.

(Sauce unknown)

ITEM 2 [**]

Rewrite the stanza indicated by [ ], replacing the words that need changing with their correct homophones.

Write clearly.
Spell correctly.
Homophones can occur in sets of two words (pairs), three words (triplets), or sometimes more words. For example the three words, *paw* — the foot of an animal, *pour* — to flow strongly, and *poor* — having very little money, would make up a homophone triplet.

**ITEM 3 [***]**

From the poem, choose two different words each of which can be part of a homophone triplet. List the words that make up each of the homophone triplets in the left section of the table and beside each word write a sentence which clearly shows correct usage of that word.

Use single words in the homophone triplets. Spell the words correctly. Acronyms, slang words, foreign words or names of people or places must not be used in the homophone triplets.

<table>
<thead>
<tr>
<th>Homophone triplet 1</th>
<th>Sentences</th>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Homophone triplet 2</th>
<th>Sentences</th>
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</thead>
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</table>
UNIT THREE

Espresso (coffee) is a brewed beverage made from the roasted beans of a coffee tree. To produce a shot of espresso, near-boiling water is pushed under pressure through a compacted bed of finely ground coffee beans. Espresso is used as the basis for a variety of coffee drinks formed by the addition of such things as milk, extra water, cocoa or milk foam.

The diagram in Figure 1 uses overlapping circles to show the components, but not the proportions, of some popular beverages.
ITEM 4 [***]

I. Use Figure 1 to determine the components of the beverages shown.

Record the components of the different beverages by placing a tick in the appropriate cells of the table below. The long black has been completed.

<table>
<thead>
<tr>
<th>beverage</th>
<th>espresso</th>
<th>extra water</th>
<th>milk</th>
<th>cocoa</th>
<th>milk foam</th>
</tr>
</thead>
<tbody>
<tr>
<td>cappuccino</td>
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<tr>
<td>flat white</td>
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<td></td>
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<tr>
<td>hot chocolate</td>
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<td>latte</td>
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<tr>
<td>long black</td>
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<td>✓</td>
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<tr>
<td>macchiato</td>
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</tr>
<tr>
<td>mochaccino</td>
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</tbody>
</table>

II. A long macchiato is made up of a small amount of milk foam and an espresso shot made ‘long’ by the addition of extra water.

Write a clear description of how to slightly modify the diagram in Figure 1 to include a long macchiato. Ensure no other new beverage is created. Provide a labelled drawing of the relevant section of the diagram.
Figure 2 uses scale drawings of coffee cups to show not only the components but also the proportions of the components of a café mocha and an espresso con panna.

![Coffee Cups Diagram](image)

**Figure 2**

**ITEM 5 [***]**

A Vienna coffee is an espresso con panna that has two shots of espresso instead of one.

Accurately represent the proportions of the components of a Vienna coffee on the diagram of the cup below. The diagram is a scaled enlargement of the cups shown in Figure 2.

![Vienna Coffee Diagram](image)

*A copy of this diagram is provided on p. 24.*

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Measure carefully.

Show calculations.

Indicate the components on the diagram.
ITEM 6 [****]

A catering store sells espresso cups of various sizes. The interior of each cup is cylindrical in shape and each has an internal depth of 32 mm but their internal diameters differ.

If 30 mL of espresso makes up a single shot, calculate the minimum internal diameter of a cup that would allow a double shot of espresso to fit within it.

Reminder: \( V = \pi r^2 h \quad \text{1 mL} = \text{1 cm}^3 \)

Show all steps.
Give the diameter to the nearest mm.
UNIT FOUR

Storage companies provide areas where customers can store goods securely. The Manhattan Mini Storage company has a large advertising sign painted on the side of one of its storage buildings. The sign is clearly visible to pedestrians. Figure 1 shows the view of the sign and a close-up of the sign.

Figure 1
ITEM 7 [****]

The slogan on the sign invites readers to interpret the words in two different ways. The words can be read as they are written: ‘Simply put. Stuff here.’ The other way is to read them as a single sentence: ‘Simply put stuff here.’

I. Explain the different interpretations when the slogan is read in these two ways.

II. Discuss how effectively the graphic design and the strategic placement of the sign work to advertise the company.

Refer to two features of the design and two aspects of the placement.

