

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Semester - I) (New) (NEP CBCS) Examination:
October/November – 2025
English/ English for communication (ENG-101)**

Day & Date: Saturday, 01-11-2025
Time: 09:00 AM To 10:30 AM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives from the following.

06

- 1) Communication that uses spoken or written words is called _____.
 - a) Non-verbal communication
 - b) Verbal communication
 - c) Visual communication
 - d) Informal communication
- 2) Which of the following is an example of non-verbal communication?
 - a) A conversation on the telephone
 - b) A written letter
 - c) A thumbs-up gesture
 - d) An email
- 3) Effective communication leads to _____.
 - a) Confusion
 - b) Better relationships and efficiency
 - c) Misunderstanding
 - d) Isolation
- 4) Which of the following is important for an interview?
 - a) Memorizing facts
 - b) Good body language and communication
 - c) Speaking continuously
 - d) Wearing expensive clothes
- 5) Which of the following is NOT a soft skill relevant to interviews?
 - a) body language
 - b) Communication
 - c) Adaptability
 - d) Typing speed
- 6) What is the primary purpose of a group discussion?
 - a) To argue with others
 - b) To show dominance
 - c) To exchange ideas and assess communication skills
 - d) To make friends

Q.2 Short Answers. (Any Four) 06

- a) How does communication help in building relationships?
- b) Define the concept of Upward communication.
- c) What does "clarity" in communication mean?
- d) What are the skills essential for a successful group discussion?
- e) Write a note on the dos and don'ts of an interview.
- f) What is group discussion?

Q.3 Answer the following. (Any One) 06

- a) Write a note on the difference between formal and informal communication.

OR

- b) What is the importance of the 7Cs for effective communication?

Q.4 Answer the following. (Any One) 12

- a) Comment on Techniques of group discussion.

OR

- b) What are the skills essential to face an interview?

Seat No.	
----------	--

Set P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology) (Sem - I)
(New) (NEP CBCS) Examination: October/November - 2025
Constitution of India/ Indian Constitution and Democracy (ICD-101)**

Day & Date: Monday, 03-11-2025
Time: 09:00 AM To 10:30 AM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose the correct alternative: 06

- 1) Who was the chairman of the Drafting Committee of the Indian Constitution?

a) Rajendra Prasad	b) Jawaharlal Nehru
c) B.R. Ambedkar	d) Sardar Patel
- 2) The Preamble to the Constitution starts with: _____.

a) India is a Republic	b) We, the People of India
c) In the name of God	d) By the authority of Parliament
- 3) Which article of the Constitution guarantees the Right to Equality?

a) Article 14	b) Article 21
c) Article 19	d) Article 25
- 4) How many Fundamental Duties are there in the Indian Constitution?

a) 10	b) 11
c) 12	d) 9
- 5) Which one is not a type of democracy?

a) Direct	b) Indirect
c) Monarchy	d) Presidential
- 6) SVEEP is related to: _____.

a) Pollution control	b) Water conservation
c) Voter education	d) Rural employment

Q.2 Answer the questions. (Any Three) 06

- a) Define the Preamble.
- b) What do you mean by fundamental rights?
- c) Write any two characteristics of democracy.
- d) Mention any two objectives of the Election Commission.
- e) What do you understand by good governance?

Q.3 Answer the questions. (Any Two) 06

- a) Write a short note on the importance of Fundamental Duties.
- b) Explain the values expressed in the Preamble.
- c) Describe the role of the Election Commission in strengthening democracy.

Q.4 Answer the questions. (Any Two) 06

- a) Discuss the classification of democracy.
- b) State the salient features of good governance.
- c) Describe the voting rights of Indian citizens.

Q.5 Answer the questions. (Any One) 06

- a) Explain the Fundamental Rights in detail.
- b) Discuss the structure and significance of the Election Commission of India.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - I) (New) (NEP CBCS) Examination: October/November – 2025
Indian Knowledge System/ General IKS (CT01109)**

Day & Date: Tuesday, 04-11-2025
Time: 09:00 AM To 10:30 AM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose the correct alternative (MCQs):**06**

- 1) What is the primary goal of Indian Knowledge Systems (IKS)?
 - a) Accumulating facts
 - b) Achieving self-realization and liberation
 - c) Gaining material wealth
 - d) Mastering sciences and arts
- 2) Which Indian philosopher is known for writing the "Ashtadhyayi"?
 - a) Kautilya
 - b) Aryabhata
 - c) Panini
 - d) Jivaka
- 3) Which metal alloy was developed in India, known for its exceptional quality?
 - a) Bronze
 - b) Wootz steel
 - c) Cast iron
 - d) Copper
- 4) Which traditional practice in India emphasizes the cultivation of medicinal plants for sustainability?
 - a) Organic farming
 - b) Ayurveda
 - c) Sacred groves
 - d) Both b and c
- 5) What is the core concept of health in the Indian Knowledge System (IKS)?
 - a) The absence of disease
 - b) The balance between the body, mind, and environment
 - c) Physical fitness
 - d) Mental clarity
- 6) Which Indian institution had the Dharmaganja library, one of the largest in the world?
 - a) *Takṣaśīlā*
 - b) Patanjali Academy
 - c) *Nālandā*
 - d) University of Banaras

- Q.2 Answer the following. (Any Three) 06**
- a) What is the significance of the concept of 'moksha' in Indian philosophy?
 - b) What role did sacred groves play in environmental conservation in India?
 - c) Explain the use of natural dyes in ancient India and mention one important dye.
 - d) Describe the primary goal of Ayurveda and its approach to health.
 - e) Which Indian mathematician introduced the concept of zero, and what was its significance?
- Q.3 Answer the following (Any Two). 06**
- a) Discuss the distinctive features of Non-Vedic and Vedic philosophical systems.
 - b) What are the contributions of Aryabhata to mathematics and science?
 - c) How did notable alumni of Nalanda contribute to the spread of knowledge in ancient times?
- Q.4 Answer the following. (Any Two) 06**
- a) Explain the principles of sustainability in ancient Indian agricultural practices.
 - b) How did ancient Indian scholars contribute to the understanding of motion and gravity? Discuss Brahmagupta's and Bhaskara II's ideas.
 - c) Discuss the significance of plants in Indian life sciences, including their medicinal and ecological roles.
- Q.5 Answer the following.(Any One) 06**
- a) Discuss the role of *Takṣaśīlā* and *Nālandā* in the spread of education and knowledge in ancient India
 - b) Explain the traditional Indian approach to environmental sustainability.

Seat No.	
----------	--

Page 1 of 2

- Q.3 Answer the following. (Any Two) 06**
- a) Define phenol, explain Claisen rearrangement reaction.
 - b) Define alcohol and explain the uses of glycerol in cosmetics.
 - c) Explain the uses of silicon.
- Q.4 Answer the following. (Any Two) 06**
- a) Explain the term Elastomer.
 - b) Explain the classification of polymer on the basis of origin.
 - c) Differentiate between the organic and inorganic polymer.
- Q.5 Answer the following. (Any One) 06**
- a) Define the phenol & explain different reactions of phenol.
 - b) Explain in detail classification of inorganic polymer.

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - I) (New) (NEP CBCS) Examination: October/November - 2025
Cosmetic Technology - I (CT01101)**

Day & Date: Wednesday, 29-10-2025
Time: 11:00 AM To 12:30 PM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Draw neat, labelled diagram wherever necessary.
3) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives.

06

- 1) Which labelling information is mandatory on cosmetic packaging?
 - a) Product Name
 - b) Manufacturer's details
 - c) Ingredient list
 - d) All of the above
- 2) In terms of sustainability, which type of packaging is considered the most environmentally friendly?
 - a) Single-use plastic
 - b) Glass
 - c) Multi-layer plastic
 - d) Metal
- 3) A surfactant used for detergency purposes typically has an HLB value of _____.
 - a) 1-3
 - b) 4-6
 - c) 7-9
 - d) 13-16
- 4) In a biphasic dosage form, the 2 Phases typically consist of _____.
 - a) Solid and gas
 - b) Liquid and gas
 - c) Two immiscible liquids
 - d) Solid and liquid
- 5) What are cosmeceuticals?
 - a) Prescription medications
 - b) Over-the-counter drug
 - c) Cosmetic products with biologically active ingredients
 - d) Dietary supplements
- 6) Which of the following oils is commonly used as an emollient in natural skin care products?
 - a) Mineral Oil
 - b) Coconut oil
 - c) Ethanol
 - d) Isopropyl alcohol

Q.2 Answer the following. (Any Three)

06

- a) Explain types of skin.
- b) Explain in brief about hypertrophy in solubility enhancement.
- c) Write a note on the applications of surfactants in cosmetics.
- d) Write a note on the glass as packaging material.
- e) Write a note on humectants used in cosmetics.

- Q.3 Answer the following. (Any Two) 06**
- a) Explain HLB scale and give its significance.
 - b) Define Biphasic dosage form and add note on emulsion and suspension.
 - c) Define Cosmetic and write its classification with examples.
- Q.4 Answer the following. (Any Two) 06**
- a) Define cosmetic, misbranded cosmetic, and spurious cosmetics as per D and C act.
 - b) Write a note on the monophasic dosage form.
 - c) Discuss about the labelling requirements of cosmetics.
- Q.5 Answer the following. (Any One) 06**
- a) Explain the type of containers in cosmetic packaging.
 - b) Write about solubility enhancement techniques.

Seat No.	
-------------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - I) (New) (NEP CBCS) Examination: October/November – 2025
Herbal Cosmetics - I (CT01102)**

Day & Date: Friday, 31-10-2025
Time: 11:00 AM To 12:30 PM

Max. Marks: 30

- Instructions:** 1) All questions are compulsory.
2) Draw neat labelled diagrams wherever necessary.
3) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives from the options. 06

- 1) Which of the following is an Example of organized drug.

a) Latex	b) Extract
c) Root	d) All of the above

- 2) The Greek word "kosmoticos" means: _____.

a) Skilled in the use cosmetics	b) Fashion
c) Skilled in hair care	d) None of the above

- 3) _____ is not hydrolysed into simpler units.

a) Oligosaccharides	b) Polysaccharides
c) Monosaccharaides	d) Both A and B

- 4) _____ is obtained from wool of sheep.

a) Spermaceti	b) Teel oil
c) Wax	d) lanolin

- 5) Botanical type of crude drug classification is also known as _____.

a) Morphological classification
b) Alphabetical classification
c) Taxonomical classification
d) pharmacological classification

- 6) _____ Herbs lives more than three season.

a) Biennial	b) Annual
c) Perennial	d) None of the above

Q.2 Answer the Following. (Any Three) 06

- a) Define carbohydrates.
- b) Explain Uses of heena in cosmetics.
- c) Define organized herbs.
- d) Write the uses of starch in cosmetics.
- e) Explain morphology of leaf.

Q.3 Answer the following. (Any Two) 06

- a) Explain in detail about unorganized drug.
- b) Explain morphological and chemotaxonomical classification of drug with their merits and demerits.
- c) Explain in detail about herbs.

Q.4 Answer the following (Any Two) 06

- a) Write down the history and development of herbal cosmetics.
- b) Write down the identification test for carbohydrates.
- c) Write down the source, chemical constituent and preparation of Brazil wax.

Q.5 Answer the following (Any One) 06

- a) Write down the source, chemical constituent and uses of rice starch and maize starch.
- b) Write down the source, chemical constituent of and preparation of olive oil and teel oil.

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - I) (New) (NEP CBCS) Examination: October/November - 2025
Cosmetic Chemistry – I (CT01103)**

Day & Date: Monday, 03-11-2025
Time: 11:00 AM To 12:30 PM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives. (MCQ) 06

- 1) Conversion of mixture of substances into two or more distinct products is known as _____.
 - a) qualitative analysis
 - b) separation
 - c) quantitative analysis
 - d) evaporation
- 2) Molecules are combination of _____.
 - a) atoms
 - b) metals
 - c) ions
 - d) elements
- 3) The synthetic method is said to be best when atom economy is _____.
 - a) 0%
 - b) 50%
 - c) 100%
 - d) none of the above
- 4) A primary standard is a reagent that is characterized by _____.
 - a) high purity
 - b) low hygroscopicity
 - c) high Stability
 - d) all of the above
- 5) _____ is the largest block in periodic table.
 - a) s
 - b) d
 - c) p
 - d) f
- 6) Ozone layer absorb _____ radiations.
 - a) visible
 - b) infrared
 - c) UV
 - d) X-ray

Q.2 Short Notes. (Any Three) 06

- a) Chemistry and its importance.
- b) Atom.
- c) Hazardous elements to the environment.
- d) Covalent bond.
- e) Analytical chemistry.

- Q.3 Answer the following. (Any Two) 06**
- a) Define Molecule. Explain various types of Molecules.
 - b) Explain Solutions and their characteristics.
 - c) Explain Classifications of elements in periodic table.
- Q.4 Answer the following (Any Two) 06**
- a) Define Mixture. Explain their types.
 - b) Define chemical formula. Explain various types of chemical formula.
 - c) Give advantages and disadvantages of green chemistry.
- Q.5 Answer the following (Any One) 06**
- a) Explain in detail, photosynthesis process.
 - b) Explain various periodic properties of elements.

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - II) (New) (NEP CBCS) Examination: October/November - 2025
Human Anatomy (CT01208)**

Day & Date: Tuesday, 28-10-2025
Time: 09:00 AM To 10:30 AM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Draw neat labelled diagrams wherever necessary.
3) Figures to the right indicate full marks.

Q.1 Multiple choice questions.

06

- 1) _____ is called as power house of the cell.
 - a) Mitochondria
 - b) Ribosome
 - c) Nucleus
 - d) Peroxisome
- 2) _____ is also known as fat cells.
 - a) Leukocytes
 - b) Adipocytes
 - c) Melanocytes
 - d) Keratinocytes
- 3) Blood group O has _____.
 - a) Antigen A
 - b) Antigen B
 - c) Antigen A and B
 - d) Neither A nor B antigen
- 4) Blood group AB makes _____.
 - a) Anti-B
 - b) Anti-A
 - c) Neither anti-A nor anti-B
 - d) Both anti-A nor anti-B
- 5) The protein Keratin is present in _____.
 - a) Hair
 - b) Nail
 - c) Sweat glands
 - d) Both a and b
- 6) _____ keeps the hair soft and pliable and gives it a shiny appearance.
 - a) Sebum
 - b) Sweat
 - c) Keratin
 - d) Melanin

Q.2 Answer the following. (Any Three)

06

- a) Define cell and tissue.
- b) Give types of tissue.
- c) Define blood coagulation.
- d) Give different types of blood groups.
- e) Enlist different components of skin.

- Q.3 Answer the following. (Any Two)** **06**
- a) Draw neat labelled diagram of Hair.
 - b) Draw neat labelled diagram of Nail.
 - c) Draw neat labelled diagram of Teeth.
- Q.4 Answer the following. (Any Two)** **06**
- a) Write a note on sweat gland.
 - b) Write a note on sebaceous gland.
 - c) Write a note on rhesus system.
- Q.5 Answer the following. (Any One)** **06**
- a) Explain in detail process of blood coagulation.
 - b) Explain in detail about pigment responsible for the skin.

Seat No.	
-------------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - II) (New) (NEP CBCS) Examination: October/November – 2025
Analytical Chemistry (CT01207)**

Day & Date: Thursday, 30-10-2025
Time: 09:00 AM To 10:30 AM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Draw neat labelled diagrams wherever necessary.
3) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives.

06

- 1) Primary cells are electrochemical device that convert ____ energy into electric energy.

a) mechanical	b) electrostatic
c) Chemical	d) heat
- 2) In colorimeter the internal thickness of the cell in which the test sample is taken is called as _____.

a) Absorptivity	b) Absorbance
c) Molar absorptivity	d) Path length
- 3) The type of the electrode that represent the potential changes in an ion species that is present in the solution in which it immersed is the ____ electrode.

a) Reference	b) Indicator
c) Gas sensing	d) Both A & B
- 4) The glass electrode of the pH meter contains ____ electrolyte solution.

a) Saturated KC1	b) Dilute KC1
c) Dilute HC1	d) None of these
- 5) ____ invented the pH scale.

a) Sorenson	b) Franklin
c) Henry	d) Rontgen
- 6) Lamberts law is related to the ____ through which light is passing.

a) thickness of the medium
b) thickness of the cell
c) concentration of the medium
d) none of these

- Q.2 Answer the following. (Any Three) 06**
- a) Explain the Calomel electrode.
 - b) Explain the basic principles of electroplating.
 - c) Define Faradays law.
 - d) Define Standard electrode potential.
 - e) Define the term Electrolysis.
- Q.3 Answer the following. (Any Two) 06**
- a) Explain in detail Applications of Colorimeter.
 - b) Write a note on Glass electrode.
 - c) Explain in detail anodising.
- Q.4 Answer the following (Any Two) 06**
- a) Write a note on pH meter.
 - b) Explain in detail Galvonic cell.
 - c) Write a note on principle of Colorimeter.
- Q.5 Answer the following (Any One) 06**
- a) Explain the component of pH electrode in detail with neat labelled diagram.
 - b) Explain in detail electroplating of nickel and chromium on metal surface.

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - II) (New) (NEP CBCS) Examination: October/November - 2025
English/ English for communication (ENG-201)**

Day & Date: Friday, 07-11-2025
Time: 09:00 AM To 10:30 AM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose the correct alternative from the following:

06

- 1) What is the first step in the listening process?
 - a) Evaluating
 - b) Understanding
 - c) Responding
 - d) Receiving
- 2) Empathetic listening involves _____.
 - a) Listening for entertainment
 - b) Listening to judge the speaker
 - c) Understanding the speaker's emotions
 - d) Ignoring the speaker's feelings
- 3) Which action demonstrates active listening?
 - a) Nodding and asking follow-up questions
 - b) Looking away while the speaker is talking
 - c) Checking your phone during the conversation
 - d) Interrupting the speaker
- 4) What is the main purpose of a newspaper report?
 - a) To entertain the reader
 - b) To inform the public about current events
 - c) To give opinions only
 - d) To advertise products
- 5) What is the main difference between "CC" and "BCC" in an email?
 - a) CC recipients are hidden, and BCC recipients are visible
 - b) BCC sends attachments, CC does not
 - c) CC recipients are visible to all; BCC recipients are hidden from other recipients
 - d) There is no difference
- 6) What is the primary purpose of a blog post?
 - a) To sell products only
 - b) To share information, opinions, or experiences
 - c) To write formal reports
 - d) To publish research papers

Q.2 Short Answers. (Any Three) 06

- a) How does the "understanding" stage in the listening process work?
- b) What is critical listening, and when is it used?
- c) Differentiate between hearing and listening.
- d) Write a note on the benefits of email writing.
- e) What is the function of a headline in a news report?
- f) List two major benefits of blog writing.

Q.3 Answer the following. (Any One) 06

- a) Comment on the importance of Listening Skills.

OR

- b) Explain the different types of listening. How do they serve different purposes in communication?

Q.4 Answer the following. (Any One) 12

- a) You are M.Tech student at Shivaji University, write an email to your Vice-Chancellor, requesting permission to organize a quiz competition in the University auditorium.

OR

- b) What is a blog? How will you create your blog?

Set

P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - II) (New) (NEP CBCS) Examination: October/November – 2025
Cosmetic Technology – II (CT01201)**

Day & Date: Friday, 31-10-2025
Time: 11:00 AM To 12:30 PM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Draw neat labelled diagrams wherever necessary.
3) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives from the options.

06

- 1) Abbe's refractometer does not consist of _____.
 - a) Telescope
 - b) Graduated scale
 - c) Eyepiece
 - d) Refracting prism
- 2) Which of the following dosage forms contains the highest proportion of solid content?
 - a) Ointment
 - b) Cream
 - c) Paste
 - d) Jelly
- 3) Talcum powder is primarily composed of _____.
 - a) Zinc oxide
 - b) Kaolin
 - c) Magnesium silicate
 - d) Starch
- 4) Which of the following tests is used to identify the type of emulsion?
 - a) Flame test
 - b) Conductivity test
 - c) UV spectrophotometry
 - d) Titration
- 5) In a flocculated suspension, the sediment formed _____.
 - a) Is hard and difficult to redisperse
 - b) Is compact with clear supernatant
 - c) Does not settle at all
 - d) Is loose and easy to redisperse
- 6) What is the primary purpose of adding preservatives to pharmaceutical and cosmetic products?
 - a) To improve color
 - b) To prevent microbial growth
 - c) To enhance fragrance
 - d) To increase solubility

Q.2 Answer the following. (Any Three)

06

- Write down Uses and Safety aspects of preservatives used in cosmetic formulations.
- Explain Flocculated and Deflocculated suspensions.
- Write down the characteristics of Powders.
- Write a note on Optical rotation.
- Distinguish between Ointment and Paste.

- Q.3 Answer the following. (Any Two) 06**
- a) Define Powder. Classify them and elaborate Face powder.
 - b) Classify Emulsion and discuss preparation methods of Emulsion.
 - c) Write a note on preparation methods of Creams.
- Q.4 Answer the following (Any Two) 06**
- a) Explain in brief Dielectric constant.
 - b) Write a note on stability of Suspensions.
 - c) Explain factors influencing the effectiveness of Preservatives.
- Q.5 Answer the following (Any One) 06**
- a) Define Ointment. Classify them and discuss in detail Ointment bases.
 - b) Explain Dipole moment and Refractive index.

Seat No.	
-------------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - II) (New) (NEP CBCS) Examination: October/November - 2025
Herbal Cosmetics – II (CT01202)**

Day & Date: Monday, 03-11-2025
Time: 11:00 AM To 12:30 PM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Draw neat, labelled diagrams wherever necessary.
3) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives.

