

---

**GLOBAL PERSPECTIVES**

**8030/01**

Component 1 Written Examination

**October/November 2019**

INSERT

**1 hour 30 minutes**

(RESOURCE BOOKLET)

---

**READ THESE INSTRUCTIONS FIRST**

This Resource Booklet contains Documents 1 and 2 which you should use to answer the questions.

You should spend approximately 10 minutes reading the documents before attempting to answer the questions.  
This is allowed for within the time set for the examination.



---

This document consists of **3** printed pages and **1** blank page.

The documents below consider issues related to sustainable futures. Read them **both** in order to answer **all** the questions on the paper.

**Document 1:** adapted from 'Electronic waste in Africa: recycling methods damage health and the environment', an article written by Jacopo Ottaviani. It was published online by a German news magazine in 2016. The author is a computer scientist and data journalist, who works for Code4Africa.

Every year the world produces over 40 million tonnes of electronic waste (e-waste) which causes environmental problems. The United States and the European Union are the greatest producers of e-waste per person. They discard heaps of refrigerators, computers, television sets, ovens, telephones and air conditioning units. Altogether these devices are seven times the weight of the Great Pyramid of Giza.

The Basel Convention is an international treaty to reduce the movements of hazardous waste between nations. It bans the transportation of this waste to developing countries where it cannot be handled safely. However, as this e-waste continues to be traded illegally, the true scale of the problem is unknown. Only a small part of e-waste, about 15.5% in 2014, is recycled with methods that are efficient and environmentally safe. Researchers from the University of Ghana state that if you treat e-waste obeying the environmental laws of developed countries, it increases the costs. So, e-waste tends to end up at dumping grounds in developing countries where workers use highly polluting methods.

Much of this e-waste still has commercial value, because some devices still work and some contain valuable materials which can be recycled. This is why developed countries ship e-waste to developing countries, like Ghana in West Africa. Accra, Ghana's capital, has a prosperous second-hand market, a sprawling network of repair shops, and a range of activities which attempt to use the full potential of e-waste. However, there is another side to this. Accra has an enormous and heavily polluted e-waste dump in Agbogbloshie. Here children extract copper, aluminium and other materials using methods that are harmful to health and the environment.

To call Agbogbloshie "the largest e-waste dump in Africa" doesn't do justice to its size: it is actually a city within the city. This is where the poorest people of Accra have spent years dismantling, recovering and reselling parts and metals extracted from the heaps of e-waste. Mike Anane, an environmental activist from Accra explains, 'What was once a green and productive landscape is now a graveyard of plastics and skeletons of abandoned appliances. Child workers burn hundreds of kilos of electric cables to extract copper and then resell it for a very small price. The toxic fumes rise into the sky, poisoning the soil and settling on the vegetables sold at the market.' The Journal of Health and Pollution states that an air control station on the Agbogbloshie dumpsite detected excessive amounts of copper and lead in the air. They found 1.5 mg of copper per cubic metre, exceeding the guideline of 1.0 mg, and 0.72 mg of lead compared to the guideline of 0.15 mg. These are guidelines for work areas, but 90 000 people live in Agbogbloshie and all are affected. Wolfgang Mac-Din, founder of an organisation supporting Agbogbloshie's children, says 'Some die. Others have cancer.'

So, Agbogbloshie needs a solution. Ghana's authorities have proposed the demolition of this site. This certainly would solve its environmental problems and the health hazards to its recyclers.

**Document 2:** adapted from ‘World’s biggest e-dump, or vital supplies for Ghana?’, an online article written by Jon Spaul in 2015, for *SciDev.net*. Its mission is to provide authoritative news about science and technology, to enable global sustainable development and to reduce poverty in the Southern part of the world. The author is a writer, photographer and film maker for SciDev.net.

The Agbogbloshie site in Ghana’s capital city has been falsely labelled the “world’s biggest e-waste dump” by the media. When I visited, I expected to see mountains of computers and TVs stretching into the distance. However Agbogbloshie is not that large when compared with other dumps I have seen in Brazil and the Philippines. Instead of masses of people scavenging across mounds of waste, it appeared to be more like a well-organised scrapyards. I discovered no more e-waste amongst the vehicles and other scrap metal than you might expect for a dump in a capital city of more than two million people.

Academics and those who work with recyclers on the site also challenge the global media view. For over seven years the media, including the New York Times, Al Jazeera and the Guardian, has linked the Agbogbloshie site with illegal e-waste dumping. However, critics such as Josh Lepawsky, a geographer from a Canadian University, say the key question is this: whether electronics are being exported to Ghana as illegal e-waste, or to supply a demand for recycled cheap second-hand electronics that can help Ghana’s progress. The 2015 UN Environment Programme (UNEP) report estimates that Ghana receives 40 000 tonnes of electronics a year. Its research found that although half was not working when it arrived, it was then repaired for local resale. Lepawsky therefore questions whether we should classify this equipment as e-waste.

According to the Basel Convention, between 2001 and 2011, the number of computer users in Africa increased 10 times and the number of mobile phone users by 100 times. Rather than being e-waste, second-hand equipment supplies the growing demand for cheap, high quality ICT across Africa. Osseo-Asare, an architect and co-leader of the Agbogbloshie Makerspace Platform, a global project supporting the recyclers, says that second-hand imports made this technological advancement possible. He adds that cutting off this supply will only result in new low quality imports, that are likely to fail sooner than second-hand US and European imports.

However, we cannot deny the environmental and health hazards of Agbogbloshie. Greenpeace found high levels of heavy metals such as lead and mercury in soil samples there, some up to 100 times higher than natural levels. During my visit, I saw fires producing choking toxic smoke. I also saw recyclers, mostly boys, extracting metals from e-waste without any protection against the toxins.

UNEP estimates that around 30 000 people in Ghana work to recycle various materials. So far, no-one has asked the recyclers’ views on Agbogbloshie’s future. Osseo-Asare says recyclers just need equipment such as automated wire strippers to enable them to strip the cables rather than burn them, reducing risk to their health and the environment.

Perhaps then the solution to the site’s problems lies with future safer technology rather than closing it. Especially as it provides work for the recyclers and supplies Africa’s demand for cheap ICT. As Greenpeace says, ‘ultimately only by eliminating hazardous chemicals from electronics, can we stop building this toxic legacy’.

**BLANK PAGE**

---

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at [www.cambridgeinternational.org](http://www.cambridgeinternational.org) after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.