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**Five Year Integrated (M. Tech.) (Semester - I) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
Cosmetic Chemistry - I (CT101)**

Day & Date: Friday, 10-05-2024  
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

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

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

- 1) Acidic solutions have pH value \_\_\_\_\_.  
a) more than 7                      b) 7  
c) less than 7                      d) can't define
- 2) The concentration of  $H^+$  ions and  $OH^-$  ions in pure water is \_\_\_\_\_.  
a)  $H^+ > OH^-$                       b)  $H^+ = OH^-$   
c)  $H^+ < OH^-$                       d) None of the above
- 3) Following solvents are used in Non-aqueous titrations except.  
a) MDC                                  b) Acetone  
c) Methanol                          d) Water
- 4) Chloroform is an example of \_\_\_\_\_.  
a) Aprotic solvent                  b) Protogenic solvent  
c) Protophilic solvent              d) Amphiprotic solvent
- 5) An unwanted chemical substance or external substance present in the final compound is called as \_\_\_\_\_.  
a) Pure chemical substance  
b) Impurity  
c) Official substance  
d) Official preparation
- 6) Which is the cheapest and easily available solvent?  
a) Methanol                          b) MDC  
c) Water                                d) Acetone
- 7) Thickeners are also called as \_\_\_\_\_.  
a) Rheological ingredients      b) Rheological additives  
c) Rheological pigment          d) Active Ingredient
- 8) Cellulose is a type of \_\_\_\_\_.  
a) Naturally derived thickener  
b) Mineral thickener  
c) Lipid thickener  
d) Ionic thickener

- 9) Among the following, which is an example of a weak acid?
- a) HCl
  - b)  $\text{NH}_4\text{OH}$
  - c)  $\text{CH}_3\text{COOH}$
  - d) Nitric acid
- 10) Newtonian fluids are those fluids which \_\_\_\_.
- a) follow Newton's law of viscosity
  - b) Both a and c
  - c) does not follow Newton's law of viscosity
  - d) all of the above

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

- 1) Change in pH depends on  $\text{OH}^-$  ion Concentration.
- 2) Aprotic solvents favour ionization.
- 3) The substances which are granted by Indian Pharmacopeia (IP) are known as official substances.
- 4) Non-aqueous titration method is useful for the titration of a mixture of acids.
- 5) Basic buffers are prepared by mixing a strong base and its salt.
- 6) Silica is a type of Lipid thickener.

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

- a) Define Test for purity and enlist various tests for purity.
- b) Write a note on the choice of indicators used in acid-base titration.
- c) Define the terms, Non-aqueous titrations and Non-aqueous solvents.
- d) Explain cosmetic thickeners and give reasons for using it.

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

- a) Define Impurity and explain various types of Impurities in cosmetic formulation.
- b) Justify, viscosity and rheology is important in thickeners.

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

- a) Explain the following Acid-base theories with example and its limitations
  - i) Arrhenius theory
  - ii) Lowry-Bronsted theory
- b) Explain the advantages and disadvantages of Non-aqueous titrations.

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

- a) Define pH, Explain in brief the concept of pH and pH scale.
- b) Explain various sources of impurities in the final product.

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

- a) Explain lipid thickeners and naturally derived thickeners with suitable examples.
- b) Discuss the Non-aqueous titrations of weak base with example.

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

- a) What is buffer solution? Explain its types and properties.
- b) What is the limit test? Explain the limit test of Chloride in detail.

Set No.	
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**Five Year Integrated (M. Tech) (Semester - I) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY**

**Fundamentals of Anatomy and Physiology (CT102)**

Day & Date: Monday, 13-05-2024

Max. Marks: 80

Time: 11:00 AM To 02:00 PM

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

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

**10**

- 1) \_\_\_\_\_ is made up of cells without any intercellular space.
  - a) Connective tissue
  - b) Epithelial tissue
  - c) Muscular tissue
  - d) Nervous tissue
- 2) Liposomes are known as \_\_\_\_\_ of the cells.
  - a) power house
  - b) suicidal bags
  - c) Centre
  - d) protective wall of the cell
- 3) Chromosomes are located in the \_\_\_\_\_.
  - a) Golgi bodies
  - b) nucleus
  - c) vacuoles
  - d) plastids
- 4) Rh factor is an antigen situated on the surface of \_\_\_\_\_.
  - a) platelets
  - b) lymphocytes
  - c) white blood cells
  - d) red blood cells
- 5) The blood cells that protect the body from microbes and other foreign substances are \_\_\_\_\_.
  - a) leukocytes
  - b) thrombocytes
  - c) lymphocytes
  - d) erythrocytes
- 6) Deciduous teeth are known as \_\_\_\_\_.
  - a) adult teeth
  - b) milk teeth
  - c) wisdom teeth
  - d) none of these
- 7) Total number of canines are \_\_\_\_\_.
  - a) 4
  - b) 8
  - c) 12
  - d) 16
- 8) The cornea is a transparent coat that covers the \_\_\_\_\_.
  - a) eyeball
  - b) coloured iris
  - c) Pupil
  - d) Sclera
- 9) \_\_\_\_\_ is the middle layer of the eyeball.
  - a) Cornea
  - b) Vascular tunic
  - c) Retina
  - d) Iris
- 10) The layer of the epidermis that contains melanocytes are the \_\_\_\_\_.
  - a) Stratum Basale
  - b) Stratum Lucidum
  - c) Stratum Spinosum
  - d) Stratum Corneum

- B) Write true and false.** **06**
- 1) The Nucleus contains only DNA.
  - 2) Liver is the largest organ of the body in both surface area and weight.
  - 3) Blood is the connective tissue.
  - 4) Blood contains 45 % of plasma fluid.
  - 5) The iris is the inner layer of the eyeball.
  - 6) The keratinocytes are the most abundant cells in the epidermis.
- Q.2 Answer the following.** **16**
- a) Define the cell and write the function of organelle of the cell.
  - b) Define the term blood and write the composition of blood.
  - c) Discuss various functions of the skin.
  - d) Write the definition of keratin. Discuss about its etiology.
- Q.3 Answer the following.**
- a) Explain in detail structure and function of nervous tissue and connective tissue with neat labelled diagram. **08**
  - b) Discuss in detail about blood group types and its system. **08**
- Q.4 Answer the following.**
- a) Write the appendages of skin and briefly explain about sweat glands and sebaceous gland. **08**
  - b) Explain in detail about how the pigmentation is responsible for skin colourization. **08**
- Q.5 Answer the following.**
- a) Write the clotting factors and briefly explain about blood coagulation process. **08**
  - b) Explain in detail about anatomy and physiology of eye with neat labelled diagram. **08**
- Q.6 Answer the following.**
- a) Discuss in detail about structure and function of epithelial tissue and muscular tissue with the help of diagram. **08**
  - b) Explain in brief about types of colours related to the skin and its pigmentation on the skin. **08**
- Q.7 Answer the following.**
- a) Write the blood components and explain in detail about leukocytes and its classification, functions. **08**
  - b) Discuss in detail about structure of teeth with neat labelled diagram and write its functions. **08**

Seat No.	
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**Five Year Integrated (M. Tech.) (Semester - I) (CBCS) Examination:  
March/April-2024  
COSMETIC TECHNOLOGY  
Natural Cosmetic Agents - I (CT104)**

Day & Date: Wednesday, 15-05-2024  
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

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

**Q.1 A) Multiple choice questions.**

**10**

- 1) The oldest herbal document of china is \_\_\_\_\_.  
a) Papyrus Ebers                      b) Pent 'Sao  
c) Charaka Samhita                  d) De Materia Medica
- 2) \_\_\_\_\_ herbs live one season and dies.  
a) Biennial                              b) Annual  
c) Perennial                            d) None of the above
- 3) \_\_\_\_\_ test is only given by starch.  
a) Bial's                                  b) Iodine  
c) Benedict's                          d) None of the above
- 4) \_\_\_\_\_ is an example of non-drying oil.  
a) Castor oil                            b) Linseed oil  
c) Sesame oil                          d) Olive oil
- 5) \_\_\_\_\_ is an unorganized part.  
a) Seeds                                  b) Barks  
c) Rhizomes                            d) Latex
- 6) \_\_\_\_\_ is an example of aerial modification in stem.  
a) Tuber                                  b) Sucker  
c) Corm                                  d) Phylloclades
- 7) Arabinose is an example of \_\_\_\_\_.  
a) Trioses                                b) Tetroses  
c) Heptoses                            d) Pentoses
- 8) \_\_\_\_\_ contain melissyl cerotate.  
a) Spermaceti wax                    b) Carnauba wax  
c) Bees wax                            d) Coconut oil

## SLR-GF-3

- 9) \_\_\_\_\_ is based on the consideration of natural relationship or phylogeny among the plants and animals.
- a) Morphological classification      b) Taxonomical classification  
c) Chemical classification          d) Pharmacological classification
- 10) Roots are \_\_\_\_\_.  
a) Positively geotropic                  b) Positively hydrotropic  
c) Negative phototropic                d) All of the above

### B) Write True or False:

06

- 1) Sushruta Samhita is the oldest Treatise on Ayurveda.
- 2) Creepers coil the support and grow.
- 3) Low molecular weight carbohydrates are crystalline and soluble in water.
- 4) Fats contain more percentage of saturated acids.
- 5) Cloves are used in condiment.
- 6) Essential oils extracted from herbs are used in aromatherapy and soap.

### Q.2 Answer the following.

16

- a) Write a note on alphabetical classification system of drugs of natural origin.
- b) Describe the aggregate fruit.
- c) Classify the carbohydrate with suitable example. Write down the uses of starch.
- d) Write down the properties of lipids.

### Q.3 Answer the following.

- a) Comment on development and role of natural product in cosmetic and medicines. 08
- b) Describe the types of leaves. Add a note on modification of leaves. 08

### Q.4 Answer the following.

- a) Write down the general identification tests for carbohydrate. 08
- b) Classify the lipids. Write down the biological source, chemical constituents and uses of Coconut oil. 08

### Q.5 Answer the following.

- a) Describe the pharmacological classification system of drugs of natural origin. 08
- b) Define a fruit. Explain simple dry fruits. 08

### Q.6 Answer the following.

- a) Write down the biological source, chemical constituents and uses of Agar. 08
- b) Write down the biological source, method of preparation, chemical constituents and uses of Kokum butter. 08

**Q.7 Answer the following.**

- |           |  |           |
|-----------|--|-----------|
| <b>a)</b> | Write a note on:   | <b>08</b> |
|           | i) Mucilage  |           |
|           | ii) Latex  |           |
| <b>b)</b> | Write down the biological source, method of preparation, chemical constituents and uses of Spermaceti wax. | <b>08</b> |

<b>Seat No.</b>	
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- Q.2 Answer any four of the following questions in brief. 08**
- a) What is Majuli in the prose *Jadav Payeng: The Forest Man of India*?
  - b) Describe the character of the grandmother and the author in the prose *The Portrait of a Lady* by Khushwant Singh.
  - c) What did the grandmother in the prose *The Portrait of a Lady* by Khushwant Singh do when the author returned from his studies abroad?
  - d) What is the relation between economics and religion, according to M.K. Gandhi's American friend Prof. Sam Higginbottom?
  - e) What is the most deep seated decision in India, according to Gandhi?
  - f) What advice did the villagers and forest officers give to Jadhav Payeng in the prose *Jadav Payeng: The Forest Man of India*?
- Q.3 Answer any Two of the following questions. 08**
- a) The theme of guilt in the poem *The Toys*.
  - b) The various qualities discussed by the poet in the poem *Let Me Not Pray to be Sheltered from Dangers*.
  - c) The significance of the lotus flower in the poem *The Lotus*.
- Q.4 Answer any Two of the following questions. 08**
- a) Write a descriptive essay on the topic 'a memorable trip'.
  - b) Write a descriptive essay on the topic 'a memory of someone whom you miss'.
  - c) Write a narrative essay on your first day experience at your college.
- Q.5 Answer any One of the following questions. 08**
- a) What are intrapersonal skills? Explain some interpersonal skills with reference to the unit prescribed for your study.
  - b) What is communication? Explain the communication process in detail.

**Seat  
No.**

# COSMETIC TECHNOLOGY

## Fundamental Chemistry (CT109)

Max. Marks: 80

**Q.1 A) Choose Correct Alternative. (MCQ) 10**

- 1) If common salt is dissolved in water, then the surface tension of salt is \_\_\_\_\_.  
a) Increased                      b) Decreased  
c) Not changed                  d) First increased then decreased
- 2) Electron donating substituent present on aromatic ring is \_\_\_\_\_ directing.  
a) Ortho                          b) Para  
c) Meta                          d) Both a & b
- 3) Organic hydrocarbon in which all hydrogen atoms have been replaced by fluorine are known as \_\_\_\_\_.  
a) Fluorocarbons                b) Fluorine  
c) Silicone                      d) None of these
- 4) The boiling point of glycerol is \_\_\_\_\_.  
a) 200° C                      b) 197° C  
c) 290° C                      d) 195° C
- 5) The compound containing two hydroxy groups are known as \_\_\_\_\_.  
a) Dihydric alcohol              b) Trihydric alcohol  
c) Monohydric alcohol         d) None of these
- 6) Allyl phenyl ether on heating at 200°C forms ortho or Para allyl phenol in \_\_\_\_\_ reaction.  
a) Fries rearrangement        b) Claisen rearrangement  
c) Gattermann Synthesis      d) Reimer- Tiemann reaction
- 7) The polymer which change to an infusible & insoluble mass on heating is \_\_\_\_\_.  
a) Thermosetting                b) Thermoplastic  
c) Elastomer                      d) Monomer
- 8) The phenol on nitration or reaction with nitrating mixture gives \_\_\_\_\_.  
a) 2 Nitrophenol                b) 4 Nitrophenol  
c) 2,4,6 Trinitrophenol        d) None of these
- 9) Ethylene oxide on hydrolysis with dilute hydrochloric acid give \_\_\_\_\_.  
a) Ethylene glycol              b) Glycerol  
c) Both a & b                      d) None of these

- 10) What is the unit of viscosity?
- |                    |                  |
|--------------------|------------------|
| a) Candela         | b) Newton        |
| c) Poiseuille (PI) | d) None of these |

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

- 1) Ethylene glycol is a trihydric alcohol.
- 2) Nylon 66 is the example of condensation polymer.
- 3) The unit of surface tension is N/M.
- 4) Phenols are acidic than alcohol.
- 5) Nitration is an example of aromatic Substitution.
- 6) Ethylene oxide on treatment with dilute acid form Glycerol.

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

- a) Define the alcohols & give its classification in detail.
- b) Explain fluorocarbon compound in detail.
- c) Explain the following terms in detail.
  - 1) Polymer
  - 2) Elastomer
  - 3) Polymerisation
  - 4) Homo & Hetero polymer
- d) Explain the Gattermann synthesis with suitable examples.

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

- a) Explain phosphonitrilic compounds in detail.
- b) Explain the various uses of glycerol.

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

- a) Explain in detail the Surface tension of liquid.
- b) Explain in detail the mechanism of Pinacol- Pinacolone rearrangement reaction.

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

- a) Define the phenol & Explain different reactions of phenol.
- b) Explain the classification of polymer based on general physical properties & based on the origin.

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

- a) Explain in detail the formation of ethylene glycol by different methods & give its uses.
- b) Explain Condensation process with neat labelled diagram.

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

- a) Explain the nitration of aromatic compounds with respect to the nitrating agent, generation of nitrenium ion.
- b) Explain in detail the mechanism of ReimerTiemann reaction.

Seat No.	
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**Five Year Integrated (M. Tech) (Semester - II) (New) (CBCS)****Examination: March/April-2024****COSMETIC TECHNOLOGY****Cosmetic chemistry (Analytical Methods) – II (CT201)**

Day &amp; Date: Friday, 10-05-2024

Max. Marks: 80

Time: 03:00 PM To 06:00 PM

- 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. (MCQ)****10**

- 1) Acetic acid is the example of \_\_\_\_\_ electrolyte.
  - a) Weak
  - b) Strong
  - c) Neutral
  - d) All of the above
- 2) In electrochemical cell \_\_\_\_\_ salt bridge is used.
  - a) KCL
  - b) KOH
  - c) KI
  - d) KBr
- 3) When standard electrode potential is positive, the nature of reaction is \_\_\_\_\_.
  - a) Non-spontaneous
  - b) Spontaneous
  - c) Backward
  - d) None of the above
- 4) Depth filtration gives \_\_\_\_\_ degree of quality.
  - a) low
  - b) medium
  - c) high
  - d) zero
- 5) \_\_\_\_\_ radiation is used for sterilization of cosmetic products.
  - a) Gamma
  - b) Beta
  - c) X-ray
  - d) Alpha
- 6) The word chelates relate to \_\_\_\_\_.
  - a) bind
  - b) bond
  - c) attach
  - d) demask
- 7) Stability constant is also known as \_\_\_\_\_ constant.
  - a) formation
  - b) equilibrium
  - c) both a & b
  - d) none of the above
- 8) Formaldehyde is used as \_\_\_\_\_ agent.
  - a) Masking
  - b) Demasking
  - c) Chelating
  - d) None of the above

- 9) Saponification number measures \_\_\_\_\_.  
 a) Atomic weight                      b) weight in kg  
 c) Molecular weight                  d) All of the above
- 10) The titrant is also known as \_\_\_\_\_.  
 a) Reagent                                b) Titrator  
 c) Standard solution                  d) All of the above

**B) Identify TRUE/FALSE****06**

- 1) Acetic acid is the example of weak electrolyte.
- 2) When standard electrode potential is negative, the nature of reaction is non-spontaneous.
- 3) In chelation, ring like structure is formed in complex.
- 4) Higher ester value indicates low ester content in fats.
- 5) In the extraction process, a solute is transferred from one phase to another phase.
- 6) Electrochemistry is the branch of Physical chemistry.

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

- a) Define the Oswald's Theory of acid-base indicator.
- b) Define and explain the Redox titration with example.
- c) Define the terms, end point, equivalence point, secondary standard and standard solution.
- d) Give the uses of Complexometric titration.

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

- a) Explain in detail Nernst equation.
- b) Define reducing agent with examples and give its characteristic.

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

- a) Explain in detail extraction process with its types.
- b) Define reducing agent with examples and give its characteristic.

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

- a) Explain metal ion indicator.
- b) Explain in detail stability constant of complex.

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

- a) Explain the types of Complexometric titration.
- b) Explain in detail common oxidising agent with examples.

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

- a) Write down the theories of acid-base indicator.
- b) Explain in detail the Masking and Demasking agent.

