

SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Revised Syllabus For

B.Sc. Part- II

**Food Science and Quality Control
(Semester- III and IV)**

Syllabus to be implemented from June 2019 onwards.

B.Sc. II Food Science and Quality Control

Semester III

Paper V –Food preservation

Unit 1: Introduction of preservation (8)

Introduction of preservation

General principles of preservation

Class I & Class II preservatives

Need and benefits of industrial food preservation

Unit2: Food preservation by high and low temperature (13)

: Methods of high temperature

preservation a)Blanching

b)Pasteurization

c)Canning

: Effect of heat on food

: Effect of heat on microorganisms

: Methods of low temperature preservation

a) Chilling

b) Refrigeration

c) Freezing

: Effect of low temperature on food

: Effect of low temper ature on microorganisms

Unit 3 : Food preservation by drying (8)

: Types of drying

: Changes during

drying 3.3: Effect of

drying on food

3.4: Advantages & Disadvantages

Unit 4: Food preservation by Irradiation (9)

Introduction & units of irradiation

Mechanism of a ction of radiation

Radiation process

Effect of radiation on food

Effect of radiation on microorganisms

Semester III

Paper VI – Fruits and Vegetable Processing

Unit 1: Introduction of fruits and Vegetables	07
1.1 Definition of rip ening	
1.2 Changes occurring during rip ening	
1.3 Textural changes	
1.4 Regulation of ripening	
Unit 2: Jams jellies and marmalade	12
2.1 definitions of jam jellies and marmalade	
2.2 Methods of preparation.	
2.3 Role of ingredients	
2.4 FPO specific ations and preservation	
Unit 3: Tomato products	13
3.1 Introduction	
3.2 Preparation of tomato juice, soup	
3.3 Preparation of tomato puree, ketchup	
3.4 preservation	
Unit 4: Fruit and vegetable beverages	07
Types of beverages	
preparation of squashes,syrup,cordials, RTS	
preservation	

Semster IV

Paper VIII – Cereals & Pulses Technology

Unit 1.	Introduction of Cereals & Pulses	07
1.1	Introduction	
1.2	Important cereals & pulses	
1.3	Morphological Characters of cereals and pulses	
1.4	Storage & handling	
Unit 2.	cerels technology	12
2.1	Composition and nutritive value	
2.2	Specific cerels and milling operation	
	a) Wheat	
	b) Rice	
	C) Corn	
2.3	Effect of Heat on Cereals	
2.4	Role of cereals in cookery	
2.5	Breakfast cereals	
Unit 3	Pulses Technology	13
3.1	Nutritive value of pulses	
3.2	Pulses pro cessing	
3.3	Role of pulses in cooking	
3.4	Effect of c ooking on pulses	
3.5	Toxic c onstituents	
3.6	Fa ctors affecting cooking quality of pulses	
Unit 4	Oil seed technology	07
	Introduction	
	Methods of oil extra ction	
	a) Rending	
	b) Mechanical press	
	c) Solvent extraction	

Recommended Books

1. Food Science by B. Srilakshmi, 2010
2. Food Microbiology by Frazier ,2009
3. Food Processing and Preservation by B. Shivshankar

Nature of theory Examination and distribution of marks:

Common Nature of Question Paper as Per Faculty of Science.

practical Course

List of Practical-

Practical based on paper V,VI,VII and VIII

- 1) Preparation of pineapple jam
- 2) Preparation of apple jam
- 3) Preparation of jelly
- 4) Preparation of marmalade
- 5) Preparation of amala candy
- 6) Preparation of pickles
- 7) Preparation of orange squash
- 8) Preparation soymilk
- 9) Preparation of flavored soya milk
- 10) Preparation of cake
- 11) Preparation of wheathalawa
- 12) Preparation of potato chips
- 13) Study of cutout examination of canned food
- 14) Determination of iodine value of an oil
- 15) Isolation of casein from milk
- 16) Determination of titratable acidity and pH of milk
- 17) Isolation of *Staphylococcus species* from food sample
- 18) Isolation of *Salmonella species* from food sample
- 19) Isolation of halophilic bacteria from food sample

- 20) Screening and isolation of amylase producing microorganisms
- 21) Extraction of gluten content from wheat flour
- 22) Extraction of fat by soxhlet method
- 23) Estimation of ash content of food sample
- 24) Estimation of total sugar by phenol H_2SO_4
- 25) Estimation of reducing sugar by DNSA method
- 26) Estimation of vitamin C by DCPIP method
- 27) Determination of saponification value of oil
- 28) Estimation of fructose by resorcinol method
- 29) Determination of an acid value of oil
- 30) Study of food preservation by low temperature
- 31) Estimation of starch by anthron method
- 32) Isolation of starch from potato
- 33) Study of thin layer chromatography
- 34) Study of paper chromatography
- 35) Study of physicochemical method of quality evaluation of food
- 36) Study of microscopic experiments of evaluation of food quality
- 37) Determination of pH value of various food samples
- 38) Estimation of protein by biuret method
- 39) Visit to rice milling industry
- 40) Visit to oil processing industry

41) Visit to fruit processing industry

Practical examination of 100 Marks –

1. The practical examination will be conducted on two days for not less than five hours on each day of practical examination.
2. Each candidate must produce a certificate from the head of the department in his / her college stating that he / she has completed practical course in satisfactory manner on the lines laid down from time to time by A.C. on the recommendation of BOS and that laboratory journal has been properly maintain.
3. Candidate has to visit at list two places of interest (food industry/ Dairy/research lab) and submit the report of their visit at the time of the examination. The report duly certified by head of the department.

Distribution of marks for practical examination –

Spotting.

10marks

Preparation of product.

20 marks

preparation of product.

20marks

Estimation of chemical components

15 marks

Determination of chemical component

15 marks

Journal

10m

arks

Tour report

10 marks

Total

100 marks