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COSMETIC TECHNOLOGY

Cosmetic Chemistry – I

Max. Marks: 80

Instructions: 1) Question 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.

10

- 1) BaCl₂ is used as reagent for the limit test of _____.
a) Sulphate b) Chlorides
c) Lead d) Nitrate
- 2) The solution which resist the change in pH of solution is known as _____.
a) Buffer b) Acid
c) Base d) Salt
- 3) The choice of acid-base indicator depend upon the change in _____ of solution.
a) Concentration b) pH
c) End point d) None of the above
- 4) Washing process involves the removal of _____ impurity.
a) Insoluble b) Soluble
c) Partially soluble d) None of the above
- 5) The _____ theory involves the formation of Co-ordinate bond.
a) Arrhenius Theory b) Lewis Theory
c) Lowry-bronsted Theory d) Lux-Flood Theory
- 6) The pH scale was determined by taking _____ as standard.
a) Water b) NaCl
c) NH₃ d) HCl
- 7) The solvents which are chemically inert are called as _____.
a) Aqueous b) Protogenic
c) Aprotic d) Protophilic
- 8) Benzene is the _____ solvent.
a) Protogenic b) Aprotic
c) Protophilic d) Amphiprotic
- 9) Cosmetic thickeners mainly involves _____ force.
a) Retardation b) Ionic
c) Driving d) Electrophilic
- 10) Silica is the example of _____ thickeners.
a) Mineral b) Lipid
c) Synthetic d) Ionic

B) Identify true/false**06**

- 1) H₂O is known as pure chemical compound.
- 2) The impurity which comes from the starting materials is known as solvent impurity.
- 3) According to Lewis Acid-Base Theory, the acids are those substance which donates electron.
- 4) Non-aqueous solvents contain no or less water.
- 5) Bees wax is the example of lipid thickeners.
- 6) Sulphuric acid is protophilic solvent

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

- 1) Define the cosmetic thickeners and explain lipid thickener in detail.
- 2) What is mean by non-aqueous titration? And explain in detail types of solvents used.
- 3) Write a note on Lewis Acid-Base theory.
- 4) Explain the various methods used in purification of inorganic substances.

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

- a) Explain in detail the limit test for chlorides and sulphate.
- b) Define the buffer solution, gives its types and explain the properties of buffer solution.

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

- a) Explain in detail synthetic thickener and ionic thickener.
- b) Write down the methods used to determine the end point in non-aqueous titration

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

- a) Give the advantages and disadvantages of non-aqueous titration
- b) Explain the concept of pH and pH scale

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

- a) Mention and explain any six sources of impurity and their control in Raw materials.
- b) Explain in detail limit test of arsenic and lead

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

- a) Explain the Crystal Violet and Oracet Blue-b indicator used in non-aqueous titration
- b) Explain acid-base titration with example.

Seat No.	
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**Five Years Integrated M. Tech (Semester - I) (New) (CBCS) Examination:
Oct/Nov-2022**

(COSMETIC TECHNOLOGY)

Fundamentals of Anatomy and Physiology

Day & Date: Tuesday, 14-02-2023

Max. Marks: 80

Time: 03:00 PM To 06:00 PM

- Instructions:** 1) Question 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 of the following is known as the suicide bag of a cell?
 - a) Mitochondria
 - b) Golgi Complex
 - c) Lysosome
 - d) Nuclei
- 2) DNA is stored in which of the following cell organelle?
 - a) Cell wall
 - b) Cell Membrane
 - c) Nucleus
 - d) Cytoplasm
- 3) In which of the following cell nucleus is not present?
 - a) Eukaryotic cell
 - b) Prokaryotic cell
 - c) Both of the above
 - d) None of the above
- 4) Which of the following organisms doesn't have a cell?
 - a) Virus
 - b) Bacteria
 - c) Fungi
 - d) Algae
- 5) Which of the following cells is found in the brain?
 - a) Neuron
 - b) Hepatocyte
 - c) Nephron
 - d) Epithelial cell
- 6) Which of the following is a part of neuron?
 - a) Axon
 - b) Cell body
 - c) Dendrite
 - d) All of the above
- 7) Process of formation of blood corpuscles is called _____.
 - a) Haemolysis
 - b) Haemozoin
 - c) Haemopoiesis
 - d) Haemoter
- 8) Which structure is known as the working unit of nervous system?
 - a) Nerves
 - b) Neurons
 - c) Cell body
 - d) Neuralgia
- 9) Where are the RBC destroyed?
 - a) Spleen
 - b) Liver
 - c) Kidney
 - d) Thymus
- 10) Which vitamin is essential for blood clotting?
 - a) Vitamin K
 - b) Vitamin A
 - c) Vitamin B
 - d) Vitamin C

B) Write true/false**06**

- 1) DNA and RNA are absent in prokaryotic cell.
- 2) Hemoglobin is protein present in blood.
- 3) Blood cells are produced in bone marrow.
- 4) Hairs are necessary part of the skin.
- 5) WBC are called as soldier cell.
- 6) Heparin clots the blood.

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

- a) Write the functions of plasma membrane and lysosomes of animal cell.
- b) Comment on the function of skin.
- c) Draw a neat-labeled diagram of skin.
- d) Distinguish between baby skin and adult skin.

Q.3 Answer the following.

- a) What is keratinization? Write a note on melanin synthesis.
- b) Comment briefly on hair follicle.

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

- a) What is nervous tissue? Give different types of tissue and function.
- b) What is eye? Give the structure and function of it

10**06****Q.5 Answer the following.**

- a) Write a note on WBC
- b) Write a note on RBC

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

- a) What is keratinization? Write down the physiology of keratinization.
- b) Explain the structure and function of mitochondria.

10**06****Q.7 Answer the following.**

- a) Write a note on epithelial tissue
- b) Write a note on baby skin.

08**08**

Seat No.	
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B) State True or False.**06**

- 1) Sertuerner is well known for his studies on plant kingdom.
- 2) The basic function of oils and fats is storage of energy.
- 3) Lactose on hydrolysis yield glucose and galactose.
- 4) Organized parts are liquid in nature.
- 5) Sushrutha called the Father of Indian medicine and Father of Plastic Surgery.
- 6) Fixed oils are volatile in nature.

Q.2 Answer the following**16**

- a) Write a note on latex.
- b) Describe in short Barfoed's and Bial's test as an identification test for carbohydrate.
- c) Define and classify lipids.
- d) Write down the merits and demerits of morphological classification system of drugs of natural origin.

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

- a) Draw a neat labeled diagram of seed and briefly explain the following parts of seeds:
 - 1) Embryo
 - 2) Endosperm
 - 3) Seed coat
- b) Explain the Biological and Chemotaxonomical classification system of drugs of natural origin along with their merits and demerits

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

- a) Write down the biological source, geographical source, chemical constituents and the uses of agar.
- b) Write down the biological source, geographical source, method of preparation, chemical constituents and the uses of carnauba wax.

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

- a) Classify the fruits and write a note on fleshy fruit.
- b) Comment on development and role of natural products in cosmetic and medicine.

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

- a) Write down the biological source, geographical source, chemical constituents and the uses of pectin.
- b) Write down the biological source, geographical source, method of preparation, chemical constituents and the uses of lanolin.

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

- a) Write a note on morphology of leaf.
- b) Write down the biological source, geographical source, method of preparation, chemical constituents and the uses of linseed oil.

