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

Day & Date: Thursday, 22-May-2025
Time: 09:00 AM To 10:30 PM

Max. Marks: 30

Instructions:

- 1) All question are compulsory.
- 2) Draw neat labelled diagrams and give equations whenever necessary.
- 3) Figures to the right indicate full marks.

Q.1 Choose the correct alternatives.

06

- _____ is small membranous vesicles Pinched off from Golgi apparatus.
 - Lysosome
 - Ribosome
 - Nucleus
 - Peroxisome
- _____ cell organelle contains the body's genetic material.
 - Ribosome
 - Nucleus
 - Golgi body
 - Endoplasmic reticulum
- Blood group AB has _____.
 - Antigen A
 - Antigen B
 - Antigen A and B
 - Neither A nor B antigen
- Blood group O makes _____.
 - Anti-B
 - Anti-A
 - Neither Anti-A nor B
 - Both anti -A nor anti-B
- The pigment Melanin is present in _____.
 - Leukocytes
 - keratinocytes
 - Melanocytes
 - Lymphocytes
- _____ sweat glands open into hair follicles and become active at puberty.
 - Eccrine
 - Apocrine
 - Sebaceous
 - Pituitary

Q.2 Answer the following. (Any Three)

06

- Write a note on ribosome.
- Give types of epithelial tissue.
- Give types of blood cells.
- Write the functions of different tissues

- e) Enlist different blood clotting factors.

Q.3 Answer the following (Any Two) 06

- a) Write a note on ABO system.
- b) Explain in detail sweat gland.
- c) Explain in detail sebaceous glands.

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

- a) Draw neat labelled diagram of Nail.
- b) Draw neat labelled diagram of teeth.
- c) Draw neat labelled diagram of Hair.

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

- a) Explain in detail types, components, functions of connective tissue.
- b) Give difference between baby skin and adult skin.

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

Day & Date: Saturday, 24-May-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) In the colorimeter there is study of the interaction of _____ light with matter.
 - a) U.V
 - b) Visible
 - c) X-ray
 - d) I.R
- 2) The electrodes used in the pH measurement have _____ internal resistance.
 - a) very low
 - b) moderate
 - c) very high
 - d) none of these
- 3) Primary cells are electrochemical device that convert chemical energy into _____ energy.
 - a) mechanical
 - b) electrostatic
 - c) electric
 - d) heat
- 4) In _____ field pH scale is important measurement.
 - a) Medicine
 - b) forestry
 - c) food science
 - d) All of the above
- 5) A commonly used glass electrode that is used as the reference electrode in pH measurement is the _____ electrode.
 - a) Calomel
 - b) Mercury
 - c) Silver
 - d) none of these
- 6) Colorimeters are used in the region _____.
 - a) 200nm-600nm
 - b) 400nm-800nm
 - c) 400nm-1200nm
 - d) 100nm- 800nm

- Q.2 Answer the following. (Any Three) 06**
- a) Define EMF of Cell.
 - b) Explain the basic principle 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 the important component of pH meter.
 - b) Explain in detail Applications of Colorimeter.
 - c) Write a note on Redox reaction
- Q.4 Answer the following. (Any Two) 06**
- a) Write a note on pH meter.
 - b) Explain in detail Daniel cell.
 - c) Write a note on principles of Colorimeter.
- Q.5 Answer the following. (Any One) 06**
- a) Define Glass electrode and explain their advantages and disadvantages in detail.
 - b) Write a note on buffer solution in detail.

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**Five Year Integrated M. Tech. Sem – II (New) (NEP CBCS) Examination:
March/April - 2025
Cosmetic Technology
Environmental Studies(ENS24)**

Day & Date: Monday, 19-May-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 correct alternative.

06

- 1) The gas primarily responsible for global warming is _____.
a) Oxygen b) Nitrogen
c) Carbon dioxide d) Hydrogen
- 2) _____ is a non-renewable resource.
a) Solar energy b) Coal
c) Wind energy d) Biomass
- 3) _____ is considered a renewable resource.
a) Solar Energy b) Natural Gas
c) Coal d) Petroleum
- 4) _____ is the term used to describe the gradual process of species extinction due to human activity.
a) Overexploitation b) Habitat destruction
c) Natural selection d) Biodiversity loss
- 5) The primary cause of air pollution in most urban areas is _____.
a) Industrial activity and vehicular emissions
b) Agricultural practices
c) Natural forest fires
d) Ocean currents
- 6) Most observed consequence of ozone layer depletion is _____.
a) Reduced agricultural productivity
b) Decreased rainfall
c) Increased skin cancer rates
d) Lower global temperatures

Q.2 Answer the following. (Any three)

06

- Describe India as a mega-biodiversity nation.
- Describe Multidisciplinary nature of environmental studies.
- Differentiate between floods and draughts.
- Describe Environment Protection Act in brief.
- Give brief idea of Silent valley movement.

- Q.3 Answer the following. (Any two) 06**
- a) Importance of environmental studies
 - b) Forest Ecosystem
 - c) Air Pollution
- Q.4 Answer the following. (Any two) 06**
- a) Deforestation: Causes and Impacts
 - b) Biogeographic zones of India
 - c) Conservation of Biodiversity
- Q.5 Answer the following. (Any one) 06**
- a) Write in detail on the importance of Renewable and Non-renewable energy resources.
 - b) What is Disaster? Describe disaster management with respect to flood and earthquakes.

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

Day & Date: Saturday, 17-May-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 given options. 06

- 1) Which of the following is **NOT** a stage of the listening process?
 - a) Receiving
 - b) Understanding
 - c) Judging
 - d) Responding
- 2) Which of the following is a listening focused on understanding and remembering information?
 - a) Empathetic listening
 - b) Critical listening
 - c) Appreciative listening
 - d) Informational listening
- 3) Active listening involves all of the following **EXCEPT** _____.
 - a) Giving feedback
 - b) Avoiding distractions
 - c) Daydreaming while nodding
 - d) Asking clarifying questions
- 4) Which part of a newspaper report usually summarizes the main point?
 - a) The body
 - b) The byline
 - c) The conclusion
 - d) The headline
- 5) What does "CC" stand for in an email?
 - a) Confidential Copy
 - b) Carbon Copy
 - c) Common Copy
 - d) Copy Chain
- 6) Which of the following helps to improve SEO in a blog post?
 - a) Using complex jargon
 - b) Writing in long paragraphs
 - c) Including relevant keywords
 - d) Using slang

Q.2 Answer any three out of the following. 06

- a) What are the main stages of the listening process?
- b) What is the purpose of critical listening?
- c) Write a note on the benefits of blog writing.
- d) What are the key features of a newspaper report?

- e) Comment on the importance of email writing.
- f) What is the main difference between "CC" and "BCC" in an email?

Q.3 Answer any one of the following.

06

- a) Comment on the importance of the Listening Skills.

OR

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

Q.4 Answer any one of the following.

12

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

OR

- b) What are the benefits of blog writing?

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**Five Year Integrated (M. Tech.) (Sem-II) (New) (NEP CBCS) Examination:
March/April - 2025
Cosmetic Technology – II (CT01201)**

Day & Date: Friday, 23-May-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) A hydrophilic ointment base is best suited for which type of drug delivery?
 - a) Lipophilic drugs
 - b) Occlusive therapy
 - c) Water-soluble drug release
 - d) Emollient-only effect
- 2) Which type of powder must be sterile before application?
 - a) Dusting powder for broken skin
 - b) Face powder
 - c) Talcum powder
 - d) Compact powder
- 3) What is the role of emulsifying agents in emulsions?
 - a) Increase viscosity
 - b) Decrease surface tension between phases
 - c) Improve taste
 - d) Enhance color
- 4) Which of the following factors enhances stability of a suspension?
 - a) Larger particle size
 - b) Lower viscosity
 - c) Proper selection of suspending agent
 - d) High sedimentation rate
- 5) An ideal preservative should be _____.
 - a) Effective only against bacteria
 - b) Inactive at the formulation's pH
 - c) Non-toxic and non-irritant
 - d) Highly volatile

- 6) _____ is an entity in which equal positive and negative charges are separated by a small distance.
- a) Bipolar
 - b) Dielectric
 - c) Dipole
 - d) Energy

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

- a) Write ideal Characteristics of Preservatives.
- b) Define Ointment. Classify them.
- c) Differentiate between Flocculated and Deflocculated suspensions.
- d) Explain in short Dipole moment,
- e) Explain in brief Compact powder.

