Assignments Introduction Food Freezing Course 1 Part 2

Introduction
Are you aware that in South East Asia and Europe a thousand years ago methods were developed to chill and even freeze food; describe such methods!

List all methods which are able to lower the temperature of food materials.

The Freezer Family
Which refrigeration/freezing methods have not been mentioned in Table 5.1?

Common features of freezers
Try to find out—together with your friends in the course— which type of freezing equipment is used mostly in your area, where it has been designed and built.

Cold Room Freezers
In which situation would this type of freezing equipment be appropriate, for which type of product, and which quality expectations?

Brine Freezers
In which situation would this type of freezing equipment be appropriate, for which type of product, and which quality expectations.

What consists a definite disadvantage of Brine Freezers, consider the environment.

Push Through Freezers /Trolley Blast Freezer
In which situation would this type of freezing equipment be appropriate, for which type of product, and which quality expectations.

In which other area of food processing are similar systems in use?

Try to develop a heat balance for a system in which only new trolleys are used.

Belt / Chain Belt / Tunnel Freezers
In which situation would this type of freezing equipment be appropriate, for which type of product, and which quality expectations.

In which other area of food processing are similar systems in use.

What material has to be used for the belts.

Fluidized Bed Freezers
In which situation would this type of freezing equipment be appropriate, for which type of product, and which quality expectations.

In which other area of food processing are similar systems in use.

Which equation from Fluid Mechanics would help to describe the conditions under which a particle is free floating in an air stream.

Plate Freezers
In which situation would this type of freezing equipment be appropriate, for which type of product, and which quality expectations.

Name at least one product which in your opinion is frozen in a plate freezer (children like it!).

Drum/Cylinder Freezer
In which situation would this type of freezing equipment be appropriate, for which type of product, and which quality expectations.

There are two types of Drum Freezers on the market, with direct cooling (refrigerant evaporates in the drum) and indirect cooling (with brine circulation), which one would be best for quick freezing?

Cryogenic Freezing
In which situation would this type of freezing equipment be appropriate, for which type of product, and which quality expectations.

Summarize the advantages of cryogenic freezing for a small freezer plant in a rural area.

In which way can the use of cryogenic freezers become life-threatening?

Cryogenic Equipment for Special Processing Purposes
Give other examples where the use of cryogenic fluids could be considered.