Response area continues on the next page.
ITEM 7 (continued)
ITEM 7 (continued)
UNIT FIVE

On 15 July 2012, Korean pop singer Psy uploaded his video clip 'Gangnam Style'. Within two days it had been viewed a total of more than one million times and was well on its way to becoming more successful than any previous video clip. The number of daily views first exceeded five million on 3 September 2012. The graph of how its popularity grew throughout July and August 2012 is shown below.

ITEM 8 [***]

I. How much time elapsed between when the number of daily views was one million and when it was two million? Show relevant markings on the graph to justify your response.

II. Use the information provided by the graph to estimate the total number of times the video clip was viewed during the last week of August.

Show your working.
Figure 1 represents the way a different video clip begins to go viral soon after it is initially uploaded. The video clip is shared by sending on a link to the clip. The diagram models the spread across the web when the video clip is shared. Some simplifying assumptions have been made and are listed below.

- The two-minute clip is viewed by five people as soon as it is initially uploaded.
- Ten minutes after viewing it, two out of every five viewers send the link on to five other people, none of whom has already received it.
- Everyone who receives the link views the clip immediately but only once.

A ‘wave’ comprises viewing the clip and then sending on its link. The intent of the diagram in Figure 1 is to show the first four waves of viewers.

ITEM 9 [****]

I. In the diagram in Figure 1, some of the senders have been numbered to indicate which of the first four waves of viewers they belong to.

Complete the numbering of the senders in the diagram in Figure 1 by writing the appropriate number in each of the circles.

A copy of this diagram is provided on p. 25.
ITEM 9 (continued)

The table below shows the number of views of the video clip that featured in Figure 1 from the time it is initially uploaded, then viewed and the link sent on.

<table>
<thead>
<tr>
<th>wave</th>
<th>time wave completed</th>
<th>viewers (this wave)</th>
<th>senders (this wave)</th>
<th>total views (all waves)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>12 min</td>
<td>5</td>
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<td>2nd</td>
<td>24 min</td>
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<td>3rd</td>
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<td>5th</td>
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</table>

II. Fill in the missing values in the table.

III. Determine the total number of views of the clip in the first two hours after it is initially uploaded.

Show how you arrived at your answer.
UNIT SIX

In the 1920s a decision was made to eradicate the wolf population in Yellowstone National Park in the USA and by 1926 the last Yellowstone wolves had been killed. The following adapted extract discusses the consequences to the environment of the eradication of the wolves and the subsequent reintroduction of them 70 years later.

When the new wolves in Yellowstone first came calling, the area’s elk\(^1\) stood their ground as though they were still dealing with coyotes\(^2\). Bad plan! Today Yellowstone holds half the elk it did 15 years ago in 1996.

With a near-unlimited meat supply, Yellowstone’s new wolves rapidly multiplied. But by 2008 their numbers had fallen. Doug Smith leads the Yellowstone Wolf Project. He says, ‘Numbers of wolves never got as high as we expected based on the availability of prey. Wolves move in packs and are very selective hunters. What counts for them is vulnerable prey.’ Pack-hunted elk turn into less vulnerable quarry. They become more vigilant and keep on the move more.

During the wolfless era, herds practically camped at favourite winter dining spots, foraging on the young aspen, willow and cottonwood until the stems grew clubbed and stunted like bonsai plants. Released from such grazing pressure, saplings now shoot up to form lush young groves. More songbirds find nesting habitat within their leafy shade. Along waterways, vigorous willow and cottonwood growth helps stabilise stream banks. More insects fall from overhanging stems to feed fish and amphibians.

Notes:  
\(^1\)species of large deer  
\(^2\)small wild dogs

ITEM 10 \[**\]

In this extract, the author uses different words and phrases which the reader, by inference, knows to be the elk. Give four different examples of these words or phrases.

Do not include the pronoun, 'they', as one of the four.

ITEM 11 \[***\]

Consider the exclamation, ‘Bad plan!’ (paragraph one of the extract). State what plan is being referred to, why it is bad and what circumstances led to it.
ITEM 12 [****]

Provide an easy-to-follow outline of the sequence of causes and effects of the behavioural and environmental changes that occurred in the park.

Continue from the start given below. Your response need not be written in sentences.

*decision is made*

*all wolves are killed off*
UNIT SEVEN

Population clocks can show real-time estimates of the population of cities, states or countries. The count shown on a population clock goes up by one regularly using data based on average birth, death and net migration rates.

ITEM 13 [***]

Assume the count on Queensland’s population clock goes up by one every 5 minutes and 41 seconds. At midnight on 31 December 2012 the clock was showing 4610932.