Seat No.	
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**Five Years Integrated M. Tech (Semester - I) (New) (CBCS) Examination:
Oct/Nov-2022
(COSMETIC TECHNOLOGY)
English (Communication Skill)**

Day & Date: Thursday, 16-02-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 40

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

Q.1 Rewrite the following sentences by choosing the correct alternative. 10

- 1) In the prose *The Portrait of a Lady* by Khushwant Singh, the author's mother fetched some bread for... after the death of his grandmother
 - a) dogs
 - b) cats
 - c) sparrows
 - d) pigeons
- 2) As mentioned in the prose *The Portrait of a Lady*, the author Khushwant Singh was abroad for studies for...years.
 - a) five
 - b) two
 - c) six
 - d) four
- 3) The name of the river island in the prose *Jadav Payeng: the Forest Man of India* is _____.
 - a) Maoli
 - b) Majali
 - c) Majuli
 - d) Majoli
- 4) In the prose *The Birth of Khadi* by M.K. Gandhi,... wanted an autograph from Gandhi.
 - a) students from Harvard
 - b) students from Stratford
 - c) students from Cambridge
 - d) Students from Oxford
- 5) The rate of... (employment) is increasing in India. (Use a suitable prefix and rewrite the sentence).
 - a) ir-
 - b) un-
 - c) be-
 - d) none of the above
- 6) Change the class (the part of speech) of the word 'develop' by using the suitable suffix and rewrite.
 - a) developed
 - b) developing
 - c) development
 - d) all of the above
- 7) The adjective form of the word "adventure' is _____.
 - a) adventures
 - b) adventurousness
 - c) adventurous
 - d) adventurously
- 8) As mentioned in the poem *The Lotus* by Toru Dutt.... sung praises for the flowers.
 - a) Saints
 - b) Oracle
 - c) Goddess Flora
 - d) Bards of power
- 9) The poet Rabindranath Tagore describes not to be sheltered from... in the poem *Let Me Not Pray to be Sheltered from Dangers*.
 - a) compassion
 - b) cowardice
 - c) love
 - d) dangers

- 10) The son in the poem *The Toys* by Coventry Patmore disobeys his father...times.
- | | |
|----------|---------|
| a) two | b) four |
| c) seven | d) five |

B) Write whether the following sentence is true or false. 06

- 1) The author's school in the prose *The Portrait of a Lady* by Khushwant Singh is attached to hospital.
- 2) M.K. Gandhi states in the prose *The Birth of Khadi* that behind his every act he has done in his life, there is a religious consciousness as the motive.
- 3) The poet Rabindranath Tagore wants to use heart to conquer pain in the poem *Let Me Not Pray to be Sheltered from Dangers*
- 4) The father in the poem *The Toys* by Coventry Patmore found his son sleeping in his room after the punishment.
- 5) In the sentence "Mime is a form of drama", the part of speech of the underlined word is noun.
- 6) In the sentence "Give me a hot cup of tea", the underlined word in this sentence is an adjective.

Q.2 Answer the following questions. 16

- 1) Comment on the relationship between the author and his grandmother in the prose *The Portrait of a Lady* by Khushwant Singh
- 2) What are the various steps taken by Jadhav buying to ensure the safety of the forest in the prose *Jadav Payeng: the Forest Man of India*?
- 3) What is the most deep-seated disease in India as mentioned in the prose *The Birth of Khadi* by M.K. Gandhi?
- 4) What effects did the floods have as mentioned in the prose *Jadav Payeng: the Forest Man of India*?

Q.3 Answer the following questions

- | | |
|---|-----------|
| 1) What is the significance of the toys in the poem <i>The Toys</i> by Coventry Patmore? | 08 |
| 2) What are the various important qualities discussed by Rabindranath in the poem <i>Let Me Not Pray to be Sheltered from Dangers</i> ? | 08 |

Q.4 Answer the following questions

- | | |
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| a) What is communication? Describe the process of communication in detail. | 10 |
| b) Describe the character of grandmother as depicted by Khushwant Singh in the prose <i>The Portrait of a Lady</i> . | 06 |

Q.5 Answer the following questions

- | | |
|---|-----------|
| a) Write a descriptive essay on 'A Memorable Trip in Your Life'. | 10 |
| b) What are the themes in the poem <i>The Toys</i> by Coventry Patmore? | 06 |

Q.6 Answer the following questions

- | | |
|--|-----------|
| a) Write an essay on the time when you learnt an important lesson by making a mistake in your life. Narrate it with the incidents. | 10 |
| b) Describe the character of Jadhav Payeng with reference to the prose <i>Jaden' Payeng: the Forest Man of India</i> . | 06 |

Q.7 Answer the following questions.

- | | |
|--|-----------|
| a) What are the various types of manifestations of intrapersonal skills? Discuss with reference to the unit prescribed for your study. | 10 |
| b) Do as directed. 06 | |
| 1) Write the noun forms of the words: secure, refuse and decide. | |
| 2) Write the adjective forms of the words: friend, danger and especially. | |

Seat No.	
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**Five Year Integrated M. Tech. (Semester-I) (New) (CBCS) Examination:
Oct/Nov-2022
(COSMETIC TECHNOLOGY)
Fundamental Chemistry**

Day & Date: Friday, 17-02-2023
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) Fill in the blanks by choosing correct alternatives given below. 10

- 1) In alcohols, the hydroxyl group is covalently bound to _____ hybridized carbon.
 - a) sp
 - b) sp^3
 - c) sp^2
 - d) Any of these
- 2) The aqueous solution of _____ is distinctly acidic.
 - a) Carbohydrate
 - b) Alcohol
 - c) Glycol
 - d) Phenol
- 3) Ethylene oxide on treatment with dilute acid form a _____.
 - a) Diol
 - b) Triol
 - c) Catechol
 - d) Phenol
- 4) The formation of two covalent bonds by the monomers, _____ structure is formed.
 - a) Linear
 - b) Branched
 - c) Cross Linked
 - d) None of these
- 5) The shape of a liquid drop in absence of external force is determined by _____.
 - a) Surface Tension of the liquid
 - b) The density of the liquid
 - c) The viscosity of the liquid
 - d) The temperature of air only
- 6) A drop of oil placed on the surface of the water, which of the following statements is correct?
 - a) It will remain on it as a sphere
 - b) It will spread as a thin layer
 - c) It will partly be as spherical droplets and partly as thin films.
 - d) It will float at the distorted drop on the water surface.
- 7) What is the unit of viscosity?
 - a) Candela
 - b) Poiseuille
 - c) Newton's
 - d) None of these
- 8) The boiling point Ethylene glycol is _____.
 - a) 197°
 - b) 190°
 - c) 200°
 - d) 195°

- 9) The compound containing three hydroxyl groups are known as _____ alcohol.
- a) Dihydric alcohol b) Trihydric alcohol
c) Monohydric alcohol d) None of these
- 10) Trihydric alcohol is known as _____.
- a) Diol b) Triol
c) Both d) None of these

B) Fill in the blanks.**06**

- 1) Nitration is a chemical process that introduces a _____ group into an organic compound.
- 2) A polymer is a chain of many small units joined together which are called as _____.
- 3) The process of changing water vapor into water is called _____.
- 4) Surface tension of liquids generally decreases with _____ in temperatures.
- 5) Glycol is highly soluble in _____ and _____.
- 6) The dipole moment value of carbonyl group is _____.

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

- a) Define the alcohol and give its classification in detail.
- b) Define the following terms:
 - 1) Polymer
 - 2) Monomers
 - 3) Polymerization
 - 4) Homo and Hetero polymer
- c) Explain structure and reactivity of carbonyl group.
- d) Explain phosphonitrilic compound in detail.

Q.3 Answer the following.

- a) Explain in detail the formation of ethylene glycol by different methods and give its uses.
- b) Explain in detail the surface tension of liquid.

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

- a) Write down the various uses of glycerol in cosmetics.
- b) Explain Silicones in details.

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

- a) Explain different reactions of phenol.
- b) Explain the classification of polymer based on structure and method of preparation.

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

- a) Explain in detail the mechanism of pinacol-pinacolone rearrangement reaction.
- b) Explain the classification of organic and inorganic polymers in detail.

08**08****Q.7 Answer the following.**

- a) Explain in detail nitration of aromatic compound with respect to the nitrating agent, generation of nitronium ion.
- b) Explain condensation process with neat labeled diagram.

08**08**

Seat No.	
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**Five Years Integrated M. Tech (Semester - III) (New) (CBCS) Examination:
Oct/Nov-2022**

**COSMETIC TECHNOLOGY
Cosmetic Technology – I**

Day & Date: Monday, 13-02-2023
Time: 11:00 AM To 01:00 PM

Max. Marks: 40

- Instructions:**
- 1) All questions are compulsory.
 - 2) All questions carry equal marks.
 - 3) Figures to the right indicates full marks.
 - 4) Draw neat labelled diagram wherever necessary.
 - 5) Use of calculator & log table is allowed.

