

**MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION,
MUMBAI -51**

1	Name of Syllabus	C.C. IN PRESERVATION OF FRUITS AND VEGETABLES (401105)																																								
2	Max.Nos of Student	25 students.																																								
3	Duration	6 Month																																								
4	Type	Part Time																																								
5	Nos Of Days / Week	6 Days																																								
6	Nos Of Hours /Days	4 Hrs																																								
7	Space Required	Workshop = 400 Sq feet Class Room = 200 Sq feet TOTAL = 600 Sq feet																																								
8	Entry Qualification	7 th passed																																								
9	Objective Of Syllabus/ introduction	There are enough fruits and vegetables available in our agricultural oriented country. Many fruits and vegetables are wasted due to lack of knowledge techniques transport facilities etc So this can prove a good course to avoid wastage as well as provide job opportunities to needy people students can also start a small unit of preservation after completion of this course and self employ themselves.																																								
10	Employment Opportunity	A) Self- Employment :- Small scale/ Cottage Industry of Food Preservation. E.g. Tomato Production Sauce, Ketchup, Pickles , chutney, jam and jelly etc. B) Wage-Employment :- Worker in food industry such as food industry of pickle , jam etc.																																								
11	Teacher’s Qualification	B. Sc Home science																																								
12	Training System	Training System Per Week <table><tr><td>Theory</td><td>Practical</td><td>Total</td></tr><tr><td>6 Hours</td><td>18 Hours</td><td>24 Hours</td></tr></table>						Theory	Practical	Total	6 Hours	18 Hours	24 Hours																													
Theory	Practical	Total																																								
6 Hours	18 Hours	24 Hours																																								
13	Exam. System	<table><tr><td>Sr. No.</td><td>Paper Code</td><td>Name of Subject</td><td>TH/PR</td><td>Hours</td><td>Max. Marks</td><td>Min. Marks</td></tr><tr><td>1</td><td>40110511</td><td>Method of Preservation</td><td>TH-I</td><td>3 hrs</td><td>100</td><td>35</td></tr><tr><td>2</td><td>40110521</td><td>Fundamental of Food Processing & Preservation</td><td>PR-I</td><td>6 hrs</td><td>200</td><td>100</td></tr><tr><td>3</td><td>40110522</td><td>Fruit, Beverage and Other Preparation</td><td>PR-II</td><td>3 hrs</td><td>100</td><td>50</td></tr><tr><td></td><td></td><td>Total</td><td></td><td></td><td>400</td><td>185</td></tr></table>						Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Min. Marks	1	40110511	Method of Preservation	TH-I	3 hrs	100	35	2	40110521	Fundamental of Food Processing & Preservation	PR-I	6 hrs	200	100	3	40110522	Fruit, Beverage and Other Preparation	PR-II	3 hrs	100	50			Total			400	185
Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Min. Marks																																				
1	40110511	Method of Preservation	TH-I	3 hrs	100	35																																				
2	40110521	Fundamental of Food Processing & Preservation	PR-I	6 hrs	200	100																																				
3	40110522	Fruit, Beverage and Other Preparation	PR-II	3 hrs	100	50																																				
		Total			400	185																																				

Sr. no.	THEORY - I Method of Preservation
1	History and development of Food Industry (Particular fruit and vegetable Preservation Industry) in India.
2	Availability of seasonal fruits and vegetables and their use and scope.
3	Microbiology- Moulds, yeast, Bacteria characteristics and in identification. Importance in preservation of fruits and vegetables.
4	Sanitary standards, personal hygiene
5	Principles of food preservation methods of food preservation.
6	Fruit Beverages- selection of fruit Principles and methods of preservation used. Used. Proportion of ingredients and their role in preservations. Precautions to be take while preparation preparation, Filling, Sealing and storing o Following products :- Squash, Syrup, Cordial, Crush, Nector.
7	Jams, Jellies, Marmalades- selection of fruit Principles and methods of preservation used. Proportion of ingredients precautions- Preparation, Preparation filling, sealing storing Different tests of doneness Faults in jam, jelly, marmalades making and remedies.
8	Candied peels, fruit toffee, crystaaised fruits , Glaced fruits, fruit cheese – Simple methods of preservation.
9	Sauces and wet chutneys- selection of fruit or vegetable Principles and Methods of food preservation applied Proportion of ingredients and their role precautions preparations preparation filling sealing storing Tomato, ketchup, puree.
10	Pickles – selection of fruit and vegetable Principles and methods of food preservation used. Classification . a) short duration b) Long duration precautions – preparation preparation filling packing storing, curing techniques , defects & remedies.
11	Dry chutneys and masalas – section of fruits vegetable spices and condiments principles and methods of preservation applied Raw material and their role in preservation Different methods of prepetition packaging and storing . their use in daily food preparation.
12	Dehydration- Classification- Natural Artificial Principles and Methods of preservation used preparation Tech niques storage of dehydrated products and its microbiology freezing – Techniques.
13	Food Additions a) Use of artificial colours and Flavourings b) use of other substitutes c) use of chemical preservatives d) merits and demerits of all three. Food grades and standards F. P. O. agg Mark.
14	Food Adulteration - ;identification, Food Laws. Prevention of food Adulteration Act.
15	Types of spoilages in preserved production causes control
16	Planning of food preservation production unit sources of finance specification and lay out of plang. Government licenses and other conditions required.