Q.3 Answer the following (Any Two) 06

- a) Discuss in brief identification tests of Emulsion.
- b) Define Cosmetic Cream and Write note on Vanishing cream.
- c) Explain factors influencing the effectiveness of Preservatives.

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

- a) Explain in brief Refractive index.
- b) Write a note on preparation methods of Emulsions.
- c) Define Cosmetic powder and write a note on Dusting powder.

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

- a) Define Suspension. Write a note on stability of Suspensions.
- b) Give a brief note on Dielectric constant and Optical rotation.

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

Day & Date: Monday 26-05-2025

Max. Marks: 30

Time: 11:00 AM To 12:30 PM

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

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

- 1) Adulteration with a cheaper but similar-looking substance is known as _____.
 a) Accidental adulteration b) Deliberate adulteration
 c) Substitutional adulteration d) Incidental adulteration
- 2) Major chemical constituent of kaolin is _____.
 a) Calcium carbonates b) Magnesium hydroxide
 c) Aluminium silicate d) Sodium bicarbonate
- 3) Goldbeater's skin test is used to confirm the presence of _____.
 a) Violet visible light b) Alkaloids
 c) Tannins d) Saponins
- 4) Colophony is primarily composed of _____.
 a) Resin acids b) Terpenes
 c) Flavonoids d) Alkaloids
- 5) Fuller's Earth is rich in _____.
 a) Magnesium silicate b) Calcium sulphate
 c) Sodium chloride d) Potassium nitrate
- 6) The microscopic method for detecting adulteration in herbal drugs often involves examining _____.
 a) The chemical reaction with specific reagents
 b) The shape and structure of the drug's cells and fibers
 c) The molecular weight of the adulterant
 d) The melting point of the drug sample

- Q.2 Answer the Following. (Any Three) 06**
- a) Explain the uses of resins?
 - b) Explain chemical constituents of talc.
 - c) Define Tannins.
 - d) Define adulterations in natural ingredients.
 - e) Write down the biological source and geographical source of Pale catechu.
- Q.3 Answer the following. (Any two) 06**
- a) Explain the chemical test for tannins.
 - b) Write down the biological source, chemical constituent and uses of Bentonite.
 - c) Explain in detail about Benzoin.
- Q.4 Answer the following. (Any two) 06**
- a) Explain different methods of adulterations.
 - b) Explain in detail about biological source, chemical constituents and uses of Calamine.
 - c) Explain in detail about Storax.
- Q.5 Answer the following. (Any one) 06**
- a) Explain in detail about physical evaluation method and chemical evaluation method for detection of adulteration.
 - b) Write down the biological source, geographical source, chemical constituent and uses of Baheda.

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**Five Year Integrated (M. Tech Course in Cosmetic Technology)
(Semester-II) (New) (NEP CBCS) Examination: March/April - 2025
Cosmetic Chemistry -II (CT01203)**

Day & Date: Wednesday, 28-May-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 Multiple choice questions.

06

- 1) An aqueous solution of the base can turn _____.
a) blue litmus red b) no change in red litmus
c) red litmus blue d) none of the above
- 2) Most of the indicators used for non-aqueous titrations are prepared in Acetic acid and _____.
a) Water b) MDC
c) Methanol d) Acetone
- 3) The substances which are granted by Indian Pharmacopeia are called as _____.
a) Pure chemical substance b) Impurities
c) Official preparation d) Official substances
- 4) _____ used as a catalyst in limit test for sulphate.
a) Dil. Hydrochloric acid b) NaOH
c) Nitric Acid d) Ammonia
- 5) A species which have empty orbitals and can accept the loan pair of electrons are called as _____.
a) Lewis base b) Lewis acid
c) Arrhenius Acid d) Lowry Bronsted acid
- 6) Starch is a type of _____.
a) Naturally derived thickener b) Mineral thickener
c) Lipid thickener d) Ionic thickener

Q.2 Answer the following. (Any Three)

06

- Explain the limit test of Chloride ion.
- Write a note on acid-base indicators.
- What is the effect of water in Non-aqueous titrations?
- Explain the applications of acid-base titrations.
- Explain role of thickener in emulsion.

- Q.3 Answer the following. (Any Two) 06**
- a) What is limit test? Explain limit test for Lead.
 - b) Mention the types of thickeners. Explain any two of them with examples.
 - c) Define Non-aqueous Titrations and give their advantages and disadvantages.
- Q.4 Answer the following. (Any Two) 06**
- a) State Newton's law of viscosity and explain types of Fluids with suitable examples.
 - b) Explain the Lewis acid-base theory with examples and limitations.
 - c) What are cosmetic thickeners? Explain why viscosity and rheology are important in thickeners.
- Q.5 Answer the following. (Any One) 06**
- a) Explain various sources of impurities in the final product.
 - b) Define Buffer solution, explain Buffer action in detail.

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Max. Marks: 80

10

- Page 1 of 2

9) _____ are compounds that form film around solid particles and reduce the inter particle attraction.

- a) Emulsifiers
- b) Suspending agents
- c) Powder coat
- d) Lubricants

10) Preservatives are required _____.

- a) To protect formulation from microbial attack
- b) To stabilize the product
- c) To enhance activity and efficacy of drug
- d) All of the above

B) State whether true or false. (Each Question carries one mark) 06

- i) Tooth powder is an example of dusting powder.
- ii) Ideally preservatives should be tasteless.
- iii) Powders are stable as compared to semi solids.
- iv) Storage condition may affect the stability of suspension.
- v) By emulsification, the rate of absorption can be increased.
- vi) Gels are basically W/O emulsions.

Q.2 Answer the following: 16

- a) Write a note on Dentifrices along with its formula and brand name.
- b) Define suspension and classify in detail along with examples.
- c) Write a note on stability of suspension.
- d) Define preservatives and give its classification along with examples.

Q.3 Answer the following: 16

- a) Define, classify, write advantages, disadvantages and applications of bulk powders.
- b) Give an account of Jellies.

Q.4 Answer the following 16

- a) Write a note on sticks and dusting powder with example.
- b) Give detailed note on pastes and face powder.

Q.5 Answer the following 16

- a) Define, classify Emulsion. Write advantages and disadvantages of it and write need of emulsification.
- b) Write a note on Benzoic acid and sorbic acid as preservatives.

Q.6 Answer the following 16

- a) Define semisolid dosage form. Write advantages and disadvantages of it and classify along with examples.
- b) Explain preparation methods of suspension and write applications of suspension.

Q.7 Answer the following 16

- a) Explain in detail formulation components of suspension and ideal qualities of suspension.
- b) Write detailed note on creams.