Seat No.	
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**Five Year Integrated M. Tech. (Semester - II) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
Natural Cosmetic Agents – II (CT202)**

Day & Date: Monday, 13-05-2024  
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) Multiple Choice Question.**

**10**

- 1) Talc contain \_\_\_\_\_% of iron oxide.
  - a) 2-3
  - b) 50-65
  - c) 5-10
  - d) 1-2
- 2) Balsam of Peru contain \_\_\_\_\_% of resin.
  - a) 50-65
  - b) 25-28
  - c) 5-10
  - d) 2-3
- 3) Condensed tannins are also known as \_\_\_\_\_.
  - a) Non-hydrolysable tannins
  - b) Phlobatannins
  - c) Both a and b
  - d) None of the above
- 4) Refractive index of a compound varies with the \_\_\_\_\_.
  - a) Temperature
  - b) Wavelength of the incident light
  - c) Pressure
  - d) All of the above
- 5) \_\_\_\_\_ contain suitable dispersing agent.
  - a) Natural light kaolin
  - b) Light kaolin
  - c) Mica
  - d) Both a and b
- 6) \_\_\_\_\_ slows down the dispersion of essential oils into the air.
  - a) Thickener
  - b) Emulsifier
  - c) Fixative
  - d) None of the above
- 7) Harde contain \_\_\_\_\_ % of tannins.
  - a) 20-30
  - b) 40-45
  - c) 7-33
  - d) 25-32
- 8) Which of the following is biological assay method?
  - a) Toxic
  - b) Symptomatic
  - c) Tissue
  - d) All of the above
- 9) Bentonite protects skin from harmful \_\_\_\_\_ radiation.
  - a) UVA
  - b) UVB
  - c) Both a and b
  - d) None of the above
- 10) Which of the following is ingredient of mineral origin?
  - a) Storax
  - b) Kaolin
  - c) Colophony
  - d) None of the above

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

- 1) The colour of calamine is due to zinc oxide.
- 2) Most of the resins are heavier than water.
- 3) Ethereal extract of Arjuna shows pinkish fluorescence under ultra-violet light.
- 4) Mucilage is stained red with ruthenium red.
- 5) Mica represents a group of aluminosilicate minerals.
- 6) Asafoetida is the oleo-gum resin.

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

- a) Write down the production process of mica by wet ground process.
- b) Enlist the methods by which resins are obtained.
- c) Define the tannins with example. Write down the properties of tannins.
- d) Define the following:
  - 1) Adulteration
  - 2) Adulterants
  - 3) Morphology
  - 4) Extraction

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

- a) Write down the chemical constituents, chemical test and uses of Fuller's Earth.
- b) Write down the biological source, preparation, chemical constituents and uses of Balsam of Tolu.

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

- a) Describe the classification of tannins with suitable example. Write down the Goldbeater's skin test for tannin.
- b) Explain in detail about stomata.

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

- a) Write down the preparation, chemical constituents, chemical test and uses of Bentonite.
- b) Write down the biological source, preparation, chemical constituents and chemical test of Asafoetida.

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

- a) Write down the biological source, chemical constituents, chemical test and uses of Arjun.
- b) Describe the methods by which adulteration is done with suitable examples.

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

- a) Write down the chemical constituents, chemical test and uses of Calamine.
- b) Explain the physical evaluation method for detection of adulteration.

Seat No.	
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**Five Year Integrated (M. Tech.) (Semester - II) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
English (communication skill) (CT203)**

Day & Date: Wednesday, 15-05-2024  
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 Multiple choice questions.**

**08**

- 1) In the essay, Does Education do Harm? \_\_\_\_\_ had only one year of schooling, according to Bertrand Russell.
  - a) Jay Gould
  - b) Commodore Vanderbilt
  - c) John D Rockefeller
  - d) Bertrand Russell
- 2) In his travels to the West, Rabindranath Tagore gets the concept of freedom \_\_\_\_\_.
  - a) not present at all
  - b) strong
  - c) enjoyed by all
  - d) weak
- 3) According to the poet, Niyi Osundare \_\_\_\_\_ has/have lynched the lakes.
  - a) the poet
  - b) the vehicles
  - c) factories
  - d) the humans
- 4) Alexander Pope was \_\_\_\_\_ when he wrote the poem *Ode on Solitude*.
  - a) 15
  - b) 12
  - c) 16
  - d) 18
- 5) The poem *Remember* has been addressed to the poet's \_\_\_\_\_.
  - a) family
  - b) friends
  - c) readers
  - d) lover
- 6) The synonym of the word *beautiful* is \_\_\_\_\_.
  - a) pretty & nice
  - b) ugly
  - c) both (a & b)
  - d) all of the above
- 7) Identify and write the tense of the clause, "Have you completed your home work?".
  - a) perfect past tense
  - b) perfect present tense
  - c) perfect future tense
  - d) simple past tense
- 8) \_\_\_\_\_ is robust and in contact with facts, according to Bertrand Russell.
  - a) Plutocrats
  - b) Eminence
  - c) Real virtue
  - d) Education



- Q.2 Answer any four of the following:** **08**
- a) What are the common factors among men of eminence, according to Bertrand Russell?
  - b) What are the people in the West flattered into believing, according to Rabindranath Tagore?
  - c) What opinion does the author Bertrand Russell have of his teacher?
  - d) What are the outcomes of psychology that deals with terror, according to Rabindranath Tagore?
  - e) What is the difference between being right and being original, according to Bertrand Russell?
  - f) What has affected the psychology of the people and how, according to Rabindranath- Tagore?
- Q.3 Write short notes on any two of the following.** **08**
- a) Theme of environmental pollution and harm the poem *Our Earth Will Not Die*.
  - b) Theme of solitude in the poem *Ode on Solitude*.
  - c) The theme of death and memory in the poem *Remember*.
- Q.4 Answer any Two of the following:** **08**
- a) What is an interpersonal intelligence?
  - b) What are the social skills frequently found among the individuals with interpersonal intelligence?
  - c) What are the different ways to improve interpersonal intelligence?
- Q.5 Answer any one of the following:** **08**
- a) Write a letter of application for the post of assistant professor of Chemistry to the Vice-Chancellor, Punyashlok Ahilyadevi Holkar Solapur University, Solapur with reference to the advertisement in the daily news paper *The Indian Express* dated 14 April, 2024.
  - b) Write a letter of application for the post of assistant manager to the HR Manager, Wipro, M. G. Road, Baner, Pune with reference to the advertisement in the daily news paper *The Indian Express* dated 16 April, 2024.

Seat No.	
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**Five Year Integrated (M. Tech.) (Sem- II) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
Analytical Chemistry (CT208)**

Day & Date: Friday, 17-05-2024  
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Question 1 and 2 are compulsory.  
2) Attempt any Three questions from Q.3 to Q.7.  
3) Figure to right indicate full marks.

**Q.1 A) Choose the Correct Alternative. (MCQ)**

**10**

- 1) \_\_\_\_\_ measures the acidity or alkalinity of a solution.
  - a) PH meter
  - b) Colorimeter
  - c) Conductometry
  - d) None of these
- 2) The amount of light absorbed or transmitted by coloured solution is in accordance with the \_\_\_\_\_ law.
  - a) Faradays law
  - b) Beers & Lamberts law
  - c) Both a & b
  - d) None of these
- 3) PH was first introduced by \_\_\_\_\_.
  - a) Ampere
  - b) Volts
  - c) Haber
  - d) Both b & c
- 4) E.M.F. is expressed in \_\_\_\_\_.
  - a) Ampere
  - b) Coulomb
  - c) Volts
  - d) None of these
- 5) The internal reference electrode in glass electrode is \_\_\_\_\_.
  - a) Ag-agcl
  - b) Mercury
  - c) Both
  - d) None of these
- 6) In colorimetry there is study of the interaction of \_\_\_\_\_ light with matter.
  - a) X-ray
  - b) U.V
  - c) Visible
  - d) I.R
- 7) The basic function of \_\_\_\_\_ is to determine what quality of colour is emitted from solution.
  - a) PH metry
  - b) Colorimeter
  - c) Both a & b
  - d) None of these
- 8) Colorimeters are used in the region \_\_\_\_\_.
  - a) 200nm-600nm
  - b) 400-800nm
  - c) 400nm-1200nm
  - d) None of these
- 9) One faraday is equal to \_\_\_\_\_ coulombs.
  - a) 96487
  - b) 95487
  - c) 96478
  - d) None of these

- 10) Beers law is related to the \_\_\_\_\_.  
a) Thickness of the medium  
b) Thickness of the instrument  
c) Concentration of the medium  
d) None of these

**B) Write True or False.**

**06**

- 1) Energy per unit time is called Power.
- 2) Galvanic cell named after lithium cell.
- 3) Calomel electrode is used as Secondary reference electrode.
- 4) Absorbance is called as optical density.
- 5) The unit of wave number is per centimetre.
- 6) Electrochemistry deals with electrical energy and heat.

**Q.2 Answer the following.**

**16**

- a) Write a note on PH metry.
- b) Define the term.
  - i) EMF of cell
  - ii) Standard electrode potential
- c) Explain the Daniel cell in detail.
- d) Write a note on principle of colorimeter in detail.

**Q.3 Answer the following.**

**16**

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

**Q.4 Answer the following.**

**16**

- a) Explain in detail standard electrode potential with their significance & examples.
- b) Discuss in detail buffer solution

**Q.5 Answer the following.**

**16**

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

**Q.6 Answer the following.**

**16**

- a) Explain in detail photoelectrical colorimeter & explain their applications.
- b) Explain the combination of PH electrode in detail with neat labelled diagram.

**Q.7 Answer the following.**

**16**

- a) Define potentiometric titration & explain the types of potentiometric titration.
- b) Define calomel electrode & explain its redox reaction in detail.

Seat No.	
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**Five Year Integrated (M. Tech.) (Semester - III) (New) (CBCS)**  
**Examination: March/April-2024**  
**COSMETIC TECHNOLOGY**  
**Cosmetic Technology - I (CT301)**

Day & Date: Thursday, 09-05-2024  
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

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

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

- 1) A ray of light when passes from air into liquid, it changes its direction, this change is known as \_\_\_\_\_.  
 a) Refractive Index                      b) Snell's Law  
 c) Refraction                              d) Velocity
- 2) \_\_\_\_\_ is an entity in which equal positive and negative charges are separated by a small distance.  
 a) Bipolar                                      b) Dielectric  
 c) Dipole                                        d) Energy
- 3) Surfactant having both positive and negative charge are known as \_\_\_\_\_.  
 a) Amphoteric surfactant              b) Anionic surfactant  
 c) Ionic surfactant                        d) Non-ionic surfactant
- 4) HLB value of 7-9 indicates \_\_\_\_\_.  
 a) W/O emulsifying agents  
 b) Solubilizing agents  
 c) O/W emulsifying agents  
 d) Wetting and Spreading agents
- 5) Monophasic liquid dosage forms are also known as \_\_\_\_\_.  
 a) Zero solution                              b) False solution  
 c) True solution                                d) None of above
- 6) The component of the solution which is present in small quantity is termed as a \_\_\_\_\_.  
 a) Solvent                                        b) Solute  
 c) Both a and b                                d) None of above
- 7) Which of the following packaging material is used to protect the content against light?  
 a) Plastic container  
 b) Steel container  
 c) Amber coloured glass container  
 d) Paper packaging

- 8) For Deodorant spray, what kind of container is used?
  - a) Aerosols
  - b) Boxes
  - c) Airless containers
  - d) Cups
- 9) On HLB scale 10-18 indicates \_\_\_\_\_.
  - a) Hydrophilic
  - b) Lipophilic
  - c) Both a and b
  - d) None of them
- 10) According to Biopharmaceutical classification (BCS), a substance having low solubility and high permeability belongs to which class?
  - a) Class I
  - b) Class II
  - c) Class III
  - d) Class IV

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

- 1) Wetting is one of the properties of Surfactants.
- 2) Dissociation constant is also known as Dielectric constant.
- 3) Banana peels, Coconut hulls are used in Green packaging.
- 4) Liniments and Elixirs comes under Monophasic dosage form.
- 5) Recycling of glass and metal cannot be done.
- 6) Tail or hydrophobic group is usually hydrocarbon or alkyl chain in surfactant.

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

- a) Define surfactants. Draw its neat, labelled diagram and explain the diagram.
- b) Define monophasic dosage form and write its advantages and disadvantages.
- c) Write note on physicochemical properties.
- d) Write note on labelling and its objectives.

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

- a) Discuss in detail about environmental aspects of packaging material.
- b) Explain different types of glass and plastic container.

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

- a) Classify surfactants with examples and write detailed note on Non-ionic and Zwitter ionic surfactants.
- b) Give detail note on Biphasic dosage form and write note on Emulsion and Suspension.

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

- a) Discuss in detail about Monophasic dosage form. Write its advantage and disadvantages and classify them.
- b) Write selection criteria for surfactants.

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

- a) Derive Handerson-Hasselbalch equation.
- b) Discuss in detail.
  - 1) Dielectric constant
  - 2) Optical rotation

**Q.7 Answer the following.**

- a)** Write note on.
  - 1) Dipole moment
  - 2) Dissociation constant
- b)** Write note on precipitation and use of surfactant for solubility enhancement.

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## Max. Marks: 80

Page 1 of 2

- 10) If the concentration of  $H^+$  ions increase, pH of the solution \_\_\_\_\_.  
a) Increases                      b) Decreases  
c) Remains same                d) None of the above

**B) Write True or False.**

06

- 1) If the potential difference between two points is zero then current flows through it.
- 2) A pH meter can be used to determine the pH of both aqueous as well as non-aqueous solutions.
- 3) The amount of light absorbed by a sample solution is called Absorbance.
- 4)  $\text{Ag} | \text{AgCl}$  is an example of Metal-Metal ion Electrode.
- 5) Cuvettes used in spectrophotometer are made up of Quartz and silica glass.
- 6) Curve obtained in conductometric titration of Strong acid vs Strong base is 'V' shaped.

**Q.2 Answer the following.**

16

- Define the terms Transmittance and Absorbance.
- Explain fundamental principle behind pH meter.
- Explain principle of Conductometric Acid base titrations.
- List various types of Potentiometric titrations and explain any one of them.

**Q.3 Answer the following.**

- a)** Explain in short various instruments used in Cosmetic products analysis. **08**
- b)** Explain the construction of pH meter with diagram. **08**

**Q.4 Answer the following.**

- |           |  |           |
|-----------|--|-----------|
| <b>a)</b> | Explain in detail, quinhydrone electrode.                | <b>08</b> |
| <b>b)</b> | Differentiate between colorimeter and spectrophotometer. | <b>08</b> |

**Q.5 Answer the following.**

- a) Explain in brief, advantages of pH meter. 08
- b) Explain various advantages of potentiometric titrations. 08

**Q.6 Answer the following.**

- |           |   |           |
|-----------|---|-----------|
| <b>a)</b> | Explain instrumentation, construction and working of Single cell photoelectric colorimeter. | <b>10</b> |
| <b>b)</b> | Define the terms.   | <b>06</b> |
|           | i) Current  |           |
|           | ii) Resistance  |           |
|           | iii) Conductance  |           |

**Q.7 Answer the following.**

- |           |   |           |
|-----------|---|-----------|
| <b>a)</b> | How will you measure the resistance of unknown conductor using Wheatstone bridge? | <b>08</b> |
| <b>b)</b> | Explain in detail various types of potentiometric titrations.                     | <b>08</b> |



<b>Seat No.</b>	
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**Five Year Integrated (M. Tech.) (Semester - III) (New) (CBCS)**  
**Examination: March/April-2024**  
**COSMETIC TECHNOLOGY**  
**Unit Operations - I (CT303)**

Day & Date: Tuesday, 14-05-2024  
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

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

**Q.1 A) Choose Correct alternative.**

**10**

- 1) Studies of a fluid which is in motion is called as \_\_\_\_\_.  
a) Fluid Dynamics                      b) Fluid Mechanics  
c) Fluid Statics                         d) Fluid Kinematics
- 2) Flow of fluid is Streamline when Reynold number is \_\_\_\_\_.  
a) 3000                                      b) 4000  
c) Less than 2000                        d) None
- 3) With the increase in flow viscosity, Reynolds number \_\_\_\_\_.  
a) Increases                                b) Decreases  
c) Same                                      d) Independent
- 4) Which of the following works on the principle of Compression?  
a) Ball mill                                  b) Roller Mill  
c) Hammer mill                          d) Gyratory Mill
- 5) As the size of ball decreases, the size of product \_\_\_\_\_.  
a) Remains same                          b) Decreases  
c) Increases                                d) has no effect
- 6) The Cutter mill involves the principle \_\_\_\_\_.  
a) Cutting                                    b) Compression  
c) Attrition                                  d) Impact
- 7) Size reduction is used to improve the:  
a) Physical Stability                      b) Dissolution Rate  
c) Rate of Absorption                    d) All of The Above
- 8) The Crusher mill operates on the principle of \_\_\_\_\_.  
a) Impact                                    b) Attrition  
c) Compression                            d) Cutting

- 9) Modes of motion in size separation are \_\_\_\_\_.  
a) Agitation                      b) Brushing  
c) Centrifugal force          d) All of the above
- 10) Fluid energy mill acts on the principle of \_\_\_\_\_.  
a) Compression                b) Attrition  
c) Impact                         d) None

**B) Write True or False:**

06

- 1) Fluids include liquids and gasses.
- 2) Velocity above which flow is no longer streamline is called critical velocity.
- 3) Fractional distillation is used to prepare distilled water for laboratory purposes.
- 4) Finer particle size can be obtained by using fluid energy mill.
- 5) Efficacy of ball mill is high at high rotating speed.
- 6) Valves allow the unidirectional flow.

**Q.2 Answer the following.**

16

- a) State Bernoulli's principle and give its application.
- b) What is size separation? Give its objective.
- c) Give the advantages and disadvantages of a ball mill.
- d) Write down the advantages and disadvantages of pneumatic conveyors.

**Q.3 Answer the following.**

- Write down the construction, principle and working of pneumatic conveyor.
- Write a note on simple distillation.

10

06

**Q.4 Answer the following.**

- Along with neat labeled diagram explain the construction, principle and working of fluid energy mill.
- Give Reynolds number and explain the symbols used therein.

**10**

06

**Q.5 Answer the following.**

- What is size reduction? Write a note on different factors affecting size reduction.
- Distinguish between streamline flow and turbulent flow.

