

English I
Época de Recurso/Melhoria

2016-2017

6 July 2017

Time allowed: 2 hours

NOTE: During the exam students may consult a dictionary, which must not contain any handwritten notes. Students are NOT allowed to consult any electronic device or extra notes or materials.

The answers to question B, numbers 1-8 are to be written on the exam question paper.

All other answers are to be written in an examination booklet.

A. Writing (13.5 points)

Consider the information in figure 1. Write an analytical exposition (250-300 words) in response to the following question:

Consider the views expressed by the non-refugee characters in the cartoon. To what extent are such beliefs valid from an economic point of view?



Your text will be marked on content, discourse management and genre, range and appropriacy of vocabulary and structures, and grammatical accuracy.

B. Reading Comprehension (4.55 points)

Read the text on page 2, then answer the questions that follow on pages 3 and 4.

Data drilling Oil struggles to enter the digital age

Talk of the “digital oil rig” may be a bit premature

The Economist, Apr 6th 2017

1. IT SOUNDS like a spectacular feat of engineering. Employees of Royal Dutch Shell located in Calgary, Canada, recently drilled a well 6,200 miles (10,000km) away in Vaca Muerta, Argentina. In fact, the engineers of the Anglo-Dutch oil major were using computers to perform what they call “virtual drilling”, based on their knowledge of Fox
5. Creek, a shale bed in Alberta, which has similar geological features to Argentina’s biggest shale deposit. **They** used real-time data sent from a rig in Vaca Muerta to design the well and control the speed and pressure of the drilling. On their second try, they completed the well for \$5.4m, down from \$15m a few years ago. “It’s the cheapest well we’ve drilled in Argentina,” says Ben van Beurden, Shell’s chief executive.
10. Shell is not alone in deploying computer wizards alongside geologists in an attempt to lower costs in an era of moderate oil prices. The industry as a whole is waking up to the fact that digitisation and automation have transformed other industries, such as commerce and manufacturing, and that they have been left behind. Technology firms and consultancies are knocking on their doors peddling alluring concepts like the “digital
15. oil rig” and the “oilfield of the future”. Some argue that the embrace of digital technologies could be the next big thing after the shale revolution that started to transform oil and gas production in America a decade ago. But **this** is an industry that embraces new technologies only in fits and starts.

Once, Big Oil was at the forefront of digitisation, pioneering the use of 3-D
20. seismic data and supercomputers to help find resources. But priorities changed, especially during the past decade when oil prices rose above \$100 a barrel and the primary goal was to find more of it, whatever the cost. Whizzy new technology took second place. Ulrich Spiesshofer, chief executive of ABB, a Swedish-Swiss automation-technology company, says the oil industry puts to use in exploration activities barely 5%
25. of the seismic data it has collected. During production of oil, less than 1% of data from an oil rig reaches the people making decisions, reckons McKinsey, a consultancy.

It is the process of extracting oil and gas that is considered most ripe for digitisation and automation. Drilling often takes place miles below the surface in rock formations where drill bits and pipes can be broken or snagged, which halts activity for
30. long periods. Baker Hughes, an oil-services firm, has recently developed what **it** calls the first automated drill bit, capable of self-adjusting depending on the nature of the rock. McKinsey says undersea robots are also being deployed to fix problems.

Above the surface, efforts are under way to reduce the amount of people and plant on oil rigs, helping improve safety in a dangerous industry. James Aday, a veteran
35. oil driller now at Wood Mackenzie, a consultancy, says that on the drilling platform itself, automation is not new. Others say that more rigs are being controlled semi-remotely; in the Gulf of Mexico, engineers in Houston use real-time data from oil rigs to make decisions, reducing the cost of shuttling them by helicopter to rigs. “The aim is to bring the data to the expert, not the expert to the data,” says Peter Zornio of Emerson, an
40. automation firm. “There’s a huge incentive to get the people and the choppers off the platform.”

Wider use of data, sensors and automation will produce new challenges for the industry. **It** will have to learn about cyber-security—oil rigs are critical infrastructure—and invest in ways to prevent theft of data. But digitisation may also attract millennials to
45. replace an ageing workforce, where mass retirement is a looming threat.

As to whether the workforce could shrink across the industry in the digital age, ultimately geologists and engineers believe technology will not put **them** out of a job, because producing oil is art as well as science. Nor will tech startups be likely to overcome the barriers to entry—such as high capital requirements—that protect
50. incumbents. But they add to a sense, born out of the shale revolution, that innovation will make oil and gas more accessible and that the days when oil was considered a scarce resource are long gone.