06

- 1) _____ is primarily responsible for the astringent property of Black Catechu.

a) Tannins	b) Alkaloids
c) Saponins	d) Flavonoids

- 2) Major chemical constituent of Talc is _____.

a) Calcium carbonate	b) Magnesium silicate
c) Sodium chloride	d) Potassium nitrate

- 3) _____ Example of unintentional adulteration.

a) Mixing exhausted saffron with fresh saffron.
b) Presence of sand and stones in natural drugs
c) Addition of artificial color
d) Mixing synthetic drugs into natural drugs

- 4) Kaolin is primarily composed of _____.

a) Aluminium silicate	b) Calcium carbonate
c) Magnesium sulphate	d) Iron oxide

- 5) Resins are primarily classified based on their _____.

a) Botanical origin
b) Chemical nature and method of formation
c) Color and odour
d) Geographic location

- 6) The chief chemical constituent of Benzoin is _____.

a) Benzoic acid and cinnamic acid esters
b) α -Pinene
c) Resino-tannols
d) Boswellic acid

- Q.2 Answer the following. (Any Three) 06**
- a) Define Resins.
 - b) Explain the role of Fuller's earth.
 - c) Define Tannins.
 - d) Enlist the methods of adulterations.
 - e) Write down the biological source and geographical source of Pale catechu.
- Q.3 Answer the following. (Any Two) 06**
- a) Explain the classification of Tannins.
 - b) Write down the biological source, chemical constituent and uses Bentonite.
 - c) Explain in detail about Balsam of Tolu.
- Q.4 Answer the following (Any Two) 06**
- a) Define Adulteration and explain types of adulterations in natural drugs.
 - b) Explain in detail about biological source, chemical constituents and uses of Calamine.
 - c) Explain in detail about Benzoin.
- Q.5 Answer the following (Any One) 06**
- a) Explain in detail about physical evaluation method and microscopic evaluation method for detection of adulteration.
 - b) Write down the biological source, geographical source, chemical constituent and uses of Indian goose berry.

Seat
No.Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - II) (New) (NEP CBCS) Examination: October/November – 2025
Cosmetic Chemistry - II (CT01203)**

Day & Date: Thursday, 06-11-2025
Time: 11:00 AM To 12:30 PM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives from the options.**06**

- 1) Alkaline solutions have pH value _____.
 - a) less than 7
 - b) 7
 - c) more than 7
 - d) can't define
- 2) pH has unit _____.
 - a) mol/L
 - b) $-\log[H^+]$
 - c) No unit
 - d) mL
- 3) A chemical substance that is composed of a particular set of molecules or ions that are chemically bonded with each other is called _____.
 - a) Pure chemical substance
 - b) Impurities
 - c) Official substance
 - d) Official preparation
- 4) _____ is used as a catalyst in limit test for chloride.
 - a) Hydrochloric acid
 - b) NaOH
 - c) Nitric Acid
 - d) Ammonia
- 5) _____ is the science of measurement of deformation.
 - a) Aesthetic modification
 - b) Thickener
 - c) Additives
 - d) Rheology
- 6) Among the following which is an example of a weak base.
 - a) KCl
 - b) NH_4OH
 - c) CH_3COONa
 - d) NaOH

Q.2 Answer the following. (Any Three)**06**

- a) Explain how atmospheric contamination during the manufacturing process causes impurities in the final product.
- b) Explain the applications of acid-base titration.
- c) Enlist the methods used to determine the endpoint of non-aqueous titrations. Explain any one of them.
- d) How does packing impact the final product?
- e) State Newton's law of viscosity and mention types of fluids.

Q.3 Answer the following. (Any Two) **06**

- a) Explain the following Acid-base theories with examples along its limitations.
 - i) Arrhenius theory
 - ii) Lewis theory
- b) Define non-aqueous solvents and explain their types with suitable examples.
- c) What is the limit test? Explain the limit test of sulphate ion in detail.

Q.4 Answer the following. (Any Two) **06**

- a) What is the standard solution? Explain its types with suitable examples.
- b) Explain lipid thickeners and synthetic thickeners with suitable examples.
- c) Explain various applications of Non-aqueous titrations.

Q.5 Answer the following. (Any One) **06**

- a) Define Impurity. Mention its types. Explain various methods used for the purification of Inorganic substances.
- b) Explain in brief Acid base titration, indicators used in it with a suitable example.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - II) (New) (CBCS) Examination: October/November - 2025
Cosmetic Chemistry (Analytical Methods) – II (CT201)**

Day & Date: Tuesday, 28-10-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.**10**

- 1) The titration involves determination of concentration of unknown substance by reaction with known amount of excess reagent is known as ____ titration.
 - a) back
 - b) double
 - c) blank
 - d) simple
- 2) The process used to separate dissolved solid from liquid is known as _____.
 - a) reflux
 - b) sterilization
 - c) filtration
 - d) distillation
- 3) pH range of methyl red indicator is _____.
 - a) 3.2-4.5
 - b) 4.4-6.5
 - c) 6.8-8.4
 - d) 8.3-10.5
- 4) The tendency to gain the electrons in the electrochemical cell is known as _____.
 - a) cell potential
 - b) oxidation potential
 - c) reduction potential
 - d) None of these
- 5) Acid value is also known as _____.
 - a) neutralization number
 - b) acid number
 - c) acidity
 - d) All of the above
- 6) EDTA has ____ ligands.
 - a) 4
 - b) 7
 - c) 5
 - d) 6
- 7) The colour of litmus indicator in acidic medium is _____.
 - a) Yellow
 - b) Pink
 - c) Red
 - d) Blue
- 8) Geometry of complex with co-ordination number 4 is _____.
 - a) Linear
 - b) Triangular
 - c) Tetragonal
 - d) Octahedral

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - II) (New) (CBCS) Examination: October/November - 2025
Natural Cosmetic Agents - II (CT202)**

Day & Date: Thursday, 30-10-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Multiple choice Question.**10**

- 1) The isolation, purification and identification of active constituents are ____ methods of evaluation.
 - a) Organoleptic
 - b) Biological
 - c) Physical
 - d) Chemical
- 2) The major constituent of ____ is an ester coniferyl benzoate.
 - a) Siam benzoin
 - b) Colophony
 - c) Asafoetida
 - d) Balsam of Tolu
- 3) Goldbeater's skin test is for _____.
 - a) Resin
 - b) Balsam
 - c) Tannin
 - d) None of the above
- 4) The colour of calamine is due to _____.
 - a) Zinc oxide
 - b) Magnesium oxide
 - c) Titanium dioxide
 - d) Ferric oxide
- 5) ____ is the measure of sample being tested capable of producing biological effect as that of the standard preparation.
 - a) Refractive index
 - b) Optical rotation
 - c) Bioassay
 - d) Moisture content
- 6) ____ are very resistant to hydrolysis.
 - a) Hydrolysable tannins
 - b) Condensed tannins
 - c) Both a and b
 - d) None of the above
- 7) Asafoetida contains _____.
 - a) Resin
 - b) Gum
 - c) Volatile oil
 - d) All of the above
- 8) Mica is used to add shimmer and sparkle to cosmetics due to its ____ properties.
 - a) Absorptive
 - b) Reflective
 - c) Adsorptive
 - d) None of the above

- 9) Chemical method for detection of adulteration in natural ingredients comprises of different ____.
- | | |
|-------------------|----------------------|
| a) Chemical tests | b) Assay |
| c) Both a and b | d) None of the above |
- 10) ____ is an ingredient of mineral origin.
- | | |
|----------------|-----------------|
| a) Benzoin | b) Kaolin |
| c) Tannic acid | d) Pale Catechu |

B) Write true/false.**06**

- 1) Stomata are the tubular elongated outgrowth of the epidermal cell.
- 2) Black catechu contains condensed tannins.
- 3) Storax is a balsam.
- 4) Kaolin is a purified native hydrated magnesium silicate.
- 5) The qualitative chemical tests are useful in detection of adulteration.
- 6) Pseudotannins are high molecular weight compounds.

Q.2 Answer the following.**16**

- a) Write down the method of preparation of mica.
- b) Define the following:
 - i) Resin.
 - ii) Balsam.
 - iii) Oleo gum resin.
 - iv) Glycoresin.
- c) Explain condensed tannins.
- d) Explain in short biological method for detection of adulteration in natural ingredients.

Q.3 Answer the following.**16**

- a) Write down the reasons for direct adulteration and elaborate the organoleptic method for detection of adulteration in natural ingredient.
- b) Enlist the isolation techniques of resins. Write down the biological source, chemical constituents and uses of storax.

Q.4 Answer the following.**16**

- a) Write down the biological source, chemical constituents, chemical tests and uses of amla.
- b) Write down the preparation, chemical constituents, chemical tests and uses of talc.

Q.5 Answer the following.**16**

- a) Explain the following:
 - i) Stomata.
 - ii) Trichomes.
- b) Classify the resin with suitable example. Write down the biological source, chemical constituents, and chemical tests of colophony.

Q.6 Answer the following. **16**

- a) Define tannin and write down the biological source, chemical constituents, chemical test and uses of arjun.
- b) Write down the chemical constituents and uses of the following:
 - i) Fuller's earth
 - ii) Kaolin

Q.7 Answer the following. **16**

- a) Write down the biological source, preparation, chemical constituents and uses of balsam of peru.
- b) Elaborate the physical method for detection of adulteration in natural ingredient.

Seat No.	
----------	--

Set

P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - II) (New) (CBCS) Examination: October/November - 2025
English (communication skill) *(CT203)**

Day & Date: Saturday, 01-11-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 40

Instructions: 1) Figure to the right indicate full marks.
2) All questions are compulsory.

Q.1 Rewrite the following sentences by choosing the correct alternative. 08

- 1) Teachers, according to Bertrand Russell invariably believe in _____.
 a) knowledge from books b) Common knowledge
 c) knowledge of animals d) common sense

- 2) The kings, according to Rabindranath Tagore, lived in the prison of _____.
 a) gorgeous unreality b) Dungeon
 c) isolated tower d) house arrest

- 3) In India, the Epic _____ gives us a wonderful vision of overflowing life, according to Rabindranath Tagore.
 a) the Ramayana b) the Arthashastra
 c) the Mahabharata d) Buddha Carita

- 4) According to the poet. Niyi Osundare, the infected rivers cause chaos in _____.
 a) Lakes b) the seas
 c) the fields d) the population

- 5) The mood of the poem *Ode on Solitude* is _____.
 a) pensive and melancholic b) sad and gloomy
 c) reflective and hopeful d) celebratory and joyful

- 6) The poet wishes to hear _____ from her lover in the poem Remember.
 a) the future plans b) marriage plans
 c) his work d) his family

- 7) The antonym of the word enemy is _____.
 a) Foe b) opponent
 c) Adversary d) friend

- 8) Identify and write the tense of the clause. "I have just had a bath".
 a) perfect past tense b) perfect present tense
 c) perfect future tense d) simple past tense

- Q.2 Answer the following. (Any Four) 08**
- a) What are the various effects of forcing people in an inelastic system and holding them fixed, according to Rabindranath Tagore?
 - b) What is the business of education in all countries, according to Bertrand Russell?
 - c) What, according to Rabindranath Tagore, is the true sense of freedom?
 - d) What are the people in the West flattered into believing, according to Rabindranath Tagore?
 - e) What opinion does the author Bertrand Russell have of his teacher?
 - f) What is the difference between being right and being original, according to Bertrand Russell?
- Q.3 Write Short Note. (Any Two) 08**
- a) The theme of death and memory in the poem *Remember*.
 - b) The use of various images in the poem *Our Earth Will Not Die*.
 - c) Theme of solitude in the poem *Ode on Solitude*.
- Q.4 Answer the following. (Any Two) 08**
- a) What are the different ways to improve interpersonal intelligence?
 - b) Explain the concept of interpersonal intelligence.
 - c) Write a note on the social skills that are frequently found among the individuals with interpersonal intelligence.
- Q.5 Answer the following. (Any One) 08**
- a) Write a letter of application for the post of assistant manager to the HR Manager, Wipro, M. G. Road, Baner, Pune with reference to the advertisement in the daily newspaper *The Indian Express* dated 16 April, 2024.
 - b) Write a letter of application for the post of assistant professor of Chemistry to the Vice- Chancellor, Punyashlok Ahilyadevi Holkar Solapur University, Solapur with reference to the advertisement in the daily newspaper *The Indian Express* dated 14 April, 2024.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - II) (New) (CBCS) Examination: October/November – 2025
Analytical Chemistry (CT208)**

Day & Date: Monday, 03-11-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ)**10**

- 1) Beers law is related to the _____.
 - a) Thickness of the medium
 - b) Thickness of the instrument
 - c) Concentration of the medium
 - d) None of these
- 2) Calomel electrode is used as _____.
 - a) Secondary reference electrode
 - b) Primary reference electrode
 - c) Standard reference electrode
 - d) None of the above
- 3) The mass of an ion liberated at an electrode is directly proportional to the quantity of electricity is known as _____.
 - a) Newtons law
 - b) Faradays law of electromagnetic
 - c) Faradays law of electrolysis
 - d) None of these
- 4) Colorimeters are used in the region _____.

a) 200nm-600nm	b) 400-800nm
c) 400nm-1200nm	d) none of these
- 5) _____ measures the acidity or alkalinity of a solution.

a) PH	b) Colorimeter
c) Conductometry	d) None of these
- 6) Electrochemistry deals with electrical energy and _____.

a) Chemical energy	b) Electrons
c) heat	d) None of the above
- 7) The internal reference electrode in glass electrode is _____.

a) Mercury	b) Ag-Agcl
c) Both	d) None of these

- 8) E.M.F is expressed in ____.
- | | |
|-----------|------------------|
| a) Ampere | b) Volt |
| c) Columb | d) None of these |
- 9) For PH measurement ____ electrodes are commonly used.
- | | |
|--------------------|----------------------|
| a) Glass electrode | b) Calomel electrode |
| c) Both a & b | d) None of these |
- 10) The net electrical work is given by formula ____.
- | | |
|-----------|------------------|
| a) $-nEF$ | b) nEF |
| c) EF | d) None of these |

B) Write true or false.**06**

- 1) E.M.F is expressed in Ampere.
- 2) Mercury is the internal reference electrode in glass electrode.
- 3) The absorbance is called as optical density.
- 4) Beers law is related to the concentration of the medium.
- 5) PH was first introduced by Volt.
- 6) Calomel electrode is used as standard reference electrode.

Q.2 Answer the following.**16**

- a) Discuss the Galvanic cell in detail.
- b) Explain in detail PH metry.
- c) Define the term.
 - 1) Standard electrode potential.
 - 2) Electrochemical cell.
- d) Explain the Gattermann synthesis with suitable examples.

Q.3 Answer the following.**16**

- a) Explain in detail the Beers-Lamberts law with derivation.
- b) Define glass electrode & explain their advantages & disadvantages in detail.

Q.4 Answer the following.**16**

- a) Define potentiometric titration & explain the types of potentiometric titration.
- b) Explain in detail standard electrode potential with their significance & examples.

Q.5 Answer the following.**16**

- a) Explain the combination of PH electrode in detail with neat labelled diagram.
- b) Discuss in detail buffer solution.

Q.6 Answer the following.**16**

- a) Define electrochemical cell and explain in detail types of electrochemical cell.
- b) Explain the important component of the PH meter & Explain their working mechanism.

Q.7 Answer the following.

16

- a)** Explain in detail standard electrode potential with their significance & examples.
- b)** Explain in detail photoelectrical colorimeter & explain their applications.

Seat No.	
----------	--

Set P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - III) (New) (NEP CBCS) Examination: October/November - 2025
Cosmetic Technology – III (CT01301)**

Day & Date: Friday, 31-10-2025
Time: 11:00 AM To 12:30 PM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose the correct alternative. 06

- 1) In the preparation of cream, _____ is added in aqueous phase.
 - a) Stearic acid
 - b) Cetyl alcohol
 - c) KOH
 - d) All of the above
- 2) Antioxidant should _____.
 - a) Produce desired redox reaction
 - b) Be effective at low concentration
 - c) Both a) & b)
 - d) None of the above
- 3) _____ is added in soap to act as supper fatting agent and improve moisturization.
 - a) Sodium chloride
 - b) EDTA
 - c) Lanolin
 - d) Kaolin
- 4) _____% of perfume is added in bath oil.
 - a) 5-10
 - b) 1-2
 - c) 3-5
 - d) 10-12
- 5) $C_3H_8O_3$ is the molecular formula of _____.
 - a) Urea
 - b) Propylene glycol
 - c) Sorbitol
 - d) Glycerine
- 6) _____ is not an antioxidant.
 - a) Sodium bisulphate
 - b) Sodium chloride
 - c) Sodium meta bisulphate
 - d) Sodium thiosulphate

Q.2 Answer the following question. (Any Three) 06

- a) Define emollient Explain classification of emollients.
- b) Define soap.
- c) Define
 - i) Oxidative Stress
 - ii) Free Radical
- d) Explain classification of skin cream.
- e) Enlist the ingredients used in bath oil.

- Q.3 Answer the following questions. (Any Two) 06**
- a) Explain application of humectant in cosmetics.
 - b) Explain ideal characteristics of skin cream and discuss foundation cream.
 - c) Discuss manufacturing of soap.
- Q.4 Answer the following questions. (Any Two) 06**
- a) Define antioxidant. Explain application of antioxidant.
 - b) Explain stability and safety of butylene glycol.
 - c) Discuss manufacturing and packaging of skin cream.
- Q.5 Answer the following questions. (Any One) 06**
- a) Explain bath preparation.
 - b) Discuss humectant in brief.

Set P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - III) (New) (NEP CBCS) Examination: October/November - 2025
Cosmetic Chemistry - III (Analytical) (CT01302)**

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat labelled diagrams wherever necessary.

06

- 1) Process used to separate the dissolved solid from liquid is known as _____.
a) Reflux
b) Sterilization
c) Filtration
d) Distillation
- 2) pH range of methyl red indicator is _____.
a) 3.2-4.5
b) 4.4-6.5
c) 6.8-8.4
d) 8.3-10.5
- 3) The tendency to gain the electrons in the electrochemical cell is known as _____.
a) Cell potential
b) Oxidation potential
c) Reduction potential
d) None of these
- 4) Acid value is also known as _____.
a) Neutralization number
b) Acid number
c) Acidity
d) All of the above
- 5) Geometry of complex with co-ordination number 4 is _____.
a) Linear
b) Triangular
c) Tetragonal
d) Octahedral
- 6) The colour of litmus indicator in acidic medium is _____.
a) Yellow
b) Pink
c) Red
d) Blue

06

- Enlist oxidising agents and explain any one of them.
- Define standard solutions and explain its types.
- Write a note on acid value.
- Write a note on demasking agent.
- What is reducing agent? Enlist two examples of reducing agent.

- Q.3 Answer the Following. (Any Two) 06**
- a) Explain neutralization curve and choice of indicator for strong acid and strong base titration.
 - b) Explain in detail a filtration process.
 - c) Explain saponification value and their significance.
- Q.4 Answer the Following. (Any Two) 06**
- a) Explain redox titration curve.
 - b) Explain Quinoid theory of acid base indicator.
 - c) Explain ester value and its significance.
- Q.5 Answer the following questions. (Any One) 06**
- a) Define metal ion indicator. Explain its action along with preparation.
 - b) What is oxidation? Explain any four oxidizing agents.

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat labelled diagrams wherever necessary.

06

- 1) Vaporizing chamber is known as _____.
a) condenser b) still
c) receiver d) adapter
- 2) If a given material is fibrous in nature, _____ mill is preferred.
a) ball mill b) colloid mill
c) fluid energy mill d) cutter mill
- 3) Hammer mill operates on _____ principle.
a) attrition b) crushing
c) cutting d) impact
- 4) _____ conveyor system used for transporting unpleasant and injurious materials.
a) Belt conveyor b) Bucket conveyor
c) Chain conveyor d) Pneumatic conveyor
- 5) The drive end discharge end in a screw conveyor is generally known as _____.
a) Box ends b) Plight ends
c) Lid ends d) Trough ends
- 6) In which portion of a pipe, flow of fluid is high?
a) At the actual surface of pipe wall
b) Central portion
c) Near the pipe wall
d) Transition region

06

- Give four ways of energy losses experienced by fluids flowing through a pipe.
- Define size reduction. Enlist advantages of size reduction.
- Define:
 - Distillation
 - Evaporation

- d) Enlist the basic elements of screw conveyor.
- e) Enlist the application of steam distillation.

Q.3 Answer the Following. (Any Two) 06

- a) Explain working of rotameter.
- b) Mention the applications of distillation.
- c) Explain the working and uses of cutter mill.

Q.4 Answer the Following. (Any Two) 06

- a) Explain the mechanism of size reduction.
- b) Explain working and uses of fluid energy mill.
- c) Describe modes of stress applied in size reduction.

Q.5 Answer the following questions. (Any One) 06

- a) Explain principle, working, applications, advantages and disadvantages of screw conveyor.
- b) Explain principle, construction, working, advantages and disadvantages of colloid mills.

Seat No.	
----------	--

Q.3 Write Short Note: (Any Two) 06

- a) Explain the properties of Enzymes.
- b) Explain the properties of synthetic silicate
- c) Explain Amino acids and the uses of Amino acids in cosmetic technology.

Q.4 Answer the following: (Any Two) 06

- a) Write a note on classification of amino acids.
- b) Define physical properties of protein.
- c) Draw the structure of the following amino acids.
 - i) Alanine.
 - ii) Methionine.
 - iii) Arginine.

Q.5 Answer the following: (Any One) 06

- a) What are essential & non-essential amino acids? explain with suitable example.
- b) Define the Enzymes & give its classification in detail.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - III) (New) (NEP CBCS) Examination: October/November - 2025
Fundamentals of Skin Care (CT01309)**

Day & Date: Monday, 10-11-2025
Time: 11:00 AM To 12:30 PM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat labelled diagrams wherever necessary.