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

Day & Date: Saturday, 24-May-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

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

Q.1 A) Choose correct alternative. 10

- 1) In vibrational spectra, the transition from $V=0$ to $V=1$ gives a very intense line known as _____.
a) overtone band b) fundamental band
c) dar band d) first overtone band
- 2) The fingerprint region of IR spectrum is about _____.
a) $1350-667\text{ cm}^{-1}$ b) $4000-667\text{ cm}^{-1}$
c) $667-50\text{ cm}^{-1}$ d) $4000-1350\text{ cm}^{-1}$
- 3) The mobile phase used in thin layer chromatography is _____.
a) solid b) gas
c) liquid d) both a and c
- 4) Fuel used in AAS is _____.
a) N_2O b) O_2
c) Acetylene d) Air
- 5) For anharmonic oscillator, selection rule is _____.
a) $\Delta J = \pm 1$ b) $\Delta V = \pm 1$
c) $\Delta E = \pm 1$ d) $\Delta V = \pm 1, \pm 2, \pm 3, \dots$
- 6) The most accurate chromatographic technique among the following is _____.
a) paper chromatography b) thin layer chromatography
c) HPLC d) both b and c
- 7) Among the following, which is a IR active molecule?
a) HC1 b) N_2
c) O_2 d) Cl_2
- 8) When bond between two atoms in a molecule is stiff and does not change in length, then the molecule is known as _____ model.
a) harmonic oscillator b) rigid rotor
c) stick d) rod

- 9)** For CO₂, the number of fundamental modes of vibrations are _____.
a) 3 b) 4
c) 5 d) 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 choice of mobile phase depends upon the nature of substances to be separated.
- 3) IR radiations cause the rotational changes in the molecules.
- 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) When a molecule undergoes rotational changes, there is no change in the bond length.
- 6) The ratio of distance moved by solute to the distance moved by solvent front is known as partition coefficient.

Q.2 Answer the following.

16

- a) Explain the principle of IR spectroscopy.
- b) Define the terms:
 - 1) Electromagnetic radiations
 - 2) Electromagnetic spectrum
- c) Enlist various fundamental components and their types of spectrophotometers.
- d) Discuss the classification of chromatography.

Q.3 Answer the following.

16

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

Q.4 Answer the following.

16

- Explain various factors affecting on values of vibrational frequency.
- 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.

- Explain in brief Paper chromatography.
- 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.

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**Five Year Integrated (M. Tech Course in Cosmetic Technology)
(Semester - IV) (New) (CBCS) Examination: March/April - 2025
Unit Operations - II (CT403)**

Day & Date: Tuesday, 27-May-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) Perfectly black body was obtained by _____.
a) Newton
b) Fourier
c) Ferry
d) None
- 2) In which type of mixer, the trough is stationary?
a) Barrel
b) Zig-zag
c) Ribbon
d) Double cone blender
- 3) Joule is unit of _____.
a) Heat
b) Pressure
c) Humidity
d) None
- 4) In the drying process, Final product is in the form of _____.
a) Solid
b) Slurry
c) Solution
d) None
- 5) What is the source of heat in most of the dryer?
a) Water bath
b) Hot air
c) Oil bath
d) Steam
- 6) Which of the following is also called V cone Blender?
a) Colloid mill
b) Ribbon blender
c) Double cone blender
d) Twin shell blender
- 7) For heat insulation _____ is used.
a) Aluminum
b) Glass wool
c) Copper
d) None
- 8) Fourier law is also known as _____.
a) Conduction law
b) Conviction law
c) Thermodynamic law
d) Radiation law

- 9)** Large amount of heat is transferred in _____.
a) Radiation b) Convection
c) Conduction d) None
- 10)** Which one of the following dryers is known as lyophiliser?
a) Freeze dryer b) Spray dryer
c) Tray dryer d) None

B) Write true or false.

06

- 1) Freeze drying involves lyophilization.
- 2) Conduction involves molecular movement.
- 3) Drying means evaporation.
- 4) Conduction takes place through solid.
- 5) Air conditioning involves humidification.
- 6) Heat flows from low to high.

Q.2 Answer the following.

16

- Distinguish between solid mixing and liquid mixing.
- Write a note on Conviction.
- Write a note on a twin shell blender.
- Give the merits and demerits of ribbon blender.

Q.3 Answer the following.

- a)** What is heat? Enlist different heat transfer mechanism. Give application of heat transfer.
- b)** Explain the application of drying.

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Q.4 Answer the following.

- a) Write a note on construction, principle and working of a spray dryer.
- b) Write a note on direct contact type of heat exchanger.

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Q.5 Answer the following.

- a) What is mixing? Give the applications and objectives of mixing.
- b) With neat labeled diagram explain the tray dryer.

10

06

Q.6 Answer the following.

- a) What is Drying? Give classification of it along with application.
- b) Write note on factors affecting mixing.

10

06

Q.7 Answer the following.

- a)** Write the construction, principle and working of humidifier.
- b)** Write construction, principle and working of a freeze dryer.

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06

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Set **P**

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

Day & Date: Thursday, 29-May-2025
Time: 03:00 PM To 06:00 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 Choose correct alternative. (MCQ)**10**

- 1) _____ is the chemical name of vit-C.
 - a) Benzoic acid
 - b) Ascorbic acid
 - c) Biotin
 - d) None of these
- 2) Vit - B₂ helps to protect cells against _____ stress.
 - a) Oxidative
 - b) Reductive
 - c) Both a & b
 - d) None of these
- 3) Pearl is a hard, glistening & _____ object
 - a) Dipeptides
 - b) Translucent
 - c) Non-Translucent
 - d) None of these
- 4) Target area in the body requires treatment with humectant for _____.
 - a) Moisture
 - b) Oily
 - c) Dry
 - d) None of these
- 5) _____ Vitamin is important for blood clotting.
 - a) Vit - A
 - b) Vit - K
 - c) Vit - E
 - d) None of the above
- 6) _____ lipids cannot be disintegrated into smaller molecules through hydrolysis.
 - a) Non-Saponifiable
 - b) Saponifiable
 - c) Both a & b
 - d) None of these
- 7) Cultural pearls are usually called as _____ pearls.
 - a) Natural
 - b) Synthetic
 - c) Both a & b
 - d) None of these
- 8) _____ Wax is the most important plant wax.
 - a) Bees wax
 - b) Animal wax
 - c) Carnauba wax
 - d) None of these

- 9) _____ dermatitis occurs when your skin produces too much oil.
a) Contact dermatitis b) Atopic dermatitis
c) Seborrheic dermatitis d) Albumin
- 10) _____ fatty acids are those which cannot be synthesized by human body.
a) Essential b) Non - essential
c) Both a & b d) None of these

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

- a) Vit-C is water soluble vitamin.
- b) The best known animal wax is beeswax.
- c) Contact dermatitis is also known as eezema.
- d) Saponifiable lipid can be disintegrated into smaller molecules through hydrolysis.
- e) Vit-E is important for healthy bone.
- f) Humectants are hygroscopic in nature.

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

- a) Define humectants & explain their ideal properties.
- b) Define pearl & explain their commercial uses in detail.
- c) Write a note on production method of fatty acid.
- d) Define the vitamin & explain the fat soluble and water soluble vitamin with examples.

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

- a) Write a note on Ion exchange resin & explain their cosmetic uses in detail.
- b) Explain in detail classification & properties of waxes.

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

- a) Define dry skin & explain in detail the types of risk factor & treatment for dry skin in detail
- b) Explain the following humectants in detail.
 - i) Glycerol ii) PEG

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

- a) Explain in detail fatty acids.
- b) Define lipids, structure of lipids & explain in detail classification of lipids.

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

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

Q.7 Answer the following**16**

- a) Write a note on metabolic role of vit A & vit K.
- b) Discuss in detail Lanolin.