**10**

06

**Q.6 Answer the following.**

- a) What is sieve diameter? Explain the construction, principle and working of a cyclone separator along with its uses.
- b) Define the terms
  - 1) Nominal size aperture
  - 2) Nominal diameter of the wire
  - 3) Approximate screen area

10

06

**Q.7 Answer the following.**

- |           |   |           |
|-----------|---|-----------|
| <b>a)</b> | Write note on construction, principle and working of steam distillation along with its limitations. | <b>10</b> |
| <b>b)</b> | Give the advantages and disadvantages of screw conveyor.  | <b>06</b> |

Seat No.	
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**Five Year Integrated (M. Tech) (Semester - III) (New) (CBCS)**  
**Examination: March/April-2024**  
**COSMETIC TECHNOLOGY**  
**Biomolecules – I (CT304)**

Day & Date: Thursday, 16-05-2024  
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

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

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

**10**

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

- 10) Most important group of protein is \_\_\_\_\_.  
 a) Prosthetic                      b) Metal ion  
 c) Acidic functional group      d) Basic functional group

**B) Write True or False.**

06

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

**Q.2 Answer the following.**

16

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

**Q.3 Answer the following.**

16

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

**Q.4 Answer the following.**

16

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

**Q.5 Answer the following.**

16

- Explain Coenzymes in detail and uses in cosmetics.
- Define in detail metallic soaps & explain their uses in cosmetic.

**Q.6 Answer the following.**

16

- Define protein & explain their classification in detail.
- Define the Enzymes & give its classification in detail.

**Q.7 Answer the following.**

16

- Explain in detail synthetic Surfactants.
- Explain in detail the mechanism of Enzymes by Lock and Key model.

Seat No.	
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**Five Year Integrated (M. Tech.) (Semester - III) (New) (CBCS)****Examination: March/April - 2024****COSMETIC TECHNOLOGY****Cosmetics Legislations-I (CT310)**

Day &amp; Date: Saturday, 18-05-2024

Max. Marks: 80

Time: 11:00 AM To 02:00 PM

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

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

- 1) If a cosmetic is so colored, coated or polished that damage its therapeutic value or it is made to appear of better or greater therapeutic value then it is known as \_\_\_\_\_.  
 a) Adulterated drug                      b) Spurious drug  
 c) Misbranded drug                      d) True drug
- 2) Drug enquiry committee was founded in \_\_\_\_\_.  
 a) 1940                                      b) 1930  
 c) 1920                                      d) 1919
- 3) How many members from Indian council of medical research (ICMR) are nominated in Animal welfare board of India by the Central Government?  
 a) 2    b) 4  
 c) 3    d) 6
- 4) Medicinal & toilet preparations capable of being consumed as ordinary alcoholic beverages are referred as \_\_\_\_\_.  
 a) Un restricted preparations  
 b) Restricted preparations  
 c) Alcoholic preparation  
 d) Medicinal preparations
- 5) The maximum heavy metals permitted in skin creams is \_\_\_\_\_.  
 a) 10 ppm                                      b) 15 ppm  
 c) 20 ppm                                      d) 25 ppm
- 6) Grant of license to manufacture a drug requires: \_\_\_\_\_.  
 a) Form 24                                      b) Form 25  
 c) Form 26                                      d) Form 27
- 7) Non-alcoholic aftershave lotions contain the following except: \_\_\_\_\_.  
 a) Astringents                                      b) Denaturants  
 c) Emollients                                      d) Antiseptic agents
- 8) According to the prevention of cruelty to animal act, 1960, animal means any living creature except \_\_\_\_\_.  
 a) Birds    b) Human beings  
 c) Insects    d) Microorganisms

- 9) List of dyes, colors & pigments to be used in cosmetics as per BIS is under \_\_\_\_\_ schedule.
- |      |      |
|------|------|
| a) P | b) Q |
| c) M | d) T |
- 10) In phooka or doom dev, \_\_\_\_\_ or any substance is introduced into female organ of milch animal with the intention of drawing off any secretion of \_\_\_\_\_.
- |               |                |
|---------------|----------------|
| a) Air, water | b) Water, milk |
| c) Air, milk  | d) Water, air  |

**B) Write true /false.**

**06**

- 1) DTAB has five ex-officio members.
- 2) Requirement of plant & equipment comes under schedule M2 of drugs and cosmetic act.
- 3) Power of entry, search & seizure subjected to provisions of any rules made in medicinal & toilet preparations act was authorized by state government.
- 4) Indian veterinary research institute is situated at Izatnagar.
- 5) The working hours for non- bonded laboratory are fixed by officer in charge.
- 6) Coca leaf contains more than 0.02% cocaine.

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

**16**

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

**Q.3 Answer the following.**

**10**

- a) Define the following terms:
  - 1) Cosmetic
  - 2) Toilet preparations
  - 3) Manufacture
  - 4) Non-bonded manufactory
  - 5) Spirit store

- b) Explain standard specifications laid down for Beaur of standards (BIS) for nail polish & nail lacquers.

**06**

**Q.4 Answer the following.**

- a) Write in detail requirements of plant & equipment for following cosmetic formulations.

**10**

- 1) Preparations used for eyes
- 2) Aerosol

- b) Enlist dyes, colours and pigments permitted to be used in cosmetics.

**06**

**Q.5 Answer the following.**

- a) Solve the following:

**10**

- 1) What are the general requirements of factory premises for manufacture of cosmetics?
- 2) State BIS specifications for skin powder.

- b) What are the steps for export of duty paid goods under bond?

**06**

**Q.6 Answer the following.**

- A)** Solve the following. **10**
- 1) Describe BIS specifications for toilet soap.
  - 2) What are the roles & powers of excise officer?
- B)** Write about committee for experimentation on animals. **06**

**Q.7 Answer the following.**

- A)** Solve the following. **10**
- 1) What are the offences & penalties of disobeying medicinal & toilet preparation act.
  - 2) What is lone license?
- B)** State regulatory provisions related to export of duty paid goods. **06**



<b>Seat No.</b>	
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**B) Write True or False.****06**

- 1) Emulsion is a biphasic dosage form.
- 2) Paste contains high percentage of insoluble solids which are finely dispersed into suitable vehicle.
- 3) There is no need to add preservatives to liquid dosage forms.
- 4) Tragacanth is natural emulsifying agent.
- 5) Emulsion and suspensions are most stable dosage forms.
- 6) Creams are not emulsions.

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

- a) Define and classify powders and formula for any bulk powder.
- b) Define creams and write detailed note on the same.
- c) Write note on purpose of emulsification.
- d) Write ideal characteristics of preservatives.

**Q.3 Answer the following.**

- a) Discuss in detail about identification of emulsion.

**08**

- b) Define and classify preservatives and write need of preservation.

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

- a) Describe powders enclosed in cachets.

**08**

- b) Define ointment and give note on hydrocarbon bases.

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

- a) Write a note on creaming and caking of emulsion.

**08**

- b) Draw neat, labelled diagram of skin and give short note on dermatological and pharmaceutical factors of drug penetration and absorption.

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

- a) Define creams. Write in detail general ingredients used in cream formulation.

**08**

- b) Elaborate bulk powders for external use.

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

- a) Define solid dosage forms and write its advantages, disadvantages and classification with examples.

**08**

- b) Write preparation methods and applications of emulsion.

**08**

Seat No.	
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**Five Year Integrated M. Tech. (Semester- IV) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY**

**Instrumental Methods of Analysis – II (CT402)**

Day & Date: Saturday, 11-05-2024  
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 alternatives from the given options. 10**

- 1) Electronic spectra is observed in \_\_\_\_\_ region.
  - a) Infrared
  - b) radiowave
  - c) X-Ray
  - d) UV
- 2) The middle IR region of electromagnetic spectrum is about \_\_\_\_\_.
  - a) 12500-4000  $\text{cm}^{-1}$
  - b) 100-400 nm
  - c) 667-50  $\text{cm}^{-1}$
  - d) 4000-667  $\text{cm}^{-1}$
- 3) A spectrophotometer can be used in the analysis of samples in \_\_\_\_\_ range of electromagnetic spectra.
  - a) IR
  - b) Visible
  - c) UV
  - d) All of these
- 4) The silica gel is used in column chromatography as \_\_\_\_\_.
  - a) effluent
  - b) column support
  - c) adsorbent
  - d) mobile phase
- 5) Selection rule for rotational transitions is \_\_\_\_\_.
  - a)  $\Delta J = \pm 1$
  - b)  $\Delta V = \pm 1$
  - c)  $\Delta E = \pm 1$
  - d) None of the above
- 6) In spectrophotometer, \_\_\_\_\_ is used as a monochromator.
  - a) Prism
  - b) colour filters
  - c) Diffraction grating
  - d) Both a and c
- 7) The absorption of IR radiation by organic molecule is accompanied by \_\_\_\_\_.
  - a) electronic level change
  - b) vibrational level change
  - c) nuclear spin change
  - d) rotational level change
- 8) Rotating diatomic molecule is considered to be \_\_\_\_\_.
  - a) harmonic oscillator
  - b) rigid rotor model
  - c) oscillator
  - d) none of these
- 9) For non-linear molecule, the number of fundamental modes of vibrations are calculated by the relation \_\_\_\_\_.
  - a)  $3N - 5$
  - b)  $3N - 6$
  - c)  $3N + 5$
  - d)  $3N + 6$
- 10) In gas chromatography, the carrier gas is used as \_\_\_\_\_.
  - a) adsorbent
  - b) stationary phase
  - c) mobile phase
  - d) for cleaning

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

- 1) The choice of solvent systems in TLC depends on material on which the separation is to be carried out.
- 2) The region of  $909\text{-}650\text{cm}^{-1}$  is known as Aromatic region.
- 3) The molecule without permanent dipoles do not shows rotational spectra.
- 4) The alumina is only available in neutral form.
- 5) Vibrational frequency and electronegativity are inversely proportional to each other.
- 6) AAS technique is useful for both qualitative and quantitative analysis.

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

- a) Explain advantages of thin layer chromatography over paper chromatography.
- b) Explain the terms in details:
  - i) Wavelength
  - ii) Frequency
- c) Discuss Double beam IR spectrophotometer with neat labelled diagram.
- d) Explain the principle of AAS.

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

- a) Define Electromagnetic radiation. Explain their properties.
- b) Write a brief note on instrumentation of UV-Visible spectrophotometer.

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

- a) Explain in brief fundamental modes of vibrations.
- b) Define chromatography. Classify different chromatographic methods.

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

- a) Explain rotational spectra of diatomic molecule.
- b) Write a brief note on important instrumental features of modern AAS.

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

- a) Explain conditions for absorption of IR radiation and selection rule.
- b) Explain the process of TLC and write down its applications in detail.

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

- a) Explain in detail molecular energy level diagram.
- b) Explain any four functional groups with their characteristic absorption of IR radiations.

Max. Marks: 80

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

- 1) The (emissivity) of a black body is \_\_\_\_\_.  
a) 2  
b) 1.5  
c) 1  
d) None
- 2) Lyophilization is also known as \_\_\_\_\_.  
a) Drying by sublimation  
b) Freeze Mixing  
c) Freeze drying  
d) Deep freezing
- 3) Unit of heat is \_\_\_\_\_.  
a) Joule  
b) Newton  
c) Pascal  
d) watt
- 4) \_\_\_\_\_ mechanism is not used in solid-solid Mixing.  
a) Tumbling  
b) Connective  
c) Shear Mixing  
d) Diffusion
- 5) A black body is perfect \_\_\_\_\_.  
a) Emitter only  
b) Emitter and absorber  
c) Absorber only  
d) None
- 6) What are the advantages of the spray drying process?  
a) evaporation is very rapid  
b) latent heat of vaporisation  
c) fast drying  
d) All of the above
- 7) Heat Flows \_\_\_\_\_.  
a) From Low to high  
b) From High to low  
c) Depend on Transfer rate  
d) None
- 8) Law of heat conduction is \_\_\_\_\_.  
a) Fourier law  
b) Ficks law  
c) Thermodynamic law  
d) Newton's law
- 9) The fastest way of heat transfer is \_\_\_\_\_.  
a) Conduction  
b) Conviction  
c) Radiation  
d) None

- 10) In ribbon blender, the mechanism of mixing follows \_\_\_\_\_.  
a) Shear                                      b) Trituration  
c) Impact                                     d) None

**B) Write true or false.**

06

- 1) For 100 percent RH 8.10 grains are present at 70 Fahrenheit.
- 2) Sometimes dryers can be used as mixers.
- 3) Shaker mixers are used to mix Solids.
- 4) Heat is a form of energy.
- 5) The amount of water present in air is called humidity
- 6) Conduction is the fastest way to heat transfer.

**Q.2 Answer the following.**

16

- Write a note on a Fourier law.
- Write the construction and working of the dehumidifier.
- Write a note on a double cone blender.
- Give the advantages and limitations of a spray dryer.

**Q.3 Answer the following.**

- a) What is a Dehumidifier? Describe the mechanism of Dehumidifier along with a diagram.
- b) Explain the term:
  - i) Saturated air
  - ii) Dew point

10

06

**Q.4 Answer the following.**

- Write a note on wet bulb theory of determination of humidity.
- Write a note on mixing of solids.

10

06

**Q.5 Answer the following.**

- What is heat? Explain the different mechanisms of heat transfer.
- With neat labeled diagram explain the perfectly black body.

**10**

06

**Q.6 Answer the following.**

- a)** What is mixing? Give factors influencing mixing.  
**b)** Define the terms:
- 1) Humidity
  - 2) Humidifiers
  - 3) Dehumidifiers

10

06

**Q.7 Answer the following.**

- Write the construction, principle working of fluidized bed dryer.
- Give the advantages and disadvantages of a Tray dryer.

10

06

Day & Date: Thursday, 16-05-2024  
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.

## 10

- 1) \_\_\_\_\_ is the chemical name of vit-A.  
a) Retinal                      b) Pyridoxal  
c) Biotin                        d) None of these
- 2) \_\_\_\_\_ is a hard glistening and translucent object.  
a) Lipid                          b) Vitamin  
c) Pearl                          d) None of these
- 3) \_\_\_\_\_ lipid cannot be integrated into smaller molecules through hydrolysis.  
a) Saponifiable                b) Non Saponifiable  
c) both a and b                d) None of these
- 4) \_\_\_\_\_ vitamin helps to protect cells against oxidative stress.  
a) Vit-B<sub>1</sub>                          b) Vit-B<sub>2</sub>  
c) Vit-B<sub>5</sub>                          d) Vit-B<sub>6</sub>
- 5) Synthetic pearls are usually called as \_\_\_\_\_ pearls.  
a) cultured                      b) naturals  
c) manufactured                d) none of these
- 6) \_\_\_\_\_ is a hygroscopic substance which is used to attract and keep the moisture by absorption.  
a) Humectant                    b) Lipid  
c) Pearls                          d) None of these
- 7) \_\_\_\_\_ vitamin is water soluble.  
a) Vit-C                            b) Vit-B  
c) both a and b                d) None of these
- 8) \_\_\_\_\_ humectants molecular weight is between 200-2000.  
a) PEG                              b) Glycerol  
c) Ethanol                        d) both a and b

- 9) Waxes are found in nature as a coating on \_\_\_\_\_ and \_\_\_\_\_.  
a) Roots & Leaves                      b) Leaves & Stems  
c) Stems & Roots                        d) None of these
- 10) Vit-B<sub>7</sub> is used in treatment of \_\_\_\_\_ diseases.  
a) Alzheimer                              b) Diabeties  
c) CNS                                      d) both a and b

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

- 1) Ascorbic acid is the chemical name of vit-C.
- 2) A saponifiable lipid undergo hydrolysis to smaller molecules.
- 3) Synthetic pearls usually called natural pearls.
- 4) Humectants are hygroscopic in nature.
- 5) Waxes are soluble in water.
- 6) Vit-K is obtained from kiwi, eggs, almonds.

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

- a) Explain the uses of Vitamins in cosmetics and pharmaceuticals.
- b) Define humectants and explain their functions in detail.
- c) Write a note on production methods of fatty acids.
- d) Write a note on pearls & explain their commercial uses in details.

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

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

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

- a) Define vitamin & explain in detail the essential vitamins w.r.t. chemical name, function & sources.
- b) Write a note on fatty acid.

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

- a) Explain in detail viscosity modifier.
- b) Explain the following humectants in detail.
  - 1) Glycerol
  - 2) Sorbitol

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

- a) Explain in detail classification & properties of waxes.
- b) Write a note on metabolic role of vit A & vit D.

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

- a) Write a note on Ion exchange resin & explain their cosmetic uses in detail.
- b) Discuss in detail Lanolin.



Seat No.	
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**COSMETIC TECHNOLOGY**  
**Cosmetics Legislations-II (CT410)**

Max. Marks: 80

**Instructions:** 1) Question 1 and 2 are compulsory.  
2) Attempt any Three from Q.3 to Q.7.  
3) Figure to right indicate full marks.

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

- 1) Government of India Act Import of drugs was passed in the year \_\_\_\_\_.  
a) 1933                                      b) 1934  
c) 1935                                      d) 1936
- 2) Drug inquiry committee was formed under the chairmanship of \_\_\_\_\_.  
a) Sri Ramnath Chopra                  b) Sri Kamnath Singh  
c) Mudaliar                                d) Krishnavadan
- 3) PCI is reconstituted at every \_\_\_\_\_.  
a) 1 year                                      b) 2 years  
c) 4 years                                      d) 52 years
- 4) When did The Factories Act, come into force?  
a) 01 April 1966                          b) 01 March 1967  
c) 01 May 1960                          d) 01 April 1949
- 5) 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
- 6) Patent is \_\_\_\_\_.  
a) transferable property                  b) negotiable property  
c) real property                              d) Nontransferable property
- 7) The constraints of promotion may include \_\_\_\_\_.  
a) Competitor's advertising              b) Resistance to change  
c) Budget                                      d) All of the given options
- 8) What is the minimum number of employees required to register under the Shops and Establishment Act?  
a) 10    b) 20  
c) 30    d) 50
- 9) 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
- 10) The patent act is passed in the year \_\_\_\_\_.  
a) 1932    b) 1970  
c) 1930    d) 1986

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

- 1) Registration of pharmacist is done under factory act.
- 2) The patent act is established in 1970.
- 3) The pharmacy act is passed in 1948.
- 4) Minimum 48 hrs/week working will be there to workers as per shop act.
- 5) The PCI contains elected, nominated and ex-officio members.
- 6) The shop and establishment act is applicable to warehouse and store.

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

- a) Define:
  - i) Registered Pharmacist
  - ii) Displaced person
  - iii) Shop
  - iv) Repatriate
- b) Enlist objectives of sales promotion Act.
- c) Give the advantages of patenting Act.
- d) Define factory. Give Objectives of Factory Act.