Q.1 Multiple choice questions:

08

- 1) Soda ash is also known as:

a) pure silica	b) sodium carbonate
c) Lime stone	d) Calcium carbonate
- 2) Elixirs are:

a) Hydroalcoholic	b) Aqueous
c) Viscous	d) Semisolid
- 3) What is molar refraction?

a) when refraction is measured in grams
b) Measurement of refraction with respect to moles
c) Product of specific refraction & molecular mass
d) more than any one of above
- 4) Simple syrup contains _____ % of sucrose in water.

a) 66.7	b) 65.5
c) 66.1	d) 60
- 5) The direction "shake well before use" is given for

a) Powders	b) Suspensions
c) Syrup	d) None of the above
- 6) HLB value of 2 to 3 indicates

a) Foaming agents	b) Antifoaming agents
c) w/o emulsifying agents	d) Suspending agent
- 7) standardization of plastic material by following test except:

a) Leakage test	b) Transparency
c) Water vapour permeability	d) Water attack test
- 8) Solubility is depend on

a) Temperature	b) Pressure
c) pH	d) All of the above

- Q.2 Answer the following. (Any Four)** **08**
- a) Define mouthwash & throat paints.
 - b) Define Polymorphism.
 - c) Give advantages & disadvantages of suspension dosage form
 - d) Draw HLB scale
 - e) Write Handerson-hasselbatch equation.
 - f) Write types of emulsions
- Q.3 Write short notes (Any Two)** **08**
- a) Classification of SAA.
 - b) Protein binding
 - c) Plastic as a packaging material
- Q.4 Answer the following. (Any Two)** **08**
- a) Write a note on green packaging.
 - b) Write about solubility enhancement techniques.
 - c) Give details about stereochemistry & partition coefficient
- Q.5 Answer the following. (Any One)** **08**
- a) Give detailed account on monophasic liquid dosage forms.
 - b) Write in detail refractive index with their measurement.

**Seat
No.**

Day & Date: Tuesday, 14-02-2023
Time: 11:00 AM To 01:00 PM

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

08

- 1) Paper chromatography is used to determine the _____.
a) R.F value
b) Purity of compound
c) Both a and b
d) None of these
- 2) Electromagnetic radiations are _____ in nature.
a) Only one
b) Dual
c) Dimensional
d) All of these
- 3) The range of IR regions is _____ μm .
a) 0.7 -2.5
b) 0.5 -2.5
c) 2.5 -0.7
d) 2.5 -0.5
- 4) 1 MHz is equal to _____ Hz.
a) 10^3 Hz
b) 10^6 Hz
c) 10^9 Hz
d) All of these
- 5) The amount of light absorbed is directly proportional to the thickness of an absorbing material is called as _____.
a) Beers Law
b) Lamberts law
c) Columbus law
d) None of these
- 6) Number of waves per centimeter in vacuum is called _____.
a) Frequency
b) Wave number
c) Velocity
d) Wavelength
- 7) _____ chromatography technique uses paper sheets or strips.
a) Columns
b) Paper
c) TLC
d) All of these
- 8) Which of the following is not an IR vibrational modes?
a) Stretching
b) Scissoring
c) Rocking
d) Rolling

08

- Define chromatography.
- Explain principle of flame photometry.
- Explain translational energy.
- Define the Beers-Lamberts Law
- Write down the various advantages of flame photometry
- What is mobile phase?

- Q.3 Write short notes. (Any Two)** **08**
- a) Discuss radio region and microwave region.
 - b) Explain in detail electromagnetic radiation.
 - c) Write a short note on column chromatography.
- Q.4 Answer the following. (Any Two)** **08**
- a) Write down the various application of UV visible spectroscopy.
 - b) Write down advantages and disadvantages of paper and column chromatography.
 - c) Explain in detail atomic and molecular spectroscopy.
- Q.5 Answer the following. (Any One)** **08**
- a) Explain principle, components, working procedure of the flame photometry with neat labelled diagram.
 - b) Explain IR spectroscopy with principle, theory and various stretching modes of vibrations.

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Max. Marks: 40

08

- Page 1 of 2

- Q.2 Answer the following question. (Any Four) 08**
- a) Write down the fanning's equation and different terms involve in it.
 - b) Write down the Reynolds number and enlist the different terms involved in it.
 - c) Give the advantages and limitations of Orifice meter.
 - d) Give the principle of working of Pitot tube.
 - e) What is check valve? Enlist the types of the check valve.
 - f) Define centrifugal pump.
- Q.3 Write short notes. (Any Two) 08**
- a) Globe valve construction and working.
 - b) Fluid dynamics
 - c) Flanges and expansion joints
- Q.4 Answer the following question. (Any Two) 08**
- a) Describe the construction of Screw conveyor.
 - b) Differentiate between Reciprocation pumps vs centrifugal pumps.
 - c) Describe construction and working of differential manometer.
- Q.5 Answer the following question. (Any One) 08**
- a) State the law of conservation of energy. Derive the equation for Bernoulli's theorem.
 - b) Classify the meters used to measure the flow of fluid. Explain Rotameter in detail. Comment advantage and disadvantage of Venturi meter.

Set P

Max. Marks: 40

08

- Q.2 Answer any four of the following. 08**
- a) Define amino acid with example.
 - b) What is mean by polar amino acids?
 - c) What is mean by denaturation of protein?
 - d) Define co-enzyme.
 - e) Define metallic soap.
 - f) Write down the definition of surfactant.
- Q.3 Write short notes on any two of the following. 08**
- a) Explain the types of surfactant with example.
 - b) Explain in detail lock and key model of enzymes.
 - c) Write a note on classification of amino acids.
- Q.4 Answer any two of the following. 08**
- a) Explain the chemical properties of the amino acids and give its application in cosmetics.
 - b) Explain in detail the physical properties of proteins.
 - c) Write a note on properties of enzyme.
- Q.5 Answer any one of the following. 08**
- a) Explain in details the chemistry of silicone with their properties and use in cosmetics.
 - b) Explain in detail ketogenic and glycogenic amino acids.

Seat No.	
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Five Year Integrated M. Tech. (Sem-III) (CBCS) Examination: Oct/Nov-2022

**(COSMETIC TECHNOLOGY)
Drugs & Cosmetics Laws – I**

Day & Date: Friday, 17-02-2023
Time: 11:00 AM To 01:00 PM

Max. Marks: 40

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

Q.1 Choose the correct alternatives from the options.**08**

- 1) Provisions for exhaust fan should be provided to manufacture which cosmetic?
 - a) Face powder
 - b) Nail polish
 - c) Tooth paste
 - d) Lipstick
- 2) The doors of the manufacturing premises to be opened outwards is applicable to the manufacture of which cosmetic?
 - a) Eyelashes
 - b) Toilet soaps
 - c) Shaving cream
 - d) Nail lacquers
- 3) Green S, Naphthol blue black are examples of which Schedule?
 - a) P
 - b) S
 - c) U
 - d) None of these
- 4) The penalty for treating animals cruelly is _____.
 - a) Punishable with fine NLT 10/- which may extend to 20/-
 - b) Punishable with fine NLT 10/- which may extend to 200/-
 - c) Punishable with fine NLT 10/- which may extend to 50/-
 - d) Punishable with fine NLT 10/- which may extend to 500/-
- 5) Which of the following is an example of natural colour?
 - a) Carotene
 - b) Caramel
 - c) Calcium salts
 - d) All of these
- 6) A cosmetic is deemed to be spurious if, _____.
 - a) if it contains a colour other than prescribed
 - b) if it is not labelled in the prescribed manner
 - c) if it contains wholly or partly of decomposed substance
 - d) none of these
- 7) Flow much space in sq mts. Is required for the manufacturing of _____ toilet soaps?
 - a) 1000
 - b) 10
 - c) 10000
 - d) 100
- 8) "This product should not be used for dyeing eyebrows as it may lead to blindness", such a caution is printed on which _____ Cosmetic label?
 - a) Hair shampoo
 - b) Hair colour
 - c) Hair oil
 - d) None

- Q.2 Attempt any four of the following questions. 08**
- 1) Give the objective for MTP, '1955.
 - 2) Define Cosmetics.
 - 3) Define Misbranded cosmetic & Toilet preparations.
 - 4) What does schedule S define?
 - 5) Name the classes of cosmetics which are prohibited to be imported?
 - 6) Discuss any 2 offences & penalties related to PCA, 1960.
- Q.3 Write Notes. (Any Two) 08**
- 1) Powers of Drug Inspector.
 - 2) Constitution & composition of Drugs Technical Advisory Board.
 - 3) Distinguish between Non-bonded and Bonded lab.
- Q.4 Attempt any two of the following questions. 08**
- 1) Discuss the offences and penalties of Drugs & Cosmetics Act, 1940.
 - 2) Discuss Schedule Mil in relation to the manufacture of cosmetics.
 - 3) Discuss the plant, space & requirements to manufacture Eye cosmetics.
- Q.5 Attempt any one of the following questions. 08**
- 1) Discuss the plant, requirements, space to manufacture nail polishes and nail lacquers.
 - 2) Write an exhaustive note on Government analyst w.r.t. definitions, qualification and duties.

