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 2019-20
Subject: Add-On –Certificate Course on

“Food Preservation”

Scheme of Teaching

Examination Scheme for Year 2019-2020

<table>
<thead>
<tr>
<th>Paper Code</th>
<th>Paper</th>
<th>Paper Name</th>
<th>Lectures and Practicals per week</th>
<th>University Exam. marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theory</td>
<td>Food Preservation</td>
<td>4</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Practical</td>
<td>-do-</td>
<td>4</td>
<td>50</td>
</tr>
</tbody>
</table>
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

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.

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:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Title</th>
<th>Author</th>
<th>Edition</th>
<th>Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Food Science</td>
<td>N.N. Potter &amp; J.H. Hotchkiss</td>
<td>5th</td>
<td>CBS</td>
</tr>
<tr>
<td>3.</td>
<td>Technology of Food preservation</td>
<td>N.W. Desrosier &amp; C.N. Desrosier</td>
<td>4th</td>
<td>CBS</td>
</tr>
</tbody>
</table>
Subject: Add-On –Diploma Course on

“Food Preservation”

Scheme of Teaching

Examination Scheme for Year 2019-2020

<table>
<thead>
<tr>
<th>Paper Code</th>
<th>Paper</th>
<th>Paper Name</th>
<th>Lectures and Practicals per week</th>
<th>University Exam. marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theory</td>
<td>Food Preservation</td>
<td>4</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Practical</td>
<td>-do-</td>
<td>4</td>
<td>50</td>
</tr>
</tbody>
</table>
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.
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
   (vi) Jelly
   (vii) Sauce
   (viii) Ketchup

Books:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Title</th>
<th>Author</th>
<th>Edition</th>
<th>Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Food Science</td>
<td>N.N. Potter &amp; J.H. Hotchkiss</td>
<td>5th</td>
<td>CBS</td>
</tr>
<tr>
<td>3.</td>
<td>Technology of Food preservation</td>
<td>N.W. Desrosier &amp; C.N. Desrosier</td>
<td>4th</td>
<td>CBS</td>
</tr>
</tbody>
</table>
“Food Preservation”

Scheme of Teaching

Examination Scheme for Year 2019-2020

<table>
<thead>
<tr>
<th>Paper Code</th>
<th>Paper</th>
<th>Paper Name</th>
<th>Lectures and Practicals per week</th>
<th>University Exam. marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theory</td>
<td>Food Preservation</td>
<td>4</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Practical</td>
<td>-do-</td>
<td>4</td>
<td>50</td>
</tr>
</tbody>
</table>

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)
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
3. 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:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Title</th>
<th>Author</th>
<th>Edition</th>
<th>Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Food Science</td>
<td>N.N. Potter &amp; J.H. Hotchkiss</td>
<td>5th</td>
<td>CBS</td>
</tr>
<tr>
<td>3.</td>
<td>Technology of Food preservation</td>
<td>N.W. Desrosier &amp; C.N. Desrosier</td>
<td>4th</td>
<td>CBS</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>Girdhari Lal</td>
<td>1998</td>
<td>ICAR</td>
</tr>
</tbody>
</table>