PANJAB UNIVERSITY, CHANDIGARH

SYLLABI

FOR

FOOD PRESERVATION

ADD-ON-COURSE

CERTIFICATE, DIPLOMA AND ADVANCED DIPLOMA

FOR

B.A./B.Sc./B.Com.

FOR

THE EXAMINATION OF 2021-22

Subject: Add-On-Certificate Course on

"Food Preservation",

Scheme of Teaching

Examination Scheme for Year 2021-22

Paper Code	Paper	Paper Name	Lectures and Practicals per week	University Exam. marks
	Theory	Food Preservation	4	100
	Practical	-do-	4	50
	*Project work	-do-	-	50

***Project work will be completely theoretical or survey basis depending on the individual institution where the courses are to be run and students have to prepare a project report and power point presentation. Based on that, evaluation will be done by internal faculty members.**

Proposed Syllabus of Food Preservation (Certificate Course)

Theory:

1. Introduction

Definition of food. Significance of food preservation. Present status of food processing industry in India. Functions of food. Importance of food in diet. Sources of plant and animal foods in India and their production.

2. Classification of Food

Classification of food on the basis of origin, functions, nutrients, pH & shelf life.

3. Food Composition and Uses

Cereals, pulses, oilseeds, fruits, vegetables, milk and milk products, egg, meat, fish. Composition of food: moisture, carbohydrate, protein, fat, vitamins, minerals, pigments. Nutritional status of various foods.

4. Physico-chemical and microbiological properties of food

pH, acidity, alkalinity, water quality, standard plate count.

5. Preservation and Quality

Causes of food spoilage, principles and methods of food preservation (an overview). Sampling and quality evaluation.

Instruction for paper setter of University Examination:

1) Total 8 questions are to be set homogeneously from the entire syllabus of 20 marks each and students have to attempt 5 question in total and question number 1 is compulsory

2) Question number 1 contains 5 parts of 4 marks each.

Practical

1. Determination of proximate composition of various foods:

(i) Moisture content
(ii) Carbohydrate and Sugars
(iii) Protein
(iv) Fat
(iv) Ash

2. Determination of physico-chemical properties of various foods

(i) pH
(ii) acidity
(iii) Total solids
(iv) Total soluble solids

3. Preparation of food products:

(i) Sauce
(ii) Squash
(iii) Jam
(iv) Bread
(v) Biscuit
(vi) Papad
(vii) Chips

Books:

S.No.	Title	Author	Edition	Publisher
1.	Food Science	N.N. Potter & J.H. Hotchkiss	5th	CBS

2.	Handbook of Analysis of Fruits and Vegetables	S. Ranganna	2nd	Tata-McGraw Hill
3.	Technology of Food preservation	N.W. Desrosier & C.N. Desrosier	4th	CBS

Subject: Add-On-Diploma Course on

"Food Preservation"

Scheme of Teaching

Examination Scheme for Year 2021-22

Paper Code	Paper	Paper Name	Lectures and Practicals per week	University Exam. marks
	Theory	Food Preservation	4	100
	Practical	-do-	4	50
	*Project work	-do-		50

***Project work will be completely theoretical or survey basis depending on the individual institution where the courses are to be run and students have to prepare a project report and power point presentation. Based on that, evaluation will be done by internal faculty members.**

Proposed Syllabus of Food Preservation (Diploma Course)

Theory:

1. **Introduction**

   Importance of food preservation, sources of plant and animal food in India, their production and extent of post harvest loss. Present status and scope of food processing industry in India, functions of food, importance of food in diet, nutritional requirement, calorie requirement for children and adults (male and female).

2. **Classification of food**

   Classification of food on the basis of origin, functions, nutrients, pH, shelf life.

3. **Food composition and uses**

   Composition of food: moisture, carbohydrate, protein, fat, vitamins, minerals, pigments. Cereals, pulses, oil seeds, fruits, vegetables, milk and milk products, egg, meat and fish. Different processed products from cereals, pulses, oilseeds, fruits, vegetables, milk and milk products, egg, meat and fish. Nutritional status of various food items.

4. **Physico-chemical and microbiological properties of food**

   pH, acidity, alkalinity, water quality, standard plate count, yeast and mould count, bacterial count in different food items.

