MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION, MUMBAI

1	Name of Syllabus	**C. C. IN MANUFACTURING OF SOAPS AND DETERGENTS (307116)**
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	S.S.C.
9	Objective Of Syllabus/ introduction	To provide systematic training making of soaps and detergents
10	Employment Opportunity	Job opportunities in soap industries and detergents, can set up his own unit
11	Teacher's Qualification	Graduate in Science (chemistry) with 1 year relevant exp .
12	Training System	**Training System Per Week** Theory: 6 Hours; Practical: 18 Hours; Total: 24 Hours
13	Exam. System	

Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Min. Marks
1	**30711611**	INTRODUCTION TO SOAP AND DETERGENTS	TH-I	3 hrs	100	35
2	**30711612**	SOAP AND DETERGENT MANUFACTURING	TH-II	3 hrs	100	35
3	**30711621**	INTRODUCTION TO SOAP AND DETERGENTS	PR-I	3 hrs	100	50
4	**30711622**	SOAP AND DETERGENT MANUFACTURING	PR-II	3 hrs	100	50
		Total			**400**	**170**

THEORY - I - INTRODUCTION TO SOAP AND DETERGENTS

Introduction of oils and fats, their sources, structure and composition of oils and fats, glycerides and fatty acids, their nomenclature, classification.
Natural sources of oils and fats, Position in India in relation to the world production of oils and fats.

Introduction of soaps, synthetic detergents, raw materials for soaps and their selection, selection of other auxiliary raw materials.
General principles of soap making, chemistry of soap boiling and saponification reaction, manufacture of soap (cold, hot and semi boiled process), bleaching of soap, manufacture of toilet soap.

Various types of detergents, classification of detergents (anionic, cationic, nonionic, amphoterics), biodegradability.
Inorganic compounds of detergents (builder & other additives, phosphates, silicates, zeolites, etc)

Synthetic detergents (raw materials)
i. Organic raw materials for manufacturing of fatty acids, olefins, alkylbenzene, methyl esters, fatty amines, ethylene oxide, propylene oxide sources and manufacture.
ii. Inorganic raw material for sulphonation viz; sulphuric acid, sulphonic acid, oleum, sulphur trioxide, chlorosulphonic acid.
iii. Sulphonation of organic raw materials like fatty acids, fatty acids ethoxylates plants and processes.
iv. Sulphonation of alkylbenzene, olefins & vegetable oils, plants and processes.

PRACTICAL - I - INTRODUCTION TO SOAP AND DETERGENTS

Determination of physico-chemical characteristics of oil and fats

a. Moisture content

b. Acid value

c. Iodine value

d. Saponification reaction and Saponification value

Manufacture of liquid soap (shampoo) and laundry soap.

Project Work

Industrial training for one month duration.

THEORY - II - SOAP AND DETERGENT MANUFACTURING:

Classification and chemistry of soaps, classification and
chemistry of non soapy detergents, manufacture of soaps (cold, semi boiled, hot process).

Fatty raw materials for soaps:
Oils for soap making, pretreatment and up gradation of oils & fats, technology of fat splitting and distillation, handling and storage of oils and fats.

Technology of soap manufacturing:
Soap manufacture, glycerine recovery, manufacture of laundry and toilet soaps.

Technology of manufacturing of synthetic detergents

Manufacture of detergents powders (dry mixing, spray drying, agglomeration, combination of spray drying with other processes), manufacture of detergent cakes and liquid products.

General principles of soap making, chemistry of soap boiling, saponification reaction, raw materials and their selection, soap making by continuous process.
Glycerine recovery: Introduction, glycerine recovery process, refining of crude glycerine.
Manufacture of shaving soaps, liquid soaps, medicated soaps, laundry soaps.

Detergents classification, raw materials for synthetic detergents, manufacture of detergent powders, liquid detergents, detergent bars, fabric softeners, additives to detergents, finishing of detergents.
Introduction of various surface cleansers e.g. glass cleansers, oven cleansers, dish washing agents.

Packaging of soaps and detergents, management of soaps and detergents, safety, pollution and effluents, conditioning.

PRACTICAL - II - SOAP AND DETERGENT MANUFACTURING

Determination of total fatty matter, free caustic alkali, chloride & moisture and volatile matter in the soaps.

Manufacture of detergents.

Identification test and detection of adulteration of oils and fats.

An industrial tour

Determination of active matter, moisture of detergent powders and cakes, pH of the solution.

Manufacture of soaps like caustic soap, medicated soap, shaving soap and soft soap.

Manufacture of detergents.

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