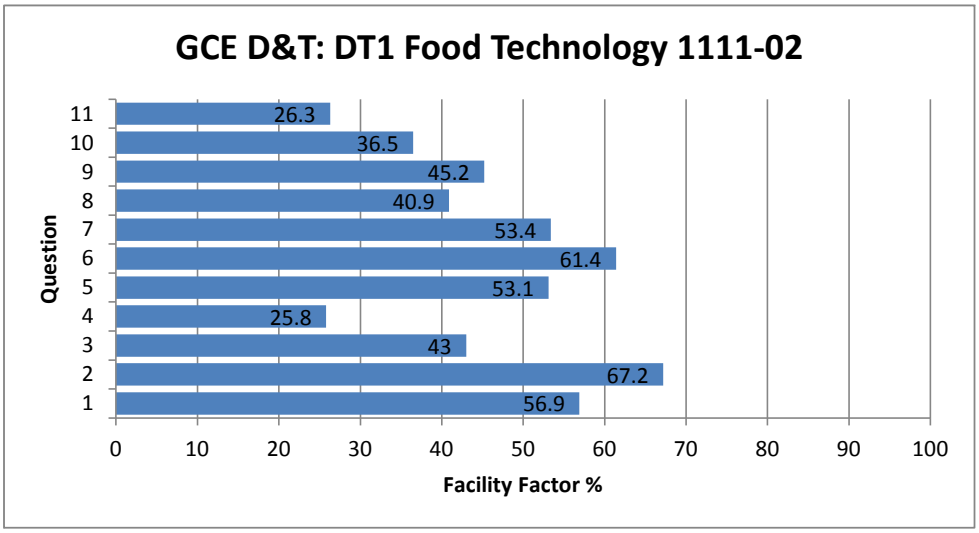
WJEC 2014 Online Exam Review

GCE D&T: DT1 Food Technology 1111-02

All Candidates' performance across questions

Question Title	N	Mean	S D	Max Mark	F F	Attempt %
1	63	4.6	2.9	8	56.9	53.9
2	108	5.4	2.4	8	67.2	92.3
3	61	3.4	2.4	8	43	52.1
4	33	2.1	2	8	25.8	28.2
5	88	4.3	2.3	8	53.1	75.2
6	78	4.9	2.2	8	61.4	66.7
7	40	4.3	2.1	8	53.4	34.2
8	104	3.3	1.8	8	40.9	88.9
9	48	13.6	5.4	30	45.2	41
10	43	11	7.6	30	36.5	36.8
11	26	7.9	7.8	30	26.3	22.2

11



SECTION B

Answer **one** *question from this section.*

Your answer should be substantial and show the **depth** *of your knowledge in Food Technology.*

Each question carries 30 marks.

11. Discuss how the use of modern food materials and modern manufacturing techniques has influenced the production of new and innovative food products, both aesthetically and functionally. [30]

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Section B

11. New innovative products have been produced by the discovery of smart foods. smart foods are foods which have been altered to perform a certain function, or simply to make the aesthetically pleasing to gain sales.

In the modern day meat analogues are very popular. A meat analogue is a substitution for meat for people who are vegetarian, vegan, following a certain religion or people who want to reduce their meat intake but are not vegetarian. One main meat substitution is quorn. quorn is made from the fungi, mushroom. but still contains protein. Quorn is a low fat low cholestrol product and therefore is healthier than meat. The Quorn brand offers a range of different products including mince. The brand used diversification to produce quorn chicken burgers, sausages and bacon. Another meat substitution is tofu which is popular in Asian countries. Tofu is made from soybeans and soyamilk. The beans are soaked for 24 hours, then pressed to remove liquid and then rolled on a conveyer belt. Once rolled soyamix is add a the mix coagulates