Name: Number:

B. Reading comprehension (cont.)

Choose **one** answer to each question and write the letter clearly in the box. [e.g. *b*]
(0.35 points each)

1. The main purpose of the article is
a. to argue that technology has brought advances to oil drilling. ☐
b. to report on technological advances in the oil industry.
c. to describe why oil companies are using new methods.
d. to explain why new methods in drilling are needed.
2. What advantages does virtual drilling offer? ☐
a. It is less expensive than conventional drilling.
b. It takes less time than conventional drilling.
c. It is more certain to produce results.
d. None of the alternatives is correct.
3. Which statement is true? ☐
a. The oil industry was forced to adopt new technologies by technology firms and consultancies.
b. Technological advances in the oil industry have been gradual and constant.
c. The oil industry stopped all technological research when oil prices rose.
d. The oil industry has been slow to adopt digital technology compared to other industries.
4. What is the impact that digital technology can bring to the oil industry? ☐
a. Fewer staff will be needed on oil rigs.
b. Working on an oil rig will become safer.
c. All the alternatives are correct.
d. There will be fewer people flying out to and from oil rigs.
5. Why is drilling for oil and gas a slow process? ☐
a. Because it is the most ripe for digitalisation and automation.
b. Because the drilling equipment is often broken when trying to drill through rock.
c. Because at present there are no undersea robots.
d. None of the alternatives is correct.
6. Which sentence is false? ☐
a. Tech startups are unlikely to become direct competitors to major oil companies because entry costs are high.
b. Innovations in 3-D imaging of earthquakes enabled oil companies to find more oil and gas.
c. Digitalisation is changing the way the oil industry searches for and extracts oil and gas.
d. The oil industry has always used the data it collects efficiently to raise production.
7. According to the article, what problems does the oil industry face? ☐
a. Young tech-savvy workers are not attracted to the industry because it doesn't offer opportunities for technologically innovative work.
b. The cost of oil exploration makes it difficult for newcomers to enter the industry.
c. Many of its skilled and knowledgeable workers are about to retire.
d. There will be more cyber attacks on its information.

B. Reading comprehension (cont.)

8. What is the best one-sentence summary of the article? ☐
- Technological advances in digitalisation are changing the way that the oil industry drills for oil and gas.
 - Oil companies are now able to drill for oil and gas using automated equipment and digital data.
 - The oil industry is catching up to other industries in its use of digital technology and automation.
 - Shell and other oil industry giants are pioneering new technology in their drilling methods.

Reference, substitution and ellipsis

What do the following items (highlighted in the text) refer to? I.e. what is their specific meaning in this particular text? (0.35 points each)

- they (line 6)
- this (line 17)
- it (line 30)
- It (line 43)
- them (line 47)

C. Vocabulary (1.95 points)

Complete each sentence with an expression similar in meaning to the explanation in brackets. The first letter of the keyword is given to help you. Except for nº 4., all letters are in lower case. You might need to add a preposition and you will need to conjugate verbs. (0.39 points each)

- What SME owners must focus on, says Bramble, is their **t..... m.....**: "The key message is to think about who your customers are, think about everything you know about them, where they live, what their lifestyles are, what their interests are, business wise and outside of business, and that'll give you big clues as to the social networks they're likely to be using." (a particular group of consumers at which a product or service is aimed)
- Broadly, they'd agree with the CEO of Nike, who recently said the company's long-term potential, and the long-term potential of virtually every other major company in the world, will be severely pressured by factors like **r.....** energy costs, the scarcity of many more natural resources and the demand for equal access to economic opportunity. (increasing)
- Despite the work of trustee boards in planning for financial stability, charities often go **i.....** for reasons beyond the control of trustees (not having enough money to pay debt and creditors)
- S.....** in Vodafone **sank** below £1 today as the UK mobile phone giant cut forecasts for its German and Italian businesses. (the equal parts into which a company's capital is divided, entitling the holder to a proportion of the profits)
- The Home Office has launched an investigation into the housing of **a..... s.....** in the north-east of England after claims that they are identifiable by their red doors. (people who have applied for protection as refugees and are awaiting the determination of their status)

Answers

A. Writing (13.5 points)

A good answer will follow the generic structure of an analytical exposition, presenting a clear thesis statement in the introduction, arguments supporting it in the development, and reiteration in the conclusion. The register should be relatively formal, with few overtly subjective or personal lexico-grammatical selections. Information flow should be clearly maintained through use of conjunctions and appropriate thematic development.

B. Reading comprehension 4.55

(0.35 points each)

(0.35 points each)

- | | | |
|------|--------------------|--------------------------------|
| 1. B | 9. they (line 6) | Engineers of Royal Dutch Shell |
| 2. A | 10. this (line 17) | The oil industry |
| 3. D | 11. it (line 30) | Baker-Hughes |
| 4. C | | |
| 5. B | | |
| 6. D | 12. It (line 43) | The oil industry |
| 7. C | 13. them (line 47) | geologists and engineers |
| 8. A | | |

C. Vocabulary (0.39 points each)

1. target market
2. rising
3. insolvent
4. shares
5. asylum seekers