PART-B

11.)

a) i) Current food Production Systems are involved in bringing the Products from farm to Consumer.

* This show the steps that follows from the farm to Consumers.
* It have the Several steps to be followed these are.

i) Agriculture.
ii) Harvesting.
iii) Post-harvesting
iv) Storing
v) Packaging.
vi) Distribution
vii) Consumer view.

i) Agriculture:

* The agriculture is the genisus point for the producing foods
* Farmers Can Plant the seeds and growing in their lands.
* In this Point we Can check the Condition of the plants. Because it Can be affected by the insects & bacterias.

ii) Harvesting:

* After the stage of agriculture the crops are being in the stage of harvesting.
* In this harvesting stage they can check the crops & plants conditions & then start harvesting.

iii) Post- harvesting:

* After the completion of harvesting the collected crops or plants are being tested for the condition.
* It can be check & seperate the products.

Eg: Seperate rice from Paddy.

iv) Storing:

* After completion of post- harvesting process the collected products are store in the storage.
* By implementing this storage process it can be achive the preservation conditions.
* That can make the products reliable on many days.

v) Packaging:

* This packaging process can be done for the distribution process.
* It must be ensure that the products are be in good & healthy state.
* And also check the quality of package because the package is not good it will be avoide for the distribution

vi) Distribution:

* After the packaging done it can be distributed throughout the stores and markets
* During the distribution ensure that the packages are been safe.

vii) Consumer view:

* All the process are done finally the consumer by the product & taking the product for their foods
* It must be in good quality & quantity & then the good package.

These are all the food productions systems are involved in bringing these products from farm to consumer.

ii) Health benifits of fat Substitutes :

The fat is not only consider as an bad one. It can also have the good health benifits This fat Substitutes can reduce the unwanted fat that present in the food.

It can be have the macronutrient foods like Carbohydrates, Proteins and lipids.

i) Carbohydrate foods of fat Substitutes :

* The carbohydrate foods can be contains the rich amount of energy
* It can be produce a energy for the body.
* And it activates the immune system in our body and gives the energy.

These carbohydrates are consume from the foods like

* Rice
* Wheat
* Millet
* Shrugann.

Fat Substitutes in this foods can be reduce the unwanted fats and given only the rich amount of nutrientions.

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Carbohydrates rich foods:

The Carbohydrates rich foods are mainly like Cereals

* Rice
* wheat
* Millet

They Can produce rich amount of Carbohydrates in the Consuming of foods.

Also giving the large amount of energy production.

ii) Proteins for Tissue repair:

* The proteins Can be help in the form of muscle growth.
* It Can be give strength and Increase the muscle growth.
* By adding the Protein rich food Can be useful for the muscle growth and tissue repair.

Proteins rich foods:

* The Proteins rich foods are mainly the meat & milk
* And the greens also have the high amount of proteins.

They Can be produce rich amount of the proteins and in the consuming of food

Also giving the muscle growth and Tissue repair.

* Adding the proteins in hospital meal plan can give a more muscle strength and also used for the muscle growth.

Proteins rich foods:

* Meat
* Red meat
* Milk
* Greens.

* By adding these proteins in the hospital meal plan can gives the strength
* It can be gives to the tissue repair patients & burn patients
* Because it can helping in the growth of muscles.

iii) Lipids (Fat):

* Most of the hospital meal plan they does not take much amount of fats in their food.
* Because it can be leads to the high colesterol level.
* But it can also gives some health benifits like metabolic regulations
* The diary products are been contains large amount of fat content.

Fat foods:

* Diary products
* Some meats (Mutton)

By using the fat substitutes. The certain amount of saturated unsaturated fats. fats are best reduce of given only the required amount of fats.

The consuption and the contamination of fat in low level can be not cause any health issues.

but the intake of such fat products like diary products can be lead to an serious health issue.

12.)

9.) i) Knowledge of carbohydrates, proteins and lipids to select a different suitable dietary sources & food items for inclusion in hospital meal plan.

* In the hospital meal plan these macronutrients like carbohydrates, Proteins & lipids are best essential for the patients.

* By giving the foods that contains high level of macronutrient can causes the problem and contains of low level of macronutrient also cause the problem.

* It should be in maintain in the stable level of all nutrients.

i) Enhance food safety:

* In the enhance of food safety it can be used an antibiotic like an Silver, iron oxide and Titanium dioxide.
* These can be helps to enhance the food safety.
* By using this can be have the long lasting of food safety.

ii) Extend Shelf life:

* By adding nanometerials like nano-clay can be protect the food
* Applying of the nano-clay can be produce a rich amount of extend shelf life.
* In this extend shelf life process these nano materials are been used.

iii) Improve Quality:

* The quality must be improve in the food by using the nano-encapsulation
* This can be preservative the food for the long time.
* And not be affected by any unwanted bacterias.