**Q.3 Answer the following.**

- a) Give the constitution & function of PCI. **10**
- b) Give detail information about leave & payment of wages under shop act. **06**

**Q.4 Answer the following.**

- a) Give the process of registration of pharmacist. **10**
- b) Who acts as chief facilitator & what are powers of facilitator? **06**

**Q.5 Answer the following.**

- a) What are the health & safety provision made in factory. **08**
- b) Give the offences & penalties under shop act. **08**

**Q.6 Answer the following.**

- a) Give the procedure for approval of institute & withdrawal of approval. **10**
- b) How employment of young person is done? Describe about working hours of an employee. **06**

**Q.7 Answer the following.**

- a) What is executive committee? Give the terms of office & casual vacancies. **10**
- b) Give details about working hrs of young children's & their annual leaves. **06**

Seat No.	
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Set **P****Five Year Integrated M. Tech. Course (Semester - IV) (Old) (CBCS)****Examination: March/April-2024****COSMETIC TECHNOLOGY****Cosmetic Technology - II (CT1401)**

Day &amp; Date: Thursday, 09-05-2024

Max. Marks: 40

Time: 03:00 PM To 06:00 PM

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

**Q.1 Choose the correct alternative****08**

- 1) \_\_\_\_\_ is known as shunt routes of skin penetration.
  - a) Hair follicle
  - b) Sweat gland
  - c) Sebaceous gland
  - d) All of the above
- 2) Surfactants are incorporated in the preparation of Dentifrice as they \_\_\_\_\_.
  - a) Aid in preparation of surface film
  - b) Produce foam
  - c) Removes debris
  - d) All the above
- 3) Vanishing cream is applied for \_\_\_\_\_.
  - a) Remove face powder
  - b) Improve adhesion of cosmetics
  - c) Produce pigmentation
  - d) None of these
- 4) Water soluble base is also called as \_\_\_\_\_.
  - a) Water immiscible
  - b) Water miscible
  - c) Water insoluble
  - d) None of these
- 5) Emulsion is stabilised by \_\_\_\_\_.
  - a) Emulsifying agent
  - b) Suspending agent
  - c) Glycerine
  - d) Sweetener
- 6) CTFA method for analysis is employed to \_\_\_\_\_.
  - a) Determine efficacy of preservative
  - b) Determine efficacy of drug
  - c) Determine efficacy of antibiotics
  - d) Determine efficacy of perfume
- 7)  $F = V u /$  \_\_\_\_\_.
  - a)  $V_i$
  - b)  $V_a$
  - c)  $V_o$
  - d)  $V_k$
- 8) Binders are the key ingredient in \_\_\_\_\_ powder.
  - a) Talcum
  - b) Dusting
  - c) Compact
  - d) Foot

- Q.2 Answer the following. (Any Four) 08**
- a) Define ointment; classify them.
  - b) Distinguish between ointment and paste.
  - c) Define the cosmetic emulsion and enlist their rational in formulation.
  - d) Write down the characteristics of powders.
  - e) Define the following:
    - 1) Dusting powder
    - 2) Humectants
  - f) Differentiate between flocculated and deflocculated suspension.
- Q.3 Write Short Notes. (Any Two) 08**
- a) Discuss in brief identification of emulsion.
  - b) How do you formulate cosmetic powders?
  - c) Write note on preparation of ointment.
- Q.4 Answer the following. (Any Two) 08**
- a) Classify emulsion and discuss preparation of emulsion.
  - b) Define powder and elaborate evaluation of powders.
  - c) Define cosmetic cream and write note on vanishing cream.
- Q.5 Answer the following. (Any One) 08**
- a) Discuss in detail formulation of emulsion. Add a note on instability problems in emulsion.
  - b) Give ideal properties of preservative and how will you predict the efficacy of preservatives?

Seat No.	
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**Five Year Integrated M. Tech. Course (Semester - IV) (Old) (CBCS)****Examination: March/April-2024****COSMETIC TECHNOLOGY****Instrumental Methods of Analysis – II (CT1402)**

Day &amp; Date: Saturday, 11-05-2024

Max. Marks: 40

Time: 03:00 PM To 06:00 PM

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

**Q.1 Choose the correct alternative****08**

- 1) The elastic scattering of photons is called as \_\_\_\_\_.
  - a) Atmospheric scattering
  - b) Rayleigh scattering
  - c) Conserved scattering
  - d) Raman scattering
- 2) What does a polarimeter measure \_\_\_\_\_.
  - a) Polarity of substance
  - b) Angle of rotation
  - c) Concentration of the substance
  - d) pH of the substance
- 3) Which of the following is the simplest pH meter \_\_\_\_\_.
  - a) Null detector type pH meter
  - b) Direct reading type pH meter
  - c) Digital pH meter
  - d) Modern pH meter
- 4) Pure water is known to be which of the following?
  - a) weak electrolyte
  - b) strong electrolyte
  - c) Neither weak nor strong electrolyte
  - d) none of these
- 5) A pH scale reading of 13 indicates a \_\_\_\_\_.
  - a) weak base
  - b) weak acid
  - c) strong acid
  - d) strong base
- 6) In conductometry \_\_\_\_\_ sheet is used.
  - a) Platinum
  - b) Gold
  - c) Silver
  - d) None of the above
- 7) Greater the value of refractive index of a medium the bending of light will be \_\_\_\_\_.
  - a) Greater
  - b) Smaller
  - c) Zero
  - d) Negative
- 8) In Raman spectroscopy the radiation lies in the \_\_\_\_\_.
  - a) microwave region
  - b) visible region
  - c) UV region
  - d) X-ray region

- Q.2 Answer the following. (Any Four) 08**
- a) Explain the principle of the pH meter.
  - b) What is meant by plane-polarized light?
  - c) Explain perfectly elastic collision.
  - d) Explain specific rotation in details.
  - e) Write down the principle of refractometry.
  - f) What is meant by conductance?
- Q.3 Write short notes. (Any Two) 08**
- a) Construction and working of glass electrodes.
  - b) Write a note on the importance of the refractive index.
  - c) Write a note on the Quantum principle.
- Q.4 Answer the following. (Any Two) 08**
- a) Write down the various applications of pH meter.
  - b) Write down the advantages and disadvantages of glass electrode.
  - c) Explain the laws of refraction.
- Q.5 Answer the following. (Any One) 08**
- a) Explain various types of conductometric titration curves in detail with suitable examples.
  - b) Explain the construction, working, and application of the pH meter.

Seat No.	
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Set **P**

Five Year Integrated (M. Tech.) (Semester- IV) (Old) (CBCS)

Examination: March/April-2024

COSMETIC TECHNOLOGY

Cosmetic Engineering - II (CT1403)

Day &amp; Date: Tuesday, 14-05-2024

Max. Marks: 40

Time: 03:00 PM To 06:00 PM

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

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

- 1) Identify the application of heat transfer.
  - a) Evaporation
  - b) Sterilization
  - c) Food processing Industry
  - d) All the above
- 2) \_\_\_\_\_ is the main method by which heat is transferred through solids.
  - a) Conduction
  - b) Convection
  - c) Radiation
  - d) All the above
- 3) The value of  $b$  for black body is \_\_\_\_\_.
  - a)  $5.67 \times 10^{-8} \text{ W/m}^2\text{K}^4$
  - b)  $1.67 \times 10^{-8} \text{ W/m}^2\text{K}^4$
  - c)  $9.08 \times 10^{-8} \text{ W/m}^2 \text{K}^4$
  - d) None of above
- 4) Rate of radiation is expressed by \_\_\_\_\_.
  - a) Fick's law
  - b) Fourier's law
  - c) Stefan -Boltzmann law
  - d) Reynolds experiments
- 5) Amount of heat required to raise the unit mass of dry gas and its associated vapour through one unit difference in temperature ( $1^\circ\text{F}$ ) at constant pressure is known as \_\_\_\_\_.
  - a) Humid heat
  - b) Specific heat
  - c) Heat coefficient
  - d) None of above
- 6) Relative humidity is represented in Psychrometry Chart by.
  - a) Horizontal line
  - b) Vertical line
  - c) Line slopping toward left
  - d) Curved lines
- 7) In a system when a part of the boundary of the system is displaced, such system is called as \_\_\_\_\_.
  - a) Shaft work
  - b) Flow work
  - c) Both A and B
  - d) None of above
- 8) \_\_\_\_\_ that indicates what is happening in a system at given time.
  - a) Integral Balance
  - b) Differential Balance
  - c) Stoichiometric balance
  - d) None of the above

- Q.2 Answer the following. (Any Four)** **08**
- a) What do you mean by Counter Current heat flow?
  - b) Define Black body and Grey body.
  - c) Explain determination of Humidity by dew point method.
  - d) If air consists of 77% by weight of nitrogen and 23% by weight of oxygen calculate:
    - a) The mean molecular weight of air.
    - b) The mole fraction of oxygen.(Given values Molecular Weight: C-12, H-1, O-16, N-14, Cl-35.5, Na-23)
  - e) Draw neat labeled diagram of Double Pipe Heat Interchanger.
  - f) Define and classify heat exchangers.
- Q.3 Write short notes on Any Two of the following.** **08**
- a) Elaborate Applications of refrigeration.
  - b) Write down the applications of heat transfer.
  - c) Explain refrigeration cycle.
- Q.4 Answer Any Two of the following.** **08**
- a) What do you mean by Dehumidification? Explain approaches to Dehumidification.
  - b) What are indirect contact type heat exchangers write down its subtypes, Elaborate Fluidized bed type heat exchangers.
  - c) Explain Parallel heat flow with diagram and derive a general equation for same.
- Q.5 Answer Any One of the following.** **08**
- a) What is Air conditioning? Elaborate in detail about Window air-conditioning system.
  - b) Write in brief about plate heat exchangers.



Seat No.	
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**Five Year Integrated M. Tech. (Semester- IV) (Old) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
Cosmetic Chemistry IV (CT1404)**

Day & Date: Thursday, 16-05-2024  
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 Multiple choice questions.**

**08**

- 1) The skin barrier are mainly overcome by \_\_\_\_\_ based viscosity modifiers.
  - a) Alcohol
  - b) Natural gum
  - c) Electrolyte
  - d) Solvent
- 2) Chemically natural gums are \_\_\_\_\_.
  - a) Carbohydrate
  - b) Proteins
  - c) Polysaccharides
  - d) None of above
- 3) In Fatty Alcohol, the terminal carbon is attached to the \_\_\_\_\_ group.
  - a) -OH
  - b) -COOH group
  - c) -Amine
  - d) Aldehyde
- 4) The waxes are classified based on the basis of \_\_\_\_\_.
  - a) Nature of lipid
  - b) Use
  - c) Origin
  - d) both b & c
- 5) In human body, vitamin D is produced by exposing the sun light to \_\_\_\_\_ in skin.
  - a) Cholesterol
  - b) Keratin
  - c) Lipid
  - d) Fatty acid
- 6) The people require more regular supply of \_\_\_\_\_ vitamin.
  - a) A
  - b) D
  - c) C
  - d) E
- 7) Cation exchange resins involves the exchange of \_\_\_\_\_.
  - a) Anion
  - b) Cation
  - c) Free radicals
  - d) All of the above
- 8) The micro-beads used in ion exchange resins has \_\_\_\_\_ surface area.
  - a) Large
  - b) Small
  - c) Micro
  - d) Minimum

- Q.2 Answer any four of the following. 08**
- a) Define the waxes with its example.
  - b) Give a short note on structure of fatty acid.
  - c) Give the composition of Lanolin.
  - d) Define the Ion Exchange Resin.
  - e) Define water soluble vitamins and give their names.
  - f) Write a note on Types of Pearl.
- Q.3 Write short notes on any two of the following. 08**
- a) Write down the metabolic role of Vitamin D.
  - b) Explain the uses of Pearl in Cosmetics and Medical field.
  - c) Define the lipids and explain in detail the structure of lipids.
- Q.4 Answer any Two of the following. 08**
- a) Explain the Alcohol as a viscosity modifier.
  - b) Explain plant and animal waxes.
  - c) Explain metabolic role of vitamin K.
- Q.5 Answer any one of the following. 08**
- a) Write down the various steps involved in the production of Fatty Acids.
  - b) Explain in detail the classification of waxes.

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**COSMETIC TECHNOLOGY**  
**Drug & Cosmetic Laws – II (CT1409)**

Max. Marks: 40

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

08

- 1) The Factories Act came into force in India on \_\_\_\_\_.  
a) 01-05-1949                      b) 01-03-2022  
c) 01-04-1949                      d) None of these
- 2) The Employees Compensation Act was passed in the year \_\_\_\_\_.  
a) 1920                                b) 1922  
c) 1923                                d) 1925
- 3) Which of the following is the full form of PCT?  
a) Patient Corporation Treaty      b) Patent Corporation Treaty  
c) Patient Consultation Treaty     d) Patent Cooperation Treaty
- 4) In the constitution of PCI, a representative of AICTE is a \_\_\_\_\_ member.  
a) Elected                            b) Nominated  
c) Ex-officio                          d) None of these
- 5) A person who has completed his 18<sup>th</sup> year of age is known as \_\_\_\_\_.  
a) Child                                b) Old  
c) Unmarried                          d) Adult
- 6) Calendar year means \_\_\_\_\_.  
a) period of twelve months          b) period of twelve weeks  
c) period of twenty four months    d) period of twenty four weeks
- 7) The Payment of Gratuity Act was passed in the year \_\_\_\_\_.  
a) 1992                                b) 1952  
c) 1972                                d) 1982
- 8) The S&E Act is governed by \_\_\_\_\_ department.  
a) Health                              b) Family  
c) Welfare                             d) Labour

08

- Give the objective of Shop Establishment Act.
- Define Commercial Establishment.
- What are the various types of patents?
- What is the penalty for dispensing of drugs by unregistered person?
- Who are certified surgeons?
- Write any 02 duties of occupier as per The Factories Act, 1948.

- Q.3 Write short notes on any Two of the following. 08**
- a) Write the elected members of Pharmacy Council of India.
  - b) Constitution & composition of State Pharmacy Council.
  - c) Discuss the safety provisions made available in the factory.
- Q.4 Answer any Two of the following 08**
- a) What are the advantages & disadvantages of the patents?
  - b) Discuss the offences & penalties related to Sales Promotion Act, 1976.
  - c) Discuss the constitution & composition of JSPC.
- Q.5 Answer any One of the following. 08**
- a) Add a note on 'Patent Cooperation Treaty'.
  - b) What are the powers of PCI? Discuss the terms of office & casual vacancies of PCI members?

Seat No.	
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**Five Year Integrated M. Tech. (Semester - V) (New) (CBCS) Examination:  
March/April-2024  
COSMETIC TECHNOLOGY  
Perfume I (CT1501)**

Day & Date: Friday, 10-05-2024  
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 labeled diagram and give equations wherever necessary.

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

- 1) In direct steam distillation plant material is heated no higher than \_\_\_\_ temperature.
 

a) 20 °C	b) 30 °C
c) 40 °C	d) 100 °C
- 2) Hydraulic or screw pressure is applied in \_\_\_\_ method.
 

a) Hot fat	b) Cold fat
c) Water distillation	d) Soxhlet extraction
- 3) Resins are classified into following sub classes except \_\_\_\_\_.
 

a) Acid	b) Ester
c) Resin alcohol	d) Resin ether
- 4) Myrrh contains important acid \_\_\_\_\_.
 

a) Comiphoric acid	b) Abietic acid
c) Benzoic acid	d) Acetic acid
- 5) Vanilla belongs to \_\_\_\_ family.
 

a) Liliaceae	b) Orchidaceae
c) Apocyanaceae	d) Solanaceae
- 6) The scientific name of Mango is \_\_\_\_\_.
 

a) Magnifera Indica	b) Ocimum Sanctum
c) Azadirachta Indica	d) Ananus comosus
- 7) \_\_\_\_\_ suffix is attached to the alcohol.
 

a) En	b) Ol
c) Ene	d) Hyde
- 8) Ethanol is prepared industrially by \_\_\_\_\_.
 

a) Hydration of ethylene	b) Fermentation of sugars
c) Both a and b	d) None of the these

**Q.2 Answer any four of the following. 08**

- a) Define essential oil and write the uses of essential oil in cosmetic preparation.
- b) Define resins and write their classification with example.
- c) Write the source and properties of mango.
- d) Write the manufacturing methods of alcohol.
- e) Write the source and properties Gum styrax.
- f) Write the difference between cold fat and hot fat method.

- Q.3 Write short notes on any two of the following. 08**
- a) Water and steam distillation method
  - b) Percolation and reserved percolation method
  - c) Isolation of Eugenol
- Q.4 Answer any two of the following. 08**
- a) Discuss in detail water distillation method with neat labelled diagram.
  - b) Write in detail batch deodorization and semi continuous deodorization with advantages and disadvantages.
  - c) Explain in detail source, properties and uses of pineapple, vanilla.
- Q.5 Answer any one of the following. 08**
- a) Define oleo resin, write the sources of oleoresins and explain in detail the extraction of ginger oleoresin.
  - b) Discuss in detail selection of solvents in extraction and explain in detail extraction with volatile solvents.

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Set **P**

**Five Year Integrated M. Tech. (Sem-V) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
Cosmetic Technology III (CT1502)**

Day & Date: Monday, 13-05-2024  
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.

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

- 1) \_\_\_\_\_ term is used to describe a skin with heightened sebum production.
 

a) Dry	b) Oily
c) Normal	d) Combination
- 2) \_\_\_\_\_ is similar in humectancy to propylene glycol.
 

a) Glycerol	b) Sorbitol
c) Butylene glycol	d) Calcium chloride
- 3) \_\_\_\_\_ is an example of antioxidant used in oil-based formulation.
 

a) Propyl gallate	b) Sodium metabisulphite
c) Ascorbic acid	d) Sodium sulphite
- 4) \_\_\_\_\_ gives an effect of increased whiteness in soap.
 

a) Phenyl benzo thiozole	b) Tolu of balsam
c) Sodium thiosulphate	d) Sodium phosphate
- 5) The basic building blocks of \_\_\_\_\_ are ethylene glycol and terephthalic acid.
 

a) PP	b) PET
c) Acrylic	d) None of the above
- 6) \_\_\_\_\_ is a saponifying alkali.
 

a) Sodium carbonate	b) Potassium hydroxide
c) Ammonium hydroxide	d) Both a and c
- 7) In foam bath products \_\_\_\_\_ allows the product to remain sparklingly clear.
 

a) Sequestering agent	b) Thickeners
c) Foaming agent	d) Preservatives
- 8) \_\_\_\_\_ is a lipophilic antioxidant.
 

a) Glutathione	b) Ascorbic acid
c) Both a and b	d) Tocopherols

**Q.2 Answer any four of the following 08**

- a) How the water affect the stability of cream.
- b) Which factors should be considered during selection of antioxidant?
- c) Define soap. How soap works?
- d) What are the requirements for good bubble bath products?
- e) What are the causes for combination skin type?
- f) Define the humectants. Write down the types of humectants with suitable examples.

