

As Per NEP 2020

AC: 20/04/2024

Item No: 6.6 Sem. II (11b)

University of Mumbai



Syllabus for Basket of OE	
Board of Studies in Chemistry	
UG First Year Programme	
Semester	II
Title of Paper	Credits 2/ 4
Chemistry in Cosmetics	2
	2
	2
	2
From the Academic Year	2024-2025

Semester II
Chemistry in Cosmetics

Sr. No.	Heading	Particulars
1	Description of the Course	The course aims to provide brief information about commonly used cosmetics
2	Vertical	Open Elective (OE)
3	Type	Theory
4	Credits	2 Credits (1 Credit = 15 Hours for Theory)
5	Hours Allotted	30 Hours
6	Marks Allotted	50 Marks
7	Course Objectives (CO): CO 1: To give an overview of the commonly used chemicals in various types of cosmetics along with their roles CO 2: To disseminate knowledge on chemical composition of the components of the cosmetics CO 3: To give brief idea about possible health hazards associated with cosmetics	
8	Course Outcomes (OC): Students shall be able to- OC 1: Enlist the commonly used chemicals used in cosmetics OC 2: Explain the role of the commonly used chemicals in cosmetics OC 3: Understand the labelling of cosmetic formulation and critically analyse the possible merits and demerits of the same	

9	Modules
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Semester	Module	Description	Credits
II	I	Introduction to Cosmetics, Possible Health Hazards due to Cosmetics, Emollients and Colourants	02

	II	Gelling Agents (Thickeners), Surfactants, Antioxidants and Preservatives	
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Module I	Introduction to Cosmetics, Possible Health Hazards due to Cosmetics, Emollients and Colourants (15L)
1.1	Introduction to Cosmetics and Possible Health Hazards due to Cosmetics (07L) Introduction to Cosmetics (03L) • Types of cosmetics based upon the site of application: Face and skin cosmetics, Nail cosmetics, Eye cosmetics, Lip cosmetics, Hair cosmetics (01L) • Types of cosmetics based on physical state with examples: Solid, Semi-solid and Liquid (01L) • Chemicals used in cosmetics: Emollients, Colourants, Thickeners, Surfactants, Antioxidants and Preservatives, UV filters and Fragrances (01L) Possible Health Hazards due to Cosmetics (04L) • Skin Related Effects: Allergies and skin sensitization, Skin irritation, Pore clogging, Skin infection, Eye irritation (01L) • Hair Related Effects: Dryness and brittleness, Scalp irritation, Clogging of hair follicles (01L) • Overview of carcinogenic ingredients (01L) • Rational use of cosmetics to minimize health hazards (01L)
1.2	Emollients and Colourants (08L) Emollients (04L) • Concept of emollients in cosmetic formulations (01L) • Types of emollients: Natural versus synthetic (01L) • Commonly used emollients: Fatty acids, Triglycerides, esters and their application in various products (02L)

	Colourants (04L) • Concept of colourants and types of colourants: Pigments verses dyes (01L) • Commonly used pigments and their application in various products (01L) • Commonly used dyes and their application in various products (01L) • Hazardous contaminants in colorants and their toxicities (01L)
Module II	Gelling Agents (Thickeners), Surfactants, Antioxidants and Preservatives (15L)
2.1	Gelling Agents (Thickeners) and Surfactants (07L) Gelling Agents (Thickeners) (04L) • Role of gelling agents in cosmetics (02L) • Commonly used thickeners such as gums, polymers and clays and their application in various products (02L) Surfactants (03L) • Role of surfactants in cosmetics (01L) • Commonly used surfactants and their application in various products (02L)
2.2	Antioxidants and Preservatives (08L) • Introduction to antioxidants and preservatives in cosmetics (04L) • Role of preservatives in preventing microbial growth and contamination (03L) • Merits and demerits of Parabens (01L)

References Books and Articles:

1. Harry's Cosmeticology, Wilkinson, Moore, Seventh Edition, George Godwin
2. Cosmetics – Formulations, Manufacturing and Quality Control, P.P. Sharma, Vandana Publications Pvt. Ltd., Delhi.
3. Text book of Cosmeticology by Sanju Nanda & Roop K. Khar, Tata Publishers
4. AK Mohiuddin., Chemistry behind Cosmetics: An Extensive Review, Sch Int J Chem Mater Sci, May 2019; 2(4): 54-79, DOI: 10.36348/sijcms.2019.v02i04.003
5. Gavazzoni Dias MF. Hair cosmetics: an overview. Int J Trichology. 2015 Jan-Mar;7(1):2-15. doi: 10.4103/0974-7753.153450. PMID: 25878443; PMCID: PMC4387693.
6. Tushar N. Sonawane, Dhananjay D. Chaudhari, Satish D. Mali, Azam Z. Shaikh. A Short Review on skin cares Cream. Research Journal of Topical and Cosmetic Sciences. 2021; 12(1):1-3. doi: 10.52711/2321-5844.2021.00001

QUESTION PAPER PATTERN

Theory	Credit	No. of Hours	Marks
	02	30	50

Internal Continuous Assessment: 40% (20 Marks)	External, Semester End Examination: 60% Individual Passing in Internal and External Examination (30 Marks)
Continuous Evaluation through: Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc.(at least 3)	As per the Format of Question Paper
Format of Question Paper: for the final examination	

Question Paper Pattern for 30 Marks:

Semester End Theory Examination:

1. Duration - These examinations shall be of **one-hour** duration.
2. Theory question paper pattern:
 - a. There shall be **02** questions, Question 1 carries 15 Marks based on Unit I and Question 2 carries 15 Marks based on Unit II.
 - b. All questions shall be compulsory with internal choice within the questions.

Question	Particulars	Marks	Questions Based on
Q.1	A) Objective Questions 06 out of 10	06	Unit I
	B) Subjective Questions 03 out of 05	09	
Q.2	A) Objective Questions 06 out of 10	06	Unit II
	B) Subjective Questions 03 out of 05	09	
Total		30	---

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