I. What estimate of Queensland’s population did the clock show at midnight on the following day, 1 January 2013?

Show all steps.

II. Calculate how many days after 31 December 2012 the population clock will show Queensland’s population estimate to be 5 million if the count continues to go up by one every 5 minutes and 41 seconds.

Show all steps.
ITEM 14 [****]

A website contains a population clock for the whole of Australia. Information on the website states that the count on the population clock goes up by one regularly based on the following rates:

- one birth occurs every 1 minute and 42 seconds
- one death occurs every 3 minutes and 36 seconds
- a net gain of one migrant occurs every 2 minutes and 15 seconds.

Determine how many minutes and seconds it takes for the count on this population clock to go up by one based on the rates listed above.

Show all steps. Include clear explanations with your calculations.
UNIT EIGHT

The following is an adapted extract from an opinion piece on the reading of novels. It begins by quoting an author whose novels are regarded as classics.

'A classic is something everyone wants to have read and nobody wants to read.' Mark Twain

I think we've all felt this way. We hear about classic novels, and we feel the burning desire to read them ... and then we don't. It's like eating vegetables or candy. When I read Diary of a Wimpy Kid, I tell myself I'm eating candy. When I read The Catcher in the Rye I'm eating vegetables. Many of us wish we ate healthy foods, but don't. Mark Twain is right in his assertion. The question is, do we care?

I have read all of The Hunger Games trilogy. Do I feel good about that? Not entirely. Why? Because if I'm going to read three 300-page novels, I wish I could at least throw one Hemingway¹ in there. But it's hard. I don't need to tell you why it's hard. A lot of people don't have the fortitude required to read The Hunger Games, which is why I feel a sense of accomplishment for having endured them.

If I'm going to be successful at reading, I have to read what I want to read. Sometimes I'm in the mood for Harry Potter. If I am, I go with it. I don't try to force myself to read Crime and Punishment when I'm in the mood for Harry Potter. I won't force myself to eat dessert last. I eat what I want.

If you're into it, read Twilight. Read Percy Jackson and the Olympians. Don't be ashamed. Your accomplishment? You're reading. And when either you've grown weary of what you like or there's none of it left, you will find yourself dusting off the classics you've always meant to read but never did. And if you don't, who cares? Mark Twain? You're reading.

Note: ¹author of novels regarded as classics

ITEM 15 [***]

I. The writer of the opinion piece classifies novels as either 'candy' or 'vegetables'.

From the writer's perspective, which of the novels mentioned in the extract are considered 'vegetables'?

List the titles here.
II. In light of the discussion in lines 8–12, explore the writer’s response to having read all of *The Hunger Games* trilogy.

Don’t simply quote from the text.

ITEM 16 [****]

Think of the types of reading you do and foods you might use to help convey to others your experiences when engaging in these types of reading.

Select three distinct types of reading and link each to a different food. For each type of reading make use of two attributes of the associated food to clearly describe your reading experience.

Craft your descriptions creating vivid images. Avoid repetition.

Response area continues on the next page.
<table>
<thead>
<tr>
<th>beverage</th>
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<td>hot chocolate</td>
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<td>mochaccino</td>
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**clip initially uploaded**

- viewer who sends on the link, i.e. a sender
- viewer who does not send on the link

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![Network Diagram]

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<th>wave</th>
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<th>viewers (this wave)</th>
<th>senders (this wave)</th>
<th>total views (all waves)</th>
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If you want this response marked, don't forget to cancel your response on p. 14.

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If you want this response marked, don't forget to cancel your response on p. 15.
Acknowledgments


Douglas H Chadwick, for an adapted extract from Wolf Wars, published by National Geographic Society, Washington DC 2010.

Lucas Moore, for an adapted extract from The Classics: To Read or Not to Read from www.theblvdier.com, accessed December 2013.

Manhattan Mini Storage, LLC, for image of advertisement.

Sharon Crone, for photograph from her private collection.

Wikipedia, for an adapted graph, licensed under the Creative Commons Attribution-ShareAlike License, accessed December 2013.

Every effort has been made to trace the ownership of copyright material. Any information enabling us to rectify any error or omission in subsequent editions is welcome.
Item and star-value distribution

The star-value rates a specific item relative to others in the paper in terms of worth/effort.

<table>
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<tr>
<th>Unit</th>
<th>Item</th>
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<td>***</td>
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For planning purposes, it may be useful to know that there are 52 stars in total, with the middle stars occurring at Item 9.