Seat No.	
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Set **P**

**Five Years Integrated M. Tech (Semester - V) (New) (CBCS) Examination:
Oct/Nov-2022**

**COSMETIC TECHNOLOGY
Perfume I**

Day & Date: Monday, 13-02-2023
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

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

- 1) What is meant by rancid fat?
 - a) pleasant taste and odor
 - b) unpleasant taste and odor
 - c) bad smell, changes in color
 - d) Both b & c
- 2) In cold fat Extraction at what period of time we have to remove flowers from crops?
 - a) After 2 hrs
 - b) After 4 hrs
 - c) After 24 hrs
 - d) After 12 hrs
- 3) Which of the following is used to control taste and smell in alcohol?
 - a) Activated carbon
 - b) Synthetic zeolite
 - c) Lime
 - d) Rocksalt
- 4) What is the full form of SCF in Extraction?
 - a) Super Condition fluid
 - b) Super common fluid
 - c) Supercritical fluid
 - d) Supreme critical fluid
- 5) What is the active ingredient in clove?
 - a) Eugenol
 - b) Linalool
 - c) Citral
 - d) Geraniol
- 6) _____ is the chemical formula of ethanol
 - a) C_3H_7OH
 - b) C_2H_5OH
 - c) CH_3OH
 - d) C_4H_9OH
- 7) What are the essential flavours?
 - a) Salty & Sweet
 - b) Sour
 - c) Bitter
 - d) All of the above
- 8) In water distillation, which type of heating equipment is used?
 - a) steam jacket
 - b) closed steam jacket
 - c) closed or open steam coil
 - d) All the above

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

- a) Define Menstruum, Marc, Extracts & Tinctures.
- b) Draw the diagram of distillation pot in the purification process of ethanol.
- c) Draw the diagram of Soxhlet Apparatus.
- d) What is a general molecular formula for alcohol and give its examples?
- e) Define & classify flavor.
- f) Define & classify distillation.

- Q.3 Write short notes (Any Two)** **08**
- a) Write a note about producing ethanol through anaerobic carbohydrate catabolism.
 - b) What are the properties and uses of Geraniol?
 - c) Write a note on Rose.
- Q.4 Answer the following. (Any Two)** **08**
- a) Write a note on Fermentation during ethanol production.
 - b) Write the details of **Ginger oleoresins**.
 - c) What are the properties and geographical sources of Orange?
- Q.5 Answer the following. (Any One)** **08**
- a) Explain in detail phases coming in manufacturing of Ethanol with graphs.
 - b) Write a note on steam distillation with their advantages and disadvantages

Seat No.	
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Set **P**

Five Year Integrated M. Tech. Course (Semester - V) (New) (CBCS)
Examination: Oct/Nov-2022
(COSMETIC TECHNOLOGY)
Cosmetic Technology – III

Day & Date: Tuesday, 14-02-2023
 Time: 03:00 PM To 05:00 PM

Max. Marks: 40

- Instructions:** 1) All questions are compulsory.
 2) Answer to all questions are to be written in one answer book only.
 3) Figures to the right indicate full marks.
 4) Draw neat labeled diagram wherever necessary.
 5) Use of calculator and log table is allowed.

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

- 1) _____ is a fat soluble emollients.
 - a) Sorbitol
 - b) Glycerol
 - c) Lanolin
 - d) Both a and b
- 2) Salicylic acid is used for treating _____.
 - a) Blackheads
 - b) Whiteheads
 - c) Both a and b
 - d) None of the above
- 3) Which of the following antioxidant is added in aqueous formulation?
 - a) Ascorbic acid
 - b) BHA
 - c) BHT
 - d) None of the above
- 4) _____ give an effect of increased whiteness in soap.
 - a) Gum benzoin
 - b) Musk
 - c) Phenyl benzo thiozole
 - d) Sodium thiosulphate
- 5) _____ contain high amount of emollient.
 - a) Bath salt
 - b) Foam bath
 - c) Bath oil
 - d) Bath bomb
- 6) The scientific term for well balanced skin is _____.
 - a) Eudermic
 - b) Xerosis
 - c) Eczema
 - d) None of the above
- 7) _____ is an occlusive agent.
 - a) Petroleum jelly
 - b) Wax
 - c) Silicones
 - d) All of the above
- 8) _____ is an in-vitro method to determine antioxidant activity.
 - a) Total protein
 - b) Lipid peroxidation
 - c) Total phenol assay
 - d) Both a and b

- Q.2 Answer the following. (Any Four)** **08**
- a) What properties of acrylic plastic make it to use as the composition of cosmetic container?
 - b) Enlist the application of humectant.
 - c) How antioxidant act?
 - d) Why soap does not work in hard water.
 - e) How sodium perborate exhibit antiseptic properties.
 - f) Write down the properties of cleansing cream
- Q.3 Write short notes (Any Two)** **08**
- a) Write a short note on foundation cream.
 - b) Write a short note on Hyaluronic acid.
 - c) Write a short note on:
 - i) Toilet soap
 - ii) Transparent soap
- Q.4 Answer the following. (Any Two)** **08**
- a) Write down the ideal characteristic of antioxidants and add a note on vitamins as antioxidants.
 - b) Write down the stability and safety of glycerol.
 - c) How creams are manufactured and add a note on packing of cream.
- Q.5 Answer the following. (Any One)** **08**
- a) Write in detail about ingredients used in soap manufacturing and manufacturing of soap by cold process.
 - b) What are bath salts and write down in detail about ingredients used in the formulation of bath salts.

Seat No.	
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**Five Year Integrated M. Tech. (Semester- V) (New) (CBCS) Examination:
Oct/Nov-2022**

**(COSMETIC TECHNOLOGY)
Principles of Cosmeceutics – I**

Day & Date: Wednesday, 15-02-2023
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

Q.1 Multiple choice questions.

08

- 1) Most widely used colors in suspensions is/are _____.
a) Titanium dioxide (white) b) Brilliant blue (blue)
c) Indigo carmine (blue) d) All of these
- 2) Following are the tests which used to identify the emulsions except.
a) Microscopic method b) Conductance method
c) Coagulation method d) Dye method
- 3) The dispersion of one liquid in another liquid is called as _____.
a) Solid sol b) Sol
c) Emulsion d) Gel
- 4) The solvating layer is strongly held to the surface and its outer surface represents the boundary of relative movement between the solid and the liquid. The potential at this point is termed as _____.
a) Zeta potential b) Nernst potential
c) Stern layer d) All of these
- 5) Organic solute is more soluble in _____.
a) Inorganic solvent b) Inorganic solute
c) Organic solute d) Organic solvent
- 6) O/W emulsions is called as _____.
a) Aqueous emulsion b) Oily emulsion
c) Alcoholic emulsion d) Electrophoresis
- 7) Which of the following test/s is/are used for identification of emulsions?
a) Cobalt Chloride b) Dye
c) Conductance d) All of these
- 8) Increase in particle size of solid results in _____ solubility.
a) Increased b) Decreased
c) Remains unchanged d) Depends on the crystal structure

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

08

- a) Define Spreading coefficient and surface energy.
- b) Distinguish between flocculated and deflocculated suspension.
- c) Define the term isotonicity with an example.
- d) What is sedimentation? Enlist the factor affecting on sedimentation.
- e) Explain upward and downward creaming.
- f) Define Surface tension. Give its SI unit.

- Q.3 Write short notes. (Any Two)** **08**
- a) Distinguish between ideal solution and real solution.
 - b) What are multiple emulsions? Explain its types.
 - c) Derive relation between surface tension and surface energy.
- Q.4 Answer the following question. (Any Two)** **08**
- a) Write a note on stability of suspension.
 - b) Explain the different methods for determining the type of emulsion.
 - c) What is coalescence? Explain factors affecting it.
- Q.5 Answer the following question. (Any One)** **08**
- a) Define solubility. Explain the various factors affecting solubility of solids in liquids.
 - b) Explain in detail components of suspension formulation. Add a note on methods of preparation of suspensions.

Seat No.	
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**Five Years Integrated M. Tech (Semester - V) (New) (CBCS) Examination:
Oct/Nov-2022
(COSMETIC TECHNOLOGY)
Beauty Culture – I**

Day & Date: Thursday, 16-02-2023
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

Q.1 Choose the correct alternative from the given option.