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

Day & Date: Monday, 02-June-2025
Time: 03:00 PM To 06:00 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 Choose correct alternative. (MCQ)

10

- 1) PCI is reconstituted at every _____
 - a) 1 year
 - b) 2 years
 - c) 4 years
 - d) 5 years
- 2) When did The Factories Act, come into force?
 - a) 01 April 1966
 - b) 01 March 1967
 - c) 01 May 1960
 - d) 01 April 1949
- 3) Section 29 of the Factories act, 1948 provides _____
 - a) Lifting machines, chains, ropes and lifting tackles
 - b) Casing of new machinery
 - c) Excessive weights
 - d) Precautions in case of fire.
- 4) Section 10 of the Factories act, 1948 deals with _____
 - a) Work on or near machinery in motion,
 - b) Artificial humidification.
 - c) Certifying surgeons
 - d) Lifting machines, chains, ropes and lifting tackles
- 5) The constraints of promotion may include _____
 - a) Competitor's advertising
 - b) Resistance to change
 - c) Budget
 - d) All of the given options
- 6) What is the minimum number of employees required to register under the Shops and Establishment Act?
 - a) 10
 - b) 20
 - c) 30
 - d) 50
- 7) What is the maximum number of hours that an employee can work in a week?
 - a) 40 hours
 - b) 44 hours
 - c) 48 hours
 - d) 52 hours

- 8) The PCI constitute of _____
 a) Nominated members b) Elected members
 c) ex-officio members d) all of above
- 9) The Ex-officio members of PCI consists of _____
 a) drugs controller of India
 b) director general of health services
 c) both a & b
 d) None
- 10) How many compulsory licenses are issued in India.
 a) 1 b) 2
 c) 3 d) 4

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

- a) Registration & Licenses for factory is done under factory act.
 b) The patent act gives information about process and application of patent.
 c) The pharmacy act gives information about practice of education regulations.
 d) Minimum 36 hrs/week working will be there to workers as per shop act.
 e) The PCI does not contains elected, nominated and ex-officio members.
 f) Woman shall be required or allowed to work in a shop or establishment except between hours of 6 a.m. and 9 p.m.

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

- a) Define i) Employer ii) Wages iii) Patent iv) Establishment
 b) Give the objectives of sales promotion act.
 c) Give offences and penalties of pharmacy act.
 d) Define factory .Give Objectives of Factory Act.

Q.3 Answer the following.

- a) How the application, approval licensing and registration of factory done. **10**
 b) Write down duties of inspector who work under sales promotion act. **06**

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

- a) Give the procedures for approval of institute & withdrawal of approval.
 b) Give the offences and penalties under sales promotion act.

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

- a) What is the process of registration of Pharmacist?
 b) Give the offences & penalties under shop act.

Q.6 Answer the following.

- a)** Give the constitution and function of joint state pharmacy council. **10**
- b)** Explain the process of patent filing. **06**

Q.7 Answer the following

16

- a)** What is executive committee. Give the term of office & casual vacancies.
- b)** Give details about employer leave under sales promotion act.

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Set	P
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**Five Year Integrated (M. Tech.) (Sem-VI) (New) (CBCS) Examination:
March/April - 2025
Perfume II (CT601)**

Day & Date: Tuesday, 20-May-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) Figure to right indicate full marks.

Q.1 A) Choose correct alternative.

10

- 1) _____ is the substance that will hold and fix aroma which helps a fragrance last longer on the skin.
 - a) Solvent
 - b) Fixative
 - c) Perfume
 - d) Top note
- 2) The pyramid of fragrances consists of _____.
 - a) Top notes
 - b) Middle notes
 - c) Base notes
 - d) All of the above
- 3) Name out the chemical reaction in which two or more reactants are combine to form single product by loss of water.
 - a) Hydrogenation
 - b) Nitration
 - c) Condensation
 - d) All of the above
- 4) What is a common use of diethyl phthalate?
 - a) Flavoring agent in food
 - b) Fragrance fixative
 - c) Antiseptic
 - d) Treatment of wounds
- 5) Which of the following acts as a catalyst for the esterification of alcohol and carboxylic acid.
 - a) Nitrous acid
 - b) Nitric acid
 - c) Sulphuric acid
 - d) None of the above
- 6) _____ is the characteristic odour of an ester.
 - a) Alcoholic odour
 - b) Fruity like odour
 - b) Rotten egg
 - d) None of the above
- 7) In Grignard reagent _____ is not present.
 - a) Methyl group
 - b) Magnesium
 - c) Halogen
 - d) acidic group
- 8) Hydrogenation is a chemical reaction that involves the addition of hydrogen to:
 - a) Single bonds
 - b) Double bonds
 - c) Triple bonds
 - d) Aromatic rings

- 9) _____ is the family of civet.
- a) Viverridae b) Cervidae
c) Phytoteridae d) Styracaceae
- 10) The _____ is Nucleophilic addition of an active hydrogen compound to a carbonyl group followed by dehydration reaction.
- a) Knoevenagel condensation b) Condensation
c) Perkin condensation d) Pechmann condensation

B) Answers the following as true/false

06

- 1) Fixatives are the base notes in a perfume, and kept at 6%.
- 2) The heart notes serve as a buffer for the base note.
- 3) Perkin reaction is a modification of Aldol condensation reaction.
- 4) Musk xylene is a synthetic musk fragrance which mimics natural musk.
- 5) The hydrogenation of citral can be carried out to form mixtures of citronellal and citronellol.
- 6) Aromatic Aldehydes participate in Perkin reaction.

Q.2 Answer the following.

16

- Write down the physical and chemical properties of Coumarin.
- Write a note on heart note.
- Write down the precaution taken during condensation reaction.
- Write the source, chemical composition and uses of Myrrh.

Q.3 Answer the following.

16

- a) Explain in detail about Essential oil fixative.
- b) Write detail note on Condensation of Coumarin by Pechmann reaction.

Q.4 Answer the following.

16

- a)** Write the biological source, chemical composition and uses of following fixatives
a) Benzoin b) Benzyl benzoate c) Musk d) Civet
- b)** Explain in detail about the Perkin reaction and Knoevenagel reaction with mechanism.

Q.5 Answer the following.

16

- Write a note on synthetic fixative and explain in detail about the building of perfumes and body of the perfumes.
- Define condensation reaction and explain in detail synthesis of cinnamaldehyde by aldol condensation reaction.

Q.6 Answer the following.

16

- Define nitration reaction. write down the nitrating agent used in nitration and brief explanation of nitration reaction mechanism.
- Explain in detail about hydrogenation of citronellal.

Q.7 Answer the following.

16

- a)** Discuss in detail about Nitration of Musk xylene.
- b)** Explain in brief about mechanism of aldol condensation.

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Set P

**Five Year Integrated (M. Tech.) (Sem-VI) (New) (CBCS) Examination:
March/April - 2025
Cosmetic Technology IV (CT602)**

Day & Date: Monday, 19-May-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

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

Q.1 A) Choose correct alternatives. 10

- 1) Industrial materials such as _____ cause damage to the unprotected skin.

a) Detergents	b) Metal polishes
c) Oven cleaners	d) Organic solvents
- 2) The adhesive power of baby powders can be improved by the incorporation of _____.

a) Zinc stearates	b) Lanolin
c) Petrolatum	d) None of the above
- 3) _____ is not used in hydrocolloid-based system.

a) Casein	b) Rubber-latex
c) Acacia	d) Guar gum
- 4) _____ is used as a miscellaneous skin lightening agents.

a) 4-isopropyl catechol	b) Ascorbyl oleate
c) Mercapto-amines	d) All of the above
- 5) The absorbency and adhesiveness of the talc can be improved by blending with other materials such as _____.

a) Kaolin	b) Perfume
c) Water	d) None of the above
- 6) Dibromofluorescein is also known as D & C Orange No _____.

a) 5	b) 7
c) 10	d) 8
- 7) Zinc oxide is usually employed in amounts between _____ percent in dry rouge.

a) 2 to 8	b) 3 to 6
c) 5 to 10	d) 2 to 5

- 8) _____ is used to impart red shades in mascara.
- | | |
|---------------|-------------------|
| a) Umbers | b) Chromium oxide |
| c) Zinc oxide | d) Carmine |
- 9) Liquid eyeshadows take the form of liquid _____ or liquid dispersion.
- | | |
|-------------|---------------|
| a) Solution | b) Gel |
| c) Lotion | d) Suspension |
- 10) _____ may be used as an argillaceous-materials.
- | | |
|---------------|---------------|
| a) China clay | b) Casein |
| c) Bentonite | d) Both a & c |

B) Write true or false. 06

- 1) Skin is to be protected from physical hazards, such as UV- radiation.
- 2) Zinc oxide is thought to have mildly anti-inflammatory properties in baby products.
- 3) Methylcellulose is used as an emollient in hand cleansers.
- 4) Melanin is synthesized in keratinocytes.
- 5) Face pack must be dermatologically non-toxic.
- 6) When pH is above 4, eosin changes to an intense red salt.