Q.1 Choose the correct alternative.**06**

- 1) _____ is a temporary method of hair removal.
 - a) Laser hair removal
 - b) Electrolysis
 - c) Waxing
 - d) Thermolysis
- 2) Vacuum suction machine in facial treatment is mainly used for _____.
 - a) Extracting blackheads
 - b) Hydrating skin
 - c) Improving lymphatic drainage and blood circulation
 - d) Removing makeup
- 3) The normal pH range of healthy skin is _____.
 - a) 2.5 to 3.0
 - b) 4.5 to 5.5
 - c) 6.5 to 7.5
 - d) 7.5 to 8.5
- 4) _____ is the primary purpose of a face pack.
 - a) Add colour to the skin
 - b) Exfoliate dead skin
 - c) Deep cleanse, tighten and tone the skin
 - d) Remove facial hair
- 5) A Wood's lamp is used in skin analysis to _____.
 - a) Measure pH
 - b) Detect fungal infections and skin irregularities under UV light
 - c) Open pores
 - d) Remove dead skin
- 6) Peel-off masks are best suited for _____.
 - a) Sensitive skin
 - b) Dry skin
 - c) Removing blackheads and dead skin
 - d) Moisturizing the skin

- Q.2 Answer the Following. (Any Three) 06**
- a) Define threading.
 - b) What is the function of electro muscle stimulator machine?
 - c) Define Sanitation.
 - d) Explain history of cosmetics.
 - e) What is the skin care routine for healthy skin?
- Q.3 Answer the Following. (Any Two) 06**
- a) Explain the eyebrow shaping according to face shape.
 - b) Explain the characteristics of oily skin and dry skin.
 - c) Explain in detail about Microdermabrasion and facial steamer.
- Q.4 Answer the Following. (Any Two) 06**
- a) Define Waxing and explain the types of wax.
 - b) Explain different types of face masks.
 - c) Explain methods of sterilization.
- Q.5 Answer the following questions. (Any One) 06**
- a) Explain in detail about preparations of cleanser, toner and face pack.
 - b) What is Bleaching? explain the types of bleach and procedure for bleach and precautions for Bleaching.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - III) (New) (NEP CBCS) Examination: October/November - 2025
English (CT-ENG-301)**

Day & Date: Wednesday, 29-10-2025
Time: 11:00 AM To 12:30 PM

Max. Marks: 30

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 Choose the correct alternative. (MCQ)**06**

- 1) According to the poem, Miss. Pushpa is going to _____.
 a) a different city in India b) a foreign country
 c) her hometown d) her husband's home

- 2) The poet's attitude towards killing a tree is a/an _____.
 a) approval b) indifference
 c) protest d) excitement

- 3) The central theme of the poem *The Ghaghra in Spate* is _____.
 a) the beauty of the Ghaghra River
 b) the devastating effects of the Ghaghra River's annual flood
 c) the loss of the crops
 d) the negligence of the government

- 4) Raman is a _____ by profession.
 a) Lawyer b) Engineer
 c) Teacher d) Doctor

- 5) The old banyan tree was located in the garden of: _____.
 a) The author's grandfather b) The author's neighbour
 c) The author's school d) The author's friend

- 6) The kind man offers the child _____ when he is lost.
 a) many toys
 b) a sweetmeat and a balloon
 c) To take him to the police station
 d) to play with him

Q.2 Answer the questions in short. (Any Two)**06**

- a) How can the tree get back to its former size?
- b) What is the central idea of the poem *Pilgrimage*?
- c) Why does a fair attract children?
- d) Apart from medication, what is an essential quality required for a good doctor?

Q.3 Answer the questions in short. (Any One) **06**

- a) Explain the conflict between the brutality of human beings and the resilience of nature with reference to the poem *On Killing a Tree*.
- b) Describe the power of nature with reference to the poem *The Ghaghra in Spate*.

Q.4 Answer the following question in detail. (Any One) **12**

- a) Explain the relationship between a doctor and a patient, and how the communication of a doctor heals the patient. Explain with reference to *The Doctor's Word*.
- b) Parents are the most valuable assets for their children. Justify with reference to *The Lost Child*.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - III) (Old) (CBCS) Examination: October/November - 2025
Cosmetic Technology - I (CT301)**

Day & Date: Tuesday, 28-10-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate in full marks.

Q.1 A) Choose correct alternative.**10**

- 1) Which of the following packaging material is used to protect the content against light?
 - a) Plastic Container
 - b) Steel Container
 - c) Amber Coloured glass Container
 - d) Paper Packaging
- 2) For Deodorant Spray, what kind of container is used?
 - a) Aerosols
 - b) Boxes
 - c) Airless Containers
 - d) Cups
- 3) HLB Value of 7-9 indicates _____.
 - a) W/O emulsifying agents
 - b) Wetting and Spreading agents
 - c) Solubilizing agents
 - d) O/W emulsifying agents
- 4) Surfactant having both positive and negative charge are known as _____.
 - a) Amphoteric surfactants
 - b) Anionic surfactant
 - c) Ionic surfactant
 - d) Non-ionic Surfactant
- 5) Monophasic liquid dosage forms are also known as _____.
 - a) Zero solution
 - b) False Solution
 - c) True solution
 - d) None of the above
- 6) Which of the following is a commonly used co-solvent in cosmetic formulations?
 - a) Glycerol
 - b) Ethanol
 - c) Propylene glycol
 - d) All of the above
- 7) A ray of light when passes from air into liquid, it changes its direction, this change is known as _____.
 - a) Refractive index
 - b) Snell's law
 - c) Refraction
 - d) Velocity

- 8) ____ is an entity in which equal positive and negative charges are separated by a small distance.
- | | |
|------------|---------------|
| a) Bipolar | b) Dielectric |
| c) Dipole | d) Energy |
- 9) On HLB scale 10-18 indicates ____ Surfactants.
- | | |
|-----------------|-----------------|
| a) Hydrophilic | b) Lipophilic |
| c) Both a and b | d) None of them |
- 10) Due to increase in temperature refractive index ____.
- | | |
|----------------------|-------------------------|
| a) Increases | b) Decreases |
| c) Remains unchanged | d) Depends on substance |

B) Write True or False.**06**

- 1) Dissociation constant is also known as dielectric constant.
- 2) Tail or hydrophobic group is usually hydrocarbon or alkyl chain in surfactant.
- 3) Emulsion is a biphasic dosage form.
- 4) Recycling helps to increase pollution on earth.
- 5) Micellization is one of the properties of surfactant.
- 6) Emulsion and suspension are most stable dosage form.

Q.2 Answer the following.**16**

- a) Write a note on the Dielectric constant and its application.
- b) Write note on Co-solvents and hydrotrophy.
- c) Define HLB. Explain HLB Scale.
- d) Write a note on Plastic as packaging material.

Q.3 Answer the following.**16**

- a) What is Optical rotation? Write in brief about the determination and application of optical activity.
- b) Write in brief about the dipole moment and its application.

Q.4 Answer the following.**16**

- a) Write about solubility enhancement techniques.
- b) Give detailed account on the Monophasic liquid dosage form with its advantages and disadvantages.

Q.5 Answer the following.**16**

- a) Write about the properties and application of surfactant involved in cosmetic.
- b) What is Surfactant. Classify surfactant based on chemical nature with example.

Q.6 Answer the following.**16**

- a) Discuss about labelling requirement of cosmetics.
- b) Discuss the environmental aspects of different packaging materials used in cosmetic formulations.

Q.7 Answer the following.

16

- a)** Explain in detail biphasic dosage form and write note on emulsion and suspension.
- b)** Write note on
 - i) Green packaging
 - ii) Glass as packing material

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Semester - III) (Old) (CBCS) Examination: October/November - 2025
Instrumental Methods of Analysis - I (CT302)**

Day & Date: Wednesday, 29-10-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.**10**

- 1) The electrode consists of a metal coated with one of its sparingly soluble salts and immersed in a solution containing an electrolyte having a common anion as that of the salt is called as _____.
a) Gas electrode
b) Metal-sparingly soluble salt electrode
c) Redox electrode
d) Metal-metal ion electrode
- 2) The monochromator used in the spectrophotometer is _____.
a) Colour Filters
b) Diffraction Grating
c) Prism
d) both b & c
- 3) If the concentration of OH^- ions increase, pH of the solution _____.
a) Increases
b) Decreases
c) Remains same
d) None of the above
- 4) The conductance between the opposite faces of the one-centimeter cube of a conductor is called as _____ Conductance.
a) Unknown
b) Equivalent
c) Molar
d) Specific
- 5) EMF of 1 N KCl solution containing calomel electrode is _____.
a) +0.2800 V
b) +0.3338 V
c) +0.2422 V
d) -0.2800 V
- 6) _____ states that the amount of light absorbed is proportional to the pathlength or thickness of the solution taken for analysis.
a) Beer law
b) Lambert law
c) Beer-Lambert law
d) None of the above
- 7) What is the unit of pH?
a) no unit
b) M
c) $-\log[H^+]$
d) mol/L

- 8) A colorimeter can be used for determination of the concentration of ____ solutions.
- Colourless
 - both coloured and Colourless
 - Coloured
 - Saturated
- 9) Pure water has concentration of H^+ ions ____.
- 7×10^{-7}
 - 1×10^{-7}
 - 7×10^{-14}
 - 1×10^{-14}
- 10) ____ conductometric titration will show 'V' shaped titration curve.
- Strong acid vs Weak base
 - Strong acid vs Strong base
 - Weak acid vs Weak base
 - Weak acid vs Strong base

B) Write True or False.**06**

- A Wheatstone bridge is said to be in a balanced condition when no current flows through the galvanometer.
- $Zn | ZnSO_4$ is an example of Metal- sparingly soluble salt electrode.
- Conductometric titrations can also be used for homogeneous suspensions and coloured solutions.
- Apart from Spectrophotometer, Colorimeter is more accurate technique for analyzing the color of solutions.
- In pH meter, the output voltage of the summing amplifier acts as the input of the microcontroller.
- A spectrophotometer can operate only in the visible range of electromagnetic spectra.

Q.2 Answer the following.**16**

- Explain various applications of conductometric acid base titrations.
- Explain the role of Filters used in colorimeter with its examples.
- Explain the principle of Potentiometric titrations.
- What is calibration solution? Give its uses.

Q.3 Answer the following.**16**

- Explain in detail, glass electrode.
- Explain the principle and examples of Conductometric acid base titrations.

Q.4 Answer the following.**16**

- Explain Beer-Lambert law and give its applications.
- Explain Principle and working of pH meter by using its block diagram.

Q.5 Answer the following.

- Explain various conductometric acid base titration curves.
- Differentiate between Colorimeter and Spectrophotometer.

10**06**

Q.6 Answer the following. **16**

- a) What is Galvanic cell? Explain the various types of electrodes used in it.
- b) Define the following terms.
- | | |
|-----------------------------|---------------------------|
| i) Specific Resistance | ii) Specific Conductance |
| iii) Equivalent Conductance | iv) Molecular Conductance |

Q.7 Answer the following. **10**

- a) Explain Instrumentation, construction and working of spectrophotometer. **10**
- b) Explain in brief concept of pH and pH scale. **06**

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - III) (Old) (CBCS) Examination: October/November – 2025
Unit Operations - I (CT303)**

Day & Date: Thursday, 30-10-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Draw neat, labelled diagrams wherever necessary.
4) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.**10**

- 1) The flow is said to be laminar, if R_e is ____
 - a) <2100
 - b) < 4000
 - c) < 3000
 - d) >2100
- 2) The mechanism of compression is involved in ____ equipment of size reduction.
 - a) Cutter mill
 - b) Roller mill
 - c) Hammer mill
 - d) Fluid energy mill
- 3) The sieve no. 85 through which 40% particles pass is ____ grade of powder.
 - a) Coarse
 - b) Moderately coarse
 - c) Moderately fine
 - d) Fine
- 4) The equilibrium partial pressure of the substance in the vapour phase divided by the mole fraction the substance in the solution is called as _____.
 - a) Dalton's law
 - b) Newton's law
 - c) Volatility
 - d) Raoult's law
- 5) ____ conveyor is used in the formulation of powdered insufflations.
 - a) Belt
 - b) Chain
 - c) Pneumatic
 - d) Bucket
- 6) ____ does not require manometer in the construction of flow meters.
 - a) Rotameter
 - b) Pitot tube
 - c) Orifice meter
 - d) Venturi meter
- 7) Oil seed can be reduced in size using ____ mills.
 - a) Ball mill
 - b) Cutter mill
 - c) Fluid energy mill
 - d) Roller mill

- 8) ____ screens is used for size separation of big and heavy particles.
- | | |
|--------------------------|-------------------------|
| a) Bar screens | b) Bolting cloth sieves |
| c) Punched plate screens | d) Woven wire screens |
- 9) The discharge capacity of the reciprocating pump is ____ that of the centrifugal pump.
- | | |
|----------------|------------------|
| a) Higher than | b) Lower than |
| c) Same as | d) Unpredictable |
- 10) An up and down, back and forth relative linear motion is called ____.
- | | |
|------------------|---------------|
| a) Reciprocation | b) Rotation |
| c) Filtration | d) Excavation |

B) Write true or false.**06**

- 1) Critical velocity is velocity at which viscous flow changes into turbulent flow.
- 2) Rotameter is also known as variable head meter.
- 3) Size reduction of materials has advantage of high flow of materials.
- 4) Attrition and cutting are mode of size reduction by hammer mill.
- 5) Steam distillation is also known as equilibrium distillation.
- 6) In the construction of a screw conveyor, flight is used for the movement of a solid particles.

Q.2 Answer the following.**16**

- a) Define pump. Give its types.
- b) Discuss modes of motion in size separation.
- c) Explain in detail Raoult's law.
- d) Give four basic elements of screw conveyors.

Q.3 Answer the following.**16**

- a) Give construction, working, uses, diagram of pitot tube.
- b) Give official standards for powders.

Q.4 Answer the following.**16**

- a) Define and explain in detail each class of Centrifugal pump.
- b) Give principle, construction, working, uses of Colloidal mill.

Q.5 Answer the following.**16**

- a) Define Flash distillation. Give its principle, working and draw the diagram for Flash distillation.
- b) Give principle, construction, working, diagram of Pneumatic conveyor.

Q.6 Answer the following.**16**

- a) Derive the equations for simple manometer. Draw the diagram and write the applications of it.
- b) Give principle, construction, working, diagram of Belt conveyor.

Q.7 Answer the following.

16

- a)** Give principle, construction, working, diagram, uses of Fluid energy mill.
- b)** Explain Bernoulli's theorem in detail with equations.

Seat No.	
----------	--

Set P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - III) (Old) (CBCS) Examination: October/November - 2025
Biomolecules - I (CT304)**

Day & Date: Thursday, 30-10-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.

10

- 1) Amino acids with aromatic chain are _____.
 - a) Tryptophan, Threonine, Tyrosine
 - b) Tryptophan, Asparagine, Tyrosine
 - c) Phenyl alanine, Tryptophan, Serine
 - d) Phenylalanine, Tryptophan, Tyrosine
- 2) Enzymes are polymers of _____.
 - a) Hexose Sugar
 - b) Amino acids
 - c) Fatty acids
 - d) Inorganic phosphate
- 3) Fibrous & globular proteins are classified on the basis of ____ Structure.
 - a) Primary
 - b) Secondary
 - c) Tertiary
 - d) Quaternary
- 4) Which of the following is true regarding the solubility of amino acids?
 - a) Mostly soluble in water and insoluble in organic solvents
 - b) They are only water soluble
 - c) They are only soluble in organic solvents
 - d) Mostly soluble in organic solvents & insoluble in water
- 5) An enzyme that joins the ends of two strands of nucleic acid is _____.
 - a) Polymerase
 - b) Synthetase
 - c) Ligase
 - d) Helicase
- 6) Which of the following is a non-essential amino acid?
 - a) Lysine
 - b) Threonine
 - c) Serine
 - d) Histidine
- 7) How many amino acids make up a protein?
 - a) 10
 - b) 20
 - c) 30
 - d) 50

- 8) Synthetic silicates are always found in ____ form.
- a) Hydrated
 - b) Oxide
 - c) Hydroxide
 - d) Composite
- 9) Enzymes are named by adding ____ suffix.
- a) -ese
 - b) -se
 - c) -ase
 - d) -eas
- 10) Most important group of protein is ____.
- a) Prosthetic
 - b) Metal ion
 - c) Acidic functional group
 - d) Basic functional group

B) Write true or false.

06

- 1) Leucine is a non-essential acid.
- 2) Fibrous protein has a thread like structure.
- 3) Phenyl alanine is an example of aromatic amino acid.
- 4) Feldspar is the synthetic silicates.
- 5) Enzymes work on specific molecules.
- 6) Amino acids are produced on the hydrolysis of carbohydrates.

Q.2 Answer the following.

16

- What are glycogenic and ketogenic amino acids?
- Write a note on properties of clay minerals.
- Define the chemical properties of proteins.
- Explain properties of Enzymes.

Q.3 Answer the following.

- | | | |
|-----------|---|-----------|
| a) | What are essential & non-essential amino acids? Explain with suitable example. | 08 |
| b) | Define synthetic silicate. Explain in detail their properties and applications. | 08 |

Q.4 Answer the following.

- a) Define amino acids & explain in detail their classification. **08**
- b) Explain in detail the physical properties of protein & explain their uses in cosmetics. **08**

Q.5 Answer the following.

- a)** Explain CoEnzymes in detail and give their uses in cosmetics. **08**
- b)** Define in detail metallic soaps & explain their uses in cosmetic. **08**

Q.6 Answer the following.

- a)** Define protein & explain their classification in detail. **08**
- b)** Define the Enzymes. Explain in detail their mechanisms. **08**

Q.7 Answer the following.

- a)** Explain in detail synthetic Surfactants. **08**
- b)** Explain in detail the mechanism of Enzymes by Lock and Key model. **08**

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - III) (Old) (CBCS) Examination: October/November - 2025
Cosmetics Legislations - I (CT310)**

Day & Date: Saturday, 01-11-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Draw neat labelled diagram & give equation wherever necessary.
4) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.

10

- 1) Which of the following is prohibited to be imported?
a) Toilet preparations b) Ayurvedic drugs
c) Schedule C, G drugs d) Misbranded drugs
- 2) _____ Act provides the levy & collection of duties of excise on medicinal & toilet preparations containing alcohol, opium, Indian hemp, etc.
a) MTP Act b) RTI Act
c) Excise duties act 1955 d) PCI Act
- 3) Finished medicinal & toilet products can be stored in jars or bottles containing not less than _____.
a) 1000 ml b) 1273 ml
c) 2000 ml d) 2273 ml
- 4) Requirements of factory premises for manufacture of medical devices is dealt under _____.
a) Schedule M1 b) Schedule M2
c) Schedule M3 d) Schedule R1
- 5) An example of coal tar colour is _____.
a) Amaranth b) Erythrosine
c) Tartrazine d) All of the above
- 6) A drug sample taken by drug inspector for analysis is sent to _____.
a) Government analyst b) Drug controller
c) Drug inspector d) Excise commissioner
- 7) BIS comes under _____.
a) Ministry of food affairs b) Ministry of consumer affairs
c) Ministry of forest affairs d) None of the above

- 8) Opium derivatives include all of the following except:
a) Prepared opium b) Medicinal opium
c) Heroin d) Charas
- 9) According to the prevention of cruelty to animal acts, experimentation on animals is carried out for the following purpose except:
a) Development of new drug
b) Production of vaccines and sera
c) Development in medicinal field
d) To have the practice
- 10) DTAB has ____ ex officio members.
a) 5 b) 6
c) 4 d) 8

B) Write true or false.**06**

- 1) Prevention of cruelty to animal act was passed in 1960.
- 2) The preparations which are not capable of being misused as ordinary alcoholic beverages is called as restricted preparations.
- 3) Application for grant of license for manufacture of medicinal & toilet preparations must be submitted to the licensing authority at least 2 months before commencement of manufacture.
- 4) If a cosmetic contains a colour not prescribed or if it's not labelled in prescribed manner or if the label bears any standard which is false or misleading in any particular, it is called as misbranded cosmetic.
- 5) Standards for cosmetics comes under schedule K of D & C Act.
- 6) S. K. Banerjee was the chairman of Drug Enquiry Committee.

Q.2 Answer the following.**16**

- a) What are the duties of drug inspector?
- b) Write about classification of medicinal & toilet preparations.
- c) State objectives of prevention of cruelty to animal act and experimentation on animals.
- d) Explain about constitution & function of Drugs Technical Advisory Board.

Q.3 Answer the following.

- a) Define the following terms.

10

- 1) Adulterated cosmetic.
- 2) Medicinal preparations.
- 3) Alcohol.
- 4) Non-bonded manufactory.
- 5) Spirit store.

- b) Explain standard specifications laid down for Bureau of standards (BIS) for Lipsticks & lip gloss.

06

Q.4 Answer the following.

- a) Write in detail requirements of plant & equipment for following cosmetic formulations. **10**
1) Preparations used for eyes.
2) Aerosol.
- b) Enlist dyes, colours and pigments permitted to be used in cosmetics. **06**

Q.5 Answer the following.

- a) Solve the following: **10**
1) What are the general requirements of factory premises for manufacture of cosmetics?
2) State BIS specifications for skin powder.
- b) What are the steps for export of duty paid goods under bond? **06**

Q.6 Answer the following.

- a) Solve the following: **10**
1) Describe BIS specifications for toilet soap.
2) What are the roles of Drug inspector?
- b) State regulatory provisions relating to import of cosmetics. **06**

Q.7 Answer the following.

- a) Solve the following: **10**
1) What are the offences & penalties of disobeying medicinal & toilet preparation act.
2) Define bonded manufactory and non-bonded manufactory.
- b) Write about committee for experimentation on animals. **06**

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - IV) (New) (CBCS) Examination: October/November - 2025
Cosmetic Technology - II (CT401)**

Day & Date: Tuesday, 28-10-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.**10**

- 1) Which property is most critical for face powders?
 - a) Solubility
 - b) Spreadability
 - c) Viscosity
 - d) pH
- 2) Which type of powder is commonly used in surgical gloves and baby care products?
 - a) Compact powder
 - b) Dusting powder
 - c) Face powder
 - d) Medicated stick
- 3) Which of the following bases is used in oleaginous ointments?
 - a) Lanolin
 - b) Petrolatum
 - c) PEG
 - d) Cetostearyl alcohol
- 4) Which form has better occlusive properties?
 - a) Creams
 - b) Gels
 - c) Ointments
 - d) Lotions
- 5) A key property of pastes is that they contain _____.
 - a) No solid particles
 - b) High proportion of solid material
 - c) Alcohol as a solvent
 - d) Large amounts of water
- 6) Which test is used to identify the type of emulsion?
 - a) Creaming test
 - b) Phase inversion test
 - c) Dilution test
 - d) Sedimentation test
- 7) Which is a flocculated suspension characteristic?
 - a) Clear supernatant
 - b) Cake formation
 - c) Hard sediment
 - d) Poor redispersibility
- 8) Which is common source of contamination in cosmetic products?
 - a) Packaging material
 - b) Humidity
 - c) Airborne microbes
 - d) All of the above

- 9) Which of the following is not a characteristic of an ideal preservative?
- | | |
|--------------------|--------------------------------|
| a) Water-insoluble | b) Broad-spectrum activity |
| c) Non-toxic | d) Compatible with formulation |
- 10) Which is a potential drawback of using parabens in cosmetics?
- | | |
|-----------------|--------------------------|
| a) Skin dryness | b) Carcinogenic concerns |
| c) High-cost | d) Poor stability |

B) Write True or False.**06**

- 1) Dusting powders are primarily intended for internal use.
- 2) Compact powders generally contain binders to help them stay compressed.
- 3) Ointments are typically water-based and non-greasy.
- 4) Non-flocculated suspensions are generally more stable than flocculated ones.
- 5) Preservatives are added to cosmetic products to improve their fragrance.
- 6) Suspending agents are used to increase the viscosity and maintain uniformity of suspensions.