5. **Preservation and Quality**

   Causes of food spoilage, principles and methods of food preservation (chemical preservation, thermal processing, canning, drying, freezing, refrigeration). Sampling and quality evaluation.

Instruction for paper setter of University Examination:

1) Total 8 questions are to be set homogeneously from the entire syllabus of 20 marks each and students have to attempt 5 question in total and question number 1 is compulsory

2) Question number 1 contains 5 parts of 4 marks each.

Practical

1. Determination of proximate composition of various foods:

(i) Moisture content
(ii) Carbohydrate & Sugars
(iii) Protein
(iv) Fat
(v) Ash

2. Determination of physico-chemical properties of various foods:

(i) pH
(ii) Acidity
(iii) Total solids
(iv) Total soluble solids

3. Preparation of food products:

(i) Pickles (ii) Squash
(iii) Sauce (iv) Ketchup
(v) Dried fruits (vi) Jam
(vii) Bread (viii) Biscuit
(ix) Papad (x) Chips

4. Analysis of food products:

(i) Milk and milk products (ii) Rice
(iii) Wheat flour (iv) Squash
(v) Jam (v) Jelly
(vii) Sauce (viii) Ketchup

Books:

S.No.	Title	Author	Edition	Publisher
1.	Food Science	N.N. Potter & J .H. Hotchkiss	5th	CBS
2.	Handbook of Analysis of Fruits and Vegetables	S. Ranganna	2nd	Tata-McGraw Hill
3.	Technology of Food Preservation	N.W. Desrosier & C.N. Desrosier	4th	CBS
4.	Food Analysis: Theory and Practice	Y. Pomeranz	3rd	CBS

Subject: Add-On-Advanced Diploma Course on

"Food Preservation"

Scheme of Teaching

Examination Scheme for Year 2021-2022

Paper Code	Paper	Paper Name	Lectures and Practicals per week	University Exam. marks
	Theory	Food Preservation	4	100
	Practical	-do-	4	50
	*Project work	-do-		50

***Project work will be completely theoretical or survey basis depending on the individual institution where the courses are to be run and students have to prepare a project report and power point presentation. Based on that, evaluation will be done by internal faculty members.**

Proposed Syllabus of Food Preservation (Advanced Diploma Course)

Theory:

1. Introduction

Status and scope of food processing industry in India with reference to global scenario, significance of food security and government policies.

2. Classification of food

Classification of food on the basis of origin, functions, nutrients, pH & shelf life.

3. Food Products

Method of manufacture of bread, biscuit, pasta, pizza, extruded products, puffed rice, beaten rice, corn flakes, pop corn, sprouted and roasted products, jam, jelly, marmalade, squash, cordials, sauce, ketchup, pasteurized milk, special milks, milk powder, paneer, cheese, cream, butter, ghee, sausage, salami, canned products.

4. Food Quality

Sensory evaluation, physico-chemical and microbial evaluation.

5. Methods of Food Preservation

Chemical preservation and preservatives, thermal processing, canning, drying, freezing, refrigeration.

6. Food Law &Standards: (PFA, BIS, MMPO, AGMARK)

Instruction for paper setter of University Examination:

1) Total 8 questions are to be set homogeneously from the entire syllabus of 20 marks each and students have to attempt 5 question in total and question number 1 is compulsory

2) Question number 1 contains 5 parts of 4 marks each.

Practical

1. Determination of proximate composition of various foods:

(i) Moisture content
(ii) Carbohydrate and Sugars
(iii) Protein
(iv) Fat
(v) Ash

2. Determination of physico-chemical properties of various foods:

(i) pH
(ii) Acidity
(iii) Total solids
(iv) Total soluble solids

3. Preparation of food products:

(i) Pickles
(ii) Squash
(iii) Sauce
(iv) Ketchup
(v) Dried fruits & vegetables
(vi) Jam
(vii) Bread
(viii) Biscuit
(ix) Papad
(x) Chips
(xi) Candy
(xii) Pastry

4. Analysis of food products:

(i) Milk and milk products
(ii) Rice
(iii) Wheat flour
(iv) Squash
(v) Jam
(vi) Jelly
(vii) Sauce
(viii) Ketchup

Books:

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5.	Preservation of Fruits & Vegetables	Girdhari Lal	1998	ICAR