

Examination

Food Technology: 15 marker
a, b, c

Section	Part	Question Number
III	/	28

Date

10/11/11

Number of booklets
used for this question

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Instructions

- Write your Centre Number and Student Number at the top of this page.
- In the boxes provided write the name and date of this examination, and the number(s) of the question(s) attempted in this booklet.
- If you have not attempted the question, you must still hand in the Writing Booklet, with the words 'NOT ATTEMPTED' written clearly on the front cover.
- Write using black or blue pen. (Black pen is recommended.)
- You may ask for an extra Writing Booklet if you need more space.
- **You may NOT take any Writing Booklets, used or unused, from the examination room.**

Start here.

(a) Possible causes of deterioration and spoilage in fruit can be physical which includes bruising, crushing etc which changes the shape and ~~stret~~ texture of the fruit; ^(eg bruised pear) Chemical spoilage due to chemical reactions in the fruit ~~cause~~ causing it to go off ~~o~~ for example citric acid in lemon leading to breakdown of fruit; enzymatic spoilage which is the main cause of fruit spoilage as ripening continues after harvesting leading to overripening and breakdown of the fruit tissue affecting colour and flavour; living organisms including rats can also spoil fruit as fruit flies dig into the fruit and consume it leading to spoilage and contamination; and lastly microbial activity by moulds and bacteria can also spoil and lead to the deterioration of fruit, for example a mouldy apple.

(b) The legislative requirements under the Australian food Standards Code and Code of Practice by Food Standards ~~Act~~ Australia New Zealand (FSANZ) relating to the labelling of a preserved fruit product ~~are~~ determine every aspect that must be on the preserved fruit packaging label regardless of if it's canned or homemade being served in a town fair. These requirements include a name of product, company name, date of packaging/processing, use by or shelf life date (extremely vital for preserved fruit as many believe preserved foods have unlimited shelf life when it is really up to two years in most cases), barcode if commercially made, ingredient list including additives like flavour enhancers or colours used in commercial preserved fruit like ~~jam~~ strawberry jam, allergy warning, ~~the~~ country of origin and cannot claim to be a 'health' product

as other ~~food~~ preserved fruit contain ~~low~~ high sugar levels to inhibit microbial growth leading to a less nutritional product. All these must be placed on preserved fruit labelling including storage conditions after opening as this breaks the ~~presentation~~ presentation process shelf life due to exposure to the elements promoting new microbial activity.

(c) One ~~best~~ preservation process that could be used to extend the shelf life of the oversupplied fruit could be turning the fruit into jam which preserves the fruit through the inactivation and inhibition of microbial activity. This can be used for fruits such as strawberries, raspberries, apricots and ~~and~~ blueberries. Processes undertaken in ~~this~~ this preservation ~~process~~ method is the pasteurisation of the fruit to inactivate or kill ~~the~~ any bacteria present, the sterilisation of the jam jars and equipment to prevent cross contamination and inhibit microbial activity, the exclusion of air when sealing the jam lid onto the jar prevents access of bacteria to the product to preserve it and using additives like ~~acid~~ acid to control the pH of the jam as bacteria cannot live in an acidic environment of below 4.9.

Another preservation process that can be used to extend the shelf life of the fruit is the dehydration of the fruit to create a dried fruit snack for future use that preserves. This process can be used on multiple fruit products such as bananas, apples, pears and apricots. This process uses ~~the~~ ~~process~~ the removal of moisture ~~and~~ from the fruit which is a requirement bacteria needs to live, therefore preserving

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microbial activity. Equipment that can be used for this preservation process ~~can~~ to extend the shelf life includes a dehydrator that can be used both commercially and domestically. The heating of the fruit to remove moisture ~~sterilises~~ inactivates the bacteria present in the fruit, and the high heat used to absorb the moisture also sterilises bacteria, effectively killing it from the fruit, and the lack of moisture present after this process prevents microbial activity from recurring, an effective preservation method. An example of this process being used in fruit preservation is the availability of dried banana pieces in the market today.

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