08

- 1) In which direction wax should be applied _____.
 a) In the direction of hair growth
 b) In any direction
 c) In opposite direction of hair growth
 d) Clients choice
- 2) Which skin type becomes dry & rough after washing?
 a) Oily skin
 b) Combination skin
 c) Dry skin
 d) Sensitive skin
- 3) During facial which skin type needed attention?
 a) Dry skin
 b) Sensitive skin
 c) Normal skin
 d) Oily skin
- 4) What is the technical name of black heads?
 a) Milia
 b) Acne
 c) Seborrhoea
 d) Comedone
- 5) Which method is used to make eyebrow quickly?
 a) Threading
 b) Tweezing
 c) Plucking
 d) Bleaching
- 6) What is the technical name of kneading?
 a) Petrissage
 b) Friction
 c) Effleurage
 d) Tapotment
- 7) Essential oil should be store in _____.
 a) Transparent glass
 b) Amber colored glass
 c) Metal container
 d) Plastic container
- 8) What is the largest organ of body?
 a) Brain
 b) Heart
 c) Dermis
 d) Stomach

- Q. 2 Answer any four of the following 08**
- a) Name the tools used for facial.
 - b) Write different types of blemishes.
 - c) What is waxing. Write its types.
 - d) Define face pack & face mask.
 - e) Draw neat labelled diagram of skin.
 - f) Define aromatherapy. Write its advantages.
- Q. 3 Write a short note on any two of the following 08**
- a) Explain the different techniques used for eyebrow shaping.
 - b) Describe the treatment given for skin blemishes.
 - c) Explain the precaution taken during waxing.
- Q.4 Answer any two of the following 08**
- a) Discuss different types of face mask available in market.
 - b) Define essential oil. Name the different essential oil. Write the extraction method used for petals.
 - c) Enlist different steps involved in facial. Describe any two.
- Q. 5 Answer any one of the following. 08**
- a) Explain the procedure used for performance of eyebrow shaping.
 - b) Write a note on peel off & hot oil mask.

Seat No.	
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Set **P**

**Five Year Integrated M. Tech. (Semester-V) (New) (CBCS) Examination:
Oct/Nov-2022**

**(COSMETIC TECHNOLOGY)
Pharmacology & Interaction - I**

Day & Date: Friday, 17-02-2023
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

Q.1 Choose the correct alternatives from the options.**08**

- 1) Identify the agent excreted through kidney from given option below.
 - a) Fat soluble
 - b) Volatile
 - c) High molecular weight compound
 - d) Water soluble
- 2) The regulated oxygenation of arachidonic acid leads to formation of _____.
 - a) Alkaloid
 - b) Ecosanoids
 - c) Melanine
 - d) Collagen
- 3) _____ may cause hospital admission in skin disease.
 - a) Cellulitis
 - b) Atopic dermatitis
 - c) Psoriasis
 - d) Contact allergic dermatitis
- 4) Most popular systemic skin lightening agent is _____.
 - a) Azelaic acid
 - b) Salicylic acid
 - c) Kojic acid
 - d) Glutathion
- 5) Constituent of hair cosmetic responsible for hair damage is/are _____.
 - a) Thioglycolates
 - b) Peroxides
 - c) Ammonia
 - d) All of these
- 6) _____ are fast-growing warts which look thread-like and spiky, sometimes like tiny brushes.
 - a) Filiform warts
 - b) Venereal warts
 - c) Flat warts
 - d) Planter warts
- 7) Caries activity increases as the _____.
 - a) Viscosity of the saliva increases
 - b) Viscosity of the saliva decreases
 - c) Saliva has Viscosity similar to water
 - d) None of above
- 8) During acne progression following are the inflammatory lesions except.
 - a) Papule
 - b) Cyst
 - c) Nodule
 - d) Open comedon

- Q.2 Attempt any four of the following questions. 08**
- 1) Describe inflammation with cardinal signs, define anti-inflammatory agents.
 - 2) What is Gingivitis? Write down symptoms of Gingivitis.
 - 3) Define
 - a) Drug
 - b) Metabolic half life ($t^{1/2}$)
 - 4) What do you mean by redistribution?
 - 5) Define contact dermatitis along with its type.
 - 6) Explain the MOA of Zinc Pyrithione in treatment of antidandruff.
- Q.3 Attempt any two of the following questions. 08**
- 1) Comment on treatment of atopic dermatitis.
 - 2) Explain Kojic acid, Glutathione, Hydroquinone as skin whitening agents.
 - 3) Explain Treatment of wrinkles.
- Q.4 Attempt any two of the following questions. 08**
- 1) What is oral malodour, describe the factors responsible for oral malodour.
 - 2) Explain MOA of Sunscreen agents.
 - 3) Explain Seborrheic dermatitis mention its symptoms and treatment.
- Q.5 Attempt any one of the following questions. 08**
- 1) Explain Hyperhydrosis, Anhydrosis, Miliarea.
 - 2)
 - a) Explain Drug transportation with respect to Passive diffusion/filtration and Specialized transport.
 - b) What do you mean by Pharmacopoeia, Pharmacodynamics, In vitro method, Clearance?

Seat No.	
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Five Years Integrated M. Tech (Semester - VII) (New) (CBCS)
Examination: Oct/Nov-2022
COSMETIC TECHNOLOGY
Perfumes & Colours

Day & Date: Monday, 13-02-2023
 Time: 11:00 AM To 02:00 PM

Max. Marks: 70

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

Q.1 Multiple choice questions.

14

- 1) Muguet flower also known as-
 - a) May bells
 - b) Our Lady's tears
 - c) Both a & b
 - d) None of the above
- 2) What are the Herbal Actions of Violet?
 - a) Anti-inflammatory
 - b) Expectorant
 - c) Antitumor
 - d) All of the
- 3) What are the Chemical compositions of Rose?
 - a) Citronellol
 - b) Geraniol
 - c) Phenyl ethyl alcohol
 - d) All of the above
- 4) Why alcohol is used in perfumes?
 - a) alcohol in perfume helps break down perfume ingredients
 - b) It helps merge oils and aroma products together
 - c) Alcohol evaporates almost instantly
 - d) All of the above
- 5) What is the industrial Application of Polysorbate-20?
 - a) Moisturizer
 - b) Foaming agent
 - c) Shower gel
 - d) Make up remover
- 6) What is mean by Emulsified fragrances?
 - a) Semi-solid emulsions which contain mixtures of oil and water with aroma
 - b) Semi-solid emulsions which contain mixtures of oil and water without aroma
 - c) These are gaseous mixture
 - d) All of the above
- 7) What are the Household perfume products?
 - a) Laundry products
 - b) General Toilet products
 - c) Decorative Cosmetics
 - d) Skin care products
- 8) Cleansing Creams are used for _____.
 - a) As an antiseptic cream
 - b) Removing makeup
 - c) Removing dirt on skin
 - d) Both b & c
- 9) In alcoholic fragrance solution the % of Alcohol content is _____.
 - a) 50%
 - b) 70-75%
 - c) 95-96%
 - d) 10-20%

- 10) What are basic problems faced by formulators while drops creating a new products like **Solubilized perfumes**?
 - a) Temperature Variations
 - b) [pH] Variations
 - c) Incorporation of new ingredients
 - d) All of the above
- 11) An adaptation of fragrance means _____.
 - a) ability to feel the smell drops
 - b) ability to sense the taste drops
 - c) ability to sense the colour
 - d) All of the above
- 12) _____ scientist worked on the surface acting odorants.
 - a) Pickthall
 - b) Francois Coty
 - c) Horst Rechelbacher
 - d) None of the above
- 13) In Cosmetics _____ formulation is most difficult task to perfuming.
 - a) After shave lotion
 - b) Perfuming Hair oil
 - c) Powder
 - d) Nail lacquer
- 14) Which are the characteristics of the Powders?
 - a) Absorption
 - b) Adsorption
 - c) Solubilization
 - d) Both a & b

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

- 1) Define and classify perfumed products.
- 2) What are the properties of Lavender?
- 3) Define Solubilized perfumes.
- 4) Which are the sources of Muguet flower and also mention the other names of this one?
- 5) Write a note on hair preparation perfumes

b) Write notes on (Any Two) 06

- 1) Write a note about the preparation of the alcoholic fragrance solution through the "Regular process method".
- 2) Make a note about the lipstick and nail lacquer.
- 3) Which properties are ideal for cleansing cream?

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

- 1) What are the properties and geographical sources of Narcissus?
- 2) Which factors influence soap perfuming?
- 3) What are the geographical sources & chemical composition of Lilac?

b) Answer the following. (Any One) 06

- 1) Write a note on perfuming Creams.
- 2) What are the chemical components of Orris and Cypress?

Q.4 a) Answer the following. (Any Two) 10

- 1) Write a note on making of perfume of Orris by steam distillation method.
- 2) Write a note on
 - a) **Violet**
 - b) **Acacia**
- 3) Write a note on Diminished solvent method with example.

b) Answer the following. (Any One) **04**

- 1) Write any four examples of solubilizer with their industrial applications.
- 2) What are the properties of Lilac Essential Oil?

Q.5 Answer the following. (Any Two) **14**

- 1) Define and classify an Alcoholic Fragrance solution and explain in detail their processes.
- 2) Write a note on
 - a) Muguet
 - b) Kewda
- 3) Explain in detail the emulsified fragrances and its examples.