- Q.3 Write short notes on any two of the following** **08**
- a) Write a short note on Night and Massage cream.
  - b) Write a short note on metabolic antioxidant.
  - c) Write a short note on stability and safety of propylene glycol.
- Q.4 Answer any two of the following** **08**
- a) Explain the modern continuous hydrolysis and soap formation process with its advantages.
  - b) Explain the steps involved in the preparation of bath salt.
  - c) Write down the procedure for DPPH radical scavenging assay.
- Q.5 Answer any one of the following.** **08**
- a) Explain in detail syndet.
  - b) How creams are manufactured. Elaborate the applications of humectant



Seat No.	
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Set **P**

**Five Year Integrated M. Tech. (Sem-V) (New) (CBCS)**  
**Examination: March/April-2024**  
**COSMETIC TECHNOLOGY**  
**Principles of Cosmetics - I (CT1503)**

Day & Date: Wednesday, 15-05-2024  
 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 Multiple choice questions.****08**

- 1) W/O emulsions are called as \_\_\_\_\_.  
 a) Aqueous emulsion                      b) Oily emulsion  
 c) Alcoholic emulsion                      d) Electrophoresis
- 2) The substances which are added to stabilize the emulsions are called \_\_\_\_\_.  
 a) Dialyser                                      b) Aggregates  
 c) Emulsifying agent                      d) Peptizing agent
- 3) The dispersion of one liquid in another liquid is called as \_\_\_\_\_.  
 a) Solid sol                                      b) Sol  
 c) Emulsion                                      d) Gel
- 4) Identify the factors which influence solubility.  
 a) Temperature                                      b) Crystal properties  
 c) PH    d) All of the above
- 5) Controlled flocculation of particles is obtained by adding \_\_\_\_\_.  
 a) Flocculating agents                      b) Suspending agents  
 c) Wetting agents                              d) All of these
- 6) Surfactant \_\_\_\_\_ the interfacial tension between drug particles and liquid.  
 a) Decrease                                      b) Increase  
 c) no change on                              d) Improves
- 7) Increase in temperature causes \_\_\_\_\_ in surface tension.  
 a) Lowered                                      b) Remains constant  
 c) Increase                                      d) Decreases
- 8) Identify the following as flocculating agents \_\_\_\_\_.  
 a) Electrolytes                                      b) Surfactants  
 c) Polymers                                      d) All of these

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

- a) Explain the term saturated and supersaturated solution.
- b) Differentiate between creaming and cracking.
- c) Write a note on Sedimentation volume.
- d) Define phase inversions.
- e) Define Spreading coefficient and surface energy.
- f) What is Suspension? Give its classification

- Q.3 Write short notes. (Any Two) 08**
- a) Distinguish between ideal solution and real solution.
  - b) What is solubility? Give the different expressions of solubility.
  - c) Explain Critical solution temperature and mention their applications.
- Q.4 Answer the following. (Any Two) 08**
- a) Write a note on stability of suspension.
  - b) Derive relation between surface tension and surface energy.
  - c) What is coalescence? Explain factors affecting it.
- Q.5 Answer the following. (Any One) 08**
- a) Define solubility. Explain the various factors affecting solubility of solids in liquids.
  - b) Define Surface tension. Explain the principle involved in determination of surface tension by capillary rise method. Give its limitations.

Seat No.	
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Set **P**

**Five Year Integrated (M. Tech.) (Sem-V) (New) (CBCS) Examination:  
March/April-2024  
COSMETIC TECHNOLOGY  
Beauty Culture – I (CT1504)**

Day & Date: Friday, 17-05-2024  
Time: 11:00 AM To 01:00 PM

Max. Marks: 40

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

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

- 1) \_\_\_\_\_ is not a paired bone.
 

a) Mandible	b) Maxilla
c) Nasal	d) None of these
- 2) The vomer bone is located inside the \_\_\_\_\_.
 

a) Nasal cavity	b) Orbital cavity of the eye
c) Cranial cavity	d) None of these
- 3) Neither oily nor dry is a characteristic of \_\_\_\_\_ skin.
 

a) Dry	b) Oily
c) Combination	d) Normal
- 4) \_\_\_\_\_ are responsible for melanin production.
 

a) Melanocytes	b) Epithelial
c) Hair follicle	d) Cup cells
- 5) \_\_\_\_\_ oil is removed from the plant by being either distilled or extracted using solvent.
 

a) Essential oil	b) Non-essential oil
c) Fixed Oil	d) Fatty oil
- 6) \_\_\_\_\_ is great tool to have in our home.
 

a) Condenser	b) Diffuser
c) Both A & B	d) None of the above
- 7) Face masks for treatment of acne should include \_\_\_\_\_.
 

a) Vitamin C	b) Hyaluronic acid
c) Salicylic acid	d) Glycolic acid
- 8) Good efficiency thickeners & stabilizers used in face mask should have following characteristic:
 

a) High dispersibility	b) Low irritancy
c) Pleasant sensation	d) All of the above

**Q.2 Answer any four of the following.****08**

- a) Write the names of the bone and draw neat labelled diagram of face bone.
- b) Write the guidelines for facial treatments.
- c) Write steps involved in threading.
- d) Explain how does aromatherapy treatment work?
- e) Define masks. What are the types of facial masks?
- f) Enlist ingredients used in paraffin wax masks.

- Q.3 Write short notes on any two of the following. 08**
- a) Facial and cleaning steps.
  - b) Black heads
  - c) Peel-off masks
- Q.4 Answer any two of the following. 08**
- a) Discuss in detail facial and massage techniques with neat labelled diagram.
  - b) How diet helps in achieving healthy skin?
  - c) Define aromatherapy and explain for which conditions aromatherapy it may treat.
- Q.5 Answer any one of the following. 08**
- a) Write the face pack ingredients and significance of facial and explain in detail different types of facial.
  - b) What are Wrinkles? Write in detail about causes, symptoms and treatment of wrinkle.

Seat No.	
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Set **P**

**Five Year Integrated (M. Tech.) (Semester - V) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
Pharmacology & Interaction-I (CT1509)**

Day & Date: Monday, 20-05-2024  
Time: 11:00 AM To 01:00 PM

Max. Marks: 40

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

**Q.1 Multiple Choice Questions.****08**

- 1) \_\_\_\_\_ is quantitative study of the effect of drug.  
a) Pharmacokinetics                      b) Pharmacodynamics  
c) Pharmacotherapeutics              d) Pharmacovigilance
- 2) \_\_\_\_\_ refers to amount of drug needed to produce a certain response.  
a) Drug potency                              b) Drug efficacy  
c) Drug specificity                            d) None of above
- 3) In pathogenesis of acne following are the inflammatory lesions except.  
a) Papule    b) Cyst  
c) Closed comedone                          d) Nodule
- 4) \_\_\_\_\_ activate the inflammatory response which cause pain and fever.  
a) Prostaglandins                              b) Microsomal enzymes  
c) Lipase    d) Urease
- 5) \_\_\_\_\_ is responsible for development of warts.  
a) Influenza virus                              b) Flavivirus  
c) Orthopox virus                              d) HPV
- 6) Decreased level of \_\_\_\_\_ may lead to hypopigmentation.  
a) Alanine    b) Valine  
c) Tyrosine                                        d) All the above
- 7) Effective concentration of minoxidil in androgenic alopecia is \_\_\_\_\_.  
a) 2 %    b) 4 %  
c) 5 %    d) 7 %
- 8) Most common form of psoriasis is \_\_\_\_\_.  
a) Psoriasis vulgaris                              b) Guttate Psoriasis  
c) Erythroderma Psoriasis                      d) Nail Psoriasis

- Q.2 Answer Any Four of the following. 08**
- a) Define
    - 1) Dermatology
    - 2) Drug
  - b) What is first pass metabolism?
  - c) Enlist the factors responsible for acne.
  - d) Define and give different types of dermatitis.
  - e) Enlist symptoms and treatment of seborrheic dermatitis.
  - f) What is depigmentation, give its different types.
- Q.3 Write Short Notes on Any Two of the following. 08**
- a) Dentin hypersensitivity.
  - b) Hirsutism
  - c) Factors effecting GI absorption of drug.
- Q.4 Answer Any Two of the following: 08**
- a) What are sunscreen agents? Explain in short MOA of organic and inorganic sunscreens.
  - b) Explain local reactions of nail cosmetics.
  - c) What is Hypohydrosis.
- Q.5 Answer Any One of the following: 08**
- a) Give biological significance of melanin; explain tyrosinase inhibitors as skin lightening agents.
  - b)
    - 1) What is Pharmacology? Give sources of drug information.
    - 2) Comment on dental caries.

Set | P

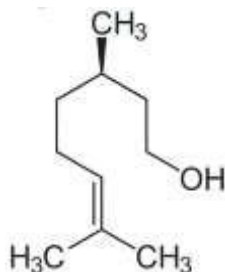
**COSMETIC TECHNOLOGY**  
**Perfume - II (CT1601)**

Max. Marks: 40

**Instructions:** 1) All questions are compulsory.  
2) Figures to the right indicate full marks.  
3) Draw a neat diagram and equations wherever necessary.

## 08

- 1) The Civet fixative obtained from \_\_\_\_\_.  
a) Animal  
b) Synthetically  
c) Resinous Material  
d) None of the above
- 2) A chassis is made up of \_\_\_\_\_.  
a) Round wooden frame  
b) Rectangular wooden frame  
c) Both a & b  
d) None of the above
- 3) *Rutaceae* is the Family of \_\_\_\_\_.  
a) Sandalwood  
b) Cinnamon  
c) Lemon  
d) None of the above
- 4) The evaporation period of the Top notes is \_\_\_\_\_.  
a) 20 to 60 minutes  
b) 5 to 15 minutes  
c) More than 60 minutes  
d) None of the above
- 5) The top notes are also named \_\_\_\_\_.  
a) Head notes  
b) Middle notes  
c) Base notes  
d) None of the above
- 6) A Grignard's reagent may be made by reacting magnesium with which of the following compound?  
a) Methyl amine  
b) Diethyl ether  
c) Ethyl iodide  
d) Ethyl alcohol
- 7) Name the following structure:



- a) Citronellal                      b) Citronellol  
c) Citral                                d) None of the above
- 8) What is the molecular formula of Vanillin?  
a) C<sub>8</sub>H<sub>8</sub>O<sub>3</sub>                          b) C<sub>8</sub>H<sub>8</sub>O<sub>4</sub>  
c) C<sub>9</sub>H<sub>8</sub>O                             d) None of the above

- Q.2 Answer any four of the following. 08**
- a) Define Fixatives with example.
  - b) Write a note on Heart notes.
  - c) What is the Chemical Composition Balsam of Peru?
  - d) What are the uses of Benzyl Benzoate?
  - e) What are the physical properties of Anisaldehyde?
- Q.3 Write short notes on any two of the following. 08**
- a) Define Oxidation reaction with examples.
  - b) Explain Maceration.
  - c) Write a note on Synthesis of Benzyl benzoate.
- Q.4 Answer any two of the following. 08**
- a) What is the reaction & Mechanism of Nitration?
  - b) Write a note on Musk Fixatives.
  - c) Write the reaction of preparation of 3, 7-dimethyloctanol from Citral with intermediate.
- Q.5 Answer any one of the following. 08**
- a) Define Blending & Aging.
  - b) Write a note on Oxidation of toluene derivatives to benzaldehyde with reaction.



Seat No.	
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Set **P****Five Year Integrated (M. Tech.) (Semester - IV) (New) (CBCS)****Examination: March/April-2024****COSMETIC TECHNOLOGY****Cosmetic Technology IV (CT1602)**

Day &amp; Date: Monday, 13-05-2024

Max. Marks: 40

Time: 03:00 PM To 05:00 PM

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

**Q.1 Multiple Choice Question.****08**

- 1) \_\_\_\_\_ is an example of thickener used in barrier formulation.
  - a) Dimethicone
  - b) Benzoyl peroxide
  - c) Carbopol
  - d) Zinc stearate
- 2) \_\_\_\_\_ % of arbutin is used as skin lightening agent in skin lightener formulation.
  - a) 5
  - b) 2
  - c) 7
  - d) 4
- 3) \_\_\_\_\_ is a sequestering agent used in foam bath preparation.
  - a) Ethylene glycol monostearate
  - b) Citric acid
  - c) Sodium carbonate
  - d) None of the above
- 4) Lip salves are available in \_\_\_\_\_ form.
  - a) Stick
  - b) Unctuous
  - c) Both a and b
  - d) None of the above
- 5) \_\_\_\_\_ is added as a bulking agent and as a perfume carrier in compact rouge.
  - a) Talc
  - b) Zinc oxide
  - c) Aluminium stearate
  - d) Magnesium carbonate
- 6) Which of the following is film forming material used in the formulation of liquid eyeliner?
  - a) Polyvinyl pyrrolidone
  - b) Diethylene glycol monostearate
  - c) Bentonite
  - d) Magnesium aluminium silicate
- 7) \_\_\_\_\_ result in loss of elasticity of the skin and impaired wound healing.
  - a) Acrodynia
  - b) Ochronosis
  - c) Photophobia
  - d) Polyneuritis
- 8) \_\_\_\_\_ is an example of astringent used in face packs and masks.
  - a) Gelatin
  - b) Pectin
  - c) Witch hazel
  - d) Allantoin

- Q.2 Answer Any Four of the following. 08**
- 1) How protective cream work.
  - 2) Write down the formula and procedure of skin lightening cream.
  - 3) What are the safety concerns of baby products?
  - 4) Write down the procedure for the preparation of clay face mask of neutral pH.
  - 5) How eyebrow pencil is manufactured.
  - 6) What is bleeding defect in lipstick and how it is caused?
- Q.3 Write Short Notes on Any Two of the following. 08**
- a) Write a note on anti-wrinkle preparation.
  - b) Write a note on kojic acid and ascorbic acid as a skin lightening agent.
  - c) Write a note on Miliaria.
- Q.4 Answer Any Two of the following. 08**
- a) Describe vinyl based system of face pack and mask with their formula and preparation.
  - b) Add a note on mascara.
  - c) Explain the steps involved in the manufacturing of compact rouge.
- Q.5 Answer Any One of the following: 08**
- a) How lipstick is manufactured.
  - b) Elaborate the formulation aspects of barrier formulation.

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- Q.2 Answer the following. (Any Four) 08**
- a) Give packaging arrangement of powders.
  - b) Define angle of repose. Write its significance.
  - c) Define Viscosity along with its units of expressions.
  - d) Give examples for plastic and pseudo plastic systems of flow.
  - e) What is the Tyndall effect?
  - f) What are Bulges and Spurs.
- Q.3 Write short note. (Any Two) 08**
- a) Explain the Newtonian system of flow with examples.
  - b) Write a brief note on distribution phenomena.
  - c) What are the derived properties of powders? Explain any two.
- Q.4 Answer the following. (Any Two) 08**
- a) Explain-porosity. Give its applications in cosmetics.
  - b) What are colloids? Classify the colloids. Differentiate between different types of colloids.
  - c) Explain electrical properties of colloids.
- Q.5 Answer the following. (Any One) 08**
- a) Define and explain Non Newtonian flow of liquids.
  - b) What is micrometrics? Enlist the different methods to determine particle size. Explain the optical microscopy along with its advantages and disadvantages.

Seat No.	
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Set **P**

**Five Year Integrated (M. Tech.) (Sem-VI) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
Beauty Culture – II (CT1604)**

Day & Date: Friday, 17-05-2024  
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 Multiple Choice Questions.****08**

- 1) To cover the pimples which colour base is used in the makeup?
  - a) Green base
  - b) Dark Concealer
  - c) Liquid Concealer
  - d) None above
- 2) Which is the beauty product to set the eyebrows?
  - a) Hair spray
  - b) Gel
  - c) Water
  - d) Clear mascara
- 3) Which three parts of the face form the T-zone?
  - a) Forehead, nose and chin
  - b) Eye brow, nose & lips
  - c) Nose, lips and chin
  - d) Forehead, lips and chin
- 4) To match the skin colour with the base, which place on face is appropriate?
  - a) Forehead
  - b) Cheeks
  - c) Neck
  - d) Chin
- 5) Which method is used to make eyebrow quickly?
  - a) Threading
  - b) Tweezing
  - c) Plucking
  - d) Bleaching
- 6) What type of foundation is used in party makeup?
  - a) Solid
  - b) Cake
  - c) Liquid
  - d) Powder
- 7) Which product is used to enhance the beauty of eyes?
  - a) Mascara
  - b) Eye liner
  - c) Eyes shadow
  - d) All of above
- 8) Which brush is used for face powder?
  - a) Fan brush
  - b) Face tissue
  - c) Powder brush
  - d) cotton balls

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

- a) Name the tools used for makeup.
- b) Write different face shape.
- c) What is cleansing & moisturizing.
- d) Define code of ethics.
- e) Enlist the steps involved in makeup.
- f) Enlist general hair problems.

- Q.3 Write Short Notes. (Any Two)** **08**
- a) Write short note on application of temporary false eyelashes.
  - b) Write a note on brushes used in makeup.
  - c) What is blusher? How to apply it?
- Q.4 Answer the following Question. (Any Two)** **08**
- a) What is makeup? Write the techniques used to remove the makeup.
  - b) Write a note on manicure.
  - c) Discuss the structure & types of hair.
- Q.5 Answer the following Question. (Any One)** **08**
- a) Discuss in detail about code of ethics & beauticians attitude.
  - b) What is contouring? Discuss about face contouring.