Q.2 Answer the following. 16

- a) Write a note on barrier materials used in protective creams and gels.
- b) Describe in brief safety of baby products.
- c) Write a note on vinyl-based systems.
- d) Give the characteristics required in a lipsticks.

Q.3 Answer the following. 16

- a) Describe in detail barrier properties of cationic polymers.
- b) Write a note on testing of protective preparations.

Q.4 Answer the following. 16

- a) Give any two formulas for baby products.
- b) Write a note on wax-based systems used to prepare face masks/packs.

Q.5 Answer the following. 16

- a) Write in detail about transparent lipsticks and liquid lipsticks.
- b) Write a note on colour of the skin and hydroquinone as material for skin bleach preparation.

Q.6 Answer the following. 16

- a) Explain in detail liquid mascara along with the formula.
- b) Explain in detail stick eyeshadow along with the formula.

Q.7 Answer the following. 16

- a) Enlist and explain various steps involved in manufacturing of lipsticks.
- b) Give the formula for waterless hand cleanser cream and liquid hand cleanser.

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Set **P**

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

Day & Date: Saturday, 24-May-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 the correct alternative. 10

- 1) Which of the following is not an application of distribution law?
 - a) Solvent extraction
 - b) Drug absorption
 - c) Determination of molecular weight
 - d) Boiling point elevation

- 2) In which of the following systems is the distribution phenomenon not applicable?

a) Water-chloroform	b) Benzene-water
c) Alcohol-water	d) Ether-water

- 3) Which factor affects the distribution coefficient?

a) Temperature	b) pH
c) Ionization of solute	d) All of the above

- 4) Partition coefficient is important in drug design for predicting _____.
 - a) Molecular weight
 - b) Hydrophilicity
 - c) Lipophilicity and membrane permeability
 - d) pKa value

- 5) Peptizing agents are used to _____.
 - a) Coagulate colloids
 - b) Increase particle size
 - c) Prevent sedimentation
 - d) Convert precipitate into colloidal form

- 6) Brownian motion in colloids is a type of _____.

a) Electrical property	b) Kinetic property
c) Optical property	d) Sedimentation process

- 7) Which behaviour is exhibited by cornstarch in water under shear?

a) Pseudoplastic	b) Newtonian
c) Dilatant	d) Elastic

- 8) What is the behaviour of Newtonian fluids?
 a) Viscosity changes with shear
 b) Constant viscosity at all shear rates
 c) Viscosity increases over time
 d) Flow only after yield stress
- 9) True density can also be called _____.
 a) Apparent density b) Intrinsic density
 c) Compressed density d) Bulk density
- 10) A powder with an angle of repose of 45° is considered to have _____.
 a) Excellent flow b) Good flow
 c) Passable flow d) Very poor flow

B) Write whether true or false. 06

- 1) Ionic dissociation can affect how a solute distributes between two phases.
- 2) Only optical properties are used to characterize colloids.
- 3) Peptization is the process of converting a sol into a gel.
- 4) Viscosity is not affected by temperature in dispersed systems.
- 5) Packaging arrangements can impact the quality and performance of solid preparations.
- 6) True density is always higher than bulk density.

Q.2 Answer the following. 16

- a) State and explain Nernst distribution law along with its limitations.
- b) Explain Optical properties of colloids.
- c) Explain factors influencing rheology of dispersed system.
- d) Explain Packaging arrangement of Powders.

Q.3 Answer the following. 08

- a) Explain the effect of molecular association and dissociation on the distribution of solute when added to an immiscible system. Explain the various applications of distribution law. **08**
- b) Write a note on stability of colloidal systems. **08**

Q.4 Answer the following. 08

- a) Explain Plastic, Pseudoplastic and dilatant flow of liquids. **08**
- b) What are derived Properties of powders? Explain in detail any four. **08**

Q.5 Answer the following. 08

- a) Discuss the kinetic properties of colloids and explain about mechanism of peptization of colloid. **08**
- b) Explain the Newtonian system of flow with examples. Explain the mechanism of thixotropy with examples. **08**

Q.6 Answer the following.

- a)** Enumerate methods to determine the particle size. Explain any two methods to determine particle size. **08**
- b)** Define colloids. Classify the colloids. Explain detail different types of colloids. Add note on electrical properties of colloids. **08**

Q.7 Answer the following.

- a)** Define Viscosity along with its units of expression. Explain Negative thixotropy with examples. **08**
- b)** With the help of neat diagram explain Andreson's pipette method to determine particle size. **08**

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Set	P
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**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem-VI) (New) (CBCS) Examination: March/April - 2025
Beauty Culture - II (CT604)**

Day & Date: Monday, 26-May-2025
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

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

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

- 1) Professional ethics is _____
 - a) Trying to be friendly to people
 - b) A system of rules that tell professionals how they should behave
 - c) To become a member of a professional organization
 - d) A set of rules about beauty
- 2) What is concealer?
 - a) It goes all over your face
 - b) It goes under your eyes and on spot
 - c) It goes around the forehead
 - d) None of the above
- 3) What's the use of powder or setting spray?
 - a) To make the products stick to the skin
 - b) To give the skin a dewy glow
 - c) To give a skin a matte glow
 - d) None of the above
- 4) Mascara is used for: _____
 - a) Applying on the eyebrows
 - b) Thickening and lengthening of the eyelashes
 - c) Applying on the eyelids
 - d) Beautifying the margins of the eyelids
- 5) Which of the following ingredients can be used for thickening of shampoos?

a) Glycerin and lactic acid	b) Sodium chloride and CMC
c) Bentonite and beeswax	d) Mineral oil and olive oil

- 6) Under what conditions should oil based makeup be used instead of water-based makeups?
- a) If someone has extremely dry skin
 - b) When applying makeup for someone appearing on TV or film
 - c) In humid climate
 - d) All of the above
- 7) Which of the following is not a benefit of regular manicures and pedicures?
- a) Improved nail health and appearance
 - b) Increased risk of infection
 - c) Reduced stress and relaxation
 - d) Early detection of nail disorders
- 8) The stationary part of the pin curl is the _____
- a) Circle
 - b) Curl
 - c) Base
 - d) Stem
- 9) What is the effect of cuticle cream?
- a) Emollient that softens the tissue at the base of the nail
 - b) Removes excess cuticle
 - c) Smooth the nail plate
 - d) All of the above
- 10) Nail stain can be removed with nail bleach or _____
- a) Peroxide
 - b) Acetone
 - c) An oil manicure
 - d) Polish remover

Q.1 B) Write True/ False:**06**

- a) Eyeshadows are available in liquid form only.
- b) We use light colors under the brow.
- c) Sometimes it is necessary to use a liner to cover the shine from dried lash glue.
- d) The athlete's foot is found between the toes and appears as redness and broken skin, which is very itchy.
- e) The technique in which the ends of the hair are cut at a slight taper, using diagonal lines is called beveling.
- f) Permanent hair color breaks up or diffuses melanin.

Q.2 Answer the following: (Any Eight)**16**

- a) Describe professional ethics and desired attitude of beauticians to clients.
- b) What are general problems related to hairs?
- c) What is astringent preparation?
- d) Write a note on bridal makeup.