Seat No.	
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Five Year Integrated M. Tech. Course (Semester - VII) (New) (CBCS)
Examination: Oct/Nov-2022
(COSMETIC TECHNOLOGY)
Cosmetic Technology- V

Day & Date: Tuesday, 14-02-2023
 Time: 11:00 AM To 02:00 PM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.
 3) Draw neat labeled diagram wherever necessary.
 4) All questions carry equal marks.
 5) Use of calculator and log table is allowed.

Q.1 Multiple Choice Question.

14

- 1) The hair is composed of _____ protein, which is also the primary component of finger & toe Nails
 - a) Serine
 - b) Keratin
 - c) Follicles
 - d) Arginine
- 2) Surfactant molecules work by _____.
 - a) Lifting off oils, dirt into the water
 - b) Raising the pH of hair
 - c) Separating oil & water
 - d) Deionizing Water
- 3) Temporary colour is for _____.
 - a) 6 months
 - b) 2-4 weeks
 - c) From one rinse to another rinse
 - d) 1 week
- 4) Who made first permanent waving machine?
 - a) Bill gates
 - b) Charles pickler
 - c) Van Harper
 - d) Charles Nessler
- 5) The degree to which hair absorbs the waving lotion is related to its _____.
 - a) Porosity
 - b) Texture
 - c) Length
 - d) Colour
- 6) The main active ingredient of reducing agent in alkaline perm is _____.
 - a) Hydrogen peroxide
 - b) Ammonium thioglycolate
 - c) Sodium hydroxide
 - d) Ammonium bromide
- 7) Cetyl alcohol is used as _____ in shampoo.
 - a) Viscofier
 - b) Sequesterant
 - c) Clarifying agent
 - d) Opacifier
- 8) Hair rinses are classified as _____.
 - a) Permanent hair colors
 - b) Semipermanent hair colour
 - c) Hair straighteners
 - d) Hair waving preparations
- 9) During a dandruff treatment, an effective therapy is _____.
 - a) Deep conditioning
 - b) Scalp steamer
 - c) Chemical relaxers
 - d) High frequency current
- 10) To protect hair from harmful effects of blow drying & electric rollers, use _____.
 - a) Spray on thermal products
 - b) Scalp conditioners
 - c) Protein treatment
 - d) Hair masks

- 11) Deep conditioning treatment is the chosen therapy when _____ is needed.
- Scalp conditioning
 - Thermal protection
 - Equal moisturizing & protein treatment
 - Hair setting
- 12) Quaternary ammonium compounds are included in formulas of moisturizers for their ability to _____.
- Attach to hair fibers
 - Detangle the hair
 - Promote healing of scalp
 - Penetrate the cortex
- 13) Dry shampoo is recommended _____.
- To make hair shiny
 - For elderly clients
 - For chemical treatment
 - To repair damaged hair
- 14) Rinse-through finishing rinses are used for _____.
- Deep conditioning
 - Improving quality of new hair growth
 - Protection against breakage
 - Detangling hair after washing

- Q.2 A) Answer the following. (Any Four) 08**
- Define hair tonic and give their examples.
 - Define hair dyes & enlist their types.
 - Mention common uses of surfactants in hair cleansers.
 - What is mousse formulations.
 - Write about role of hydrogen peroxide in hair dyeing.
 - What is brilliantine.
- B) Write Notes on. (Any Two) 06**
- Vegetable dyes.
 - Acid balanced shampoo.
 - Ideal characters of hair tonic.
- Q.3 A) Answer the following. (Any Two) 08**
- Write a note on hair straighteners.
 - Discuss about pressurized hair styling products
 - Write about hair dye remover.
- B) Answer the Following. (Any One). 06**
- Write a brief note on hair conditioners.
 - Discuss about bleaching of hair.
- Q.4 A) Answer the following. (Any Two) 10**
- What are the principle and secondary surfactants in shampoo preparations? Explain their role in formulation of liquid shampoos with examples.
 - Discuss formulation of colour and process of hair colouring.
 - Write a note on hair thickeners.
- B) Answer the Following. (Any One) 04**
- Discuss factors influencing colour fading & removal of colour from hairs.
 - Discuss evaluation of hair styling products.
- Q.5 Answer the following. (Any Two) 14**
- Write brief note on hair waving preparations & methods of waving.
 - Write about classification of shampoos.
 - Give detailed account on classification of hair dyes with their examples.

Seat No.	
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Set **P**

**Five Years Integrated M.Tech (Semester - VII) (New) (CBCS) Examination:
Oct/Nov-2022**

**(COSMETIC TECHNOLOGY)
Quality Assurance Techniques**

Day & Date: Wednesday, 15-02-2023
Time: 11:00 AM To 02:00 PM

Max. Marks: 70

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

Q.1 Multiple choice questions.**14**

- 1) _____ is performed before the production process.
 - a) Quality Control
 - b) Quality Assurance
 - c) Quality Planning
 - d) None of the above
- 2) In HPLC the mobile phase is _____.
 - a) Solvent
 - b) Solute
 - c) Column
 - d) None of the above
- 3) _____ is used to determine thermal stability of skin cream.
 - a) Humidity Chamber
 - b) Desiccator
 - c) Nessler Cylinders
 - d) pH meter
- 4) As per WHO storage conditions for Real time stability study for Zone I is _____.
 - a) 25°C and 60% RH
 - b) 21°C and 45% RH
 - c) 30°C and 35% RH
 - d) 30°C and 70% RH
- 5) Change Control is approved by _____.
 - a) QA Head
 - b) QC Head
 - c) Production Head
 - d) None of the above
- 6) _____ is used as reference in NMR spectroscopy.
 - a) CHCl₃
 - b) CS₂
 - c) CH₄
 - d) TMS
- 7) Which of the following parameters should be observed periodically during performance of ageing stability of lipstick?
 - a) Application characteristics
 - b) Crystallization of wax on surface
 - c) Oil bleeds
 - d) All of the above
- 8) Which is correct accelerated stability studies condition for refrigerated product as per ICH?
 - a) 25°C ± 2°C/60% ± 5% RH
 - b) 30°C ± 2°C/65% ± 5% RH
 - c) 40°C ± 2°C/75% ± 5% RH
 - d) None of the above
- 9) After finalization of _____ construction of machine will start.
 - a) PQ
 - b) DQ
 - c) OQ
 - d) IQ
- 10) Turbidimetric and Nephelometric measurements are carried out by using _____ light.
 - a) Blue
 - b) White
 - c) Orange
 - d) Red

- 11) The cleansing and abrasive property of the dentifrices mainly depend on _____.
a) Alkali
b) Heavy metals
c) Moisture content
d) Particle size
- 12) Which of the statement/s is/are correct?
a) Stability testing is carried out in development phase
b) Real time stability should be continued until the end of the shelf life
c) The shelf life can be guaranteed only if specific storage conditions are followed
d) All of the above
- 13) _____ is based on historical and testing data of previously manufactured batches.
a) Retrospective validation
b) Prospective validation
c) Concurrent validation
d) Revalidation
- 14) In mass spectroscopy the ions are always deflected by a magnetic field due to difference in there _____.
a) Charge
b) Concentration
c) Mass
d) Electron

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

- 1) Define the following:
 - i) Planned Deviation
 - ii) Change Control
- 2) Enlist the factor affecting on scattering of light.
- 3) Write down the factor affecting the stability of finished product.
- 4) Write down the procedure for determination of pH of shampoo.
- 5) Why do we calibrate/validate a qualified instrument/equipment on definite intervals?

B) Write notes on the following. (Any Two) 06

- 1) Write a note on URS.
- 2) Write a note on sensitivity test.
- 3) Write a note on accelerated studies as per WHO.

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

- 1) Write down the responsibilities of QC.
- 2) Explain evaluation parameters of soap.
- 3) Explain in short about photostability testing and write down the storage conditions as per climatic zone for real time stability as per WHO.

B) Answer the following. (Any One) 06

- 1) What are responsibilities of QA?
- 2) Explain in detail the instrumentation of mass spectroscopy and give its applications.

Q.4 A) Answer the following. (Any Two) 10

- 1) Give a detail account on types of validation.
- 2) Describe the instrumentation of turbidimetry and nephelometry.
- 3) How oral mucosal irritation test for toothpaste is carried out.

B) Answer the following. (Any One) **04**

- 1) How the foaming ability of shampoo is determined.
- 2) Add a note on types of distribution copy.

Q.5 Answer the following. (Any Two)

- a)** Explain the term SAT.
- b)** Explain in detail instrumentation of HPLC and give its applications.
- c)** Explain in detail a guideline to be followed for the stability testing of finished product under different storage conditions as per ICH.