Seat No.	
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**Five Year Integrated (M. Tech.) (Sem- VI) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
Pharmacology & Interaction-II (CT1609)**

Day & Date: Monday, 20-05-2024  
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) In allergic rhinitis \_\_\_\_\_ is only available agent for eye preparation.
  - a) Sodium Chloride
  - b) Oxymethazoline
  - c) Chromphenicol
  - d) Sodium chromiglicate
- 2) First step pain is associated with \_\_\_\_\_.
  - a) Plantar fasciitis
  - b) Morton's Neuroma
  - c) Hallux valgus
  - d) None of above
- 3) BIS standards are applicable for following Indian cosmetics preparations except \_\_\_\_\_.
  - a) Cold wax hair remover
  - b) After shave lotion
  - c) Nail polish
  - d) Skin whitening cream
- 4) In patch testing, "standard series" of haptens applied during test. The term "standard series" refers to \_\_\_\_\_.
  - a) Serial dilutions of irritant chemical
  - b) Lowest concentration of irritant chemical
  - c) Collections of substances that are the most frequent sensitizers
  - d) All the above
- 5) Identify the reason for false positive reaction in Patch Testing.
  - a) Impure substance
  - b) Adhesive tape reaction
  - c) Excessive concentration
  - d) All the above
- 6) Positive control used in cumulative irritation test is \_\_\_\_\_.
  - a) 3 % Sodium Chloride solution
  - b) 3 % Urea Solution
  - c) 3 % Salicylic acid Solution
  - d) 3% Sodium Lauryl Sulphate solution
- 7) Hyperaemia is \_\_\_\_\_.
  - a) Increased sweating
  - b) Increased Salivation
  - c) Increased blood circulation
  - d) Increased keratinocytes
- 8) Ichthyosis vulgaris is \_\_\_\_\_.
  - a) Dry skin areas without appearance of inflammation
  - b) Thick scale and redness around the hair follicle
  - c) Fish like dry scaling of skin
  - d) The unpleasant sensation of skin

- Q.2 Answer any four of the following. 08**
- a) Define immunogenicity and Adjuvant.
  - b) What is anaphylaxis and write down its types.
  - c) Explain why most of Photo toxicity and Photo allergy caused by UVA radiation rather than UVB radiation.
  - d) Write a short note on BIS.
  - e) Write down precautions need to be taken during Patch Testing.
  - f) Differentiate between Common cold and Allergic Rhinitis.
- Q.3 Write short notes on any two of the following 08**
- a) Morton's Neuroma
  - b) Type III and Type IV hypersensitivity
  - c) Summaries different antibody present in Human
- Q.4 Answer any Two of the following. 08**
- a) Write down the procedure involved in Compliment fixation test.
  - b) What is Morning Stiffness? Write about possible cause and treatment / Life style modification for planter fasciitis.
  - c) Explain Coombs test.
- Q.5 Answer any one of the following**
- a) Explain photosensitive eczema. **08**
  - b) 1) Explain Oral toxicity limit test. **03**  
2) Describe oral mucosal irritation test in rats. **05**



<b>Seat No.</b>	
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**Five Year Integrated (M. Tech.) (Sem - VII) (New) (CBCS) Examination:  
March/April-2024**

## COSMETIC TECHNOLOGY

### Perfumes & Colours (CT1701)

Day & Date: Thursday, 09-05-2024  
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 Multiple choice questions.

08

- 1) The dilute fragrance solution generally with up to 8 oz oil/gal is known as \_\_\_\_\_.  
a) Toilet water  
b) Alcoholic fragrance  
c) Solid fragrance  
d) Solubilized perfume
- 2) Which of the following factor is responsible for soap perfuming to reduce time & effort in production?  
a) Psychological factors  
b) Technical factors  
c) Chemical factors  
d) All of the above
- 3) The hardness of cologne stick is determined by the quantity of \_\_\_\_\_.  
a) Sodium Lauryl sulphate  
b) Stearic acid  
c) Palmitic acid  
d) Sodium stearate
- 4) \_\_\_\_\_ is the chemical constituent of jasmine.  
a) Geraniol  
b) Citronellol  
c) Benzyl alcohol  
d) All of the above
- 5) The higher \_\_\_\_\_ content yield more transparent stick.  
a) Stearic acid  
b) Palmitic acid  
c) Propylene glycol  
d) Cetyl alcohol
- 6) Which of the following agents are used to prevent spoilage in cosmetic products?  
a) Colours  
b) Flavours  
c) Preservatives  
d) Humectants
- 7) The synonym of Muguet is \_\_\_\_\_.  
a) Yellow Cassie  
b) Night jasmine  
c) Kia  
d) Our lady's tears
- 8) Which of the following groups of organic compounds are least likely to be used in making perfumes?  
a) Alcoholic  
b) Carboxylic acids  
c) Esters  
d) Aldehydes

- Q.2 Answer the following. (Any Four) 08**
- a) Define specially perfumed products with example.
  - b) Write the biological source and chemical composition of Cassie.
  - c) Give examples of perfumes incorporated in hair oils.
  - d) What are the factors affecting adaptation of perfumes in soap formulations?
  - e) Define Cologne.
  - f) Define toilet waters.
- Q.3 Answer the following. (Any Two) 08**
- a) Write a short note on alcoholic fragrances with any one formulation.
  - b) Give details of perfuming powders.
  - c) Write a biological source, properties and chemical composition of Cassie and Narcissus.
- Q.4 Answer the following. (Any Two) 08**
- a) What is adaptation of perfumes in hair conditioners?
  - b) Write a short note on mineral water essences.
  - c) Write a short note on solid fragrances with any one formulation.
- Q.5 Answer the following. (Any One) 08**
- a) Explain the methods to formulate perfume from acacia, Amber, lilac. Write their source, properties and chemical composition.
  - b) Give detailed account on incorporation of perfumes/ colours/ flavours in eye preparations.

Seat No.	
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**Five Year Integrated (M. Tech.) (Semester – VII) (New) (CBCS)**

**Examination: March/April-2024**

**COSMETIC TECHNOLOGY**

**Cosmetic Technology - V (CT1702)**

Day & Date: Saturday, 11-05-2024

Max. Marks: 40

Time: 11:00 AM To 01:00 PM

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

**Q.1 Multiple choice questions:**

**08**

- 1) Quaternary ammonium compounds are included in the formulas of moisturizers for their ability to \_\_\_\_\_.  
 a) Attach to hair fibers                      b) Detangle the hair  
 c) Promote healing of the scalp            d) Penetrate the cortex
- 2) Which oxide is used for permanent coloring of hair?  
 a) Sodium hydroxide                      b) Hydrogen peroxide  
 c) Monoxide                                  d) Any oxide
- 3) What type of shampoo is typically recommended for individuals with dry or damaged hair?  
 a) Moisturizing shampoo                      b) Volumizing shampoo  
 c) Clarifying shampoo                      d) Protein shampoo
- 4) \_\_\_\_\_ is used in tepid perming.  
 a) Calcium hydroxide                      b) Calcium oxide  
 c) Calcium nitrate                          d) Sodium hydroxide
- 5) To protect the hair from the harmful effects of blow drying & electric rollers \_\_\_\_\_ are used.  
 a) Scalp conditioners                      b) Spray-on thermal products  
 c) Protein treatment                      d) Hair masks
- 6) During a dandruff treatment, an effective therapy is \_\_\_\_\_.  
 a) Deep conditioning                      b) Scalp steamer  
 c) Chemical relaxers                      d) High frequency current
- 7) The foam quantification is tested by following method \_\_\_\_\_.  
 a) Cohesimeter                              b) Hydrometer  
 c) Ross-miles apparatus                      d) Viscometer
- 8) Action of waving lotion is to \_\_\_\_\_.  
 a) Expand the hair                              b) Shrink the hair  
 c) Discolor the hair                              d) None of the above

- Q.2 Answer the following. (Any four) 08**
- a) Write about the role of hydrogen peroxide in hair dyeing.
  - b) State ideal characteristics of hair tonics.
  - c) Define brilliantine.
  - d) Enlist factors affecting colour fading.
  - e) What is detergency?
  - f) Give a formula for hair thickener.
- Q.3 Write short notes the following. (Any Two) 08**
- a) Pressurized hair styling products
  - b) Acid balanced shampoo
  - c) Metallic hair dyes
- Q.4 Answer the following. (Any Two) 08**
- a) Discuss about bleaching of hair.
  - b) Write about hair rinses.
  - c) Discuss off-scalp techniques of hair dyeing.
- Q.5 Answer any one of the following. 08**
- a) What are the principle and secondary surfactants in shampoo preparations? Explain their role in formulation of liquid shampoos with examples.
  - b) Write a brief note on hair waving preparations & methods of waving.

Seat No.	
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**Five Year Integrated M. Tech. (Semester- VII) (New) (CBCS)**  
**Examination: March/April-2024**  
**COSMETIC TECHNOLOGY**  
**Quality Assurance Techniques (CT1703)**

Day & Date: Tuesday, 14-05-2024  
 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.

**Q.1 Multiple choice questions.**

**08**

- 1) \_\_\_\_\_ is also called as internal quality audits.
  - a) Self Inspection
  - b) Validation
  - c) Qualification
  - d) APQR
- 2) Stationary phase used in HPLC is \_\_\_\_\_.
  - a) Gas
  - b) Liquid
  - c) Solid
  - d) Both a and b
- 3) Which of the following is correct ICH guideline for bracketing and matrixing design \_\_\_\_\_.
  - a) ICH Q1A(R2)
  - b) ICH Q1E
  - c) ICH Q1B
  - d) ICH Q1D
- 4) \_\_\_\_\_ test gives an indication, whether lipstick will be able to withstand variation in climate or not.
  - a) Breaking point
  - b) Softening point
  - c) Yield point
  - d) None of the above
- 5) All data's recorded as per cGMP is reviewed for \_\_\_\_\_.
  - a) Accuracy
  - b) Traceability
  - c) Both a and b
  - d) None of the above
- 6) Which of the following is NMR inactive nuclei?
  - a)  $^1\text{H}$
  - b)  $^{13}\text{C}$
  - c)  $^{19}\text{F}$
  - d)  $^{16}\text{O}$
- 7) \_\_\_\_\_ studies are designed to increase the rate of chemical degradation or by using exaggerated storage condition as a part of the formal stability study.
  - a) Long term testing
  - b) Accelerated testing
  - c) Intermediate testing
  - d) None of the above
- 8) Score 3 in oral mucosa indicates \_\_\_\_\_ condition in oral mucosal irritation test in rats.
  - a) Discoloration, slight sloughing
  - b) Sloughing in several areas
  - c) No reaction
  - d) Ulceration

- Q.2 Answer the following. (Any Four) 08**
- 1) Write down the procedure for initiation of change control.
  - 2) What is the difference in the principle of Turbidimetry and Nephelometry?
  - 3) Enlist the studies that need to be performed during photostability testing.
  - 4) Write down the procedure for determination of pH of skin cream as per BIS.
  - 5) What is the importance of validation?
  - 6) Write down the principle behind mass spectroscopy.
- Q.3 Write short notes. (Any Two) 08**
- a) Write a short note on types of distribution copy.
  - b) Write a short note on patch test.
  - c) Write a short note on HPTLC.
- Q.4 Answer the following. (Any Two) 08**
- a) Write down the climatic condition of zones and the storage condition for real time stability studies of a product according to climatic zone.
  - b) Explain instrumentation of Infrared spectroscopy.
  - c) Describe the evaluation parameter of shampoo.
- Q.5 Answer any one of the following. 08**
- a) Explain in detail qualification.
  - b) Comment on testing frequency and storage conditions that to be maintained during stability testing as per ICH.

<b>Seat No.</b>	
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## COSMETIC TECHNOLOGY

### Herbal Cosmetics – I (CT1704)

Day & Date: Thursday, 16-05-2024  
Time: 11:00 PM 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 wherever necessary.  
4) Use of a logarithmic table and calculator is allowed.

### Q.1 Multiple choice questions:

08

- An aromatic root part which can be used in hair care is \_\_\_\_\_.
  - Nagarmotha
  - Methi
  - Chandan
  - Potato
- Which of the following plants is not used for hair care?
  - Henna
  - Mango
  - Brahmi
  - Neem
- Guidelines for storage of raw herbs are given by \_\_\_\_\_.
  - GLP
  - GMP
  - Both
  - None
- \_\_\_\_\_ is the limit for the arsenic in the raw herb.
  - 3ppm
  - 2ppm
  - 1ppm
  - 0.30ppm
- Sandalwood oil is obtained from \_\_\_\_\_.
  - Santalum album
  - Hydrocotyle Asiatica
  - Azadirachta indica
  - Acacia Arabica
- As per API raw herbs are tested for following tests \_\_\_\_\_.
  - Microscopic
  - Macroscopic
  - Purity
  - All of the above
- Solvent used for extraction of medicinal plants is also known as \_\_\_\_\_.
  - Menstruum
  - Medicinal solvent
  - True solvent
  - Solute
- Chloroform is a \_\_\_\_\_ solvent.
  - Ideal
  - Non-polar
  - Green
  - Polar

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

08

- What are the basic features of hair care cosmetics?
- Define herbal cosmetics and write its advantages.
- How will you store raw herbs in a store house?
- Enlist the different Heavy metals with their permissible limit.
- Give the biological source and uses of Babhool.
- What is the biological source of Neem and Lodra

- Q.3 Write short answers any Two of the following. 08**
- a) Write a short note on Water, Alcohol, Ether as solvents in extraction.
  - b) Write a short note on Scope of herbal ingredients in the cosmetic industry.
  - c) What should be avoided while storing raw herb.
- Q.4 Answer the following. (Any Two) 08**
- a) Explain the terms.
    - i) Ash Value
    - ii) Foreign matter
    - iii) Extractive value
    - iv) Volatile matter
  - b) State difference between herbal and conventional/synthetic cosmetics.
  - c) Write note on tinctures and lixiviation.
- Q.5 Answer any one of the following. 08**
- a) Write pharmacognostic scheme of Define extraction. Write note on following extraction techniques.
    - i) Soxhlet extraction
    - ii) Steam distillation
  - b) Write the Biological source, main chemical constituent and cosmetic use of Chandan.



Seat No.	
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Set **P**

**Five Year Integrated (M. Tech.) (Sem- VII) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY**

**Material Management & Inventory Control (CT1709)**

Day & Date: Saturday, 18-05-2024  
Time: 11:00 AM To 01:00 PM

Max. Marks: 40

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

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

**08**

- 1) **Sentence 1:** In SDE analysis, highest control is exercised on difficult items and it is based on pattern of issue of material.  
**Sentence 2:** Perpetual inventory control is also known as continuous stock checking.
 

a) False; False	b) False; True
c) True ; True	d) True ; False
- 2) The determination of reorder point is based on \_\_\_\_\_.
 

a) Lead time	b) Usage rate
c) Safety stock	d) All the above
- 3) \_\_\_\_\_ method is very suitable for relatively high inflammatory economy.
 

a) Replacement price	b) LIFO
c) FIFO	d) Standard cost method
- 4) EDP include \_\_\_\_\_.
 

a) Recording	b) Displaying
c) Storage	d) All the above
- 5) Written offer to a supplier formally stating all terms and conditions of a proposed transaction is called \_\_\_\_\_.
 

a) Agreement	b) Tender
c) Purchase order	d) Indent
- 6) Rogue bidder is major problem in \_\_\_\_\_.
 

a) Tender processing	b) Sourcing
c) Material billing	d) Store keeping
- 7) Identify the different word form given group below.  
Wax, Paper, Ink, Computer system
 

a) Wax	b) Paper
c) Printer Ink	d) Computer System
- 8) \_\_\_\_\_ is to identify and correct problems when and where they occur.
 

a) Jidohka	b) Poka-yoke
c) Sitsuke	d) Seiri

- Q.2 Answer any four of the following. 08**
- a) What is specification? Write down the aim of material management.
  - b) Enlist the stages in purchase of materials.
  - c) Write down the advantages of centralized purchase.
  - d) Give format for material rejection note.
  - e) What is A) Cost of goods sold B) Pipeline inventory.
  - f) Explain the replacement price method of stock valuation.
- Q.3 Write short notes on any two of the following. 08**
- a) Goods received note
  - b) Negotiation
  - c) Objective of purchasing and open tender system
- Q.4 Answer any two of the following 08**
- a) Explain Law of Agency and Purchasing.
  - b) Define A) capital B) running contract.  
being a material manager how you will identify the supplier for RFQ?
  - c) What is stock valuation? Explain weighted average price method of stock valuation.
- Q.5 Answer any one of the following. 08**
- a) What is EOQ? Explain in detail.
  - b) 1) Explain Delphi Technique, Time series  
2) ABC Analysis

Seat No.	
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Day & Date: Thursday,09-05-2024  
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.

## 14

- 1) The dilute fragrance solution generally with up to 8 oz oil/gal is known as \_\_\_\_\_.  
a) Toilet water  
b) Alcoholic fragrance  
c) Solid fragrance  
d) Solubilized perfume
- 2) Which of the following factor is responsible for soap perfuming to reduce time & effort production?  
a) Psychological factors  
b) Technical factors  
c) Chemical factors  
d) All of the above
- 3) The hardness of cologne stick is determined by the quantity of \_\_\_\_\_.  
a) Sodium Lauryl sulphate  
b) Stearic acid  
c) Palmitic acid  
d) Sodium stearate
- 4) \_\_\_\_\_ is the chemical constituent of jasmine.  
a) Geraniol  
b) Citronellol  
c) Benzyl alcohol  
d) All of the above
- 5) The higher \_\_\_\_\_ content yield more transparent stick.  
a) Stearic acid  
b) Palmitic acid  
c) Propylene glycol  
d) Cetyl alcohol
- 6) Which of the following is inorganic type of humectant?  
a) Calcium chloride  
b) Sodium lactate  
c) Glycerol  
d) Ethylene glycol
- 7) Which of the following factor is responsible for soap perfuming to reduce time & effort in production?  
a) Psychological factors  
b) Technical factors  
c) Chemical factors  
d) All of the above
- 8) The hardness of cologne stick is determined by the quantity of \_\_\_\_\_.  
a) Sodium Lauryl sulphate  
b) Stearic acid  
c) Palmitic acid  
d) Sodium stearate
- 9) Which of the following herb comes under family Leguminosae?  
a) Orris  
b) Jasmine  
c) Muguet  
d) Acacia

- 10) The higher \_\_\_\_\_ content yield more transparent stick.  
a) Stearic acid                      b) Palmitic acid  
c) Propylene glycol                d) Cetyl alcohol
- 11) The synonym of Muguet is \_\_\_\_\_.  
a) Yellow Cassie                      b) Night jasmine  
c) Kia                                  d) Our lady's tears
- 12) Which of the following groups of organic compounds are least likely to be used in making perfumes?  
a) Alcoholic                              b) Carboxylic acids  
c) Esters                                 d) Aldehydes
- 13) Which of the following agents are used to prevent spoilage in cosmetic products?  
a) Colours                                b) Flavours  
c) Preservatives                        d) Humectants
- 14) The linalool is the active ingredients of the following herbs.  
a) Lavender                              b) Rose  
c) Violet                                 d) Orris

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

- 1) Define specially perfumed products with example.
- 2) Write the biological source and chemical composition of Kewda.
- 3) Give examples of perfumes incorporated in hair oils.
- 4) Define emulsified perfumes with examples.
- 5) Write the biological source and chemical composition of Carnation.

**b) Write a Note on. (Any Two)** **06**

- 1) Alcoholic fragrances with any one formulation.
- 2) Perfuming powders.
- 3) Perfuming skin creams & lotions

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

- 1) Mineral water essences.
- 2) Solid fragrances
- 3) Adaptation of perfumes in nail polishes

**b) Answer the following. (Any One) 06**

- 1) Write down the biological source, properties and chemical composition of cassie and narcissus.
- 2) Give detailed account on incorporation of perfumes/ colours/ flavours in eye preparations.

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

- 1) Write the biological source and chemical composition, uses of Cypress
- 2) What are the factors affecting adaptation of perfumes in soap formulations?
- 3) Write a short note on solubilized fragrances with any one formulation.

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

- 1) What is adaptation of perfumes in nail polishes?
- 2) Write the biological source and chemical composition, uses of muquet.