- Q.3 A) Answer the following: 10**
a) What are the different shapes of faces?
b) Write in detail about application of false eyelashes and their contraindications.
- B) Write about some common hairstyles. 06**
- Q.4 A) Answer the following: 10**
a) Write about types of primers.
b) Write a note on natural hair dyes.
- B) Describe corrective makeup for lips. 06**
- Q.5 A) Answer the following: 10**
a) What is hair conditioner?
b) Write a note on lipsticks.
- B) What is foundation in makeup? 06**
- Q.6 Answer the following:**
A) Solve the following: 10
a) What are the different types of hairs.
b) Describe corrective makeup techniques for nose.
- B) Write in detail about manicure preparations. 06**
- Q.7 Answer the following:**
A) Solve the following: 10
a) Write a note on shampoo preparation.
b) Describe eye makeup product.
- B) Give a brief note on pedicure. 06**

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Set **P**

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

Day & Date: Wednesday, 28-05-2025
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 O. No. 7.
3) Figure to right indicates full marks,

Q.1 A) Choose the Correct alternative: **10**

- 1) Which of the following is a life - threatening allergic reaction?
 - a) Eczema
 - b) Anaphylaxis
 - c) Seasonal rhinitis
 - d) Diarrhea
- 2) The specific interaction between antigens and antibodies is known as _____.
 - a) Immune response
 - b) Serological reaction
 - c) Antigen-antibody reaction
 - d) Humoral immunity
- 3) Antigen -Antibody reactions form the basis for _____.
 - a) Cell-mediated immunity
 - b) Innate immunity
 - c) Humoral immunity or antibody -mediated immunity
 - d) Inflammation
- 4) When antigen-antibody reactions occur in vitro they are called as _____.
 - a) Agglutination
 - b) Serological reactions
 - c) Precipitation
 - d) Neutralization
- 5) Which of the following can cause acute toxic contact dermatitis?
 - a) Poison ivy
 - b) Latex
 - c) Sunscreen
 - d) Hydrochloric Acid
- 6) How many healthy adult human subjects are ideally selected for patch testing?
 - a) Five
 - b) Ten
 - c) Twenty
 - d) Thirty
- 7) Which of the following is a common cause of cracked heels?
 - a) Excessive sweating
 - b) Fungal infection
 - c) Dry skin
 - d) Allergic reaction

- 8) Which of the following is a common symptom of heel fissures when they extend to the dermis?
- a) Pain
 - b) Numbness
 - c) Itching
 - d) Swelling
- 9) Death of a portion of a tissue on the skin refers to ____.
- a) Necrosis
 - b) Inflammation
 - c) Cell death
 - d) Dead Tissue
- 10) ____ is keratolytic (skin exfoliant) and has been shown to reduce hyperkeratosis.
- a) Hydrochloric acid
 - b) Salicylic acid
 - c) Alpha hydroxy acid
 - d) Saccharide isomerase

B) True or False.

06

- 1) Molecules that absorb photons are called chromospheres.
- 2) Berloque Dermatitis was caused by the inclusion in some perfumes of bergamot oil.
- 3) Photo patch test is also used to confirm a suspected allergic contact dermatitis.
- 4) Type III hypersensitivity is known as arthus hypersensitivity reaction.
- 5) The part of an antibody that recognizes the epitope is called a paratope.
- 6) Flat feet term is used to describe lowering of the long inner arch of the foot.

Q.2 Answer the following:

16

- a) Write a short note on hygiene hypothesis and Allergies.
- b) Describe the salient features of antigen-antibody reactions.
- c) Differentiate between irritant and allergic contact dermatitis.
- d) Describe two treatment options for dry heel fissures.

Q.3 Answer the following:

16

- a) Write a detailed note on dietary and nutritional approaches in allergy management.
- b) Describe the non-pharmacological treatment options for severe cases of cracked heels.

Q.4 Answer the following:

16

- a) What is human repeat insult patch test (HRIPT)? Explain the principle and procedure of HRIPT.
- b) Explain in detail about Draize test in rabbit.

Q.5 Answer the following:

16

- a) Explain in detail about Eye irritancy test in rabbit.
- b) Explain the etiology and management of foot pain.

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

- a) Differentiate between precipitation in liquid and precipitation in gel.
- b) Describe the process of photopatch testing and its significance in diagnosing photo allergy.

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

- a) Explain the pathophysiology of allergic contact dermatitis, detailing the sequence of events from allergen exposure to the eczematous reaction.
- b) Describe the Magnusson and Kligman Guinea Pig Maximization Test for skin sensitization, highlighting its outline and procedure.

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**Five Year Integrated (M. Tech.) (Sem-VII) (New) (CBCS) Examination:
March/April - 2025
Quality Assurance Techniques (CT1703)**

Day & Date: Saturday, 24-May-2025
Time: 11:00 AM To 01:00 PM

Max. Marks: 40

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.

08

- 1) Any abbreviations or acronyms used in the SOP must be explained at the _____ of the SOP.

a) Beginning	b) End
c) Middle	d) None
- 2) _____ is defined as documented evidence that the equipment, supporting utilities and premises have been built or installed in keeping with design specifications.

a) DQ	b) IQ
c) OQ	d) PQ
- 3) Stationary phase used in HPLC is _____.

a) Gas	b) Liquid
c) Solid	d) Either solid or liquid
- 4) NMR is a spectroscopic technique which is based on the absorption of electromagnetic radiation _____ region.

a) IR	b) UV
c) Radio frequency	d) Microwave
- 5) QIC is a guideline for _____.

a) New drug	b) New dosage form
c) Biological products	d) Evaluation of stability data
- 6) Zone IV is a _____ type of climate.

a) Hot humid	b) Hot dry
c) Temperate	d) Sub-tropical
- 7) If lesions have not cleared up in _____ days the test material is considered as severe irritant.

a) 2	b) 15
c) 7	d) 30

- 8) In the evaluation of sunscreen preparations, _____ radiation absorption ability is evaluated.
- a) IR
 - b) UV
 - c) Both a and b
 - d) none

Q.2 Answer any four of the following. 08

- a) Enlist evaluation tests for skin creams involved in In-Vitro methods.
- b) What is the role of Radio-frequency transmitter in NMR spectrometer.
- c) What is the role of stability testing.
- d) Enlist types of validation.
- e) Give examples of different separation techniques.
- f) Give basic requirements of QA.

Q.3 Write notes on any two of the following. 08

- a) Standard Operating Procedure (SOP).
- b) Gel Filtration Chromatography.
- c) Turbidimetry.

Q.4 Answer any two of the following. 08

- a) Give basic requirements of Quality Control (QC).
- b) Explain different sample injection methods used in gas chromatography.
- c) Enlist and explain steps of change control.

Q.5 Answer any one of the following. 08

- a) Define validation. Enlist types of process validation and explain in detail each.
- b) Explain evaluation tests in detail for lipsticks.

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**Five Year Integrated (M. Tech.) (Sem-VIII) (New) (CBCS) Examination:
March/April - 2025**

**Cosmetic Technology
Colours in Cosmetics (C) (CT1801)**

Day & Date: Friday, 16-May-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

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

08

- 1) One of the following is not cool colour.

a) Blue	b) Green
c) Purple	d) Orange
- 2) Tyrian purple is colour extracted from _____.

a) Snail	b) Fish
c) Animal	d) Crab
- 3) Which of the following is NOT example of Vat dye.

a) Indigo	b) Benzanthrone
c) Congo Red	d) Vat Green
- 4) Grey is a colour of _____.

a) Happiness	b) Joy
c) Sorrow	d) Wealth
- 5) A dye's potential colouring power is known as _____.

a) Flashing	b) Bleed
c) Tinctorial strength	d) Dye's power
- 6) A series of colorants with similar chemical structure, differ only in their chain lengths and number of substitute groups known as _____.

a) Primary colors	b) Tertiary colors
c) Color lakes	d) Homologous color
- 7) The pigment stability is based on which of the following factor.

a) Inert substance
b) Coating with one or more layers of titanium dioxide
c) Both a and b
d) None of the above
- 8) The dyer's rocket is synonym of the following plant.

a) Reseda luteola	b) Juglans cinera
c) Junipers monosperma	d) Rubia tinctoria

- Q.2 Answer the following. (Any Four) 08**
- a) Give a short note on vat dyes.
 - b) Write benefits of pigment colours.
 - c) Write advantages of lake colours.
 - d) Write down the precautions taken during incorporations of colors into skin cosmetics.
 - e) Define dyes and flashing of colour.
 - f) Define dyestuff. Write common dyestuff and Luxury dyestuff.
- Q.3 Write short notes. (Any Two) 08**
- a) Process of recognising colour
 - b) Incorporation of color in skin cosmetics
 - c) Red alternative and pink pastel rose
- Q.4 Answer of the following (Any Two) 08**
- a) Classify natural colours and synthetic colours along with examples and structure.
 - b) Explain in detail preparations of dyestuff process.
 - c) Explain in detail batch testing and color correction.
- Q.5 Answer of the following (Any Two) 08**
- a) Describe hiding power. Write advantages, disadvantages of natural and synthetic colours.
 - b) Explain in detail types of colorants and types of hair colors used in cosmetic preparations.