Q.2 Answer the following.**16**

- a) Define and Classify Powders. Add a note on Dusting powder.
- b) Distinguish between Ointment and Paste.
- c) Give Identification tests of Emulsions.
- d) Write down uses and safety aspects of preservatives used in cosmetic formulations.

Q.3 Answer the following.

- a) Explain factors influencing the effectiveness of preservatives.
- b) Classify Emulsion. Discuss preparation methods of Emulsions.

08**08****Q.4 Answer the following.**

- a) Explain Flocculated and Deflocculated Suspensions. Explain preparation.
- b) Define Cosmetic Cream. Classify and explain them in detail.

08**08****Q.5 Answer the following.**

- a) Explain in detail Compact powder and Face powder.
- b) Write ideal characteristics of Preservatives. Add a note on Origin of contamination.

08**08****Q.6 Answer the following.**

- a) Write a note on Stability of suspensions.
- b) Define Ointment. Classify them and discuss in detail Ointment bases.

08**08**

Q.7 Answer the following.

- a)** Write a note on Talcum powder. Explain preparation methods of Cream. **08**
- b)** Explain in detail Jellies and Sticks used in cosmetic formulations. **08**

Set | P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - IV) (New) (CBCS) Examination: October/November - 2025
Instrumental methods of Analysis - II (CT402)**

Day & Date: Thursday, 30-10-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ)

10

- In vibrational spectra, the transition from $V = 0$ to $V = 1$ gives a very intense line known as _____.
 - overtone band
 - fundamental band
 - dark band
 - first overtone band
- The middle IR region of electromagnetic spectrum is about _____.
 - $12500 - 4000 \text{ cm}^{-1}$
 - $100 - 400 \text{ nm}$
 - $667 - 50 \text{ cm}^{-1}$
 - $4000 - 667 \text{ cm}^{-1}$
- Detector used in spectrophotometer is/are _____.
 - Photovoltaic cell
 - Phototubes
 - Photomultiplier tube
 - All of these
- Fuel used in AAS is _____.
 - N_2O
 - O_2
 - Acetylene
 - Air
- Selection rule for rotational transitions is _____.
 - $\Delta J = \pm 1$
 - $\Delta V = \pm 1$
 - $\Delta E = \pm 1$
 - None of the above
- Gas chromatography is used for the separation of mixture of _____.
 - volatile components
 - non-volatile components
 - solid liquid components
 - solid-solid components
- Among the following, which is a IR active molecule?
 - HCl
 - N_2
 - O_2
 - Cl_2
- Rotating diatomic molecule is considered to be _____.
 - harmonic oscillator
 - rigid rotor model
 - oscillator
 - none of these

- 9) For linear molecule, the number of fundamental modes of vibrations are calculated by the relation ____.
- | | |
|-------------|-------------|
| a) $3N - 5$ | b) $3N - 6$ |
| c) $3N + 5$ | d) $3N + 6$ |
- 10) Cuvettes used in spectrophotometer are generally made up of ____.
- | | |
|------------|------------|
| a) quartz | b) Glass |
| c) alumina | d) Plastic |

B) Write true or false.**06**

- 1) The radiation source used in spectrophotometer should provide continuous radiations.
- 2) The region of $909 - 650\text{cm}^{-1}$ is known as Aromatic region.
- 3) The choice of absorbent depends upon the nature of solute mixture.
- 4) In atomization unit of AAS, oven is used to brought a sample to high temperature by putting it in a high current or high potential.
- 5) Vibrational frequency and electronegativity are inversely proportional to each other.
- 6) Column chromatography is a liquid -liquid adsorption chromatography.

Q.2 Answer the following.**16**

- a) Explain the principle of IR spectroscopy.
- b) Explain the terms in details:
 - i) Wavelength.
 - ii) Frequency.
- c) Enlist various fundamental components and their types of spectrophotometers.
- d) Discuss the classification of chromatography.

Q.3 Answer the following.**16**

- a) Explain in brief, electromagnetic spectrum.
- b) Draw a block diagram of atomic absorption spectrophotometer. Explain radiation source used in it.

Q.4 Answer the following.**16**

- a) Explain various factors affecting on values of vibrational frequency.
- b) Explain in brief interaction of electromagnetic radiation with matter.

Q.5 Answer the following.**16**

- a) Explain simple harmonic oscillator model for vibrational spectra of diatomic molecule.
- b) Discuss thin layer chromatography in detail.

Q.6 Answer the following.**16**

- a) Explain in brief Paper chromatography.
- b) Write a brief note on burners used in AAS.

Q.7 Answer the following.

16

- a)** Enlist various fundamental components of spectrophotometer. Explain photovoltaic detector in detail.
- b)** Explain application of Hooke's law in IR spectroscopy.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - IV) (New) (CBCS) Examination: October/November – 2025
Unit Operations- II (CT403)**

Day & Date: Saturday, 01-11-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Draw neat labelled diagrams wherever necessary.
4) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.**10**

- 1) _____ is an energy transfer process in which heat flows through space by means of electromagnetic waves.
 - a) Radiation
 - b) Conduction
 - c) Convection
 - d) All of the above
- 2) When fluid exhibits a viscous flow, the velocity is _____ at the actual surface of the wall.
 - a) 1
 - b) 2
 - c) 3
 - d) 0
- 3) The applications of drying process include _____.
 - a) Preparation of bulk drugs
 - b) Preservation of drug products
 - c) Improve handling
 - d) All of the above
- 4) Diffusion theory assumes that the effect of _____, gravitational and friction forces are too small.
 - a) Static
 - b) Capillary
 - c) Vander Waal's
 - d) Mechanical
- 5) Inertial forces are involved in interparticle interactions, such as _____.
 - a) Vander Waal's
 - b) Electrostatic
 - c) Surface
 - d) All of the above
- 6) Factors such as _____ affect the interparticle mixing.
 - a) Particle size
 - b) Particle shape
 - c) Both a and b
 - d) Viscosity
- 7) _____ body is defined as a body that radiates maximum possible amount of energy at a given temperature.
 - a) White
 - b) Colour
 - c) Black
 - d) Grey

- 8) _____ is the amount of water that is free (easy) to evaporate from the solid surface.
- | | |
|--------|----------------------|
| a) CMC | b) FMC |
| c) EMC | d) None of the above |
- 9) _____ is an example of continuous type of mixing equipment.
- | | |
|--------------|-----------|
| a) Fluidized | b) Ribbon |
| c) Zigzag | d) Sigma |
- 10) _____ is an example of static bed dryer.
- | | |
|------------------------|----------------|
| a) Tray dryer | b) Drum dryer |
| c) Fluidized bed dryer | d) Spray dryer |

B) Write true or false. 06

- 1) In conduction, heat transfer occurs from lower to higher temperature.
- 2) For the black body, emissivity is equal to the absorptivity.
- 3) The ideal particle is spherical in shape for the purpose of uniform mixing.
- 4) Sigma blender is an example of small scale type of mixing equipment.
- 5) Demixing is accelerated when the density of the smaller particles is constant.
- 6) Roller dryer is also called as drum dryer.

Q.2 Answer the following. 16

- a) Explain in brief black body.
- b) Write a note on capillary theory.
- c) Explain in detail inertial forces.
- d) Define dehumidification. Elaborate on different dehumidifiers.

Q.3 Answer the following.

- | | |
|---|-----------|
| a) Explain in detail different mechanisms of heat flow. | 08 |
| b) Explain in detail applications of drying process. | 08 |

Q.4 Answer the following.

- | | |
|---|-----------|
| a) Define heat exchangers and heat interchangers. Enlist heat transfer equipments. Explain Finned tube heat exchangers. | 08 |
| b) Elaborate on rate relationships. | 08 |

Q.5 Answer the following.

- | | |
|--|-----------|
| a) Give the classification of mixing equipments along with nature of mixer and its examples. | 08 |
| b) Give the classification of drying equipments along with type of dryer and its examples | 08 |

Q.6 Answer the following.

- | | |
|---|-----------|
| a) Give principle, construction, working, uses, advantages, disadvantages of Drum dryer. Draw the diagram of Drum dryer and label it. | 10 |
| b) Explain in detail different mechanisms of liquid mixing. | 06 |

Q.7 Answer the following.

- | | | |
|-----------|---|-----------|
| a) | Explain in detail Fourier's law. | 10 |
| b) | Give principle, working, uses, and diagram of Airjet mixer. | 06 |

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Semester - IV) (New) (CBCS) Examination: October/November - 2025
Biomolecules - II (CT404)**

Day & Date: Monday, 03-11-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.**10**

- 1) _____ lipid can be disintegrated into smaller molecules through hydrolysis in the presence of acid and base.
 - a) Saponifiable
 - b) Non Saponifiable
 - c) Both a & b
 - d) None of these
- 2) Ascorbic acid is the chemical name of _____ unit.
 - a) Vit – A
 - b) Vit - B
 - c) Vit – C
 - d) None of these
- 3) A major compound of the beeswax is _____.
 - a) Fatty acid
 - b) Lipid S
 - c) Myricyl Palmitate
 - d) Both a & b
- 4) _____ is a hard glistening and translucent object.
 - a) Pearl
 - b) Lipid
 - c) vitamin
 - d) None of these
- 5) Cultured pearl are usually made by _____ method.
 - a) Natural
 - b) Synthetic
 - c) Both a & b
 - d) None of these
- 6) _____ vit is important for healthy bone.
 - a) Vit - D
 - b) Vit - A
 - c) Vit - C
 - d) Both a & b
- 7) _____ is the hygroscopic substance which is used to attract and keep the moisture by absorption.
 - a) lipid
 - b) Humectant
 - c) Pearls
 - d) None of these
- 8) PEG humectant has molecular weight between _____.
 - a) 200 - 2000
 - b) 400 - 4000
 - c) 600 - 6000
 - d) None of these

- 9) Vit A & Vit D are ____ Soluble Vitamins.
- a) Fat b) Water
- c) Organic solvent d) None of these
- 10) Target area in the body are required for treatment with humectant for ____ skin.
- a) Oily b) Dry
- c) Sensitive d) Normal

B) Write true or false.

06

- 1) Retinal is the chemical name of vit-A.
- 2) A non-saponifiable lipid cannot be disintegrated into smaller molecules through hydrolysis.
- 3) Vit-k helps to protect cells against oxidative stress.
- 4) Cultured pearls are usually called synthetic pearls.
- 5) Humectants are non-hygroscopic in nature.
- 6) Waxes are soluble in water.

Q.2 Answer the following.

16

- Explain the uses of Vitamins in cosmetics and pharmaceuticals.
- Define pearls & explain their commercial uses in details..
- Define humectants and Explain their function in detail
- Write a note on fatty acids.

Q.3 Answer the following.

- a) Write a note on metabolic role of vit K & explain the uses of vitamin in cosmetics & pharmaceuticals in details.
- b) Explain in detail classification & properties of waxes.

Q.4 Answer the following.

- a)** Explain in detail Lanolin. **08**
- b)** Explain the following humectants in detail. **08**
- 1) Propylene glycol 2) PEG

Q.5 Answer the following.

- | | | |
|-----------|--|-----------|
| a) | Define vitamin & Explain in detail the essential vitamins w.r.t. chemical name, functions & sources. | 08 |
| b) | Explain in detail viscosity modifier. | 08 |

Q.6 Answer the following.

- | | | |
|-----------|--|-----------|
| a) | Define lipids, structure of lipids & explain in detail classification of lipids. | 08 |
| b) | Define dry skin & explain in detail the types of risk factor & treatment for dry skin in detail. | 08 |

Q.7 Answer the following.

- a) Write a note on metabolic role of vit A & vit K. **08**
- b) Write a note on Ion exchange resin & Explain their uses in Cosmetic industries. **08**

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - IV) (New) (CBCS) Examination: October/November - 2025
Cosmetics Legislations - II (CT410)**

Day & Date: Thursday, 06-11-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) All questions are compulsory.
2) Draw neat diagrams and give equations wherever necessary.
3) Figures to right indicate full marks.
4) Use of logarithmic table and calculator is allowed.

Q.1 A) Choose correct alternative.

10

- 1) The Factory Act came into force on _____.
a) 01-04-1949 b) 01/04/1948
c) 01/04/1950 d) none
- 2) The Shop establishment Act is applicable to _____ establishment.
a) Commercial b) private
c) Public d) national
- 3) According to Rule 4 of Sales Promotion Act, all employees are granted _____ number of leaves in a calendar year.
a) 10 b) 20
c) 08 d) 15
- 4) How many members constitute Ex-officio of PCI?
a) 3 b) 5
c) 1 d) 8
- 5) How many members constitute elected members of PCI?
a) 3 b) 5
c) 1 d) 8
- 6) u/s _____ Central Register is prepared & maintained by the PCI.
a) 15 b) 15A
c) 32 d) 32A
- 7) Adolescent means a person who has completed _____ of his / her age.
a) 15 b) 16
c) 17 d) 18
- 8) The Education Regulations (ER) is approved by the _____ u/s _____.
a) Central Council, 10 b) State Council, 10
c) State Govt; 10 d) Central Govt; 10

9) Which of the following is not the Ex-officio member of Central Council?

- | | |
|---------|---------|
| a) NCB | b) DGHS |
| c) DCCL | d) DCI |

10) The building premises for manufacturing drugs and cosmetics shall conform to the conditions laid down by ____.

- | | |
|------------------------|------------------------|
| a) Factories Act, 1947 | b) Factories Act, 1948 |
| c) Factories Act, 1949 | d) Factories Act, 1941 |

B) Write true or false.

06

- 1) Chief inspector is appointed by the ____ By notification in the official gazette.
- 2) There are ____ total number of nominated members in the constitution of Central council.
- 3) Every worker shall be allowed a ____ holiday.
- 4) ____ Is an example of a patent.
- 5) The Payment of Wages Act was passed in the year ____.
- 6) u/s ____ states about withdrawal of approval of pharmacy institutions.

Q.2 Answer the following.

16

- a) Define adult, adolescent, child & young person as per The Factories Act, 1948.
- b) Give the objective of Shop & Establishments Act.
- c) What are the cleanliness provisions to be provided in the factory premises?
- d) Define & classify patent.

Q.3 Answer the following.

16

- a) Who is a certified surgeon? What are his duties?
- b) What are the qualifications required for a person's name to be entitled in first register?

Q.4 Answer the following.

16

- a) Write a note on Patent Cooperation Treaty.
- b) Discuss the offences & penalties of The Pharmacy Act, 1948.

Q.5 Answer the following.

16

- a) Discuss the offences & penalties related to Sales Promotion Act, 1976.
- b) Under what circumstances the name of a pharmacist is removed from the register?

Q.6 Answer the following.

16

- a) What type of inventions are not patentable in India?
- b) Write in general the duties of occupier as per The Factory Act, 1948.

Q.7 Answer the following.

16

- a) Give the scope of Shop Establishment Act.
- b) Explain with flow chart patenting of an invention process.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - V) (New) (CBCS) Examination: October/November - 2025
Perfume - I (CT501)**

Day & Date: Wednesday, 29-10-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.**10**

- 1) The term chassis refers to the _____ fat or oil onto which the flower petal a spread to absorb their fragrance.
 - a) colourless
 - b) odourless
 - c) fatless
 - d) tasteless
- 2) The scented oil obtained from natural source is called as _____.
 - a) Essential oil
 - b) Volatile oil
 - c) Mineral oil
 - d) Essences
- 3) _____ is the example of oleo resin.
 - a) Copaiba
 - b) Canada balsam
 - c) Ginger
 - d) Gum styrax
- 4) Homogenous mixture of resins and oil are called as _____.
 - a) Oleoresin
 - b) Oleogum
 - c) Glycoresin
 - d) Balsma
- 5) _____ is the major active constituent of Raspberry.
 - a) Niacin
 - b) Pectin
 - c) Vanillin
 - d) Anthocyanin
- 6) Citral is extracted from the _____ herb.
 - a) Rose
 - b) Lemon grass
 - c) Vanilla
 - d) Pepper mint
- 7) Wood spirit is known as _____.
 - a) Methanol
 - b) Ethanol
 - c) Acetone
 - d) Benzene
- 8) The fermentation of starch to give alcohol occurs mainly with the help of _____.
 - a) Oxygen
 - b) Nitrogen
 - c) Carbon dioxide
 - d) Enzymes

- 9) What is the primary concern regarding the use of synthetic flavours?
- | | |
|-----------|-----------------|
| a) Cost | b) Availability |
| c) Safety | d) Taste |

- 10) The efficiency of a distillation process can be improved by using: _
- A higher boiling point solvent
 - A lower boiling point solvent
 - A Fractionating column
 - A higher pressure

B) Write True or False.

06

- The quality of resins is not affected by the time of harvest.
- Fraction distillation is used to separate liquids with different boiling points.
- Percolation is a slow extraction process.
- Ketones are responsible for the fruity flavour of many fruits.
- Solvent extraction is suitable for extracting heat sensitive compounds.
- Maceration involves passing steam through plant material.

Q.2 Answer the following.

16

- Describe production equipment's used in the distillation method and write their uses.
- Write the properties and uses of pinene and linalool.
- Write the isolation methods, properties and uses of citral.
- Define alcohol and explain its purification methods.

Q.3 Answer the following.

- Write down the brief explanation about Steam Distillation method with its uses. **08**
- Discuss in detail about Soxhlet extraction method. **08**

Q.4 Answer the following.

- Discuss in detail cold fat method and enfleurage method. **08**
- Explain in detail source, properties and uses of Lemon and Orange. **08**

Q.5 Answer the following.

- Write the sources of oleogum resins and explain in detail the extraction of gum styrax and Myrrh. **08**
- Discuss in detail about deodorization of ethanol. **08**

Q.6 Answer the following.

- Write a brief note on isolation of geraniol. **08**
- Write in detail about maceration methods. **08**

Q.7 Answer the following.

- a)** Explain in detail about continuous hot extraction process. Write down the biological source, chemical constituent and uses of **08**
- 1) Gum Styrax
 - 2) Elemi
- b)** Discuss in detail extraction with volatile solvents, selection of solvent and extraction process of flower oils. **08**

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - V) (New) (CBCS) Examination: October/November - 2025
Cosmetic Technology - III (CT502)**

Day & Date: Friday, 31-10-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

Instructions: 1) Q. No. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Draw neat labelled diagrams & give equations wherever necessary.
4) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. 10

- 1) The spreadability of cold cream is increased by adding _____.
 - a) Hard paraffin
 - b) Ozokerite
 - c) Vegetable oil
 - d) Isopropyl myristate
- 2) Which of the following is inorganic type of humectant?
 - a) Calcium chloride
 - b) Sodium laureate
 - c) Glycerol
 - d) Ethylene glycol
- 3) Vanishing creams are called so because _____.
 - a) They disappear during formulation mix
 - b) They vanish during removal from skin surface
 - c) They disappear after rubbing application
 - d) None of the above
- 4) In cosmetic preparations, antioxidants used in an aqueous system is _____.
 - a) Sodium formaldehyde
 - b) Phenol
 - c) Alpha tocopherol
 - d) Methyl paraben
- 5) Chemically soaps are _____.
 - a) Potassium salt of long fatty acids
 - b) Sodium salt of long chain fatty acids
 - c) They cannot be used in hard water
 - d) All of the above
- 6) Cold creams are traditionally based on _____.
 - a) Stearic acid and sodium hydroxide
 - b) Borax- beeswax
 - c) Stearic acid and triethanolamine
 - d) Anhydrous systems

- 7) Which of the following is known as Epsom salt?
 - a) Ferrous sulphate
 - b) Calcium sulphate
 - c) Sodium sulphate
 - d) Magnesium sulphate
- 8) Following points are applicable for floating bath oils except:
 - a) They leave thin film on body
 - b) They contain light mineral oil, isopropyl myristate
 - c) They reduce foaming of soaps
 - d) They increase foaming of soaps
- 9) Following is not the synthetic humectant:
 - a) Butylene glycol
 - b) Talc
 - c) Urea
 - d) Glycerin
- 10) What is the primary difference between soaps and detergents?
 - a) Soaps are synthetic, while detergents are natural
 - b) Soaps are more effective in hard water, while detergents are not
 - c) Soaps are derived from animal fats, while detergents are synthetic compounds
 - d) Soaps are solid, while detergents are liquid

B) Write True or False.**06**

- 1) The skin is able to synthesize vitamin D when exposed to sunlight.
- 2) Chemically all humectants have hydroxyl groups in common.
- 3) Henna acts as a moisturizer.
- 4) Relative humidity is one of the reasons of dryness in cosmetic products.
- 5) Vanishing cream is an ointment that may be classified as oleaginous base.
- 6) Sorbitol is used as humectant in dental preparation.

Q.2 Answer the following questions.**16**

- a) Write a note on hygroscopicity.
- b) Define creams and classify them in detail.
- c) What are the applications of humectants? Describe in brief with examples.
- d) Distinguish between soaps and detergents.

Q.3 Answer the following questions.

- a) Solve the following:
 - 1) What is the mechanism of tissue damage caused by free radicals.
 - 2) Write about humectant properties of Glycerin.
- b) Write about manufacturing of cosmetic soaps.

10**06**

- Q.4 Answer the following questions.**
- a)** Solve the following: **10**
 - 1) Write a note on bath oils.
 - 2) Discuss in detail properties of hyaluronic acid.
 - b)** Write about choice and applications of antioxidants. **06**
- Q.5 Answer the following questions.**
- a)** Solve the following: **10**
 - 1) Write a note on bath salts.
 - 2) Write about humectant properties of propylene glycol.
 - b)** Describe continuous hydrolysis process for manufacturing of soaps. **06**
- Q.6 Answer the following questions.**
- a)** Solve the following: **10**
 - 1) Describe in-vitro methods for determination of antioxidant activity.
 - 2) Write a note on all-purpose cream.
 - b)** Describe types of soaps in detail. **06**
- Q.7 Answer the following questions.**
- a)** Solve the following: **10**
 - 1) What is blooming bath oils?
 - 2) Describe continuous hydrolysis process for manufacturing of soaps.
 - b)** Write a brief note on antioxidants. **06**

Seat No.	
----------	--

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - V) (New) (CBCS) Examination: October/November – 2025
Principles of Cosmeceutics - I (CT503)**

Day & Date: Monday, 03-11-2025

Max. Marks: 80

Time: 11:00 AM To 02:00 PM

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.