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

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

Seat No.	
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Set **P****Five Years Integrated (M. Tech) (Semester - VII) (Old) (CBCS)****Examination: March/April-2024****COSMETIC TECHNOLOGY****Cosmetic Technology- V (CT3702)**

Day &amp; Date: Saturday, 11-05-2024

Max. Marks: 70

Time: 11:00 AM To 02:00 PM

- 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.

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

- 1) Rinse-through finishing rinse are useful for:
  - a) Deep conditioning
  - b) Improving the quality of new hair growth
  - c) Protection against breakage
  - d) Detangling hair after washing
- 2) Indigo is obtained from \_\_\_\_\_.
  - a) Banana
  - b) Neem
  - c) Mango
  - d) Peach
- 3) One of the important techniques to make pin curl is \_\_\_\_\_.
  - a) Tying with ribbon
  - b) Shaping
  - c) Pulling
  - d) squeezing
- 4) The main active ingredient or reducing agent in alkaline perm is \_\_\_\_\_.
  - a) Hydrogen peroxide
  - b) Ammonium thioglycolate
  - c) Sodium hydroxide
  - d) Ammonium bromide
- 5) What type of ingredient is added to shampoos to provide a color-protecting effect?
  - a) Silicone
  - b) UV filters
  - c) Vitamin E
  - d) Essential oils
- 6) Quaternary ammonium compounds are included in the formulas of moisturizers for their ability to \_\_\_\_\_.
  - a) Attach to hair fibers
  - b) Detangle the hair
  - c) Promote healing of the scalp
  - d) Penetrate the cortex
- 7) Which oxide is used for permanent coloring of hair?
  - a) Sodium hydroxide
  - b) Hydrogen peroxide
  - c) Monoxide
  - d) Any oxide
- 8) What type of shampoo is typically recommended for individuals with dry or damaged hair?
  - a) Moisturizing shampoo
  - b) Volumizing shampoo
  - c) Clarifying shampoo
  - d) Protein shampoo

- 9) \_\_\_\_\_ is used in tepid perming.
- Calcium hydroxide
  - Calcium oxide
  - Calcium nitrate
  - Sodium hydroxide
- 10) To protect the hair from the harmful effects of blow drying & electric rollers \_\_\_\_\_ are used.
- Scalp conditioners
  - Spray-on thermal products
  - Protein treatment
  - Hair masks
- 11) Hair rinses are classified as \_\_\_\_\_.
- Permanent hair colours
  - Semipermanent hair colour
  - Hair straighteners
  - Hair waving preparations
- 12) Dry shampoo is recommended:
- To make hair shiny
  - For elderly patients
  - For chemical treatment
  - To repair damaged Hair
- 13) Following are the silicones that form a thin layer on the hair without creating appearance of greasy & lump hair, except:
- Cyclomethicone
  - Dimethicone
  - Propylmethicone
  - Amodimethicone
- 14) Resorcinol shows \_\_\_\_\_ activity.
- Antibiotic
  - Antiseptic
  - Antifungal
  - Anticancer

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

- Define hair dyes & enlist types of hair dyes.
- What is aerosol shampoo?
- Define brilliantine.
- Enlist factors affecting colour fading.
- Enlist ideal characters of hair dye.

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

- Hair dye removers.
- Acid balanced shampoo.
- Evaluation of hair setting preparations.

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

- Vegetable hair dyes
- Bleaching of hair
- Hair conditioners

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

- Discuss off-scalp techniques of hair dyeing.
- Write about health hazards associated with para-dyes and their testing.

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

- Write brief note on hair waving preparations & methods of waving.
- Discuss factors influencing colour fading & removal of colour from hairs.
- Explain in detail about pressurized hair styling products.

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

- 1) Discuss in detail safety issues related to shampoo preparations.
- 2) Explain in detail about formulation of permanent hair dyes.

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

- a) Discuss formulation, preparation methods & quality control tests for shampoos.
- b) What are the principle and secondary surfactants in shampoo preparations? Explain their role in formulation of liquid shampoos with examples.
- c) Discuss in detail process hair colouring system and temporary hair dyestuffs.



Set P

## Quality Assurance Techniques (CT3703)

Max. Marks: 70

14

- Page 1 of 3

- 11) \_\_\_\_\_ deals with measurement of intensity of scattered light.  
a) Nephelometry  
b) Turbidimetry  
c) Chromatography  
d) None of the above
- 12) Which of the following is evaluation parameter for face wash?  
a) Determination of Spread ability.  
b) Determination of viscosity.  
c) Determination of pH.  
d) All of the above.
- 13) VMP stands for \_\_\_\_\_.  
a) Validation manufacturing plan  
b) Validation master plan  
c) Validation master procedure  
d) Validation manufacturing procedure
- 14) \_\_\_\_\_ is an ICH guideline for photo stability testing of new products.  
a) ICH Q1 A (R2)  
b) ICH Q1B  
c) ICH Q1C  
d) ICH Q1D

08

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

- 1) What is the difference between validation and qualification?
- 2) What happens at ionization and acceleration stage in mass spectroscopy?
- 3) What do you mean by accelerated testing and intermediate testing in stability study as per ICH?
- 4) Define drop point and viscosity.
- 5) Which are the different columns used in GC.

**B) Write short notes on. (Any Two)**

06

- 1) Write a note on URS.
- 2) Write a note on spectrophotometric evaluation of sunscreen preparation.
- 3) Write a note on testing frequency and storage conditions for general case for stability testing of product as per ICH.

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

08

- 1) Explain the process validation.
- 2) Define chromatography and explain the principle behind gel filtration chromatography.
- 3) Describe the evaluation parameters of soap.

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

06

- 1) Describe the controlled copy.
- 2) Explain the principle and instrumentation of NMR spectroscopy.

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

10

- 1) Write down the storage conditions for products packed in semi-permeable container and products intended for storage in a refrigerator as per ICH.
- 2) Describe the evaluation parameters of tooth paste.
- 3) Explain in detail the FAT.

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

- 1) Add a note on turbidimetry.
- 2) Explain the function of QA.

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

- a) Explain in detail the instrumentation of HPTLC.
- b) Explain in detail stability study as per WHO.
- c) Explain in detail change control and deviation.

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Day & Date: Thursday, 16-05-2024  
Time: 11:00 AM To 02:00 PM

**Instructions:**

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

## 14

- Page 1 of 2

- 11) Aloe Vera belongs to the family of \_\_\_\_\_.  
a) Lythraceae                      b) Umbelliferae  
c) Liliaceae                        d) Melliaceae
- 12) In which herb chemical constituent Squalene is present?  
a) Chandan                          b) Neem  
c) Haldi                             d) None of above
- 13) Which of the following herb belongs to the family Mimosaaceae?  
a) Ritha                              b) Haldi  
c) Shikakai                        d) Aloe
- 14) The Geographical source of Aloe barbadense is \_\_\_\_\_.  
a) South Africa                    b) West Indies  
c) India                              d) All

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

- 1) Give the biological source and uses of cucumber.
- 2) Write biological and geographical sources of henna/Mehendi.
- 3) Define herbal cosmetics and write its advantages.
- 4) Enlist the different methods of sterilization of raw herbs.
- 5) Write the names of any two cosmetic preparations and give uses of aloe and neem.

**B) Answer the following. (Any Two).** **06**

- 1) What are the details required on the label of raw herb?
- 2) Write a short note on Role of herbal ingredients in hair care.
- 3) Write the Biological source, main chemical constituent and cosmetic use of aloe.

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

- 1) Write a note on ambahaldi.
- 2) Write a note on Future scope of Herbal ingredients in Cosmetic Industry.
- 3) Write biological source, geographical source and uses of neem.

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

- 1) Write the Biological source, main chemical constituent and cosmetic use of Babhool.
- 2) Write a note on testing of quality of raw herbs.

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

- 1) Write a note on Bawchi.
- 2) Write a note on Kapurkachari.
- 3) Write biological source, geographical source and uses of nagarmotha.

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

- 1) Write the Biological source, main chemical constituent and cosmetic use of Bramhi.
- 2) Write any four herbs used in hair care along with their biological source.

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

- 1) Write biological source, geographical source and uses of chandan.
- 2) Write a note on the use of herbs in skin care.
- c) Write a note on Preparation of herbal actives in cosmetics for the commercial market.

Seat No.	
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Set **P**

Five Years Integrated (M. Tech.) (Semester - VII) (Old) (CBCS)

Examination: March/April-2024

**COSMETIC TECHNOLOGY****Material Management & Inventory Control (CT3709)**

Day &amp; Date: Saturday, 18-05-2024

Max. Marks: 70

Time: 11:00 AM To 02:00 PM

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

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

- 1) \_\_\_\_\_ means producing maximum variety of product from minimum variety of materials, tools and methods.
  - a) Simplification
  - b) Standardization
  - c) Specification
  - d) None of above
- 2) Identify the different word from given examples below.  
Ointment filling machine, Beeswax, Essential oil, Ointment container
  - a) Ointment filling machine
  - b) Beeswax
  - c) Essential oil
  - d) Ointment container
- 3) Purchase is \_\_\_\_\_.
  - a) Subset of procurement
  - b) Generally, simply buying goods and services
  - c) Receiving goods
  - d) All the above
- 4) Order cost is also known as \_\_\_\_\_.
  - a) Holding cost
  - b) Set up cost
  - c) Standard cost
  - d) None of above
- 5) Law of agency is exclusively covered in \_\_\_\_\_ of Indian Contract Act 1872.
  - a) Section 182
  - b) Section 239
  - c) Section 266
  - d) None of above
- 6) Identify the component of purchasing.
  - a) Sourcing
  - b) Expediting
  - c) Negotiation
  - d) All the above
- 7) Carrying cost does not include \_\_\_\_\_.
  - a) Cost of capital
  - b) Cost of Insurance
  - c) Transportation cost
  - d) Cost of pilferage
- 8) Significant disadvantage of continuous stock taking is \_\_\_\_\_.
  - a) Shutdown of plant is necessary
  - b) Method is highly expensive
  - c) Slow moving material cannot be noted
  - d) None of above
- 9) \_\_\_\_\_ method ensures that, the material is issued at actual cost and the valuation is done at latest price.
  - a) LIFO
  - b) FIFO
  - c) Simple average price
  - d) Replacement cost

- 10) Rough bidder in tendering process can be avoided by \_\_\_\_\_.
  - a) Global tender
  - b) Open tender
  - c) Single tender
  - d) Limited tender
- 11) Negotiation is usually done for \_\_\_\_\_.
  - a) Price
  - b) Inspection
  - c) Freight
  - d) All the above
- 12) In stock valuation process, the variation in price due to different quantities can be overcome by \_\_\_\_\_.
  - a) Weighted average price method
  - b) Periodic average price method
  - c) Simple average price method
  - d) None of above
- 13) \_\_\_\_\_ is written offer to a supplier formally stating all terms and condition of proposed transactions.
  - a) Purchase order
  - b) Sales order
  - c) Bill of material
  - d) Indent
- 14) **Sentence A:** Centralized system is also known as spoke and hub system.  
**Sentence B:** Organizational purchase influenced by cultural factors.
  - a) True; True
  - b) False; False
  - c) False; True
  - d) True; False

**Q.2 A) Answer any Four of the following.**

08

- 1) Write down the functions of store manager.
- 2) Give the format for excess report.
- 3) What is ordering cost? Enlist different cost associated with inventory.
- 4) During valuation of material receipt, what treatment will be given to following items?
  - a) GST
  - b) Insurance charge
- 4) What do you mean by,
  - a) Agreement
  - b) Cost of goods sold

**B) Write short note on any Two of the following.**

06

- 1) Management receipt and Issue control.
- 2) Carrying cost and Ordering cost.
- 3) Consumable items and non-consumable items.

**Q.3 A) Answer any Two of the following.**

08

- 1) Explain reorder point.
- 2) Elaborate standard cost method.
- 3) Describe in brief- Goods received note.

**B) Answer any One of the following.**

06

- 1) Comment, MRP is production planning and inventory control system.
- 2) Discuss in detail, Negotiation.

- Q.4 A) Answer any Two of the following. 10**
- 1) Give objectives of Purchasing, what is individual purchase and organizational purchase?
  - 2) Write down the applications of computers in store management.
  - 3) How inspection of goods is carried out after receiving from vender?
- B) Answer any One of the following. 04**
- 1) What is
    - a) Anticipation inventory
    - b) Dead Stock
    - c) Blanket order
    - d) Capital
  - 2) Write down advantages and disadvantages of JIT.
- Q.5 Answer any Two of the following. 14**
- a) What is open tender, explain different purchasing method.
  - b) How will you control obsolescence? Explain various terms used in waste management. (Related to material)
  - c) Comment on Inventory control.



Seat No.	
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Set **P**

**Five Year Integrated M. Tech. (Semester- VIII) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
Colours in Cosmetics (C) (CT1801)**

Day & Date: Thursday, 09-05-2024  
Time: 03:00 PM To 05:00 PM

Max. Marks: 40

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

**Q.1 Choose the correct alternative.****08**

- 1) Red is a \_\_\_\_\_ colour.
  - a) Warm
  - b) Cool
  - c) Both A) and B)
  - d) None of the above
- 2) What is another name for hue?
  - a) Tone
  - b) Shade
  - c) Tint
  - d) All of these
- 3) Azo dyes are used in \_\_\_\_\_.
  - a) Textile
  - b) Cosmetics
  - c) Food
  - d) All of these
- 4) Which one of the following colours is NOT from mineral origin?
  - a) Ochre
  - b) Azurite
  - c) Lead
  - d) Henna
- 5) A cosmetic product which has as its prime function the ability to complement skin colour by imparting velvet like finish is called \_\_\_\_\_.
  - a) Moisturizing lotion
  - b) Rouge
  - c) Vanishing creams
  - d) Face powder
- 6) \_\_\_\_\_ refers to the process of reducing the particle size of pigments to improve their dispersion color, intensity and texture.
  - a) Micronization
  - b) Coating
  - c) Dispersion
  - d) Purification
- 7) Red dyes are obtained from \_\_\_\_\_ plant.
  - a) Lichen
  - b) Heena
  - c) Dyers bugloss
  - d) all of the above
- 8) The substance that are insoluble in the medium to be colored is known as \_\_\_\_\_.
  - a) Dyes
  - b) Color Lake
  - c) Pigments
  - d) Colorants

- Q.2 Answer any Four of the following. 08**
- a) Classify synthetic colours with examples.
  - b) Write certified colours with their uncertified names.
  - c) Write chemical structures of Berberine and Flavonoids.
  - d) Write down the stability issues of cosmetic formulation.
  - e) Write down the precautions taken during incorporations colors into skin cosmetics.
  - f) Write down the color regulation in India.
- Q.3 Write short notes on of the following. (Any Two) 08**
- a) Colour wheel.
  - b) Natural colours.
  - c) Manufacturing process of cosmetic formulations.
- Q.4 Answer the following. (Any Two) 08**
- a) Elaborate knowledge on colour light.
  - b) Write difference between dyes and pigments.
  - c) Discuss in detail about method of incorporations of color into hair cosmetics.
- Q.5 Answer the following. (Any One) 08**
- a) Write in detail relation between colours with emotions.
  - b) Discuss in detail the preparation methods of color and variations in colour ingredients in cosmetic formulations.

Seat No.	
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Set **P**

**Five Years Integrated M. Tech (Semester - VIII) (New) (CBCS)**  
**Examination: March/April-2024**  
**Cosmetic Technology - VI (CT1802)**

Day & Date: Saturday, 11-05-2024  
 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 Choose the correct alternative.****08**

- 1) When stearic acid combines with potassium hydroxide it will form \_\_\_\_\_.  
 a) Potassium Nitrate                      b) Potassium stearate  
 c) Stearate Carbonate                      d) All of the above
- 2) Lather shaving cream normally contains \_\_\_\_\_ to \_\_\_\_\_ % soaps.  
 a) 25 to 30                                      b) 30 to 50  
 c) 35 to 40                                      d) 20 to 35
- 3) Tooth paste contains \_\_\_\_\_.  
 a) Sodium Hydroxide                      b) Calcium Carbonate  
 c) Potassium Nitrate                      d) None of the above
- 4) Ultraviolet radiation comprises wavelengths between \_\_\_\_\_ and \_\_\_\_\_.  
 a) 250nm and 400nm                      b) 290nm and 400nm  
 c) 400nm and 770nm                      d) 320nm and 290nm
- 5) From the following which is not foot ailment?  
 a) Corns    b) Calluses  
 c) Bunions                                      d) None of the above
- 6) Shaving preparations are classified as \_\_\_\_\_.  
 a) Pre shave and post shave preparations  
 b) Depilatories and epilatories  
 c) Lather shaving creams and brushless shaving creams  
 d) Softeners and lubricants
- 7) Cuticle creams \_\_\_\_\_ the cuticle.  
 a) Soften    b) Harden  
 c) Irritate    d) Flake
- 8) Potassium hydroxide is an ingredient of \_\_\_\_\_.  
 a) Soap    b) Cuticle remover  
 c) Both of these                                  d) None of these

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

- a) What are shaving preparation? Give their examples.
- b) Give any 4 basic requirements of dentrifices.
- c) Define sunscreen and suntan preparations along with example.
- d) What are foot creams? Give examples.
- e) Give the advantages and disadvantages of suntan preparations.
- f) Define mouthwash along with example.

- Q.3 Write Notes. (Any Two)** **08**
- a) Write a note on Corn and Collus preparations.
  - b) What is the effect of SPF factor on skin?
  - c) Give the formula & preparation of brushless shaving cream.
- Q.4 Answer the following questions. (Any Two)** **08**
- a) How tooth paste are formulated.
  - b) What are preelectric shave lotion, shave gel stick & shave powder?
  - c) What are solar radiations? How it will affect on skin?
- Q.5 Answer the following question. (Any One)** **08**
- a) Describe in detail about manicure preparations.
  - b) Describe in brief about tooth paste including basic structure & their formulations.