Advantages:

* Producing large amount of food without wasting it
* It have the extend shelf life
* Enhance the food safety.

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* Giving the fats to the have metabolic regulation issues.
* It can be ensure the metabolic regulation in patients.

These are the macronutrient food like carbohydrates, proteins & lipids can give the energy, strength and metabolic regulates in the patients.

ii) Roles in Energy Productions, Tissue repair & Metabolic regulation in patients:

* The macronutrient can helps in these causes like adding carbohydrate for energy production.
* Then adding the proteins for the tissue repair.
* And then adding lipids for the metabolic regulation in the patients body.

The macronutrient are carbohydrate, proteins & lipids.

i) Carbohydrates For Energy production:

* By taking of carbohydrate rich food can be produce more energy
* These are having the energy rich nutrientions.
* Adding the carbohydrate foods in the patient they can have the energy level increase and boost the immune

iii) Lipids for Metabolic regulation :

* The lipids is nothing but fat. It Can be Consume large amount of unwanted energy.
* But the lipids Can also used in good health beneficial.
* The lipids rich foods are mostly in the diary products

Lipids rich foods:

* The lipid rich foods are diary products and meats.
* This Can be have the good fat.
* By adding the lipids Can be 'improve the metabolic regulation in patient
* And also gives the good health benefits.

Q5)

a.) Nanomaterials used in Enhance food safety, extend shelf life & improve quality.

* The nanomaterials are used for preservating the food products.
* There are many number of nanomaterials used in the Preservation of foods.

It Can be classify in the topic of: Enhance food safety, Extend shelf life an the improve quality.

i) Carbohydrates:

* The Carbohydrates in the hospital meal plan be giving foods like Rice, wheat and the millets.
* The Cereals have the rich amount of Carbohydrates.
* By adding the Carbohydrates in the hospital meal can give more energy to the patients.

Carbohydrate foods:

* Rice.
* wheat (chappati)
* Millet
* Barley

* The energy drained patient can be better to take a Carbohydrate foods.
* This can maintain the energy level & also give the energy.

ii) Proteins:

* The proteins in the hospital meals plan be giving the foods like an meat, milk and greens
* The meat & milk have the rich amount of proteins

ii) Proteins food of Fat Substitutes :

* These proteins are be gives the strength of muscles growth.
* It Can help in the side of tissue repair and implement the muscle growth in the body
* This proteins rich foods are been mostly from the animal produce food like meat, red meat, milk.
* And also Comes from the plants like vegitables like greens.

The fat substitutes Can be reduce the certain amount of fat and gives the rich proteins for the body

iii) Lipids food of Fat Substitutes:

* The lipids is also consider as a fat.
* It Can be have the good & the healthy fat for our body
* But the large amount of fat taken Can be leads to a health issues
* Meat, diary products like things have a more fats.

Nano materials used:

* Nano-clay
* Antibiotic nano material like silver, Iron oxide, Titanium dioxide
* Nano encapsulation
* Nano coating

These are the nanomaterials used to enhance food safety extend shelf life & improve quality of food.

PART-A

1) Functional food

* Functional foods are contains nutrients & other minerals
* It have been take single food have multiple nutrients

Superfoods:

* Superfoods are contains such in nutrients
* It have been take single food that contain such nutrients

2) * A package food sample shows early spoilage the microbial analysis can applied the TPC Test plate count
* It can be check and access the quality of also use the yeast and moulds.

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3.) Food resources based on the orgin

* plants → cerials, pulses, vegetables, fruits
* Animals → Meat, Diry products
*

4.) Basic principles of HACCP:

* The Contection of ~~Safety~~ Hazard analysis
* Identify Critical Control point
* Establish Critical vies
* Establish monitoring Procedure
* Establish Correct actions
* Establish Verification procedure
* Establish documentation & Records

5.) i) Macronutrients:

This macronutrients are bee the carbohydrates, proteins & lipids it can help in the energy production, muscle growth and metabolism regulation.

ii) Micronutrients:

Thes micronutrients are the nutrients like, Calcium, megnesium, Iorn, zinc, selenium it can helps in the produce health, good health.

6.) The nutrients in human physiology can be give the energy, good health and cure the desies in the human body.

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7.) Selenium deficiency:

* The health effects are weak nerve system, non rythem heartbeat
* The selenium rich foods are:
  i) Brazil nuts
  ii) Fish.

8.) The biotechnology concepts of food additives has been dont be add an foreign materials and the food must be healthy to human body & consume energy.

9.) Commonly used nanomaterials in food are:
* Nano-clay
* Nano-Coating
* Nano safty like Silver, Iron oxide, Titanium dioxide.

10.) * Nano-clay used to preservation of food safety
* Nano-coating used for food safety
* Nano materials like silver, Iron oxide and the Titanium dioxide.