Q.1 A) Choose correct alternative. (MCQ) 10

- 1) Critical solution temperature for partially miscible liquids is the minimum temperature at which _____.
 - a) A homogeneous solution is formed
 - b) Mutual solubility of the two liquids shows a decreasing trend
 - c) Two liquids are completely separated into two layers
 - d) None of these
- 2) What does the Hildebrand solubility parameter primarily measure?
 - a) The chemical reactivity of a substance
 - b) The viscosity of a liquid
 - c) The cohesive energy density of a substance
 - d) The pH of a solution
- 3) If the surface of a liquid is plane, then the angle of contact of the liquid with the walls of the container is _____.
 - a) Acute angle
 - b) Obtuse angle
 - c) 90°
 - d) 0°
- 4) The Freundlich adsorption isotherm can be used to model _____.
 - a) Multilayer adsorption
 - b) Monolayer adsorption
 - c) Both
 - d) None of the above
- 5) Excess negative ions are present in which region of the electric double-layer?
 - a) Tightly bound layer
 - b) Diffuse second layer
 - c) Nerst potential
 - d) Zeta potential
- 6) In which type of suspension sedimentation rate is high?
 - a) Flocculated suspension
 - b) Non-Flocculated suspension
 - c) Both
 - d) None of the above
- 7) Which of the following factors affects the stability of suspension?
 - a) Particle Size
 - b) Solubility
 - c) Viscosity of the medium
 - d) All of the above

- 8) Cracking means ____.
- a) Separation of two layers
 - b) Upward movement of dispersed globules to form a thick layer at the surface
 - c) Change the type of emulsion
 - d) None of the above
- 9) In the conductivity test, bulb glows on passing the electric current, the emulsion is _____ type.
- a) O/W type
 - b) W/O type
 - c) Coarse emulsion
 - d) Fine emulsion
- 10) Which of the following factors primarily affects the shelf life of an emulsion?
- a) Viscosity of the emulsion
 - b) Particle size distribution
 - c) Temperature of storage
 - d) All of the above

B) Write true or false.**06**

- 1) Interfacial tension is always lower than surface tension.
- 2) Drugs that are highly lipophilic tend to be more soluble in aqueous solution.
- 3) The particle size in a suspension is usually larger than that in a solution.
- 4) The 'dye test' can be used to detect the presence of an emulsion by adding a water-soluble dye to the sample.
- 5) A zeta potential close to zero indicates poor stability of colloidal dispersion.
- 6) The sedimentation rate is inversely proportional to the particle size.

Q.2 Answer the following.**16**

- a) Briefly explain the structured vehicle in suspension.
- b) Explain in detail solvation and association.
- c) Write a note on the spreading coefficient.
- d) Write a note on theories of emulsification.

Q.3 Answer the following.

- a) Explain in brief the mechanism of solute-solvent interaction. Explain in detail the Hildebrand solubility parameter.
- b) Explain the adsorption at the solid and liquid interface in detail.

08**08****Q.4 Answer the following.**

- a) Add a note on flocculation and deflocculation in suspension.
- b) Write a note on the assessment of emulsion shelf life.

08**08**

Q.5 Answer the following.

- a) Define solubility. Explain the various factors affecting the solubility of drugs **08**
- b) Write a note on the electric double layer. Define nernst and zeta potential. **08**

Q.6 Answer the following.

- a) Add note on sedimentation parameter and controlled flocculation in suspension. **08**
- b) Add note on types of emulsion. Discuss in detail about stability of emulsion. **08**

Q.7 Answer the following.

- a) Write a note on formulation and evaluation of suspension stability. **08**
- b) Explain detection tests of emulsion and explain in short the mechanism of droplet stabilization in emulsion. **08**

Seat No.	
-----------------	--

Set P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - V) (New) (CBCS) Examination: October/November – 2025
Beauty Culture - I (CT504)**

Day & Date: Thursday, 06-11-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Draw neat labelled diagram wherever necessary.

Q.1 A) Choose correct alternative.

10

- 1) _____ is the outermost layer of epidermis.
a) Stratum lucidium b) Stratum basale
c) Stratum spinosum d) Stratum corneum
- 2) _____ is used to treat whiteheads.
a) Benzoyl peroxide b) Salicylic acid
c) Retinoid d) All of the above
- 3) _____ Facial massage involves tapping with fingertips.
a) Friction b) Petrissage
c) Tapotement d) Effleurage
- 4) _____ is used in face packs to reduce oiliness and absorb excess sebum.
a) Honey b) Aloe Vera
c) Turmeric d) Clay
- 5) _____ Technique help to reduce puffiness and promote the removal of toxins from the skin.
a) Stretching b) Lymphatic drainage
c) Pinching d) Friction
- 6) _____ is commonly used to administer essential oil in aromatherapy.
a) Oral ingestion b) Topical application
c) Injection d) All of the above
- 7) _____ is the purpose of facial toner.
a) To hydrate the skin
b) To remove excess oil and tighten pores
c) To exfoliate the skin
d) To apply makeup
- 8) _____ is used for treatment of wrinkles.
a) Benzoyl peroxide b) Salicylic acid
c) Retinoid d) Antibiotics

- 9) _____ is the benefit of using a peel off mask.
- | | |
|--------------------------|------------------------|
| a) To exfoliate the skin | b) To hydrate the skin |
| c) To treat the acne | d) To tighten the skin |

- 10) _____ is used to dilute the essential oil.
- | | |
|-------------------|------------------|
| a) Carrier oil | b) Vegetable oil |
| c) Grape seed oil | d) Soya been oil |

B) Write true or false.

06

- 1) Using a sunscreen is the important part of summer skin care.
- 2) Facials are only beneficial for people with dry skin.
- 3) The skin's primary function is to protect the body from harmful external elements.
- 4) Essential oils should always be applied directly to the skin.
- 5) Sheet mask are an effective way to deliver active ingredient to skin.
- 6) Open pores are caused by excessive oil production.

Q.2 Answer the following.

16

- a) Write down the diet for healthy skin.
- b) Write the names of the bone and draw neat labelled diagrams of face bone.
- c) Explain aromatherapy.
- d) Write down the benefits of hot oil mask and setting mask.

Q.3 Answer the following.

16

- a) Describe in detail treatment for skin conditions.
- b) Explain in detail types of facial.

Q.4 Answer the following.

16

- a) Write paraffin wax mask.
- b) What is carrier oil and write down the properties of carrier oil.

Q.5 Answer the following.

16

- a) What is facial mask? Write down the peel off mask and setting mask.
- b) Write down the properties of essential oil.

Q.6 Answer the following.

16

- a) Explain in detail about facial.
- b) Explain in detail about methods of hair removal.

Q.7 Answer the following.

16

- a) Explain types of face massage and its benefits.
- b) Write down the blending and precautions for essential oil

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - V) (New) (CBCS) Examination: October/November – 2025
Pharmacology and Interaction-I (CT505-B)**

Day & Date: Saturday, 08-11-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.

10

- 1) The action of the drug on the body is known as _____.
a) Pharmacokinetic b) Pharmacodynamic
c) Pharmacology d) Pharmacotherapeutics
- 2) Cellulitis is most often caused by group A beta-haemolytic streptococci _____.
a) Streptococcus pyogenes b) Staphylococcus aureus
c) Candida intermedia d) Both A and B
- 3) _____ refers to an inflammation of the gums.
a) Sinusitis b) Gingivitis
c) Allergic gingivitis d) Crohn's disease
- 4) The _____ is the hard, keratin coating on the fingertip.
a) Nail plate b) Nail bed
c) Nail matrix d) Lanula
- 5) The pharmacology focusing on the effects of drugs or active compounds on the skin refers to _____.
a) Dermatopharmacology b) Haematology
c) Cosmeceuticals d) Dermatology
- 6) _____ is the key component in a cosmetic formulation responsible for producing a desired effect on the skin.
a) Excipient b) Vehicle
c) Active ingredient d) All of the above
- 7) _____ is a delayed allergic reaction that appears as a rash, a day or two after skin is exposed to an allergen.
a) Allergic contact dermatitis b) Contact dermatitis
c) Dermatitis d) Allergic rash

- 8) The ____ is comprised of bundles of connective tissue fibres.
a) Periodontal ligament b) Pulp Chamber
c) Canines d) Cementum
- 9) ____ is a condition that causes hair to fall out in small patches, which can be unnoticeable.
a) Alopecia b) Alopecia areata
c) Androgenetic alopecia d) Telogen effluvium
- 10) ____ is the major lipophilic antioxidant in plasma, membranes, and tissues.
a) Vitamin A b) Vitamin C
c) Vitamin D d) Vitamin E

B) Write true or false.**06**

- 1) Moderate cellulitis cannot be treated with oral antibiotics.
- 2) Climbazole is an antifungal that inhibits the growth of Malassezia.
- 3) Androgenetic alopecia is a common form of hair loss in men.
- 4) Hypohidrosis is a condition that causes a person to sweat less than usual.
- 5) Wisdom teeth are also called second molars.
- 6) Nail polish remover can irritate the perionychial tissues and produce onycholysis.

Q.2 Answer the following.**16**

- a) Write down the side effects of cosmetic products on sebaceous gland.
- b) Write a note on Eczema.
- c) Define the following term
 - i) Dermatopharmacology.
 - ii) Cosmeceuticals.
- d) Discuss in detail about Enamel, Pulp Chamber.

Q.3 Answer the following.

- a) Explain in detail about contact dermatitis. **08**
- b) Write detail note on hair diseases and disorders caused by cosmetic products. **08**

Q.4 Answer the following.

- a) Explain in detail about nail diseases and disorders. **08**
- b) Discuss in detail about anti-aging pharmacology. **08**

Q.5 Answer the following.

- a) Discuss in detail about anti-wrinkle pharmacology. **08**
- b) Explain in detail about disorders and treatment of teeth. **08**

Q.6 Answer the following.

- a) Discuss in detail about Pharmacodynamics and pharmacokinetics process. **08**
- b) Explain in brief about Psoriasis. **08**

Q.7 Answer the following.

- | | |
|--|-----------|
| a) Write in detail about nail pigmentation and keratin granulation. | 08 |
| b) Discuss in detail about dentifrices products. | 08 |

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Semester - VI) (New) (CBCS) Examination: October/November - 2025
Perfume - II (CT601)**

Day & Date: Tuesday, 28-10-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. 10

- 1) _____ is the family belongs to Musk.

a) Viverridae	b) Cervidae
c) Styracaceae	d) Burseraceae
- 2) The main odorous and medicinal constituent of Sandal wood is the _____.

a) Santol	b) Aldehyde Santalol
c) Santene	d) Santalone
- 3) Condensation reaction is the reverse of which of the following reaction?

a) Lock and key hypothesis	b) Oxidation
c) Hydrolysis	d) Glycogen formation
- 4) _____ is the molecular formula of coumarin.

a) $C_9H_6O_2$	b) $C_{10}H_7O_2$
c) $C_{11}H_6O_2$	d) $C_9H_7O_2$
- 5) Complete the following reaction.
 $RCOOH + R^1OH \rightleftharpoons ?$

a) $RCOOR^1 + H_2O$	b) $RCHO + R^1OH$
c) $ROR^1 + CO_2 + H_2O$	d) $RCOR^1 + H_2O_2$
- 6) The synonym of musk xylene is _____.

a) tert-butyl-2,4,6-trinitrobenzene
b) 2-tert-butyl-3,5-dimethyl-2,4,6-trinitrobenzene
c) 1-tert-butyl-3,5-dimethyl 2,4,6-trinitrobenzene
d) 3-tert-butyl-3,5-dimethyl 2,4-dinitrobenzene
- 7) Hydrogenation is a chemical reaction that involves addition of hydrogen in the presence of a catalyst to gives _____ bond.

a) Saturated	b) Unsaturated
c) Both a and b	d) None of the above

- 8) _____ is the main component of citronella oil gives its distinctive lemon aroma.
- | | |
|----------------|---------------|
| a) Citronellal | b) Citronoene |
| c) Citronellol | d) Citral |
- 9) Fixatives are the base notes in a perfume, and kept at _____ %.
- | | |
|---------|---------|
| a) 1-4% | b) 2-4% |
| c) 3-5% | d) 4-6% |
- 10) _____ is a balsamic resin obtained from *Styrax benzoin* Dryand.
- | | |
|--------------------|----------------|
| a) Benzyl benzoate | b) Benzoin |
| c) Myrrh | d) Tolu balsam |

B) Write True or False.**06**

- 1) Tolu balsam deliciously softens and soothes the skin.
- 2) Lemon is a rich source of vitamin E.
- 3) Aldol reaction can be carried out with either aldehyde or ketone.
- 4) Hydrogenation is a chemical reaction that involves addition of hydrogen in the presence of catalyst to the double bond.
- 5) Alkyl, vinyl or aryl magnesium halides are referred to as Grignard reagents.
- 6) Benzyl benzoate is an organic compound having molecular formula $C_{15}H_{12}O_2$.

Q.2 Answer the following.**16**

- a) Define fixative and write down the classification of fixative.
- b) Write the source, chemical composition and uses of civet.
- c) Define the following:
 - i) Condensation
 - ii) Esterification
- d) Enlist the nitrating agent used in nitration. Write down the chemical properties of Musk xylene.

Q.3 Answer the following.

- a) Explain the Building of perfumes and body of the perfumes.
- b) Explain in detail about Esterification of benzyl benzoate.

08**08****Q.4 Answer the following.**

- a) Explain the acetylation of acetylated fruit notes.
- b) Explain in detail about the Knoevenagel reaction with mechanism.

08**08****Q.5 Answer the following.**

- a) Discuss in detail about resinous fixative.
- b) Define hydrogenation process. Explain the synthesis of citronellal from citronellol by hydrogenation.

08**08**

Q.6 Answer the following.

- a)** Write the biological source, chemical composition and uses of following fixatives. **08**
- i) Diethyl Phthalate
 - ii) Ambergris
 - iii) Cinnamon
- b)** Discuss in detail about Nitration of Musk Ambrette. **08**

Q.7 Answer the following.

- a)** Discuss in detail about preparation of phenyl ethyl alcohol by Grignard reaction process. **08**
- b)** Explain in detail about the condensation reaction with any one mechanism. **08**

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VI) (New) (CBCS) Examination: October/November – 2025
Cosmetic Technology - IV (CT602)**

Day & Date: Thursday, 30-10-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Draw neat labelled diagrams wherever necessary.
4) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.

10

- 1) The chemicals that are capable of inflicting a damage on the unprotected skin are _____.
 - a) Alkalis
 - b) Organic solvents
 - c) Resins
 - d) All of the above
- 2) The adhesive power of baby powders can be improved by the incorporation of _____.
 - a) Aluminium
 - b) Lanolin
 - c) Petrolatum
 - d) None of the above
- 3) The variety of gums can be used in _____ based system.
 - a) Rubber
 - b) Hydrocolloid
 - c) Vinyl
 - d) Earth
- 4) _____ is used as an oxidizing agent in skin lightening creams.
 - a) Zinc oxide
 - b) Mercury Chloride
 - c) Hydrogen peroxide
 - d) Hydroquinone
- 5) Baby oils are composed predominantly of a very pure grade of _____.
 - a) Mineral oil
 - b) Fatty acid esters
 - c) Vegetable oils
 - d) Lanolin derivatives
- 6) Eosin is also known as D & C Red No. _____.
 - a) 21
 - b) 27
 - c) 24
 - d) 30
- 7) _____ mill is used to prepare dry rouge.
 - a) Cutter mill
 - b) Fluid energy mill
 - c) Hammer mill
 - d) Runner mill
- 8) _____ is used to impart brown shades in mascara.
 - a) Chromium oxide
 - b) Carmine
 - c) Zinc oxide
 - d) Umbers

9) _____ eyeshadows contains high proportions of waxes.

- | | |
|-----------|----------|
| a) Powder | b) Cream |
| c) Liquid | d) Stick |

10) Eyeliners are available in different forms except _____.

- | | |
|-----------|---------------|
| a) Liquid | b) Suspension |
| c) Cake | d) Pencil |

B) Write true or false.

06

- 1) Skin is to be protected from dry solids, dust, and dirt.
- 2) Zinc oxide is thought to have mildly antiseptic properties in baby products.
- 3) Magnesium Aluminium silicate is used as an emollient in hand cleansers.
- 4) Unbound melanin is called as melanosomes.
- 5) Face pack should be a smooth paste without gritty particles.
- 6) Most widely used staining dyes are water-soluble eosin.

Q.2 Answer the following.

16

- a) Give the types of hazards from which skin is to be protected.
- b) Enlist the causes associated with skin problems in babies.
- c) Write down the properties of face masks/packs.
- d) Write a note on historical background of rouge.

Q.3 Answer the following.

- a) Give the ideal properties of mascara and enlist different available eyeshadow preparations.

08

- b) Give formula for each protective creams and lotions.

08

Q.4 Answer the following.

- a) Give the formula for waterless hand cleanser cream and liquid hand cleanser.

08

- b) Write a note on hydrocolloid-based systems used to prepare face masks/packs.

08

Q.5 Answer the following.

- a) Give any one formula for products of baby oil and baby powder.

08

- b) Explain in detail different skin lightening agents.

08

Q.6 Answer the following.

- a) Explain in detail cake mascara along with the formula.

08

- b) Explain in detail pressed powder eyeshadow along with the formula.

08

Q.7 Answer the following.

- a) Explain in detail various ingredients used in lipstick formulation.

10

- b) Explain in detail eyeliner preparations.

06

Seat No.	
----------	--

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VI) (New) (CBCS) Examination: October/November - 2025
Principles of Cosmetics – II (CT603)**

Day & Date: Saturday, 01-11-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.

Q.1 A) Choose correct alternative. (MCQ) 10

- 1) Which of the following law governs the distribution of a solute between two immiscible solvents?
 - a) Raoult's law
 - b) Henry's law
 - c) Nernst's distribution law
 - d) Boyle's law
- 2) The distribution law holds good only when _____.
 - a) Solute undergoes chemical reaction
 - b) Solute is volatile
 - c) Solute exists in same molecular form in both solvents
 - d) Solvents are miscible
- 3) Which optical property is commonly used to detect colloids?
 - a) Tyndall effect
 - b) Brownian motion
 - c) Electrophoresis
 - d) Osmosis
- 4) Colloids that show strong affinity to the dispersion medium are _____.
 - a) Lyophobic
 - b) Lyophilic
 - c) Hydrophobic
 - d) Insoluble
- 5) The hysteresis loop in rheology indicates _____.
 - a) Pseudoplastic behaviour
 - b) Thixotropic behaviour
 - c) Newtonian behaviour
 - d) Elastic deformation
- 6) A suspension that becomes thicker on shaking is _____.
 - a) Newtonian
 - b) Thixotropic
 - c) Dilatant
 - d) Plastic
- 7) Which fluid requires an initial shear force to begin flowing?
 - a) Newtonian
 - b) Dilatant
 - c) Bingham plastic
 - d) Elastic fluid
- 8) Hausner ratio is calculated as _____.
 - a) Tapped density / Bulk density
 - b) Bulk density / Tapped density
 - c) Surface area / Volume
 - d) Void volume / True volume

- 9) Which factor does not affect flow properties?
- | | |
|-----------------------|---------------------|
| a) Particle shape | b) Moisture content |
| c) Color of particles | d) Surface texture |
- 10) Which particle shape usually shows better flowability?
- | | |
|--------------|---------------|
| a) Irregular | b) Fibrous |
| c) Spherical | d) Plate-like |

B) Write true or false.**06**

- 1) Distribution phenomenon involves the distribution of solute between two immiscible liquids.
- 2) Optical properties of colloids are used to determine particle size and behaviour.
- 3) Thixotropy is a type of flow behaviour that describes time-dependent decrease in viscosity.
- 4) Rheology only applies to solid materials.
- 5) Micromeritics does not consider surface area as a measurable property.
- 6) A higher angle of repose indicates better flow properties of a powder.

Q.2 Answer the following.**16**

- a) Explain the effect of molecular association and dissociation on the distribution of solute when added to an immiscible system.
- b) What are colloids? Classify the colloids. Differentiate between different types of colloids.
- c) Explain the Newtonian system of flow with examples.
- d) What are derived properties of powders? Explain any two.

Q.3 Answer the following.

- a) State Nernst Distribution law. Explain the various applications of distribution law.
- b) Explain in detail the electrical and kinetic properties of colloids.

08**08****Q.4 Answer the following.**

- a) Define and explain non-Newtonian flow of fluids (Time Independent).
- b) Enumerate methods to determine the particle size. Explain any two methods to determine the particle size.

08**08****Q.5 Answer the following.**

- a) Write a note on stability of colloidal systems.
- b) Explain in detail Thixotropy and Anti-thixotropy with examples.

08**08****Q.6 Answer the following.**

- a) Give Packaging arrangement of powders and explain their influence on processing of solid preparations.
- b) Discuss in detail the optical properties of colloids. Add note on mechanism of peptization of colloids.

08**08**

Q.7 Answer the following.

- a)** Define Viscosity along with its units of expression. Explain factors influencing rheology of dispersed system. **08**
- b)** With the help of neat diagram explain principle and working of Coulter counter method to determine particle size. **08**

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VI) (New) (CBCS) Examination: October/November – 2025
Beauty Culture – II (CT604)**

Day & Date: Monday, 03-11-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Draw neat labelled diagrams & give equations wherever necessary.
4) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.

10

- 1) Cheek colour comes in: _____.
 - a) Cream form
 - b) Liquid form
 - c) Dry form
 - d) All of the above
- 2) Which product should you apply first and foremost?
 - a) Lipstick
 - b) Primer
 - c) Highlighter
 - d) Concealer
- 3) Which makeup should be soft and natural looking?
 - a) Bridal makeup
 - b) Evening makeup
 - c) Day makeup
 - d) Trendy makeup
- 4) Which of the following products give you a natural sun-kissed glow that accentuates the cheekbones?
 - a) Contour
 - b) Highlighter
 - c) Bronzer
 - d) All of the above
- 5) A cosmetic product which has its prime function the ability to complement skin colour by imparting a velvet like finish is called:
 - a) Moisturizing lotion
 - b) Rouge
 - c) Vanishing cream
 - d) Face powder
- 6) Castor oil is used in lipsticks for: _____.
 - a) Giving a shine
 - b) Building viscosity
 - c) Dispersing colour
 - d) Preventing bleed
- 7) Which of the following is not a type of hair?
 - a) Curly
 - b) Coily
 - c) wavy
 - d) Ringlets

- 8) Hair pressing is:
- a) Temporarily curls hair.
 - b) Temporarily straightens hair.
 - c) Permanently waves hair.
 - d) Gives wide waves to curly hair.
- 9) What is characterized by sudden falling out of hair in round patches?
- a) Postpartum alopecia.
 - b) Androgenetic alopecia.
 - c) Alopecia areata.
 - d) Alopecia senilis
- 10) If you are trying to cover up a pimple, you should choose: ____.
- a) A concealer with green in it.
 - b) A separate darker base for that area.
 - c) A liquid concealer.
 - d) None of the above.