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itM New techniques have allowed foods to be genetically modified to either enhance the products appearance & to enhance its function. One example of a G.M food is the tomato. This was the first ever food to be modified genetically. It was modified by using plant sterols to increase the tomatoes life span. However it was discontinued. Another example in the modern day is a potato. some potatoes are modified to reduce its fat absorbtion to produce a healthier product when cooked in oils.
Functional foods are another example of new food products. Functional foods are foods which ~~are set out~~ have a health claim e.g. "vitamin enriched". Functional foods either add a new material or use more of the materials already present in the product. One example of a functional food is Flora. Flora also used diversification to develop new products when they realised sales began to drop. Flora still continues to develop their products with their newest creation 'Flora gold' a luxury butter. Flora created 'Flora Omega 3' which can be seen as a functional food. ~~The butter is~~ The spread contains

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omega 3 for the development of brains and bones, essential for young children. A health benefit of omega three is that it can reduce the risk of cancers including, breast cancer and prostrate cancer.

Encapsulation technology has allowed products to become aesthetically pleasing to consumers. One example being jelly beans. The confectionary is coated with a hard outer coloured shell. The colour attracts consumers, especially of the younger age. ~~The process involves~~. However the technology is expensive to purchase but worth it in the long run for manufacturers.

Another modern food material is modified starch. Modified starch is created from native starch. Pregelatanised starch helps to set cold desserts such as mousses. ~~starch is used in frozen~~ Modified starch is used in frozen products to ensure the product ~~doesn~~ does not drip or produce a ~~pudd~~ pool of water whilst defrosting. Modified starch is also used as an emulsifier in low fat salad dressings to stop the fat separating from the water. Modified starch is used in powders such as cheese sauce or gravy granuels, when ~~the~~ water is added the sauces thicken. This is also present in the creation of Pot Noodles. The starch helps to thicken the flavoured ~~sauce~~ sauce

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	so it is not like water like.
	TO conclude smart foods have
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	different products using different
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The use of modern food materials and manufacturing techniques have allowed for the production of innovative and interesting new products.

Modern food materials such as the smart foods have highly influenced the production of new and innovative food products.

Modified starches are starches that have be pre-gelatinised. This means that they can stay viscous when chilled. They are used in chilled desserts. Modified starches benefit the product functionally, Because it keeps it viscous, stops it going sloppy & thin. They benefit the dessert aesthetically because they make sure it holds its shape

Modified starches are also used in pot snacks, such as pot noodles. The starch in pot noodle is pregelatinised so that it thickens instantly when boiling water is added. This benefits the function because it thickens instantly, so this meets the function as it is a very instant and quick snack.

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11. Functional foods are used in modern food production. A functional food is a product with an added function. For example, 'flora pro-active' is fortified with plant sterols and Omega 3 fatty acids to lower cholesterol, this in turn lowers the risk of coronary heart disease. The use of functional foods benefits the consumption of the product because it makes it ~~not~~ healthier.

Encapsulation is another smart food used in new products. It is ~~a~~ ~~this~~ when a ~~a~~ thin coating is put around a solid or liquid product. A good example of encapsulation technology are jelly beans. It has a benefit ~~a~~ aesthetically because it holds the product in its shape. It influences ~~it~~ the product functionally because it allows the product to have a liquid.

Genetically modified foods are used to produce new products. Genetic modification is when an artificial gene is inserted into a food, usually a crop, to give it an extra function. It influences the function

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11. of the product because it allows crops to be grown all year round.

Meat analogues are used in new products. Meat analogues are vegetarian & meat alternatives. They mimic the sensory ~~or~~ properties and the taste of meat. They are made from soya milk, soya flour and lupins. Meat analogues influence ~~the~~ a product, like a ready meal functionally, because it is not actually meat, so vegetarians can eat it.

Modern manufacturing techniques also influence new food product. Modern production machines speed up manufacture, but also do things that people can't. An Enrobing machine is used to produce new products, for example, a twix chocolate bar. An enroping machine is used to cover biscuit in melted chocolate. This influences a product aesthetically because it makes it look more appetizing, with chocolate on top.

A ~~is~~ forming machine allows for the production of new, shaped products.