Day & Date: Thursday, 22-May-2025
Time: 03:00 PM To 05:00 PM

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

08

- Page 1 of 2

- Q.2 Answer (Any Four) of the following 08**
- a) What is preelectric shave lotion? Describe in short.
 - b) What is nail laquer. Give examples.
 - c) Give the ideal properties of dentrifrices.
 - d) Give 2 examples of each antibacterial agent and flavouring agent in mouthwashes.
 - e) Give ideal properties of nail preparations.
 - f) Classify shaving preparations.
- Q.3 Write notes on (Any Two) of the following 08**
- a) Write a note on cuticle remover and nail bleach.
 - b) Write a note on footcare preparations
 - c) Write a note on suntan preparations.
- Q.4 Answer (Any Two) of the following 08**
- a) Give an account of brushless shaving cream.
 - b) What are sunscreen agents give their functions.
 - c) What are foot powders and sprays? Describe.
- Q.5 Answer (Any One) of the following 08**
- a) Write a note on i) Aerosol Shaving foam ii) Dry shaving preparations.
 - b) Describe in brief about tooth paste including basic structure & their formulations.

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**Five Year Integrated (M. Tech Course in Cosmetic Technology)
(Semester - VIII) (New) (CBCS) Examination: March/April - 2025
Cosmeceuticals Microbiology (CT) (CT1803)**

Day & Date: Tuesday, 27-May-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

Q.1 Choose the correct alternative.

08

- 1) Molds are certain _____ type of fungi whose growth will be easily recognised cottony appearance.
 - a) Unicellular filament
 - b) Multicellular filament
 - c) Acellular type
 - d) None of the above
- 2) _____ is the term referring to any process that remove or kills all form of microbial organism present on the surface or in a compound such as biological culture media.
 - a) Sterilization
 - b) Disinfectant
 - c) Antiseptics
 - d) Germicides
- 3) In gram staining, Iodine is used as a _____.
 - a) Fixative
 - b) Moderant
 - c) Solubilizer
 - d) Stain
- 4) Name the type of bacteria which uses CO₂ as a sole source of carbon for its own growth.
 - a) Organotrophs
 - b) Hetrotrophs
 - c) Autotrophs
 - d) Lithotrophs
- 5) _____ is bacteria which obtain energy from chemical compounds.
 - a) Chemotrophs
 - b) Phototrophs
 - c) Organotrophs
 - d) Lithotrophs
- 6) Which of these is not a selective media?
 - a) Blood agar
 - b) Eosin ethylene blue agar
 - c) Macconkey agar
 - d) Mannitol salt agar
- 7) The viral envelope is composed of _____.
 - a) Phospholipid
 - b) Glycoprotein
 - c) Lipid and Proteins
 - d) All of the above

- 8) In Viable plate count, each _____ represents a _____ from the sample population.
- | | |
|---------------------|---------------------|
| a) Cell, Colony | b) Colony, Cell |
| c) Hour, generation | d) Cell, generation |

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 sterilisation of bacteria.
- e) Write down the general characteristics of protozoa.
- f) Define germicides and microbiostasis.

Q.3 Write short notes on of the following. (Any two) 08

- a) Mechanism of cell injury.
- b) Morphological and general characteristic of algae.
- c) Principle method of analysis to enumerate microorganism.

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

- a) Discuss in detail about isolation and maintenance of pure culture.
- b) Explain in detail of structure, working and uses of autoclave with neat labelled diagram.
- c) Explain in detail factors related influencing the organism being killed activity.

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

- a) What are the different types of staining techniques in microbiology? Explain in detail about acid fast staining technique.
- b) Define antiseptic, sanitizer, disinfections. Discuss physical control method for sterilisation of bacteria.

**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Semester - VII) (New) (CBCS) Examination: March/April - 2025
Herbal Cosmetics - II (CT1804)**

Max. Marks: 40

08

- Page 1 of 2

- 8)** Identify the chemical constituent present in tulsi _____.
 a) Eugenol b) Carvacrol
 c) Both a and b d) None of the above

Q.2 Answer any four of the following. 08

- Write down the procedure of infusion method of extraction.
- Write down the biological source and chemical constituents of Bhringraj.
- What do you mean by natural extractives?
- Write down the biological source and chemical constituents of Kesar.
- Write down the chemical constituents of Seetaphal.
- Give the chemical constituents and cosmetic uses of Grape fruit.

Q.3 Write short notes on any two of the following. 08

- a) Write a note on ultrasound extraction method.
- b) Write a note on Manjistha.
- c) Write a note on preparation of herbal shampoo powder with suitable example.

Q.4 Answer any two of the following. 08

- Describe the procedure of extraction using Soxhlet apparatus along with its merits and demerits.
- Write down the biological source, chemical constituents and cosmetic uses of Hibiscus.
- Give preparation of polyherbal hair oil.

Q.5 Answer any one of the following. 08

- a) Explain the enfleurage method of extraction.
- b) Write down the biological and geographical source, chemical constituents and cosmetic uses of Orange peel.

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**Five Year Integrated (M. Tech.) (Sem-VIII) (New) (CBCS) Examination:
March/April – 2025
Management and Organizational Behavior (CT1808)**

Day & Date: Monday, 02-June-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) _____ refers to an intrinsic desire for personnel development.
 - a) Existence
 - b) Growth
 - c) Relatedness
 - d) All the above
- 2) Identify the hygiene factor from below options.
 - a) Technical supervision
 - b) Achievement
 - c) Recognition
 - d) Responsibility
- 3) _____ is also called as quality improvement team.
 - a) Problem solving team
 - b) Process team
 - c) Functional team
 - d) Virtual team
- 4) A corrective action to resolve known deviation may involve in _____.
 - a) Revision of standard
 - b) Changing the method of selection
 - c) Training of workers
 - d) All the above
- 5) In quality circle, following are the functions of members except _____.
 - a) Follow the code of conduct
 - b) Learn the problem-solving technique
 - c) Promote quality circle program
 - d) Attend leadership training
- 6) According to Koontz O'DonneL Planning is _____.
 - a) Hypothetical process
 - b) Intellectual process
 - c) Complex and unpredictable
 - d) Hybrid process
- 7) _____ is the most fundamental authority.
 - a) Functional authority
 - b) Line authority
 - c) Staff authority
 - d) None of above

- 8) Sentence A: Planning is non-systemic and complex process.
Sentence B: There is hierarchical structure in planning which are non-integrated.

- | | |
|-----------------|----------------|
| a) False; True | b) True; False |
| c) False; False | d) True; True |

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

- a) Differentiate between authority and power.
- b) Write down limitations of controlling.
- c) What is '5S' approach?
- d) Explain any two informal groups.
- e) What is contribution of Professor Charles Babbage in evaluation of management thought?
- f) Summarize the philosophy of scientific approach in short.

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

- a) Project management with reference to basic components of network and techniques.
- b) Principles of delegation.
- c) McClelland's Achievement model.