B) Write true or false.**06**

- 1) We don't use dark colours in the crease.
- 2) Eyeshadows are available in liquid form only.
- 3) The technique in which the ends of the hair are cut at a slight taper, using diagonal lines is called beveling.
- 4) Sometimes it is necessary to use a liner to cover the shine from dried lash glue.
- 5) Permanent hair colour breaks up or diffuses melanin.
- 6) The athlete's foot is found between the toes and appears as redness and broken skin, which is very itchy.

Q.2 Answer the following.**16**

- a) What is corrective makeup?
- b) Describe structure of hair.
- c) Write a note on shampoo preparation.
- d) What are the different types of hairs.

Q.3 Answer the following.

- a) Solve the following:
 - a) Describe eye makeup products.
 - b) Write down the corrective makeup techniques for eyes.
- b) What are the different hair accessories used.

10**06****Q.4 Answer the following.**

- a) Solve the following:
 - 1) What are the different shapes of face?
 - 2) Write a note on blusher.
- b) What is hair conditioner?

10**06**

Q.5 Answer the following.

- a) Solve the following: **10**
 - 1) What is toner?
 - 2) Describe different hair styles which can be used regularly.
- b) Describe in detail evening makeup. **06**

Q.6 Answer the following.

- a) Solve the following: **10**
 - 1) Write a note on chemical hair dyes.
 - 2) What is the correct way to apply blush?
- b) Describe corrective makeup for different face shapes. **06**

Q.7 Answer the following.

- a) Solve the following: **10**
 - 1) Describe professional ethics and desired attitude of beauticians to clients.
 - 2) What is astringent preparation?
- b) Write in detail about application of false eyelashes and their contraindications. **06**

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VI) (New) (CBCS) Examination: October/November - 2025
Pharmacology & Interaction-II (CT605-B)**

Day & Date: Thursday, 06-11-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.

10

- 1) Which fatty acid is considered to promote healing and reduce inflammation?
 - a) Omega-6
 - b) Omega-9
 - c) Omega-3
 - d) Trans-fatty acids
- 2) Which plant supplement has shown similar efficacy to cetirizine and Fexofenadine for allergic rhinitis?
 - a) Spirulina
 - b) Stinging Nettle
 - c) Butterbur
 - d) Nigella sativa
- 3) Photosensitive dermatitis can be caused or aggravated by:
 - a) Sunlight exposure
 - b) Bacterial infections
 - c) High humidity levels
 - d) Low air pressure
- 4) The HRIPT is typically conducted on:
 - a) Laboratory Animals
 - b) In vitro cell cultures
 - c) Patients with known skin allergies
 - d) Healthy human volunteers
- 5) A corn is distinguished from a callus by:
 - a) Its location on the foot
 - b) The presence of a central conical core of keratin
 - c) Its size and thickness
 - d) The amount of pain it causes
- 6) Which of the following is NOT a common example of foot pain?
 - a) Sesamoiditis
 - b) Plantar fasciitis
 - c) Shin splints
 - d) Achilles tendinitis
- 7) Which of the following medications is an oral analgesic used for quick relief of foot pain?
 - a) Ibuprofen
 - b) Naproxen
 - c) Acetaminophen
 - d) Diclofenac

- 8) Patch testing is a well-established method of diagnosing contact allergy like ____.
- a) Type IV hypersensitivity reaction
 - b) Type I hypersensitivity reaction
 - c) Type III hypersensitivity reaction
 - d) Type II hypersensitivity reaction
- 9) Chemical substances which burn the skin on local application is known as ____.
- a) Bullae
 - b) Cauterizing Agents
 - c) Allergens
 - d) Irritant product.
- 10) ____ is cutaneous diseases that are caused or aggravated by sunlight exposure.
- a) Photosensitive dermatitis
 - b) Allergic contact dermatitis
 - c) Acute toxic contact dermatitis
 - d) Photo allergy

B) Answer the following as true or false.**06**

- 1) The part of which antibody combines with antibody is called Epitope.
- 2) An immune complex is formed from the integral binding of an antibody to insoluble antigen.
- 3) Pustular Reaction in the skin characterized by appearance of several lesions containing pus.
- 4) Finn Chambers are made of iron, which may come into chemical reactions with test substance.
- 5) Saccharide isomerate compound is also known as pentavitin.
- 6) The cumulative irritation test is not accepted method used to evaluate the skin irritation potential.

Q.2 Answer the following.**16**

- a) Write a short note on Psychosocial impact of allergies.
- b) What is agglutination, and how is it used in blood grouping?
- c) Describe the role of Langerhans cells in allergic contact dermatitis.
- d) What are the primary causes of cracked heels?

Q.3 Answer the following.

- a) Write a detailed note on Anti -inflammatory diet.
- b) Explain the procedure for applying test preparations to patch test chambers.

08**08****Q.4 Answer the following.**

- a) Briefly describe the four types of hypersensitivity reactions.
- b) Explain in detail about Neuropathic foot pain and Inflammatory foot pain.

08**08**

Q.5 Answer the following.

- a) Discuss the etiology of foot pain, including the different types of stresses that can lead to tissue damage and examples of specific foot pain conditions. **08**
- b) Write a detail note on photo patch test. **08**

Q.6 Answer the following.

- a) Discuss the different types of antigen-antibody reactions, including precipitation, agglutination, and ELISA. **08**
- b) Explain in detail about oral mucous irritancy test. **08**

Q.7 Answer the following.

- a) Discuss in detail about acute toxic contact dermatitis **08**
- b) Write in detail salient features of antigen - antibody reaction and explain the precipitation reaction. **08**

Seat
No.Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VI) (New) (CBCS) Examination: October/November - 2025
Perfume - II (CT1601)**

Day & Date: Tuesday, 28-10-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

Instructions: 1) All questions are compulsory.
2) Draw neat labelled diagrams.
3) Figure to the right indicate full marks.

Q.1 Multiple choice questions.**08**

- 1) _____ is family belongs to Civet.
 - a) Viverridae
 - b) Cervidae
 - c) Styracaceae
 - d) Burseraceae
- 2) The main odorous and medicinal constituent of Sandal wood is the _____.
 - a) Santol
 - b) Aldehyde Santalol
 - c) Santene
 - d) Santalone
- 3) Condensation reaction is the reverse of which of the following reaction?
 - a) Lock and key hypothesis
 - b) Oxidation
 - c) Hydrolysis
 - d) Glycogen formation
- 4) _____ is the molecular formula of coumarin.
 - a) $C_9H_6O_2$
 - b) $C_{10}H_7O_2$
 - c) $C_{11}H_6O_2$
 - d) $C_9H_7O_2$
- 5) Complete the following reaction.
 $RCOOH + R^1OH \rightleftharpoons ?$
 - a) $RCOOR^1 + H_2O$
 - b) $RCHO + R^1OH$
 - c) $ROR^1 + CO_{2+} + H_2O$
 - d) $RCOR^1 + H_2O_2$
- 6) The synonym of musk xylene is _____.
 - a) tert-butyl-2,4,6-trinitrobenzene
 - b) 2-tert-butyl-3,5-dimethyl-2,4,6-trinitrobenzene
 - c) 1-tert-butyl-3,5-dimethyl 2,4,6-trinitrobenzene
 - d) 3-tert-butyl-3,5-dimethyl 2,4-dinitrobenzene
- 7) Hydrogenation is a chemical reaction that involves addition of hydrogen in the presence of a catalyst to give _____ bond.
 - a) Saturated
 - b) Unsaturated
 - c) Both a and b
 - d) None of the above

- 8) _____ is the main component of citronella oil gives its distinctive lemon aroma.
- | | |
|----------------|---------------|
| a) Citronellal | b) Citronoene |
| c) Citronellol | d) Citral |

Q.2 Answer the following. (Any Four) 08

- a) Define fixative and write down the classification of fixative.
- b) Write the source, chemical composition and uses of civet.
- c) Define the following: i) condensation ii) esterification
- d) Write down the physical and chemical properties of cinnamaldehyde.
- e) Write a note on citronellol.
- f) Enlist the nitrating agent used in nitration. Write down the chemical properties of Musk xylene.

Q.3 Write Short Notes. (Any Two) 08

- a) Building of perfumes and body of the perfumes
- b) Explain with mechanism formation benzyl benzoate.
- c) Nitration of Musk Ambrette

Q.4 Answer the following. (Any Two) 08

- a) Explain the hydrogenation process with suitable reaction.
- b) Explain in detail about the aldol condensation reaction with mechanism.
- c) Write the biological source, chemical composition and uses of following fixatives.
 - i) Diethyl Phthalate
 - ii) Ambergris
 - iii) Cinnamon

Q.5 Answer the following. (Any One) 08

- a) Define esterification reaction and discuss in detail synthesis of benzyl acetate and give explanation of Perkin reaction with suitable example.
- b) Define hydrogenation process. Explain the synthesis of citronellal from citronellol by hydrogenation.

Seat No.	
----------	--

Set P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VI) (New) (CBCS) Examination: October/November – 2025
Cosmetic Technology - IV (CT1602)**

Day & Date: Thursday, 30-10-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

Instructions: 1) All questions are compulsory.
2) Figure to the right indicate full marks.

Q.1 Multiple choice questions.

08

- 1) Dimethicone is used as _____ in protective creams formulation.
 - a) Thickener
 - b) Water repellent
 - c) Film modifier
 - d) Bulking agent
- 2) _____ is an example of cationic detergent.
 - a) Cetyltrimethylammonium bromide
 - b) Sodium lauryl sulphate
 - c) Sodium oleyl sulphate
 - d) Teepol
- 3) _____ is a skin lightening agent.
 - a) Kojic acid
 - b) Glycolic acid
 - c) Mushroom
 - d) All of the above
- 4) Humectants are used in the range of _____ % in face mask.
 - a) 40-80
 - b) 2-10
 - c) 10-30
 - d) 3-7
- 5) _____ occurs when dead skin cells get trapped within small pockets on the skin surface.
 - a) Seborrheic dermatitis
 - b) Ammoniacal dermatitis
 - c) Milia
 - d) Miliaria
- 6) _____ is used as mould releasers in manufacturing of lipsticks.
 - a) Dimethyl silicone
 - b) Bismuth oxychloride
 - c) Propyl parahydroxy benzoates
 - d) Propyl gallate
- 7) _____ increases the ability to cling to the eyelashes in liquid mascara.
 - a) Rayon fiber
 - b) Guanine crystals
 - c) Benzophenone
 - d) Tragacanth
- 8) High concentration of metal stearates in dry rouges causes _____.
 - a) Glassy appearance
 - b) Colour streaking
 - c) Brittle compact
 - d) None of the above

- Q.2 Answer the following. (Any Four) 08**
- a) Define barrier creams and how does it works?
 - b) How kojic acid act as a skin lightening agent?
 - c) Distinguish between face packs and face masks.
 - d) Enlist the skin problems in babies and write down the formula for baby powders.
 - e) What do you mean by laddering defect in lipsticks? Write down the causes of laddering.
 - f) Enlist the quality characteristics of mascara.
- Q.3 Write Short Note: (Any Two) 08**
- a) Write a short note on binder used in rouge formulations.
 - b) Write a short note on mercury containing compounds and ascorbic acid as skin lightening agent.
 - c) Write a short note on foam bath.
- Q.4 Answer the following: (Any Two) 08**
- a) Explain in detail formulation aspects of hand cleanser.
 - b) Explain in detail colour systems in lipstick formulation.
 - c) Elaborate emollients used in protective cream.
- Q.5 Answer the following: (Any One) 08**
- a) Explain the manufacturing of dry rouge.
 - b) Explain in detail hydrocolloid based formulation of face masks with its preparation.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VI) (New) (CBCS) Examination: October/November – 2025
Principles of Cosmeceutics – II (CT1603)**

Day & Date: Saturday, 01-11-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Draw neat labelled diagrams and give equations whenever necessary.
3) Figure to the right indicate full marks.
4) Use of logarithmic table and calculator is allowed.

Q.1 Multiple choice questions.**08**

- 1) _____ is the diameter of a sphere having the same observed area as the particle when viewed normal to its most stable plane.
 - a) Surface diameter
 - b) Projected diameter
 - c) Volume diameter
 - d) Stoke diameter
- 2) The size of the sphere is freely stated in terms of its _____.
 - a) Area
 - b) Radius
 - c) Diameter
 - d) Volume
- 3) Dilatant materials are frequently called as _____ system.
 - a) Strain-thinning
 - b) Strain-thinning
 - c) Shear-thickening
 - d) Shear-thinning
- 4) In pseudoplastic flow as shear stress increases, shear rate _____.
 - a) Decreases but not linear
 - b) Increases
 - c) Decreases
 - d) Increases but linear
- 5) The phenomenon which involves separation of macromolecular solution into two liquid layers is called as _____.
 - a) Coacervation
 - b) Flocculation
 - c) Peptization
 - d) Liquid separation
- 6) The _____ colloids have strong attraction towards solvents.
 - a) Lyophilic
 - b) Lyophobic
 - c) Associated
 - d) None of the above
- 7) The molecules in the molecular dispersion phase have size _____.
 - a) Less than 10 nm
 - b) More than 1 nm
 - c) Less than 1 nm
 - d) More than 10 nm
- 8) _____ technique is utilized for estimation of surface diameter.
 - a) Weighing
 - b) Filtration
 - c) Vacuum
 - d) Air permeability

- Q.2 Answer the following. (Any Four) 08**
- a) Explain the term angle of repose.
 - b) State and explain Newton's law of flow.
 - c) Write a note on Dilatancy.
 - d) Define term:
 - i) Bulges.
 - ii) Spurs.
 - e) Define Rheology. Give its application in cosmetics.
 - f) What are lyophilic colloids?
- Q.3 Write Short Note: (Any Two) 08**
- a) What is viscosity? Give its unit and different types.
 - b) Discuss in detail classification of dispersed systems.
 - c) Explain the term
 - i) Surface diameter.
 - ii) Projected Diameter.
 - iii) Volume diameter.
 - iv) Stoke Diameter.
- Q.4 Answer the following: (Any Two) 08**
- a) Write a note on optical properties of colloids.
 - b) Write down application of the distribution phenomenon.
 - c) Enlist and explain derived properties of powder.
- Q.5 Answer the following: (Any One) 08**
- a) Explain methods for determining surface area.
 - b) What is Plastic flow? Give its rheogram along with mechanistic representation for a system with plastic flow.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VI) (New) (CBCS) Examination: October/November - 2025
Beauty Culture – II (CT1604)**

Day & Date: Monday, 03-11-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Draw neat, labelled diagrams and give equations whenever necessary.
3) Figure to the right indicate full marks.

Q.1 Multiple choice questions.**08**

- 1) If you can manage your _____ successfully, you can manage your _____ in the same way.

a) Time, Business	b) Will, Property
c) Beauty, Honesty	d) Time, Power
- 2) More _____ of the salon, happier is the customer.

a) Ambience	b) Quantity
c) Quality	d) Dignity
- 3) Following are layers of a hair except _____.

a) Cortex	b) Medulla
c) Cuticle	d) Tip
- 4) Anagen, telogen, catagen are phases of _____.

a) Skin cycle	b) Hair growth cycle
c) Haircare cycle	d) All of above
- 5) Droopy eyes is another name for _____.

a) Over hanging eyes	b) Round eyes
c) Slanting eyes	d) Small eyes
- 6) Pear shape face is also known as _____.

a) Diamond	b) Round
c) Square	d) Triangular
- 7) Blusher is applied with the help of _____.

a) Brush	b) Sponge
c) Both A) and B)	d) none of above
- 8) Before application of lipstick, lip balm must be applied _____.

a) To moisturize lips	b) It ruins make-up
c) Can't say	d) None of above

- Q.2 Answer the following. (Any Four) 08**
- a) Classify dyes in detail along with examples.
 - b) Write in short honesty and hygiene.
 - c) Define make up and enlist steps involved in general make up.
 - d) Write any four cosmetic products used in makeup and its role in makeup.
 - e) What are the features of oval and heart shape face?
 - f) Write any formula of oxidative dye along with its category.
- Q.3 Write Short Note: (Any Two) 08**
- a) Give note on application of lipstick and blusher.
 - b) Give note on interpersonal skill and artistic nature.
 - c) Write a note on makeup removal techniques.
- Q.4 Answer the following: (Any Two) 08**
- a) Give detail note on pedicure.
 - b) Write note on procedure for tinting the eyelash.
 - c) Write components of shampoo in short.
- Q.5 Answer the following: (Any One) 08**
- a) Explain general hair problems and their solution in detail.
 - b) Give a detailed note on bridal makeup.

Seat No.	
-----------------	--

8) Some substances produce glazed reactions by occluded standard patch test, which may be mistaken for positive reaction. Such substances should be tested by ____.

- a) RIPT
- b) Skin Irritation Test
- c) Open Patch Test
- d) None of above

Q.2 Answer the following. (Any Four)

08

- a) Define
 - 1) Immunogenicity.
 - 2) Hepten.
- b) Give graphical presentation of Ag-Ab reaction.
- c) Write down triggers for anaphylaxis.
- d) Comment on Bureau of Indian Standards.
- e) Test procedure summary for patch test.
- f) Explain contact dermatitis along with its types.

Q.3 Write Short Note: (Any Two)

08

- a) Preparation of sample, positive control, procedure of test, scoring of 'Human Cumulative Irritation Test'.
- b) IgM with structure.
- c) Difference between common cold and allergic rhinitis.

Q.4 Answer the following: (Any Two)

08

- a) Explain type II hypersensitivity.
- b) Explain mechanism behind early type of home pregnancy test kit.
- c) Explain Immuno fluorescence.

Q.5 Answer the following: (Any One)

08

- a)
 - 1) Write about management of Bunion.
 - 2) Explain photo patch testing along with its interpretation.
- b) Explain in detail skin irritancy test on human subject- Hand Immersion Test.

Seat No.	
-------------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VII) (New) (CBCS) Examination: October/November - 2025
Perfumes & Colors (CT701)**

Day & Date: Tuesday, 28-10-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

Instructions: 1) Q. Nos. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figures to the right indicate in full marks.

Q.1 A) Choose the correct alternatives from the options. 10

- 1) The essential oil obtained from fresh flowers of jasmine belongs to _____ family.

a) violaceae	b) oleaceae
c) iridaceae	d) labiatae
- 2) Body lotion contains a high level of _____.

a) humectant	b) enflurage
c) lubricants	d) opecifiers
- 3) In lip care products perfume is used in very low concentration to _____.

a) reduce cost
b) increase viscosity
c) prevent and ensure stability
d) stabilize pigment
- 4) _____ are water-based formulation containing alkalis.

a) Cuticle remover	b) Stain remover
c) Nail bleach	d) Cuticle oil
- 5) The normal range of perfume addition in adult powder is _____.

a) 1-1.5%	b) 1%
c) 0.2-1%	d) 2%
- 6) _____ is another name of muget?

a) Lily of the valley	b) May lily oil
c) Our lady's tears	d) All of above
- 7) Ambergris is pathological product formed in intestinal tract of the _____.

a) Musk deer	b) Sperm whale
c) Beaver	d) Civet cat
- 8) _____ are largest and most common sources of aromatics.

a) Fruits	b) Woods
c) Flowers and blossoms	d) Resins

- 9) The ideal water-soluble perfume consists of a mixture of perfume materials soluble at least _____ in water.
- a) 1% b) 0.1 - 1%
- c) 2% d) 3%
- 10) The main ingredient that gives colour intensity in eye shadow is _____.
- a) pigments b) preservatives
- c) waxes d) emollients

B) Write True or False.

06

- 1) Eyeshadows are used to moisturize eyelids.
- 2) The perfume types for men have been classified into five groups.
- 3) Cypress oil is an essential oil made from leaves of the cypress tree.
- 4) Plant essential oils and aromatics are primary metabolites produced by plants.
- 5) Mineral water essences can offer hydration and nourishment to the skin.
- 6) Powders should impact a rough finish to the skin.

Q.2 Answer the following.

16

- Write a note on use of perfume in skin cosmetics.
- Explain incorporation of perfume in cream mascara.
- Write sources and chemical composition of rose.
- Write formulation of beeswax borax type of cleansing cream.

Q.3 Answer the following.

- | | | |
|-----------|---|-----------|
| a) | Explain in detail sources, properties, chemical composition and synthetic substances used to formulate perfume of rose. | 10 |
| b) | Explain adaptation and incorporation of perfume and colours in cleansing cream. | 06 |

Q.4 Answer the following.

- a) Explain in detail incorporation of perfume and colour in eyeshadow. **08**
- b) Explain properties of amber, orris, cypress, and acacia. **08**

Q.5 Answer the following.

- a) Write a long note on solid fragrances. **08**
- b) Explain sources, chemical composition and properties of violet and kewda. **08**

Q.6 Answer the following.

- a)** Write a note on mineral water essences. **06**
- b)** Define perfume. Explain perfumes obtained from the animal and plant sources. **10**

Q.7 Answer the following.

- | | | |
|-----------|---|-----------|
| a) | Explain in detail manufacturing of natural perfume. | 08 |
| b) | Explain in detail incorporation of perfume and colours in lipstick. | 08 |

Day & Date: Thursday, 30-10-2025
Time: 11:00 AM To 02:00 PM

Instructions: 1) Question No. 1 & 2 are compulsory.
2) Attempt any three Questions from Q. No.3 to Q. No.7.