Seat No.	
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Set **P**

**Five Years Integrated M. Tech (Semester - VII) (New) (CBCS)
Examination: Oct/Nov-2022
(COSMETIC TECHNOLOGY)
Herbal Cosmetics – I**

Day & Date: Thursday, 16-02-2023
Time: 11:00 AM To 02:00 PM

Max. Marks:70

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

Q.1 Multiple choice questions:**14**

- 1) Cosmetics can be defined as the products employed to _____.
a) Cleanse & beautify b) Alay skin troubles
c) Cover up imperfections d) All of these
- 2) The challenges in formulation of herbal cosmetics include _____.
a) Allergic reactions b) False authentication of drugs
c) Both a & b d) None
- 3) The family of *Symplocos racemosa* is _____.
a) Symplocaceae b) Leguminosae
c) Styraceae d) Liliaceae
- 4) Which of the following are secondary metabolites present in a plant / herb?
a) Chlorophyll b) Sugars
c) Saponins d) All of these
- 5) Preparations from by-product herbal plants such as _____ are also considered herbal medicines.
a) oil b) gum
c) other secretions d) All of these
- 6) The solvent used for the extraction of medicinal plants is also known as the _____.
a) Marc b) Menstruum
c) Solute d) Percolate
- 7) Bioactive compounds are reported to possess diverse activities such as _____ activity.
a) Antioxidant b) Anti-inflammatory
c) Antimicrobial d) All of these
- 8) _____ is the most common method to preserve the plant material from enzymatic degradation.
a) Size reduction b) Fractionation
c) Distillation d) Drying
- 9) Before the extraction, pre-treatments such as _____ of plant materials are usually as conducted to increase the extraction efficiency.
a) Drying and grinding b) Drying and grading
c) Distillation and grinding d) None

- 10) The herbal drugs which are fleshy in nature should be stored in _____.
 - a) High gauge HMHD bags
 - b) Woven sacks with LD liner
 - c) Wooden boxes
 - d) All of these
- 11) The synonym of Ambahaldi is _____.
 - a) Mango ginger
 - b) Mango turmeric
 - c) Mango haldi
 - d) None
- 12) Shikakai belongs to _____ family.
 - a) Fabaceae
 - b) Flucortiaceae
 - c) Fenchonaceae
 - d) Liliaceae
- 13) Brahmin is the active constituent of _____.
 - a) Bawachi
 - b) Brahmi
 - c) Babhool
 - d) Behra
- 14) Cucurbitaceae is the family of _____.
 - a) Castor oil
 - b) Chandan
 - c) Cucumber
 - d) both a & c

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

- 1) Define Cosmetics.
- 2) Classify various cosmetic preparations with suitable examples.
- 3) Name different natural colourants.
- 4) What are the basic features of hair care cosmetics?
- 5) Name the drugs belonging to the family - Euphorbiaceae, Umbelliferae, Lythraceae & Meliaceae.

B) Write notes on (Any Two) **06**

- 1) Discuss the pharmacognostic scheme (synonym, biological source, family, uses) of Aloe.
- 2) Define 'Herbs', 'Herbal medicines' and 'Herbal Cosmetics'.
- 3) Name and explain any two solvents used in extraction with advantages and disadvantages.

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

- 1) What are alkaloids, glycosides, tannins & essential oils? Write suitable examples each.
- 2) What are the features of normal skin? Suggest suitable herbal & essential oils used for skin care.
- 3) Discuss the pharmacognostic scheme (synonym, biological source, chemical constituents' family, uses) of Nagarmotha.

B) Answer the following (Any One) **06**

- 1) What are various extraction techniques? Explain the method of extraction for thermostable substances with a neat labelled diagram.
- 2) Discuss the pharmacognostic scheme (synonym, biological source, chemical constituents family, uses) Neem.

Q.4 A) Answer the following (Any Two) 10

- 1) What is the purpose of extraction? Distinguish between Infusion & Decoction.
- 2) Discuss the percolation process with a suitable diagram.
- 3) Discuss the pharmacognostic scheme (synonym, biological source, chemical constituents family, uses) of Mehendi.

B) Answer the following (Any One)**04**

- 1) Comment on 'Storage premises Facilities' for herbal actives / herbal drugs.
- 2) How will you prepare face wash powder containing herbal ingredients? What directions should be given on such container for dry skin?

Q.5 Answer the following (Any Two)**14**

- a) Explain 'Microwave Assisted Extraction' process with a neat labelled diagram. Write its merits.
- b) Discuss the pharmacognostic scheme (synonym, biological source, chemical constituents' family, uses) of Brahmi.
- c) Prepare a formula for cold cream containing almond oil and explain its preparation with each specific use of the ingredient.

Seat No.	
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Material Management & Inventory Control

Max. Marks: 70

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

14

- 1) Identify the scope of material management _____.
a) Value analysis b) Simplification
c) Store management d) All the above
- 2) Accuracy of forecasting depends upon _____.
a) Factor considered b) High IQ
c) Method used d) All the above
- 3) **Sentence A:** Material management is organizational concept where many authorities are responsible for various activities of business.
Sentence B: Activities of business may be Purchasing, production, planning and scheduling, inventory control etc.
a) True; True b) False; False
c) False; True d) True; False
- 4) By using _____ method we can avoid rough bidder.
a) Open Tender b) Global Tender
c) Limited Tender d) None of above
- 5) Capital is _____.
a) Any tangible item
b) Any Intangible item
c) Item at least having life expectancy minimum 3 years
d) All the above
- 6) _____ written offer to a supplier formally stating all terms and condition of a proposed transaction,
a) Indent b) Sales Order
c) Bill of Material d) Purchase Order
- 7) _____ are materials which have no immediate use or at least in the foreseeable future.
a) Surplus stock b) Obsolete stocks
c) Salvageable Items d) None of above
- 8) General method of scrap disposal is/are _____.
a) By inviting offer b) By auction
c) By annual Contract d) All the above
- 9) Which method is used for stock valuation?
a) Replacement price b) Simple average price
c) FIFO d) All the above

- 10) Identify the cost associated with Inventory.
 - a) Purchase cost
 - b) Ordering cost
 - c) Inventory carrying cost
 - d) All the above
- 11) When you purchase the cosmetics from store, you get printed details from storekeeper. Such details are called _____.
 - a) Purchase order
 - b) Sales order
 - c) Indent
 - d) None of these
- 12) Identify the Inventory from below option.
 - a) Bees wax
 - b) Containers
 - c) Perfume
 - d) All the above
- 13) As per ABC analysis, 'Group A' items are _____.
 - a) Low value item
 - b) High Value items
 - c) Mid value items
 - d) None of above
- 14) Stock valuation is _____.
 - a) Determining the stock required for planned production
 - b) Perpetual inventory control
 - c) Monetary equivalent of the stock or material in hand
 - d) Cross verification of stock in store with stock record book

Q.2 a) Attempt any four of the following questions. 08

- 1) Enlist the scope/functions of material management.
- 2) What is material planning? Explain macro factor.
- 3) Define Bidder and Purchase Order.
- 4) Which documents are necessary in store department?
- 5) What is Anticipation Inventory and Dead stock?

b) Write notes. (Any two) 06

- 1) Write down the advantages of Just in Time
- 2) Explain law of agency and purchase.
- 3) Define Inventory and Cost of Goods sold, what do you mean by MRO goods?

Q.3 a) Attempt any two of the following questions. 08

- 1) Write a note of ABC analysis.
- 2) What is forecasting? Explain Time series analysis.
- 3) Comment of Negotiation.

b) Attempt any one of the following questions. 06

- 1) Describe applications of Computer in Inventory control /Store management.
- 2) Enlist the objective of Inventory control. Being a store in-charge how you will control inventory in store explain any two methods.

Q.4 a) Attempt any two of the following questions. 10

- 1) Give any 2 definitions of Material management? Explain consumable and non-consumable material.
- 2) After procurement of the material from supplier actual cost of material is calculated based upon the Duties/Taxes/ Subsidies. Mention the treatment for followings particulars.
 - i) Trade discount
 - ii) Quantity discount
 - iii) Cash discount
 - iv) Subsidy/Grant
 - v) Road Tax

- 3) Describe how EOQ calculated by Formula method and graphical method.

b) Attempt any one of the following questions. 04

- 1) What do you mean by stock valuation? Explain FIFO.
- 2) What is scrap? Explain scrap disposal and scrap control method in industry

Q.5 Attempt any two of the following questions. 14

- 1) Enlist the reasons for obsolescence how will you control obsolescence in industry? What do you mean by 1) Salvageable Items 2) Reclaimable Items?
- 2) Describe in short about the purchase procedure in Industry.
- 3) Comment of functions of Material management.