	PRACTICALS - I Fundamental of Food Processing & Preservation
1	Introduction of laboratory – Instruction for Working in food preservation laboratory. Rules for observing asepsis in the laboratory. Study of common food processing equipments instruments handling usage care & precautions.
2	Weights and Measures- Conversion of weights and measures.
3	Demonstration of Aseptic handling
4	Study of moulds yeast and bacteria associated with fruits and vegetables preservation through charts.
5	Fruit Beverages- squash, syrup cordial, crush, Juice Nector, Lemon, Orange, Sweet Lime, Pineapple, Mongo, Grapes, Jamun, Pashion fruit, Tomato etc.
6	Jams jellies, Marmalades, marambas, Mixed Fruits, Apple, Pieapple, Mongo, Strawberry, Wood Apple, Guvava, Jamun, Orange etc
7	Candied peels, fruit toffee, crystallized, glazed fruit, fruit cheese.
8	Sauces wet chutneys- Tomato, Chjilli, Tamarind Tomato ketchup, Tomato puree.
	PRACTICALS - II Fruit, Beverage and Other Preparation
9	Pickles-Mango, Lemon, Miaxed vegetan;e, chilli and others.
10	Dry chutneys and Masalas- Different varieties
11	Dehydration
12	Freezing
13	Detection of food aduleration
14	Detection of spoilage in foods
15	Visits to food preservation Industries-Report
16	Preparation of layout for a small food preservation un it – as project.

LIST OF TOOLS AND EQUIPMENTS

Sr.No.	NAME AND DISCRIPTION OF TOOLS	FOR REQUIRED
1.	Work Tables (either Aluminium or Kadappa)	15
2.	Weighing scale 10 kg. capacity.	02
3.	Refrigerator	01
4.	pulper	01
5.	Juice extracting machine	01
6.	Autoclave	01
7.	Botting Machine	01
8.	Corking Machine	01
9.	Sealing Machine	01
10.	refractometer	5 to6
11.	Thermometer (360)	5 to 6
12.	Jetmetres	2
13.	Chemical weighing balance	1
14.	sinks	5
15.	Gas burner	7

	SMALL EQUIPMENTS :-	
16.	VESSEL – STAINLESS STEEL (WITH LIDS) 20 to 25 lit. capacity 5 lit. capacity 2 lit. capacity. 1 lit. capacity.	02 05 15 15
17.	Stainless steel sieves	07
18.	Strainers (s.s. or Plastic) Big	07
19.	Knives (s.s. 6" blade)	15
20.	Wooden spoons	15
21.	Heart shaped s.s.spoons(big)	15
22.	Round-"- (medium)	15
23.	Katories	15
24.	Chopping/Cutting boards	07
25.	Measuring Glass	07
26.	Set of measuring spoons	07
27.	S. S. Thalís	07
28.	Glass nottles for jam	15
29.	Glass bottles for beverages	15
30.	S.S.Thalis	15
31.	Food Adulteration Kit	01
32.	S. S. Pealers	07
33.	Greater (S.S)	05
34.	Food mixer (Electric)	01
35.	Pressure Cooker	01
36.	Fruit trays (Plastic)	07
37.	Gas lighter	07
38.	Beaker	07

• **REFERENCE BOOKS :-**

1. FRAZIER W. C. Food Microbiology TATA 4th Ed Magraw – Hill Publishing Co-Ltd. New Delhi, 1978.
2. Lal Girdhari, et al, Preservation of Fruits and Vegetables Publication & Information Div , IACR, New Delhi 1986.
3. CFTRI Publication, Home Scale Processing & Preservation of Fruits & Vegetables the Wesley Press Mysore 1967.
4. S. C. Bhatai Canning and Preservation of fruits and Vegetables Publication Division, Small Scale Industry Research Industry.
5. Smt. Kukade S. et al Food Preservation manual . S. N. D. T. university Publication 1994.
6. Gopalan Indira & Mohan Ram. Fruits National Institute of Nutrition.
7. Smt. Radha Puri, jam, jelly, Marmalade.
8. Dr. Kadam S. S. & Shree Dhotre Vasant Phal Prakriya – ek Mahatvacha Laghu udyog.
9. Phal Prakriya – Joshi.
10. Sangeeta Pickles, chutneys, soups salads & Sauces.