Page 1 of 3

- 8) Ammonia in permanent hair dye formulations is used to _____.
 - a) Lower pH
 - b) Swell hair shaft and open cuticle
 - c) Provide color
 - d) Act as preservative
- 9) The major disadvantage of metallic dye is _____.
 - a) Natural Appearance
 - b) Cumulative deposition causing brittleness and uneven color
 - c) Temporary coloring only
 - d) Easy removal
- 10) The main dye precursor in permanent hair dyes are _____.
 - a) Paraphenylenediamine (PPD)
 - b) Para-aminophenol
 - c) Both a & b
 - d) None

B) Write whether true or false.**06**

- 1) Metallic dyes like lead acetate are completely safe for long term use.
- 2) Leave-in conditioners are rinsed off after application.
- 3) Hair setting lotions are used to maintain hairstyle temporarily.
- 4) Chemical hair relaxers may contain sodium hydroxide or ammonium thioglycolate.
- 5) Anionic Surfactants are mainly used for conditioning the hair.
- 6) Foam quantity is the only reliable test for cleansing efficiency of shampoo.

Q.2 Answer the following questions.**16**

- a) Explain in detail Detergency in shampoo.
- b) Explain in detail the chemistry behind curly hair.
- c) Write down characteristics of an ideal hair colorant.
- d) Explain the mechanism of hair styling.

Q.3 Answer the following questions.

- a) Explain in detail raw materials used in shampoo.

08

- b) Explain any two types of Men's hair dressing with examples.

08**Q.4 Answer the following questions.**

- a) Discuss formulation and evaluation of hair conditioners.

08

- b) Write a note on toxicity and dangers of para dyes.

08**Q.5 Answer the following questions.**

- a) Discuss in detail safety of shampoo.

08

- b) Explain evaluation parameters of hair styling products.

08

Q.6 Answer the following questions.

- a) Discuss caustic and chemical hair reducing preparations with formulations. **08**
- b) Describe the formulation of permanent hair dyes. **08**

Q.7 Answer the following questions.

- a) Write a detailed note on formulation of medicated shampoo and Anti-dandruff shampoo. **08**
- b) Explain formation of color in hair. **08**

Seat No.	
-------------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VII) (New) (CBCS) Examination: October/November - 2025
Quality Assurance Techniques (CT703)**

Day & Date: Saturday, 01-11-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

Instructions: 1) Q.No.1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.

Q.1 A) Choose the correct alternatives from the options. 10

- 1) _____ rays are used in medicine for killing cancer cells.
 - a) X-rays
 - b) Ultraviolet
 - c) Gamma rays
 - d) Infrared
- 2) The viscosity of shampoos is commonly measured by a _____.
 - a) Stalegrometer
 - b) Refractometer
 - c) Brookfield viscometer
 - d) Conductometer
- 3) Quality control is a _____.
 - a) Corrective tool
 - b) Predictive tool
 - c) Preventive tool
 - d) Management tool
- 4) Process used to separate the dissolved solid from liquid is known as _____.
 - a) Reflux
 - b) Sterilization
 - c) Filtration
 - d) Distillation
- 5) Primary factors affecting drug stability are _____.
 - a) pH
 - b) Moisture
 - c) Temperature
 - d) All of the above
- 6) The objectives of GMP are to _____.
 - a) Eliminate errors
 - b) Improve efficiency
 - c) Reduce costs
 - d) All of the above
- 7) Which of the following parameters is not for evaluation of lipstick?
 - a) Melting point
 - b) Breaking point test
 - c) Foam ability
 - d) Pay off test
- 8) Once the URS is finalized, the engineering department and R & D department will prepare for the _____.
 - a) Operational qualification
 - b) Design qualification
 - c) Performance qualification
 - d) Installation qualification

- 9) _____is minimum time period covered by data at the time of submission for long.
- a) 2 months b) 6 months
c) 12 months d) 9 months
- 10) Among the following, which nuclei don't have the property of nuclear spin?
- a) ^1H b) ^{19}F
c) ^{12}C d) ^{31}P

B) Write True or false.

06

- 1) He gas is used in gas chromatography as a carrier gas.
- 2) Four climatic zones can be distinguished for the purpose of world-wide stability testing.
- 3) Cleaning action of detergency is not related to evaluation of shampoo.
- 4) Validation is an example of quality control.
- 5) The long-term stability testing should cover a minimum of 12 months duration at the time of submission.
- 6) A magnetic coil produces a short powerful pulse of radio waves.

Q.2 Answer the following.

16

- Write procedure of spectrophotometric evaluation for sunscreen.
- Write a note on accelerated stability testing.
- Write a note on SOP.
- Explain basic principle of Mass Spectroscopy.

Q.3 Answer the following.

- Write a long note on Good manufacturing practices & BMR.
- Write a note on deviation and change control.

10

06

Q.4 Answer the following.

- a) Explain instrumentation and applications of GC.
- b) Explain in detail evaluation tests for toothpaste.

08

08

Q.5 Answer the following.

- a)** Write down procedure of melting point, softening point, breaking point test and rupture test of evaluation of lipstick.
- b)** Explain basic principle, instrumentation and applications of IR spectroscopy.

06

10

Q.6 Answer the following.

- a) Explain in detail stability testing methods.
- b) Explain in detail functions and activities of quality assurance.

08

08

Q.7 Answer the following.

- a) Explain in brief performance and product characteristics of evaluation of skin creams.
- b) Explain instrumentation and working of turbidometry.

08

08

Seat No.	
-------------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VII) (New) (CBCS) Examination: October/November - 2025
Herbal Cosmetics – I (CT704)**

Day & Date: Monday, 03-11-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

Instructions: 1) Q.No.1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Draw neat labelled diagram wherever necessary.

Q.1 A) Choose the correct alternatives. (MCQ)

10

- 1) The biological source of Bhringraj is _____.
 a) *Eclipta prostrata* b) *Eclipta alba*
 c) *Centella asiatica* d) *Ocimum sanctum*
- 2) *Santalum album* is the botanical name of _____.
 a) Garlic b) Chandan
 c) Neem d) Ritha
- 3) _____ of the Shikakai plant is mainly used in herbal formulations.
 a) Roots b) Leaves
 c) Pods d) Seed
- 4) Supercritical fluid extraction usually involves _____ gas.
 a) Oxygen b) Nitrogen
 c) Carbon dioxide (CO₂) d) Hydrogen
- 5) Which of the following is NOT a trend in herbal cosmetics?
 a) Personalized skincare b) Artificial preservatives
 c) Use of plant-based actives d) All of these
- 6) Cucumber belongs to family _____.
 a) Solanaceae b) Cucurbitaceae
 c) Fabaceae d) Lamiaceae
- 7) The elimination of microorganisms from herb is done by _____.
 a) Sterilization b) Extraction
 c) Fermentation d) Heat
- 8) Which factor is MOST important to control to prevent microbial growth in stored herbal drugs?
 a) Temperature b) Moisture content
 c) Exposure to air d) Size of storage container

- 9) To prevent spoilage, herbs should be stored in: _____.
a) Open containers to allow airflow
b) Sealed containers to limit moisture exposure
c) Damp cloth bags to maintain freshness
d) Transparent plastic bags exposed to sunlight
- 10) Ionic liquid is also known as _____.
a) Yellow solvent
b) Green solvent
c) Ideal solvent
d) Red solvent

B) Write True or false.

06

- 1) Jatamansi belongs to the family Lamiaceae.
- 2) Herbal actives should be stored in airtight, light-resistant containers.
- 3) Haldi is derived from the rhizomes of *Curcuma longa*.
- 4) Maceration is suitable only for volatile substances.
- 5) The main chemical constituent of Bavchi is Psoralen.
- 6) The biological source of Jesthamadh is *Glycyrrhiza glabra*.

Q.2 Answer the following.

16

- Write the chemical constitution of Henna and Ritha.
- Explain Uses of Ambahaldi.
- Explain Steam Sterilization and dry heat sterilization.
- Explain Soxhlet extraction,

Q.3 Answer the following.

16

- a)** Write down the biological source, chemical constituent of Jesthamadh and lodra.
- b)** Write down the detail future scope of herbal ingredients in cosmetics.

Q.4 Answer the following.

16

- Write down the biological source, geographical source, chemical constituent, uses and formulation of kapurkachari.
- Explain in detail about testing quality of raw Herbs.

Q.5 Answer the following.

16

- a) Write a note on guidelines for storage of herbs.
- b) Describe in detail about Maceration, Steam distillation and percolation extraction techniques.

Q.6 Answer the following.

16

- Write a note on brahmi.
- Explain in detail about aloe Vera.

Q.7 Answer the following.

16

- Write down the source, chemical constituents, geographical source and formulation of nagarmotha and bavchi.
- Describe current trends in herbal cosmetics.

Seat No.	
-------------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VII) (New) (CBCS) Examination: October/November - 2025
Material Management & Inventory Control (CT707)**

Day & Date: Thursday, 06-11-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

Instructions: 1) Q.No.1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.

Q.1 A) Choose the correct alternatives. (MCQ) 10

- 1) Which of the following is NOT one of the three basic types of inventory?
 - a) Raw materials
 - b) Work-in-progress
 - c) Maintenance, repair & operations (MRO) goods
 - d) Finished goods
- 2) What is the primary objective of the Economic Order Quantity (EOQ) model?
 - a) To maximize the quantity of stock on hand
 - b) To minimize the total inventory holding costs and ordering costs
 - c) To eliminate the possibility of a stockout
 - d) To reduce the purchase cost of materials
- 3) According to the document, the "graveyard of a business" is a saying that refers to: _____.

a) High labor costs	b) Poor marketing
c) Obsolete machinery	d) Inventories
- 4) Who is frequently referred to as the "father of JIT (Just-in-Time)" for his work at Toyota?
 - a) The RAND Corporation
 - b) The National Association of Purchasing Management
 - c) Taiichi Ohno
 - d) Not mentioned in the document.
- 5) In the Simple Average Price Method, how is the issue price calculated?
 - a) By using the price of the most recent purchase.
 - b) By dividing the total cost of items in stock by the total quantity.
 - c) By summing the prices of purchases and dividing by the number of purchase prices used.
 - d) By forecasting a standard price for the period.

- 6) Identify the disadvantage of centralised purchasing?
 - a) Poor layout space
 - b) more finance requirement
 - c) Greater risk of obsolescence
 - d) All of these
- 7) Inventory that has been purchased but is still 'en route' within the supply chain is known as: _____.
 - a) Dead stock
 - b) Anticipation Inventory
 - c) Pipeline inventory
 - d) Safety Stock
- 8) According to the JIT philosophy, which of the following is one of the seven wastes to be eliminated?
 - a) Waste of overproduction
 - b) Waste of employee training
 - c) Waste of market research
 - d) Waste of capital investment
- 9) Invoice is created by _____.
 - a) Vendor
 - b) Customer
 - c) Manufacturer
 - d) All
- 10) _____ Consumers prefer brands.
 - a) Loyal
 - b) Commercial
 - c) Extroverted
 - d) Discretionary spending

B) Write True or false.**06**

- 1) Pilferage is a cause for stock discrepancy. T/F
- 2) Seasonal is a time series pattern affected by quarter of the year. T/F
- 3) Furniture is considered as a consumable item. T/F
- 4) VED analysis is dependent on scarcity & procurement difficulty. T/F
- 5) In the formula of EOQ. 'O' stands for 'Obsolescence'. T/F
Taiichi Ohno is considered as the Father of JIT. T/F

Q.2 Answer the following.**16**

- a) Define materials & material management.
- b) Define Inventory. Give any three objectives of inventory control.
- c) Give any eight functions of store manager.
- d) Give the personality traits of a purchase agent.

Q.3 Answer the following.**16**

- a) Write a note on FIFO method.
- b) Explain ABC analysis of inventory control.

Q.4 Answer the following.**16**

- a) Enlist & explain any 3 stages of procurement.
- b) Write a note on use of computers in material management.

Q.5 Answer the following.**16**

- a) Write a note on LIFO method.
- b) Discuss concentrated buying & diversified buying.

- Q.6 Answer the following.** **16**
- a) Write in short about elements of purchasing.
 - b) Add an exhaustive note on Tenders.
- Q.7 Answer the following.** **16**
- a) Discuss purchase procedure in an industry.
 - b) Discuss selection of supplier & vendor.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VII) (Old) (CBCS) Examination: October/November – 2025
Perfumes & Colors (CT1701)**

Day & Date: Tuesday, 28-10-2025
Time: 11:00 AM To 01:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Draw neat labelled diagrams and give equations whenever necessary.
3) Figure to the right indicate full marks.

Q.1 Multiple choice questions.**08**

- 1) Which of the following is inorganic type of humectant?
 - a) Calcium chloride
 - b) Sodium lactate
 - c) Glycerol
 - d) Ethylene glycol
- 2) The hardness of cologne stick is determined by the quantity of _____.
 - a) Sodium Lauryl sulphate
 - b) Stearic acid
 - c) Palmitic acid
 - d) Sodium stearate
- 3) The _____ of perfume for cosmetics requires a delicate balance between artistry and science.
 - a) Incorporation
 - b) Adaptation
 - c) Direct addition
 - d) Encapsulation
- 4) The perfume oil is often incorporated at _____ temperature into a cream or lotion.
 - a) 90°C
 - b) 80°C
 - c) 45°C
 - d) 15°C
- 5) The pH of the lotion can affect the _____ and release of fragrance compounds.
 - a) Stability
 - b) Solubility
 - c) Volatility
 - d) All of the above
- 6) Which of the following herb comes under family Asparagaceae?
 - a) Orris
 - b) Jasmine
 - c) Muguet
 - d) Acacia
- 7) The linalool is the active ingredients of the following herbs.
 - a) Lavender
 - b) Rose
 - c) Violet
 - d) Orris

8) Which of the following groups of organic compounds are least likely to be used in making perfumes?

- a) Alcoholic
- b) Carboxylic acids
- c) Esters
- d) Aldehydes

Q.2 Answer the following. (Any Four) 08

- a) Define emulsified perfumes with examples.
- b) Write the biological source and chemical composition of Acacia.
- c) Define toilet waters.
- d) What is cologne?
- e) Give examples of perfumes incorporated in shampoo.
- f) What are the factors affecting adaptation of perfumes in cream formulations?

Q.3 Answer the following. (Any Two) 08

- a) Write a short note on solubilized fragrances with any one formulation.
- b) Give details of perfuming skin creams & lotions.
- c) Write a biological source, properties and chemical composition of Kewda and narcissus.

Q.4 Answer the following. (Any Two) 08

- a) What is adaptation of perfumes in nail polishes?
- b) Write a source, properties and composition of orris and jasmine.
- c) Write a short note on solid fragrance.

Q.5 Answer the following. (Any One) 08

- a) Explain the methods to formulate perfume from acacia, Amber, lilac. Write their source, properties and chemical composition.
- b) Give detailed account on incorporation of perfumes, colours, flavours in lipsticks & other lip preparations.

Seat No.	
----------	--

Set

P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VII) (Old) (CBCS) Examination: October/November - 2025
Cosmetic Technology- V (CT1702)**

Day & Date: Thursday, 30-10-2025

Max. Marks: 40

Time: 11:00 AM To 01:00 PM

- Instructions:** 1) All questions are compulsory.
 2) Draw neat labelled diagrams and give equations whenever necessary.
 3) Figure to the right indicate full marks.
 4) Use of logarithmic table and calculator is allowed.

Q.1 Multiple choice questions.**08**

- 1) Quaternary ammonium compounds are included in the formulas of moisturizers for their ability to _____.
 a) Attach to hair fibers b) Detangle the hair
 c) Promote healing of the scalp d) Penetrate the cortex
- 2) Which oxide is used for permanent coloring of hair?
 a) Sodium hydroxide b) Hydrogen peroxide
 c) Monoxide d) Any oxide
- 3) What type of shampoo is typically recommended for individuals with dry or damaged hair?
 a) Moisturizing shampoo b) Volumizing shampoo
 c) Clarifying shampoo d) Protein shampoo
- 4) _____ is used in tepid perming.
 a) Calcium hydroxide b) Calcium oxide
 c) Calcium nitrate d) Sodium hydroxide
- 5) To protect the hair from the harmful effects of blow drying & electric rollers _____ are used.
 a) Scalp conditioners b) Spray-on thermal products
 c) Protein treatment d) Hair masks
- 6) During a dandruff treatment, an effective therapy is _____.
 a) Deep conditioning b) Scalp steamer
 c) Chemical relaxers d) High frequency current
- 7) The foam quantification is tested by following method _____.
 a) Cohesimeter b) Hydrometer
 c) Ross-miles apparatus d) Viscometer

- 8) Action of waving lotion is to ____.
- a) Expand the hair
 - b) Shrink the hair
 - c) Discolor the hair
 - d) None of the above

Q.2 Answer the following. (Any Four) 08

- a) Write about the role of hydrogen peroxide in hair dyeing.
- b) State ideal characteristics of hair tonics.
- c) Define brilliantine.
- d) Enlist factors affecting colour fading.
- e) What is detergency?
- f) Give a formula for hair thickener.

Q.3 Write Short Note: (Any Two) 08

- a) Pressurized hair styling products
- b) Acid balanced shampoo.
- c) Metallic hair dyes.

Q.4 Answer the following: (Any Two) 08

- a) Discuss about bleaching of hair.
- b) Write about hair rinses.
- c) Discuss off-scalp techniques of hair dyeing.

Q.5 Answer the following: (Any One) 08

- a) What are the principle and secondary surfactants in shampoo preparations? Explain their role in formulation of liquid shampoos with examples.
- b) Write a brief note on hair waving preparations & methods of waving.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VII) (Old) (CBCS) Examination: October/November - 2025
Quality Assurance Techniques (CT1703)**

Day & Date: Saturday, 01-11-2025
Time: 11:00 AM To 01:00 PM

Max. Marks: 40

Instructions: 1) All questions are compulsory.
2) Draw neat, labelled diagrams whenever necessary.
3) Figure to the right indicates full marks.

Q.1 Multiple choice questions.**08**

- 1) Before going to the stores department the Quality of the raw material will be checked by ____ department.
 - a) QC
 - b) QA
 - c) Production
 - d) Packaging
- 2) The concepts of ____ are interrelated aspects of quality management.
 - a) QA
 - b) QC
 - c) GMP
 - d) All of the above
- 3) ____ is a method of analysis and separation technique of organic and inorganic compounds.
 - a) Spectroscopy
 - b) Chromatography
 - c) Turbidimetry
 - d) Nephelometry
- 4) Gel filtration chromatography is a technique in which separation of components is based on the difference of _____.
 - a) Molecular size
 - b) Polarity
 - c) Solubility
 - d) Physical constants
- 5) Guideline for evaluation of stability data is _____.
 - a) Q1B
 - b) Q1C
 - c) Q1D
 - d) Q1E
- 6) In long term testing conditions, temperature for climatic zone ____ is 30°C.
 - a) Zone III
 - b) Zone IV
 - c) Zone IVb
 - d) All of the above
- 7) Evaluation of face wash includes test except _____.
 - a) Viscosity
 - b) Spreadability
 - c) Sun-screen index
 - d) Foamability
- 8) In the evaluation of toothpaste, pH should be in the range of _____.
 - a) 3.4 to 4.5
 - b) 8 to 9
 - c) 2 to 3
 - d) 6.8 to 7.4

- Q.2 Answer the following. (Any Four) 08**
- a) Enlist evaluation tests for sunscreen preparations.
 - b) Define Spectroscopy and give its types.
 - c) Give at least four contents of BMR.
 - d) Enlist stability testing methods.
 - e) Give applications of IR spectroscopy.
 - f) Give at least four contents of SOP.
- Q.3 Write Short Note of the following. (Any Two) 08**
- a) Good Manufacturing Practices (GMP).
 - b) Chromatography.
 - c) Change control.
- Q.4 Answer the following: (Any Two) 08**
- a) Define different phases of qualification.
 - b) Explain role of detector in HPLC and mention its types.
 - c) Explain any four evaluation tests for soaps.
- Q.5 Answer the following: (Any One) 08**
- a) Explain in detail procedure for deviation.
 - b) Give temperature, humidity, minimum duration criteria for different climatic zones in long testability testing.

Seat No.	
----------	--

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VII) (Old) (CBCS) Examination: October/November - 2025
Herbal Cosmetics-I (CT1704)**

Day & Date: Monday, 03-11-2025
Time: 11:00 AM To 01:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Draw neat labelled diagrams and give equations whenever necessary.
3) Figure to the right indicate full marks.

Q.1 Choose correct alternatives.

08

- 1) Nagarmotha belongs to family.

a) Cyperaceae	b) Sapindaceae
c) Lamiaceae	d) Fabaceae
- 2) During the storage of herbs the area should be _____.

a) Dry and clean	b) High temperature
c) Excess humidity	d) AU of the above
- 3) Amba haldi is obtained from _____ of plant.

a) Leaves	b) Rhizomes
c) Stem	d) Baric
- 4) Decoction is useful for _____.

a) Heat sensitive compounds	b) Aromatic oil
c) Bioactive compound	d) volatile compound
- 5) Santalum album is the botanical name of _____.

a) Garlic	b) Neem
c) Chandan	d) Ritha
- 6) In the percolation extraction method the solvent is _____.

a) Boiled	b) pass through steam
c) Completely evaporated	d) Recycled continuously
- 7) Mehendi belongs to family _____.

a) Lythraceae	b) Lillaceae
c) Fabaceae	d) Zingiberaceae
- 8) The container used for storage of herbs is _____.

a) Ceramic	b) Metallic
c) Glass	d) Light weight

- Q.2 Answer the following. (Any Four) 08**
- a) Enlist the different methods of sterilization.
 - b) Write down the Formulation of Jatamanasi in cosmetics'
 - c) Explain the Importance of size reduction in extraction.
 - d) Explain Uses of Ambahaldi.
 - e) Write down the Biological and geographical source of Aloe Vera.
 - f) Example of herbs used in hair care along with their biological source.
- Q.3 Write Short Note: (Any Two) 08**
- a) Write a note on guidelines for storage of herbs.
 - b) Write the biological source, geographical source, chemical constituent and uses of cucumber.
 - c) Write a note on preparation of herbal actives in cosmetics.
- Q.4 Answer the following: (Any Two) 08**
- a) Write down the biological source, geographical source and chemical constituent and uses of kapur kachari.
 - b) Explain in detail about scope of herbal cosmetics.
 - c) Explain in detail about testing quality of Herbs.
- Q.5 Answer the following: (Any One) 08**
- a) Write down the source, chemical constituents and geographical source and formulation of Bawchi and babhool.
 - b) Write down the source, chemical constituents and geographical source and uses of Brahmi and Nagarmotha.

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VII) (Old) (CBCS) Examination: October/November – 2025
Material Management And Inventory Control (CT1709)**

Day & Date: Thursday, 06-11-2025
Time: 11:00 AM To 01:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Draw neat labelled diagrams and give equations whenever necessary.
3) Figure to the right indicate full marks.
4) Use of logarithmic table and calculator is allowed.