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Set **P**

**Five Years Integrated M. Tech (Semester - IX) (New) (CBCS) Examination:
Oct/Nov-2022**

**COSMETIC TECHNOLOGY
Advanced Cosmetic Technology-I**

Day & Date: Monday, 13-02-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 70

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

Q.1 Choose Correct Alternative.**14**

- 1) Phase Inversion Temperature generally considered as _____.
 - a) Vaporization temperature
 - b) Threshold Temperature
 - c) HLB temperature
 - d) Energy required to form stable emulsion
- 2) _____ are frequently called as solubilised system, because on macroscopic basis they seem to behave as true solutions _____.
 - a) Multiple emulsion
 - b) Microemulsion
 - c) Coarse emulsion
 - d) None of above
- 3) Some components of products (eg. Paste, Ointment etc.) do not have any tendency to mix spontaneously, but once mixed they do not separate out easily, such mixtures are called _____.
 - a) Neutral mixture
 - b) Positive mixture
 - c) Negative mixture
 - d) None of the above
- 4) Solution which can be used in hydration of lipid cake is/are _____.
 - a) 0.9% Saline
 - b) 5% dextrose
 - c) 10% sucrose
 - d) All the above
- 5) Penetration enhancer may act by _____.
 - a) Elevating the skin temperature
 - b) Elevating the local blood circulation
 - c) Protein alternation
 - d) All the above
- 6) **Sentence A:** Chemical enhancers act by interaction with intercellular protein.
Sentence B: Chemical enhancers act by improved partition of the drug or solvent in to stratum corneum.
 - a) True; True
 - b) False; False
 - c) False; True
 - d) True; False
- 7) Identify the different word from given group below.
 Gelatin, Methyl Cellulose, Ethyl cellulose, CMC
 - a) Gelatin
 - b) Methyl Cellulose
 - c) Ethyl cellulose
 - d) CMC

- 8) **Sentence A:** Plant actives are chemically and naturally constant.
Sentence B: Material source and quality of content is unstable in Herbs.
a) False; False b) True; True
c) True; False d) False; True
- 9) Identify the different word from given group below.
Single floral, Woody, Leather, Aquatic
a) Single floral b) Woody
c) Leather d) Aquatic
- 10) Nonmaterials usually exhibit _____ surface to volume ratio
a) Small b) Medium
c) Large d) None of above
- 11) _____ are vesicles that are mainly composed of non-ionic surfactants.
a) Ethosomes b) Tinosomes
c) Niosomes d) Lipids
- 12) Nanoemulsions are _____ system.
a) Monophasic b) Biphasic
c) Triphasic d) Dimensionless
- 13) As per COSMOS _____ chemical can be used as disinfectant,
a) Hydrogen Peroxide b) Isopropyl alcohol
c) Formic acid d) All the above
- 14) Identify the different word from group.
limonene, geraniol, citral, 98% ethanol
a) 98% ethanol b) Citral
c) Geraniol d) Limonene

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

08

- 1) What do you mean by compression and consolidation?
- 2) If water is raw material of your product, enlist the name of bacteria for which you will be conducting microbial testing.
- 3) Draw a neat labeled diagram of French Pressure Cell.
- 4) Explain Advantages/disadvantages of synthetic perfume over natural perfume.
- 5) Define organic nanoparticles and give its examples.

b) Write notes on (Any Two)

06

- 1) Comment on highly purified water used in cosmetic industry.
- 2) Explain different types of mixtures.
- 3) Classify preservatives, give its MOA and enlist any 4 examples of antimicrobials as preservatives.

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

08

- 1) Explain inorganic nanoparticles.
- 2) Discuss microencapsulation by solvent evaporation.
- 3) Describe interfacial polymerization.

b) Answer the following. (Any One)

06

- 1) Discuss nanoparticles in detail.
- 2) Comment on challenges in formulation of herbal cosmetics.

- Q.4 a) Answer the following. (Any Two) 10**
- 1) Give the ideal properties of preservatives. Comment on traditional perfume and modern perfume classification.
 - 2) Describe colloidal mill in detail.
 - 3) Write down factors affecting the action of preservatives.
- b) Answer the following. (Any One) 04**
- 1) Explain the microbial test for water
 - 2) Explain in detail silver, silica and gold nanoparticles and their use in cosmetics.
- Q.5 Answer the following. (Any Two) 14**
- 1) Give overview of physical and chemical penetration enhancement.
 - 2) A) Explain any 4 tests for determination of emulsion type.
B) Explain triple roller mill in details
 - 3) Write a note on metal oxide nanoparticles.

Seat No.	
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Five Year Integrated M. Tech. Course (Semester - IX) (New) (CBCS)
Examination: Oct/Nov-2022
(COSMETIC TECHNOLOGY)
Advanced Cosmetic Technology-II

Day & Date: Tuesday, 14-02-2023
 Time: 03:00 PM To 06:00 PM

Max. Marks: 70

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

Q.1 Multiple Choice Question.

14

- 1) _____ polymerization is also called as pearl polymerization.
 - a) Suspension
 - b) Bulk
 - c) Emulsion
 - d) None of the above
- 2) _____ promote the swelling of keratin and soften the cuticle.
 - a) Methyl cellulose
 - b) Urea
 - c) Bentone-27
 - d) Mica
- 3) _____ Substances are transported in liposomes.
 - a) Hydrophilic
 - b) Lipophilic
 - c) Both a and b
 - d) None of the above
- 4) Nutracosmetics are dietary ingredients and antioxidants that enhance the _____ of skin, nails and hairs.
 - a) Structure
 - b) Function
 - c) Appearance
 - d) All of the above
- 5) Core materials in microcapsule exist in _____ form.
 - a) Solid
 - b) Liquid
 - c) Both a and b
 - d) None of the above
- 6) _____ is an example of film former used in nail polish formulation.
 - a) Dibutyl phthalate
 - b) Xylene
 - c) Cellulose nitrate
 - d) Ethyl acetate
- 7) _____ is positively charged molecule used in niosomal preparation.
 - a) Stearylamine
 - b) Diacetyl phosphate
 - c) Phosphatidic acid
 - d) None of the above
- 8) _____ department will develop the strategy for the new cosmetics.
 - a) Marketing
 - b) R and D
 - c) Packing
 - d) Production
- 9) The acid treated collagen is called _____ gelatin.
 - a) Type A
 - b) Type B
 - c) Type III
 - d) None of the above
- 10) _____ is an example of high boiling solvent.
 - a) Cyclohexanone
 - b) Butyl propionate
 - c) Ethyl acetate
 - d) Butyl alcohol
- 11) Organogel composed of _____.
 - a) Organic liquid
 - b) Gelator
 - c) Both a and b
 - d) None of the above

- 12) In the post globalization period of the market more stress is laid on _____.
a) Consumer satisfaction
b) Consumer acceptance
c) Quality at a premium
d) All of the above
- 13) _____ reduces the friction between the surface of the microcapsule to avoid Aggregation.
a) Antitack agents
b) Cross linking agents
c) Plasticizers
d) Permeability modulators
- 14) _____ is also known as lecithin.
a) Cholesterol
b) Span 20
c) Tween 20
d) Phosphatidylcholines

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

08

- 1) Define the following:
 - a) Nanocapsule
 - b) Macrocapsule
- 2) Define film former with example and enlist its characteristics.
- 3) Write down the mechanism of release of active agent from niosome.
- 4) Write down the advantages of Nutracosmetics.
- 5) How ethyl cellulose microspheres are prepared.

B) Write Notes on. (Any Two)

06

- 1) Write a note on non-solvent addition technique for phase separation and coacervation.
- 2) Write a note on adhesion test for nail polish.
- 3) Write a note on safety concerns of cosmetics.

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

08

- 1) Add a note on chitosan as biodegradable polymer.
- 2) Write down the advantages and disadvantages of niosome.
- 3) Describe the cuticle cream.

B) Answer the Following. (Any One).

06

- 1) Explain the procedure of solvent dispersion methods for preparation of liposome.
- 2) Explain in detail the classification of organogels.

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

10

- 1) Describe PLGA.
- 2) Explain in detail resin in nail polish.
- 3) Explain the role of multinational companies in the cosmetics market.

B) Answer the Following. (Any One)

04

- 1) Define the liposomes and classify them with their description.
- 2) Write down the ideal characteristic of the film produced by nail polish.

Q.5 Answer the following. (Any Two)

14

- Explain the polymerization techniques used for the preparation of microsphere.
- Explain in detail the composition of liposomes.
- Explain the plasticizers used in the preparation of nail polish.