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11 a) A forming machine forces something, like a pasta dough, through a shaper, it comes out the other side the desired shape and size. This influences the product ~~aesth~~ aesthetically because it can make it the desired shape and size.

A rotary cutter or moulder is used to shape or cut dough, like pastry or bisuit dough. The rotary moulder will imprint a pattern or logo too. This influences the aesthetics because it looks more appetizing with a pattern on.

In this essay I have discussed the different factors affecting and influencing new and innovative products aesthetically and functionally.

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11. Food materials and modern manufacturing techniques has influenced the production of new and innovative food products both aestically and functionally, through a range of different including food materials such as smart foods, GM crops, fortified foods create a better nutritionally enhanced product while the modern manufacturing techniques of extrosion, moulding, intrusion, filling etc within batch, & continus flow production ensures continuously with reference to flavour, appearance and size of products.
The new manufacturing techniques have created new and innoviative difficulty made foods products.
Meaning they are both aestically pleasing, eye catching and finished to a good standard and enhanced the functionally of the product through the use of enhancing the nutritional content of the product through a range of methods, from fortifying the product

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with minerals and vitamins to e improre the structure, stablitiy and designer through the use of 'smart foods'. For example modern food materials such as smart foods, Gm crops & fortified foods nare improred the aesticially and functionnatt of food product. Functional food products are more centertabd on being nutriously benefical and hare nutrients mineral and vitamins needed fores your current dietary guidelines, therefore new products are made which are more nutriously enhanced such as 'so, so' bread ~~wkite~~ which is whitebread with the goodness of brown' this bread which is innoviately manufactured and created uses the fibre rich content of wholewheat, wholegrain bread so that you are getting your dietary fibre but through the look and texture of white bread, this caboyhydrate is therefore enriched with as law release form of energy which attracts a reev target audience of young children as they ~~critic~~ criticise white bread for being so grainy. This example of modern food materias and manufacturing techniques highlights the production of aestically pleasing and functional innovative food products.

Furthermore, food products are functionally more innoviative healthy and nutrious due to rew modern food materials such as fortifying food product, this manufacturing technique which is new enables food products to be fortified with essential, vitamins, minerals and nutrients, for example eggs are fortified

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within important mineral omega 3, This is due to the enhanced importance of following current dietary guidelines and getting the correct amount of minerals and vitamins, as it is essential to have a healthy diet which is balanced, the use of fortifying minerals and vitamins is essential and influence production of food products.

GM crops are also manufactured ~~to~~ using new techniques where Genetically Modified products such as corn, ~~pe~~ are injected with special pesticides to keep the standardised quality of the product and keep bugs from the crops. Gm crops that have been manufactured also created a aesticallu pleasing product, ~~ma~~ through the alteration of colour, size and taste of the product, however as this is nutritionally consequent ~~to~~ theese products can be fortified back with there nutrients.

SMart foods have also been created that use modern food materials such as, microproteins, meat analogue, ehansiers and stabilisers as well with manufacturing textures to impro re appearance and function of food product.

For example, Meat analgoue changes the texture and appearance of the meat for example in a Lasange the meat is thicker and more juicer. As well as in a fried chicken breast the chicken has a chicken texture through the manufacturing pasta.

Mycro proteins are used within the Manufacturing of vegetarian meats

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Organic food products are used so that there is no use of pesticides and develops the look taste and quality of the product.
Modern manufacturer techniques influence production of food products through range of extrusion, sheeting, and fortifining this changes and enhances the structure of the product and the appearance of it.
Through the use of batch and continous flow production within modern manufacturing techniques the appearance and structure has been improved as new techniques ensures conformity of the product, giving the exact same continuous product and high quality finish to product as they look identical i.e. All pastry for custard slice rolled to approximately 1 mm. The high quality finish is standardised.
In conclusion the use of modern food materials and modern manufacturing techniques has influenced the production of new innovative product through the use of smart foods, in my cro protein enhancers and stabilisers, fortified foods, GM crops and use of new manfacturing to enhance the innoviative design of products to make it more aesthically pleasing and function well.

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