Q.1 Multiple choice questions.

08

- 1) Identify the element / s of material management.

a) Purchasing	b) Quality control
c) Issuing and distribution	d) All the above
- 2) 'Jidohka' is _____.

a) Continuous improvement	b) Eliminating waste
c) Preventing mistakes	d) Quality at source
- 3) In _____ a forecasted unit price for a specific period of one year is used for valuation of material.

a) Standard cost method	b) Periodic average price method
c) LIFO	d) Weighted average price method
- 4) Following are the factors which influences the individual purchase except.

a) Cultural factor	b) Macro factor
c) Social factor	d) Personal factor
- 5) Cash purchase method adopted when _____.

a) Formal method of purchasing is expensive
b) Once in while purchase having low financial implications
c) Items/Materials may be an emergency item
d) All the above
- 6) Calculate the price of material by average price method if material having A: 100 ₹, B: 110 ₹, C: 120 ₹ per unit.

a) 105 ₹	b) 110 ₹
c) 115 ₹	d) 330 ₹

- 7) _____ are items which have worn out by use, but their life can be extended by some specialized process.
- | | |
|----------------------|----------------------|
| a) Obsolete items | b) Salvageable Items |
| c) Reclaimable items | d) Scrap items |
- 8) Identify the carrying cost.
- | | |
|-----------------------|-------------------|
| a) Insurance cost | b) Transport cost |
| c) Advertisement cost | d) Labour cost |

Q.2 Answer the following. (Any Four) 08

- a) Give format for rejection note.
- b) Write down advantages of JIT.
- c) Write down disposal method of scrap.
- d) Define and classify inventory.
- e) Explain Delphi technique.
- f) Explain reorder point.

Q.3 Write Short Note: (Any Two) 08

- a) Selection of source of supplier in purchasing.
- b) Computer application in store management.
- c) Indent and Inspection methods of material.

Q.4 Answer the following: (Any Two) 08

- a) What is XYZ analysis? As a manager how will you control scrap in effectively?
- b) Discuss MRP.
- c) Describe location and layout of store.

Q.5 Answer the following: (Any One) 08

- a) Discuss the techniques of material planning.
- b) Explain various cost associated with inventory.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VIII) (New) (CBCS) Examination: October/November - 2025
Colours in Cosmetics (C) (CT1801)**

Day & Date: Tuesday, 28-10-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

Instructions: 1) All questions are compulsory.
2) Draw neat labelled diagram.
3) Figure to the right indicate full marks.

Q.1 Multiple choice questions.**08**

- 1) _____ is not a primary colour.

a) Blue	b) Green
c) Red	d) Yellow
- 2) The purity of colour or freedom of colour from white or grey is known as _____.

a) Chroma	b) Hue
c) Light	d) All of these
- 3) _____ is colour that evokes happiness.

a) Red	b) Blue
c) Yellow	d) Green
- 4) Lac is obtained from _____ source.

a) Animal	b) Plant
c) Insects	d) Mineral
- 5) Which colors are mainly used in paints and dyes?

a) Additive	b) Subtractive
c) Complementary	d) Primary
- 6) Patch test is well established method of diagnosing _____.

a) Efficacy of cosmetic preparations
b) Contact dermatitis
c) Color match test
d) Spreadability of skin creams
- 7) What does colour do?

a) Fills in empty spaces
b) Makes things artsy
c) Colors can draw attention; emotional and psychological impact
d) All of the above

- 8) Inorganic pigments are primarily composed of ____
- a) Carbon chains and rings
 - b) Metallic salts or oxides
 - c) Organic compounds
 - d) Polymers

Q.2 Answer the following. (Any Four) 08

- a) Classify natural colours with examples.
- b) What is mean by certified colours and FDA certified colours?
- c) Describe the process of visual evaluation in determining the color of cosmetics.
- d) Define colour additives and colorants.
- e) Write down the split complementary colour scheme.
- f) Write down the luxury dyestuff.

Q.3 Write Short Notes. (Any Two) 08

- a) Synthetic colour
- b) Pigments
- c) Types of hair color

Q.4 Answer the following. (Any Two) 08

- a) Write in detail about colour scheme.
- b) Discuss in detail types of colorants commonly used in cosmetic preparations.
- c) Discuss the factors that influence the use of colors in daily life, such as age, occasion, and season.

Q.5 Answer the following. (Any One) 08

- a) Describe hiding power.
- b) Explain in detail about method of preparation of color and incorporation of color into skin cosmetic.

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VIII) (New) (CBCS) Examination: October/November – 2025
Cosmetic Technology - VI (CT1802)**

Day & Date: Thursday, 30-10-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

Instructions: 1) All questions are compulsory.
2) Figure to the right indicate full marks.

Q.1 Multiple choice questions.

08

- 1) Stearic acid + KOH gives what?
 - a) Potassium Nitrate
 - b) Potassium stearate
 - c) Stearate Carbonate
 - d) All of the above
- 2) Lather shaving cream normally contains ____ % soap.
 - a) 25 to 30
 - b) 30 to 50
 - c) 35 to 40
 - d) 20 to 35
- 3) Tooth paste contains _____.
 - a) Sodium Hydroxide
 - b) Calcium Carbonate
 - c) Potassium Nitrate
 - d) None of the above
- 4) UV radiation has wavelengths between ____ and _____.
 - a) 250nm & 400nm
 - b) 290nm & 400nm
 - c) 400nm & 770nm
 - d) 320nm & 290nm
- 5) Which of the following is not foot ailment?
 - a) Corns
 - b) Calluses
 - c) Bunions
 - d) None of the above
- 6) Shaving preparations are classified as _____.
 - a) Pre shave and post shave preparations
 - b) Depilatories and epilatories
 - c) Lather shaving creams and brushless shaving creams
 - d) softeners and lubricants
- 7) Cuticle creams _____ the cuticle.
 - a) Soften
 - b) Harden
 - c) Irritate
 - d) Flake
- 8) Potassium Hydroxide is an ingredient of _____.
 - a) Soap
 - b) cuticle remover
 - c) both of these
 - d) None of these

- Q.2 Answer the following. (Any Four) 08**
- a) What are Shaving preparations give examples.
 - b) Give any 4 basic requirements of dentrifices.
 - c) Define sunscreen and suntan preparations along with example.
 - d) What are foot creams. Give examples.
 - e) Give the advantages and disadvantages of suntan preparations.
 - f) Define mouthwash along with example.
- Q.3 Write Short Note: (Any Two) 08**
- a) Write a note on Corn and collus preparations.
 - b) What is the effect of SPF factor on skin.
 - c) Give the formula & preparation of brushless shaving cream.
- Q.4 Answer the following: (Any Two) 08**
- a) How tooth pastes are formulated.
 - b) What are pre-electric shave lotion, shave gel stick & shave powder.
 - c) What are solar radiations? how it will affect on skin.
- Q.5 Answer the following: (Any One) 08**
- a) Describe in detail about manicure preparations.
 - b) Describe in brief about tooth paste including basic structure & their formulations.

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VIII) (New) (CBCS) Examination: October/November - 2025
Cosmeceuticals Microbiology (CT) (CT1803)**

Max. Marks: 40

08

- Page 1 of 2

- 8) Micro bio stasis refers to ____.
- a) Complete killing of microorganisms
 - b) Inhibition of microbial growth without killing
 - c) Transformation of microbes into spores
 - d) Growth enhancement of microbes

Q.2 Answer the following. (Any Four) 08

- a) Define stain. Enlist the staining techniques in microbiology.
- b) Write down the classification based on nutritional requirement of bacteria.
- c) Write down the general properties of fungi.
- d) Enlist methods used in the radiation control for sterilization of bacteria.
- e) Write down the general characteristics of Moulds.
- f) Define germicides and Antimicrobials.

Q.3 Write Short Note: (Any Two) 08

- a) Factors influencing antimicrobial activity,
- b) Morphological and general characteristics of algae.
- c) Principle method of analysis to enumerate microorganism.

Q.4 Answer the following: (Any Two) 08

- a) Discuss in detail about general properties of fungi and classification of fungi.
- b) Explain in detail efficacy testing of preservatives.
- c) Explain in detail mechanism of cell injury.

Q.5 Answer the following: (Any One) 08

- a) What are the different types of staining techniques in microbiology? Explain in detail Gram staining technique.
- b) Define media and explain in detail about classification of media.

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - VIII) (New) (CBCS) Examination: October/November – 2025
Herbal Cosmetics-II (CT1804)**

Day & Date: Monday, 03-11-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
2) Draw neat labelled diagrams and give equations whenever necessary.
3) Figure to the right indicate full marks.

Q.1 Choose the correct alternatives.**08**

- 1) _____ is the major chemical constituent of Tulsi.
 - a) Papain
 - b) Eugenol
 - c) Anthocyanin
 - d) Saponin
- 2) _____ is the biological source of Umber.
 - a) *Ficus racemosa*
 - b) *Ficus benghalensis*
 - c) *Beta vulgaris*
 - d) *Butea monosperma*
- 3) Which plant is primarily used to strengthen hair follicles and promote hair regrowth?
 - a) Pomegranate
 - b) Bhringraj
 - c) Arnica
 - d) Seetaphal
- 4) _____ Part of the pomegranate is primarily used in hair care formulations.
 - a) Fruit pulp
 - b) Seeds
 - c) Peel
 - d) Stem
- 5) _____ is used as an emulsifier in lotion formulation.
 - a) Cetyl alcohol
 - b) Neem extract
 - c) Rose oil
 - d) Glycerine
- 6) Decoction is a method where _____.
 - a) Drug is kept in contact with solvent at room temperature
 - b) Drug is boiled in water for a short time
 - c) Solvent is passed through a column of drug
 - d) Drug is exposed to cold water
- 7) The function of emulsifying wax in cream formulation is to _____.
 - a) Act as a fragrance
 - b) Bind oil and water phases
 - c) Provide colour
 - d) Act as a preservative

- 8) The main principle behind steam distillation is ____.
- a) Pressure reduction
 - b) Solubility enhancement
 - c) Separation based on boiling points
 - d) Increased solubility in water

Q.2 Answer the following. (Any Four) 08

- a) Define Percolation?
- b) Write the names of any two cosmetic formulations by incorporating Herbal actives.
- c) Write down the biological source and geographical source of Beetroot.
- d) Enlist the methods of extractions.
- e) How will you prepare Herbal Liquid Shampoo?
- f) Write down the chemical constituents of Arnica.

Q.3 Write Short Note: (Any Two) 08

- a) Write a note on various technique for extraction for herbal constituents.
- b) Write a note on Hibiscus.
- c) Write the biological source, geographical source, chemical constituent and uses of Tulsi.

Q.4 Answer the following: (Any Two) 08

- a) Write down the biological source, chemical constituents and uses of Neem.
- b) Describe the procedure of extraction using Soxhlet apparatus along with its merits and demerits.
- c) Give preparation of polyherbal hair oil.

Q.5 Answer the following: (Any One) 08

- a) Write down the biological and geographical source, chemical constituents and cosmetic uses of Orange peel.
- b) Explain the enfleurage method of extraction.

Seat No.	
-----------------	--

- Q.2 Answer the following. (Any Four) 08**
- a) What is authority? Write down its different types.
 - b) Write about departmentation by process.
 - c) What is A) Activity B) Event
 - d) What is Brainstorming.
 - e) What is committee?
 - f) Enlist importance of motivation.
- Q.3 Write Short Note: (Any Two) 08**
- a) Job enlargement.
 - b) Nature of planning.
 - c) Informal groups.
- Q.4 Answer the following: (Any Two) 08**
- a) Management is science or an art? Justify your view.
 - b) Differentiate between PERT and CPM.
 - c) Write down different methods of motivation.
- Q.5 Answer the following: (Any One) 08**
- a) Explain nature of Motivation.
 - b) Explain Hawthorne experiment / Neoclassical approach.

Set

P

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - IX) (New) (CBCS) Examination: October/November - 2025
Advanced Cosmetic Technology - I (CT1901)**

Day & Date: Wednesday, 29-10-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

Instructions: 1) Q.No.1 and 2 are compulsory.

2) Attempt any three questions from Q. No. 3 to Q. No. 7.

3) Figures to the right indicate full marks.

Q.1 A) Choose the correct alternatives from the options.

10

- 1) In dry gum method the ratio of oil, water and gum is _____.
 - a) 3:2:1
 - b) 4:2:1
 - c) 4:3:1
 - d) 4:1:2
- 2) _____ micro-organism is considered an objectional contaminant in cosmetic products.
 - a) *E-coli*
 - b) *Staphylococcus epidermidis acidophilus*
 - c) *Bacillus subtilis*
 - d) *Lactobacillus*
- 3) Beeswax is found from _____.
 - a) *Copernicia prunifera*
 - b) *Euphorbia cerifera*
 - c) *Apis mellifera*
 - d) None of the above
- 4) _____ is not founding member of COSMOS.
 - a) ECOCERT (France)
 - b) FDA (USA)
 - c) BDIH (Germany)
 - d) ICEA (Italy)
- 5) _____ layer of skin is the main barrier to percutaneous absorption.
 - a) Dermis
 - b) Hypodermis
 - c) Stratum corneum
 - d) Epidermis
- 6) Primary role of top note in the fragrance is _____.
 - a) Long lasting scent base
 - b) Initial impression after application
 - c) Making unpleasant odour
 - d) Preservation function
- 7) Spray drying is a technique used in microencapsulation to _____.
 - a) increase particle size
 - b) enhance volatile component
 - c) kill bacteria
 - d) add fragrance

- 8) Liposomes are composed mainly from _____.
 a) synthetic polymer b) metallic particle
 c) phospholipid bilayer d) All of the above
- 9) Commonly used metal in a sunscreen is _____.
 a) Gold b) Zinc
 c) Silver d) Titanium
- 10) _____ nanoparticles are used in cosmetics.
 a) 10-100 nm b) 10-100 μm
 c) 1-100 nm d) None of the above

B) Write True or false.**06**

- 1) Small amount of *E-Coli* is considered acceptable in cosmetic product.
- 2) Microencapsulation is used to control the release of active ingredients.
- 3) Liposomes are considered nanocarrier in cosmetic formulation.
- 4) Primary advantage of nanoparticle in topical drug delivery is enhanced penetration and controlled release.
- 5) Candelilla wax is obtained from Brazilian palm.
- 6) Potassium chloride is coating material.

Q.2 Answer the following.**16**

- a) Explain principle of mixing. Explain any one machines used for liquid mixing.
- b) Define and classify perfume. Explain any one extraction method.
- c) Define and classify nanoparticles.
- d) Explain colloidal mill.

Q.3 Answer the following.

- a) Discuss cyclodextrins in detail.

10

- b) Explain nano-emulsion and nano-niosomes.

06**Q.4 Answer the following.**

- a) Explain mechanism and classification of liposomes and raw material used in cosmetics.

08

- b) Explain coacervation of phase separation and evaluation test of microencapsulation.

08**Q.5 Answer the following.**

- a) Explain machines used for semi-solid preparation. Explain safety of zinc oxide.

08

- b) Write a note on percutaneous absorption. Explain challenges in formulation of herbal cosmetics.

08

Q.6 Answer the following.

- a)** Explain preservatives. Discuss how to avoid contamination in cosmetic products. **10**
- b)** Explain nano liposome and preparation method of nanoparticles. **06**

Q.7 Answer the following.

- a)** Explain detergent dilution test. Discuss evaluation tests for preservatives and nanoparticles. **08**
- b)** Explain microencapsulation and percutaneous enhancer. **08**

Set No.	
------------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - IX) (New) (CBCS) Examination: October/November - 2025
Advanced Cosmetic Technology – II (CT1902)**

Day & Date: Friday, 31-10-2025
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Questions no. 1 & 2 are compulsory.
2) Attempt any Three Question from Q No.3 to Q No.7
3) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative.**10**

- 1) The coacervation technique is carried out under _____.
a) static condition b) continuous agitation
c) high pressure d) vacuum
- 2) Cuticle removers are based on _____ materials.
a) alkaline b) basic
c) neutral d) all of the above
- 3) Nail lacquer should possess following properties except _____.
a) good gloss b) quick drying
c) non-adhesive d) uniform colour
- 4) _____ formulation is used for targeted drug delivery.
a) Capsule b) Niosomes
c) Tablet d) Syrup
- 5) Pearlscent pigment are obtained from _____.
a) fish scales b) plant source
c) chlorophyll d) all of the above
- 6) In live cells, phosphatidylcholine converts ceramides to _____.
a) sphingomyelins b) alcohol
c) silicon d) citric acid
- 7) Which is not the example of natural phospholipids.
a) Disterylol phosphatidylcholine
b) Phosphatidylcholine
c) Phosphatidyl serine
d) Phosphatidyl ethanolamine
- 8) Coating material must form a thin cohesive film without _____.
a) cracks b) pores
c) gaps d) all of the above

- 9) _____ is not the example of film forming substances.
 a) Cellulose acetate b) Cellulose acetobutyrate
 c) Gum damar d) Ethyl cellulose
- 10) Liposomes were first produced in England by _____.
 a) Dr. Alec Bangham b) Robert Hooke
 c) Albert Einstein d) Isaac Newton

B) Write True or False. 06

- 1) In nails, fat is mostly in the form of cholesterol.
- 2) Hydrophilic or hydrophobic nature does not determines selection of coating material and method.
- 3) Gum arabic is an example of lipid soluble coating material.
- 4) Solvent used in nail polish are normally volatile organic liquids.
- 5) The solid core can be a mixture of active constituents stabilizers, diluents, recipients and release rate retardants or accelerants.
- 6) Pure vegetable liposome are produced from lecithin.

Q.2 Answer the following questions. 16

- a) Give application of micro encapsulation.
- b) Define liposome. Draw a neat labeled diagram of liposome.
- c) Write a note on core material.
- d) Write a note on cuticle oils.

Q.3 Answer the following questions. 10

- a) Explain raw material used in nail polish. 08
- b) Write a note on coacervation phase separation technique. 06

Q.4 Answer the following questions. 08

- a) Write a note on coating material used in microencapsulation. 08
- b) Write a note on nail bleaches and explain its formula with role of each ingredient. 08

Q.5 Answer the following questions. 08

- a) Explain cuticle remover. Explain its formula with role of each ingredient. 08
- b) Explain evaluation of nail polish. 08

Q.6 Answer the following questions. 06

- a) Define and classify liposome. 06
- b) Write a note on polymerization technique, spray drying and congealing. 10

Q.7 Answer the following questions. 08

- a) Explain application and advantages of liposome. 08
- b) Write a note on liposome mechanism and properties. 08

Seat No.	
----------	--

Set **P**

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - X) (New) (CBCS) Examination: October/November - 2025
Research Methodology (CT11001)**

Day & Date: Tuesday, 28-10-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

Instructions: 1) All questions are compulsory.
2) Figure to the right indicate full marks.

Q.1 Multiple choice questions.**08**

- 1) _____ is a motivation for research in students.
 - a) Research degree
 - b) Research Academy
 - c) Research Labs
 - d) Research Problems
- 2) Which of the following is an example of primary data?
 - a) Book
 - b) Journal
 - c) News Paper
 - d) Census Report
- 3) A question which requires a solution is _____.
 - a) Observation
 - b) Problem
 - c) Data
 - d) Experiment
- 4) Converting a question into a Researchable problem is called _____.
 - a) Solution
 - b) Examination
 - c) Problem formulation
 - d) Problem-Solving
- 5) The first step in formulating a problem is _____.
 - a) a Statement of the problem
 - b) Gathering of Data
 - c) Measurement
 - d) Survey
- 6) Which of the following is not the method of Research?
 - a) Survey
 - b) Historical
 - c) Observation
 - d) None of above
- 7) Research is _____.
 - a) Searching again and again
 - b) Finding solution to any problem
 - c) Working in a scientific way to search for truth of any problem
 - d) None of the above
- 8) The concepts are _____ of Research.
 - a) Guide
 - b) Tools
 - c) Methods
 - d) Variable

- Q.2 Answer any four of the following. 08**
- a) Define Research methodology.
 - b) Write any two characteristics of good research.
 - c) Give the sources of literature.
 - d) Enlist types of research.
 - e) Define research problem.
 - f) Enlist methods of data collection.
- Q.3 Write Short Notes on any two of the following 08**
- a) Explain different types of Research.
 - b) Write a note on preparation of research paper.
 - c) Write note on types of research report with examples.
- Q.4 Answer any two of the following 08**
- a) Describe sources of primary data collection.
 - b) Explain the difference between research and research methodology.
 - c) Explain research design.
- Q.5 Answer any one of the following 08**
- a) Describe in detail presentation and interpretation of data.
 - b) Describe the steps in report writing.

Seat No.	
----------	--

Set	P
-----	---

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - X) (New) (CBCS) Examination: October/November - 2025
Research Methodology (CT4001)**

Day & Date: Tuesday, 28-10-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 35

- Instructions:**
- 1) All questions are compulsory.
 - 2) Draw neat labelled diagrams and give equations whenever necessary.
 - 3) Figure to the right indicate full marks.
 - 4) Use of logarithmic table and calculator is allowed.

Q.1 Multiple choice questions.

05

- 1) _____ is a “systematically conceptual structure of inter related elements in some schematic form”
 - a) Concept
 - b) Variable
 - c) Model
 - d) Facts
- 2) A sample is chosen by _____ method in research.
 - a) Unit
 - b) Design
 - c) Random
 - d) Census
- 3) Which of the following does not correspond to characteristics of research?
 - a) Is not passive
 - b) Is not a problem-oriented
 - c) Is systematic
 - d) Is not a process
- 4) How to judge the depth of any research?
 - a) By research title
 - b) By research duration
 - c) By total expenditure
 - d) By research objectives
- 5) Which of the following is not the method of Research?
 - a) Survey
 - b) Historical
 - c) Observation
 - d) Philosophical

Q.2 Answer the following. (Any Five)

10

- a) What are the problems while defining a research problem?
- b) Explain what do you mean by Census survey?
- c) Enlist different advantages of sampling over census.
- d) Define need for research design.
- e) Draw the research process flow chart.
- f) What is Plagiarism?

Q.3 Write Short Note on the following. 10

- a) Give various definitions of research explaining its meaning and scope.
- b) Write a note on features of good research design.

Q.4 Answer the following. (Any One) 10

- a) Write a note on problems encountered by researchers.
- b) Write a note on the research process.