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Friday 18 May 2018 – Afternoon

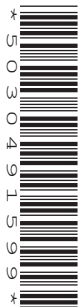
AS GCE CRITICAL THINKING

F501/01/RB Introduction to Critical Thinking

RESOURCE BOOKLET

Duration: 1 hour 30 minutes

To be issued with the Question Paper



INSTRUCTIONS TO CANDIDATES

- Read all the documents before starting to answer the questions.

INFORMATION FOR CANDIDATES

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- This document consists of **4** pages. Any blank pages are indicated.

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Document 1

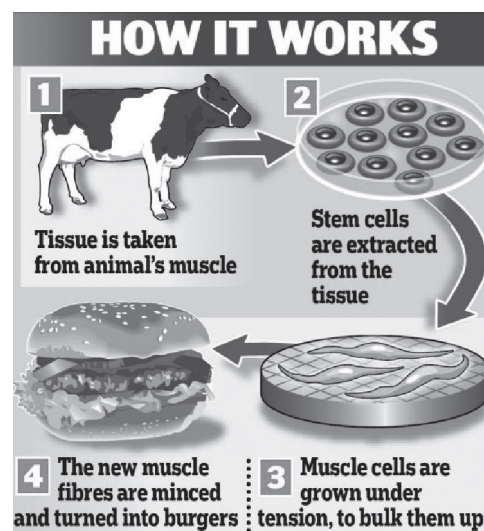
Will the public eat In Vitro Meat?

A Dutch professor, Dr Post, has been given €300 000 (approximately £240 000) to create a new burger from meat grown in a laboratory. Known as In Vitro Meat (IVM), it is being developed as a more animal friendly and a potentially healthier alternative to conventional meat. It should also be one answer to the anticipated crisis in producing enough meat to feed the world's fast growing population. According to the Food and Agriculture Organisation (FAO) between 1961 and 2007, the consumption of meat by the British public increased by 20%. As this trend shows no sign of stopping, and the global data analysis report by the FAO shows that most people are not keen on a big reduction of meat in their diet, an alternative sustainable way of producing meat is required.

However, scientists may underestimate humankind's strong emotional attachment to *naturally* produced food. Newspaper photographs of demonstrations in Europe against genetically modified (GM) foods should convince us of that. Yet GM foods are a lot more natural than meat grown by someone in a white lab coat!

- **How is it made?**

However, **Dr Post** who is on the frontline of research in IVM, is reassuring when he says, "Some people think it is the same as GM food, but it's not. We use exactly the same process that happens in nature." It involves taking muscle stem cells from an animal (without the need for slaughter) and then soaking the cells in a nutrient-rich plant solution. As the cells develop, they attach to a natural sponge-like framework which is 'exercised' with electrical impulses to form muscle tissue. He added, "We can also play with the variables, saturated fats, polyunsaturated fats and nutrients, to hopefully produce healthier meat."



- **Is it safe?**

IVM researchers also reassure us that IVM should hopefully be safer, as conventional meat is a major cause of food poisoning, whereas IVM is produced in conditions that are free from contamination caused by harmful bacteria. However, a **newspaper health correspondent** warns, "There could be unforeseen health consequences to eating lab-grown meat, amongst which could be allergies to some of the ingredients. As a result, IVM ought to be carefully tested in clinical trials before we even start to think of it as a substitute for proper meat".

- **How much does it cost?**

Under present conditions it will cost about £13 000 per kilo. However, some people including **IVM researchers**, hope prices will drop dramatically if the procedure can be industrialised on a large scale. One researcher claims, "A fully operational factory could produce In Vitro Meat for only £3 per kilo".

- **How does it taste?**

Although no one is presently allowed to taste IVM, a **Russian TV journalist**, who visited the lab to film its work, apparently sampled it before he could be stopped. He was unimpressed and said "It was chewy and tasteless". However, IVM researchers claim that they anticipate being able to customise it to individual taste, so they are convinced the meat eating public will soon get used to it, especially when meat shortages mean they no longer have a choice.

Document 2

Is In Vitro Meat an answer for those concerned about animal rights and the environment?

Some vegetarians are opposed to IVM such as this **member of the Dutch Vegetarian Society** who said, “It might be claimed that IVM would save the lives of the billions of animals killed for food every year. However, this is already preventable because we have the choice of being vegetarian.”

As the reasons for becoming vegetarian are varied, it is not surprising that vegetarians have very different responses to IVM. In contrast, the **Chairman of the Dutch Vegetarian Society** says, “Probably half of our vegetarian members would eat IVM, if it meant fewer animals were killed and farming was less intensive.”

People for the Ethical Treatment of Animals (PETA), who have been calling for lab grown meat for years and have been funding some of the research, claim, “IVM is meat produced without the cruelty, carbon footprint or waste of resources of conventional farming. It’s a hugely beneficial development for animals. We welcome this development. PETA has no objection to the eating of meat. PETA simply objects to the killing of animals and their exploitation.”

Document 3

Does the world need more meat?

Forum posts:

US contributor

I would like to tell you all how amazing this IVM technology is. Unless you belong to one of the privileged countries, you don’t have a choice. You need to eat what is there, and for many people that is meat. IVM is like the next phase of evolution in agriculture. I don’t see any downside for vegetarians or anyone else. Is there a growing trend of people not eating meat? Arguably no. Therefore the world needs more meat.

Australian contributor

In fact, the quantity of meat consumption by some people is reducing their level of health. I really don’t think that anyone needs meat so badly that we have to waste resources and scientific talent by resorting to IVM burger options. So, if our goal is to feed more people, encouraging vegetarianism is the way to go.

www.ted.com/conversations

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