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

- a) Explain features of Quality Circle.
- b) Elaborate in detail- Job enlargement.
- c) Write down stages of group development.

Q.5 Answer the following: (Any One)

- | | |
|---|-----------|
| a) i) Define Team; elaborate role of Team leader. | 03 |
| ii) Define planning explain its different types. | 05 |
| b) i) Explain non-financial incentives. | 03 |
| ii) What is KAIZEN? Explain 'Muda' in industry. | 05 |

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**Five Year Integrated (M. Tech. Course in Cosmetic Technology) (Sem - IX)
(New) (CBCS) Examination: March/April - 2025
Advanced Cosmetic Technology - I (CT1901)**

Day & Date: Thursday, 15-May-2025
Time: 11:00 AM To 02:00 AM

Max. Marks: 80

Instructions: 1) Question number 1 & 2 are compulsory.
2) Attempt any 3 questions from Q. No. 3 to Q. No. 7.
3) Figure to right indicates full marks.

Q.1 A) Choose the correct alternative. 10

- 1) Following sentence is true about cyclodextrin complex.
 - a) Increases the solubility of slightly soluble molecules
 - b) Improves the stability of ingredients
 - c) Controls the release of active ingredients, prolonging their effects
 - d) all of above
- 2) ____ are thermodynamically stable.

a) Microemulsions	b) Macroemulsions
c) Coarsemlusions	d) None of above
- 3) Liposomes are made of ____

a) lipids	b) waters
c) both	d) none
- 4) HLB for W/O emulsion is ____

a) 1-2.5	b) 7-1
c) 10-15	d) 3-6
- 5) Liposomes are biocompatible, biodegradable, and have low toxicity
Above sentence is ____

a) correct	b) partially correct
c) Incorrect	d) None
- 6) Identify the different preservative from given group below.
Edible oil, Sorbates, Benzoates, Sulphites

a) Edible oil	b) Sorbates
c) Benzoates	d) Sulphites
- 7) Nanoparticles are prepared by ____

a) Solvent evaporation	b) Microencapsulation
c) salting out	d) all of the above

- 8) Absorption of medicament through skin is best when we use following vehicle, except _____
- | | |
|---------------------|------------------|
| a) Animal oil | b) Vegetable oil |
| c) Organic solvents | d) Mineral oil |
- 9) Vehicles used for cosmetics are _____
- | | |
|-------------|-----------------|
| a) Emulsion | b) Creams |
| c) Ointment | d) all of above |
- 10) Microorganisms get into the cosmetic products due to _____
- Poor manufacturing conditions
 - Packaging that doesn't adequately protect the product
 - Ineffective preservation system particularly for ingredients that encourage growth of microorganisms
 - all of these

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

- Ether injection is method of preparation of Nanoparticles.
- The vesicular drug delivery system includes nanoliposomes and nanoniosomes.
- Liposomes are vesicular structures with an aqueous core surrounded by a hydrophobic lipid bilayer.
- Preservatives are used to increase self-life and prevent spoilage of cosmetics.
- 0.5% benzoic acid is used as preservative.
- Perfume is a mixture of fragrant essential oils or aromatic compounds, fixatives and solvents used to give a human body a pleasant scent.

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

- Enlist the steps in manufacturing of cosmetics. Describe the emulsification process in detail.
- Write a note on control of microbial contamination in cosmetics.
- Draw a well labelled diagram of transverse section of skin and describe two major processes of percutaneous absorption.
- Write a note on humectants and antioxidants in manufacturing of cosmetics.

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

- Describe formulation of liposomes.
- Describe design & formulation of nanoparticles.

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

- Explain in brief the microencapsulation.
- Explain role of cyclodextrins in cosmetics.

- Q.5 Answer the following question** **16**
- a) Write down the composition of perfume and describe its role in perfume.
 - b) Comment on control of microbial contamination in cosmetic manufacturing.
- Q.6 Answer the following question** **16**
- a) Write about liposome preparation method by ether injection method.
 - b) Comment on potentially allergenic substances used as fragrances.
- Q.7 Answer the following question** **16**
- a) Describe 'Parabens' as controversial ingredients and write down need of preservation in detail.
 - b) Write a note on COSMOS.

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**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - X) (New) (CBCS) Examination: March/April - 2025
Research Methodology (CT11001)**

Day & Date: Wednesday, 14-May-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

Q.1 Multiple choice questions.

08

- 1) The _____ is referred as father of research teaching.
 - a) N. L. Gage
 - b) David Berliner
 - c) Egon Brunswick
 - d) Donald T. Campbell
- 2) Random sampling is helpful as it is _____.
 - a) Reasonably accurate
 - b) free from personal biases
 - c) an economical method of data collection
 - d) all of above
- 3) Which of the following is not an essential element of report writing?
 - a) Research Methodology
 - b) Reference
 - c) Conclusion
 - d) None of these
- 4) In group interview there are _____.
 - a) One interviewer and one interviewee
 - b) More than one interviewer and one interviewee
 - c) One interviewer and more than one interviewee
 - d) More than One interviewer and more than one interviewee
- 5) Which of the following is not an essential element of report writing?
 - a) Research Methodology
 - b) Reference
 - c) Conclusion
 - d) None of these
- 6) Which technique is generally followed when a population is finite?
 - a) Purpose sampling technique
 - b) Area sampling technique
 - c) Systematic sampling technique
 - d) None of the above
- 7) Which among the following is NOT related to qualitative research?
 - a) Thematic analysis
 - b) Case study
 - c) Discourse analysis
 - d) Survey method

- 8) In "RESEARCH" "R" means _____
- a) Role
 - b) Retain
 - c) Rely
 - d) Round

Q.2 Answer any four of the following. 08

- a) Define Research.
- b) Write any two characteristics of good research.
- c) What is Research design?
- d) Give the sources of literature.
- e) Define sampling.
- f) What is research report?

Q.3 Write notes on any two of the following. 08

- a) Write note on different types of Research.
- b) Write note on different types of sampling technique.
- c) Write note on types of research report with examples.

Q.4 Answer any two of the following. 08

- a) Describe objective of research.
- b) Explain bibliography in detail.
- c) Explain research design.

Q.5 Answer any one of the following. 08

- a) Describe in detail methods of data collection.
- b) Describe the steps in report writing.

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**Five Year Integrated (M. Tech. Course in Cosmetic Technology)
(Sem - X) (New) (CBCS) Examination: March/April - 2025
Research Methodology (CT4001)**

Day & Date: Wednesday, 14-May-2025
Time: 03:00 PM To 05:00 PM

Max. Marks: 35

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

Q.1 Multiple choice questions.**05**

- 1) What is the name of the conceptual framework in which the research is carried out?
 - a) Research hypothesis
 - b) Synopsis of Research
 - c) Research paradigm
 - d) Research design
- 2) Random sampling is helpful because it is _____.
 - a) Reasonably accurate
 - b) An economical method of data collection
 - c) Free from personal biases
 - d) All of the above
- 3) A question which requires a solution is _____.
 - a) Observation
 - b) Problem
 - c) Data
 - d) Experiment
- 4) Research method is a part of _____.
 - a) Problem
 - b) Experiment
 - c) Research Techniques
 - d) Research methodology
- 5) Converting a question into a Researchable problem is called _____.
 - a) Solution
 - b) Examination
 - c) Problem formulation
 - d) Problem Solving

Q.2 Answer any five of the following**10**

- a) Give different methods for collecting secondary data.
- b) What is the hypothesis?
- c) What is literature review?
- d) Define Research design.
- e) Distinguish between primary data and secondary data.
- f) What is Bibliography?

- Q.3 Write short note on the following** **10**
- a) Write a detailed note on sampling and its design.
 - b) Write a note on the role and significance of research.
- Q.4 Answer any one of the following** **10**
- a) Write a note on Structure and components of scientific reports.
 - b) Explain the necessity of defining a Research Problem.