Seat No.	
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## COSMETIC TECHNOLOGY

## Cosmeceuticals Microbiology (CT) (CT1803)

Max. Marks: 40

Time: 03:00 PM To 05:00 PM

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

08

- 1) Flagella in bacteria enable them to \_\_\_\_\_ to bacteria.  
a) Reproduce                                      b) Locomote  
c) Thrive in nutrient                          d) Adhere to tissue surfaces
- 2) \_\_\_\_\_ yeast can be used for production of ethanol.  
a) *Saccharomyces cerevisiae*                b) *Candida milleri*  
c) *Eremothercium ashbyi*                     d) *Candida utilis*
- 3) \_\_\_\_\_ is used for sterilizing inoculating loops.  
a) Flaming    b) Incineration  
c) Hot air oven                                    d) steam
- 4) \_\_\_\_\_ is the quickest way to sterilize solutions without heating.  
a) Filtration                                      b) Incineration  
c) Hot air oven                                    d) Radiation
- 5) Name the type of bacteria which uses reduced inorganic substance as an electron source.  
a) Autotrophs                                      b) Chemotrophs  
c) Photoorganotrophs                          d) Lithotrophs
- 6) Purple and green non sulphur bacteria belong to which of the following classes?  
a) Photolithoautotrophy                      b) Photoorganoheterotrophy  
c) Chemolithoautotrophy                      d) Chemoorganoheterotrophy
- 7) The common yeast *Schizosaccharomyces* follows \_\_\_\_\_ type of asexual reproduction methods.  
a) Fragmentation                                      b) Budding  
c) Binary fission                                    d) Spore formation
- 8) \_\_\_\_\_ is the protein shell that envelops the viral genome.  
a) Nucleic acid                                      b) Outer envelope  
c) Capsomere                                      d) Capsid

- Q.2 Answer any Four of the following questions. 08**
- a) Write down the classification of bacteria.
  - b) Write down the general characteristics of protozoa.
  - c) Define the following term a) Sterilization b) Disinfectant.
  - d) Write down factors influencing antimicrobial activity.
  - e) Write down the types of media.
  - f) Define perseveration and enlist the efficacy testing methods.
- Q.3 Write Notes on (Any Two) 08**
- a) Morphology of yeast
  - b) Moist heat sterilization.
  - c) Synthetic media
- Q.4 Answer the following (Any Two) 08**
- a) Discuss in detail isolation and identification of gram +ve and gram -ve bacteria.
  - b) Write in detail factors related influencing the organism being killed.
  - c) Explain in detail aerobic plate count.
- Q.5 Answer the Following (Any One) 08**
- a) Explain in detail general and morphological characteristic of algae and moulds.
  - b) Discuss in detail of fungal classification and give brief explanation about efficacy testing of preservatives.

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Set **P**

**Five Year Integrated M. Tech. (Sem-VIII) (New) (CBCS) Examination:  
March/April-2024**

**COSMETIC TECHNOLOGY  
Herbal Cosmetics – II (CT1804)**

Day & Date: Thursday, 16-05-2024  
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) \_\_\_\_\_ content of orange peel is responsible for counteract sun damage.
  - a) Hesperidin
  - b) Pectin
  - c) Annonaine
  - d) Annonacin
- 2) \_\_\_\_\_ means to concentrate by boiling.
  - a) Decoction
  - b) Maceration
  - c) Enflurage
  - d) None of the above
- 3) The neem oil contains \_\_\_\_\_.
  - a) Nimbin
  - b) Nimbidin
  - c) Nimbidol
  - d) All of the above
- 4) Identify the ingredient used in herbal hair tonic.
  - a) Tulsi oil
  - b) Fenugreek
  - c) Jatamansi
  - d) All the above
- 5) Kesar belongs to family \_\_\_\_\_.
  - a) Iridaceae
  - b) Lamiaceae
  - c) Umbelliferae
  - d) None of above
- 6) Hibiscus belongs to family \_\_\_\_\_.
  - a) Meliaceae
  - b) Malvaceae
  - c) Asteraceae
  - d) None of the above
- 7) The solvent used in the maceration is called as \_\_\_\_\_.
  - a) Marc
  - b) Menstruum
  - c) Pomade
  - d) Supercritical fluid
- 8) \_\_\_\_\_ belongs to family Fabaceae.
  - a) Orange
  - b) Carrot
  - c) Lotus
  - d) Palash

**Q.2 Answer any Four of the following: 08**

- a) Define extraction and marc.
- b) Write down the cosmetic uses of Arnica.
- c) Write down the biological source of Grape fruit.
- d) Give the Biological source and cosmetic uses of Raktachandan.
- e) Write down the chemical constituents of Curry leaves.
- f) Give the Biological source and chemical constituent of Lemon (Lemon peel).

- Q.3 Write short notes on any Two of the following. 08**
- a) Write a short note on Bhringraj.
  - b) Write a short note on Papaya.
  - c) Write a short note on decoction and infusion method of extraction.
- Q.4 Answer any Two of the following: 08**
- a) Explain the percolation method of extraction.
  - b) Write down the biological source, chemical constituents and cosmetic uses of Pomegranate.
  - c) Give biological and geographical source, chemical constituents and cosmetic uses of Tulsi.
- Q.5 Answer any one of the following: 08**
- a) Write down the biological source, chemical constituents and uses of Seetaphal.
  - b) Explain preparation of polyherbals cream (cream containing at least 3-4 plant extract along with extraction procedure).



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**Five Years Integrated M. Tech. (Semester - VIII) (New) (CBCS)****Examination: March/April-2024****COSMETIC TECHNOLOGY****Management and Organizational Behavior (CT1808)**

Day & Date: Saturday, 18-05-2024  
 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 Multiple choice questions.****08**

- 1) Behavioural approach is also known as \_\_\_\_\_.  
 a) Neoclassical approach                      b) Scientific approach  
 c) Modern Approach                              d) Administrative approach
- 2) Identify the different word from given group below.  
 Commission, Profit sharing, Group Incentives, Bonus  
 a) Commission                                      b) Profit sharing  
 c) Group Incentives                                d) Bonus
- 3) Identify the characteristic of strategic planning \_\_\_\_\_.  
 a) It is Futuristic and proactive approach  
 b) It reflects future of organization  
 c) It is detailed planning which include SWOT analysis  
 d) All the above
- 4) Quality circle also called as \_\_\_\_\_.  
 a) Effective team                                      b) Problem solving team  
 c) Committee    d) Process team
- 5) The particular goal chosen by an individual will depend on \_\_\_\_\_.  
 a) Biological capability  
 b) Personal experience and learning influences  
 c) Cultural norms and values  
 d) All the above
- 6) The work of manager begins with the setting of \_\_\_\_\_.  
 a) Staff    b) Plan  
 c) Objective    d) Supervision
- 7) In industry, some activities cannot be standardized /specifies, for such cases the standard may be derived from \_\_\_\_\_.  
 a) Past cases/experience  
 b) Statistical method  
 c) Benchmarking (best possible industrial practices)  
 d) All the above
- 8) Sentence A: Budget is planning and controlling device.  
 Sentence B: Budgetary control is essence of finance and it is done for all aspects of business such as income, production, revenue etc.  
 a) False; True    b) True; False  
 c) False; False    d) True; True

- Q.2 Answer any four of the following. 08**
- a) Explain departmentation by product.
  - b) Define motivation, give its types.
  - c) What do you mean by 1) Hygiene factor 2) Job enrichment?
  - d) What is quality circle, enlist its components.
  - e) Explain any two formal groups.
  - f) Explain Standardization. (A 3rd pillar in KAIZEN).
- Q.3 Write short note on any two of the following. 08**
- a) Management V/s Administration.
  - b) Nature of Planning.
  - c) Importance of Motivation
- Q.4 Answer any two of the following. 08**
- a) Explain different quality circle techniques.
  - b) Explain 'Maslow's Need Hierarchy' theory.
  - c) Write neo classical approach.
- Q.5 Answer any one of the following.**
- a) 1) Remuneration and division of work as principles of administrative theory. **03**  
2) Comment on delegation of Authority. **05**
  - b) 1) Differentiate between CPM and PERT. **03**  
2) Explain McGregor's participation theory. **05**

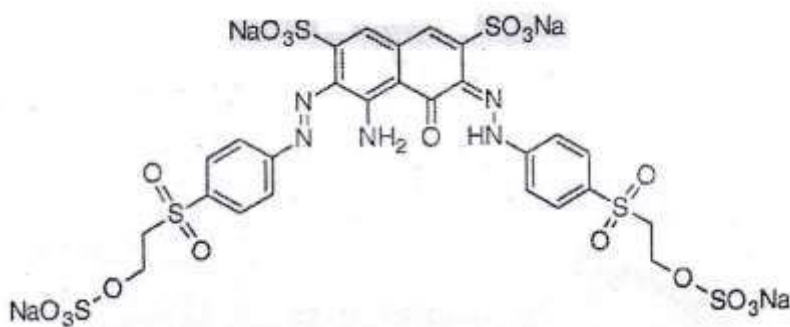
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## Max. Marks:70

**Instructions:** 1) All questions are compulsory.  
2) Figures to the right indicate full marks.  
3) Draw a neat diagram and equations wherever necessary.

## 14

- 1) Acidic dyes are mainly used in \_\_\_\_\_.
  - a) Wool
  - b) Silk
  - c) Nylon
  - d) All of the above
- 2) Indigo dye comes under \_\_\_\_\_.
  - a) Azoic dyes
  - b) Disperse dyes
  - c) Vat dyes
  - d) Sulfur dyes
- 3) Which of these colors is chemically basic in nature?
  - a) Methylene blue
  - b) Basic red
  - c) Basic brown
  - d) All of the above
- 4) Name the following structure \_\_\_\_\_.



- a) Vat green 6
  - b) Reactive black 5
  - c) Disperse red 17
  - d) Methylene blue
- 5) What are the disadvantages of Synthetic dyes?
- a) Many carcinogenic affect
  - b) Expensive
  - c) Most are not biodegradable
  - d) Both a & c
- 6) What is the right chemical formula for Alizarin?
- a)  $C_{14}H_{12}O_4$
  - b)  $C_{12}H_4O_8$
  - c)  $C_{14}H_8O_4$
  - d) None of the above
- 7) What color does indigotin represent?
- a) Red dye
  - b) Black dye
  - c) Green dye
  - d) Blue dye
- 8) The measurement of colors is the \_\_\_\_\_.
- a) quantum process
  - b) qualitative process
  - c) quantitative process
  - d) None of the above

- 9) What is the best method for color determination?
  - a) Spectrophotometry
  - b) Colorimeters
  - c) Human eye
  - d) None of the above
- 10) What are the causes in shade variation in Cosmetic preparation?
  - a) Variations in the colour of ingredients
  - b) Variations in the manufacturing process
  - c) Quality of Ingredients
  - d) All of the above
- 11) What are the manufacturing processes that affect variations in the cosmetic formulation?
  - a) Grinding
  - b) Mixing and sifting
  - c) Pouring
  - d) Both a & b
- 12) What instruments do you use to measure the amount of colour?
  - a) Colorimeter
  - b) FTIR Spectroscopy
  - c) Ultraviolet-visible spectroscopy
  - d) All of the above
- 13) What factors influence the variation from one batch to another in the cosmetic preparation?
  - a) pH
  - b) Light
  - c) Temperature
  - d) All of the above
- 14) What factors influence consumers selection of cosmetic brands?
  - a) Product quality
  - b) Price
  - c) Product packaging
  - d) All of the above

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

- 1) What is the intensity of chroma?
- 2) Is chroma the same as value?
- 3) How are tints of a color made?
- 4) Why do artists use a color wheel?
- 5) Define Lake Colours.

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

- 1) Write a note on Hiding Power of colour.
- 2) What is meant by FDA certified colors? And explain its types.
- 3) Explain in detail Sad colors, Calming colors and Energizing colors.

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

- 1) Which properties are ideal for dyes?
- 2) Write a note about knowing colour and light.
- 3) Write a note on Color Theory.

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

- 1) What are the disadvantages of Natural dyes?
- 2) Draw the structure of
  - i) Reactive black 5
  - ii) Methylene blue
  - iii) Vat green 6

- Q.4 A) Answer the following. (Any Two) 10**
- 1) What is the process of Recognizing Colors?
  - 2) Write a note about understanding color and light?
  - 3) Enlist any five examples of Disperse dyes.
- B) Answer the following. (Any One) 04**
- 1) How do colors and emotions relate to each other? And explain the Cool colors and Happy colors.
  - 2) Write a note on Colour Matching.
- Q.5 Answer the following. (Any Two) 14**
- a) Define colors and explain in detail about Natural dyes.
  - b) Write in detail advantages and disadvantages of Synthetic dyes.
  - c) Which factors affect the colour of the ingredients?

<b>Seat No.</b>	
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**Five Years Integrated M. Tech. (Semester - VIII) (New/Old) (CBCS)**

**Examination: March/April-2024**

## COSMETIC TECHNOLOGY

## Cosmetic Technology – VI (CT3803)

Day & Date: Saturday, 11-05-2024

Max. Marks:70

Time: 03:00 PM To 06:00 PM

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

### Q.1 Multiple choice questions.

14

- 1) Non-alcoholic aftershave lotion contains the following except \_\_\_\_\_.  
a) Astringent                      b) Denaturants  
c) Emollient                        d) Antiseptic agent
- 2) \_\_\_\_\_ in toothpaste is used to prevent drying out.  
a) Humectant                        b) Emulsifier  
c) Abrasive                          d) Plasticizer
- 3) \_\_\_\_\_ acid is used in brushless shaving cream.  
a) Stearic acid                        b) HCl  
c) Sulphuric acid                     d) None of the above
- 4) The first effect of sunlight is the erythema of skin followed by formation of \_\_\_\_\_.  
a) Tan                                  b) Wrinkle  
c) Acne                                d) Pimple
- 5) Patch test is well established method of diagnosing \_\_\_\_\_.  
a) Efficacy of cosmetic preparation  
b) Contact dermatitis  
c) Colour match test  
d) Spreadability of skin creams
- 6) Shaving preparations are classified as \_\_\_\_\_.  
a) Preshave & post shave preparation  
b) Depilatories & epilatories  
c) Lather shaving cream & brushless shaving cream  
d) Softeners & lubricants
- 7) Nitrocellulose in nail lacquers is a \_\_\_\_\_.  
a) Secondary film former            b) Primary film former  
c) Plasticizer                          d) Emulsifier
- 8) Which of the following are sunscreens agents?  
a) Zinc oxide                          b) Hydroquinone  
c) Talc                                 d) All of the above
- 9) Calcium carbonate in tooth powder is \_\_\_\_\_.  
a) Abrasive                            b) Detergent  
c) Foaming agent                      d) Flavour

- 10) Which one of the following is the primary component of nails?
  - a) Alpha keratin
  - b) Dermis
  - c) Omega 3
  - d) None of the above
- 11) What is the most common type of nail polish?
  - a) Gel polish
  - b) Shellac polish
  - c) Acrylic polish
  - d) Laquor polish
- 12) The main ingredient used in cuticle creams are \_\_\_\_\_.
  - a) Nitrocellulose
  - b) Lanolin
  - c) SLS
  - d) Both a & b
- 13) Erythrasma, a common bacterial infection of foot is caused by \_\_\_\_\_.
  - a) Staphylococcus aureus
  - b) E. coli
  - c) Corynebacterium minutissimum
  - d) All of the above
- 14) Excessive friction & pressure on certain parts of the feet can result in \_\_\_\_\_.
  - a) Warts
  - b) Corns & calluses
  - c) Athlete's foot
  - d) None of the above

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

- 1) Write functions of dentifrices.
- 2) What is nail whitener?
- 3) Give a formula of shaving cream.
- 4) Give some marketed examples of mouthwash.
- 5) Define sunscreen & SPF.

**b) Write a Note on. (Any Two) 06**

- 1) Abrasives used in tooth paste
- 2) Athlete's foot
- 3) Palliative sunscreen preparations

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

- 1) Write about choice of antibiotics used in mouthwash.
- 2) Write a note on beard softening.
- 3) Give details of cuticle remover.

**b) Answer the following. (Any One) 06**

- 1) Write about principle of effectiveness of sunscreen
- 2) Give detailed account on foot powders & spray.

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

- 1) Write a note on dental problems.
- 2) Write a note on nail Whiteners & straighteners.
- 3) Give information about aftershave lotion.

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

- 1) Write benefecial & adverse effects of sunlight on human body.
- 2) Write a note on nail lacquer.

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

- a) Write in detail about tooth powder.
- b) Give ideal properties of shaving preparations & classify them in detail.
- c) Describe about foot wear for healthy feet.

Seat No.	
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Set **P**

Five Year Integrated M. Tech. (Semester- VIII) (New) (Old) (CBCS)

Examination: March/April-2024

**COSMETIC TECHNOLOGY****Cosmeceuticals Microbiology (CT3804)**

Day &amp; Date: Tuesday, 14-05-2024

Max. Marks: 70

Time: 03:00 PM To 06:00 PM

**Instructions:** 1) Q. No 1 is compulsory.  
2) Figures to the right indicate full marks.

**Q.1 Choose the correct alternative.****14**

- 1) \_\_\_\_\_ term is used to-describe the reduction in numbers of pathogenic organisms on objects or in materials so that they do not pose a disease threat.
  - a) Lyophilization
  - b) Sterilization
  - c) Disinfection
  - d) Decontamination
- 2) The active antimicrobial ingredient in bleach is \_\_\_\_\_.
  - a) Phenol
  - b) Hydrochloride
  - c) Hypochlorite
  - d) Iodine
- 3) Culture medium used for growth of fungi is \_\_\_\_\_.
  - a) Nutrient agar medium
  - b) Sabouraud's Dextrose medium
  - c) EMB agar
  - d) MacConkey's agar
- 4) \_\_\_\_\_ Statement is about endospores is true.
  - a) Endospore formation in some bacteria occurs because of environmental stressors such as limiting nutrient or extremes in pH.
  - b) Endospore formation in bacteria is a means of reproduction.
  - c) When favorable conditions are restored, endospores undergo germination or development into a vegetative cell.
  - d) Both a and d
- 5) Bacteriological media that are composed of ingredients whose exact chemical composition are known are called:
  - a) Designated
  - b) Exact
  - c) Defined
  - d) Selective
- 6) Heat-sensitive materials (rubber and plastic) and bulky materials (mattresses) can be sterilized using \_\_\_\_\_.
  - a) Dry heat
  - b) Autoclaving
  - c) UV radiation
  - d) Gaseous ethylene oxide
- 7) Viruses that infect bacteria are called as \_\_\_\_\_.
  - a) Satellites
  - b) Bacteriophages
  - c) Bacteriocins
  - d) Bacterivores
- 8) A common polyhedral capsid shape of viruses is known as \_\_\_\_\_.
  - a) Pentagon
  - b) Cube
  - c) Icosahedron
  - d) Pyramid
- 9) Protozoans are also known as \_\_\_\_\_.
  - a) Plant like protists
  - b) Animal like Protists
  - c) Slime Moulds
  - d) Dinoflagellates



- 10) The bread Mold *Rhizopus stolonifera* belongs to which of the following fungal divisions?
  - a) Ascomycota
  - b) Deuteromycete
  - c) Oomycote
  - d) Zygomycota
- 11) Inclusion bodies or storage bodies found in Algae are known as \_\_\_\_\_.
  - a) Pyrenoids
  - b) Negri bodies
  - c) Magnetosomes
  - d) Carboxysomes
- 12) Bacterial fimbriae present on the outer cell surface are used for \_\_\_\_\_.
  - a) Cellular motility
  - b) Adherence to surfaces
  - c) Cell wall synthesis
  - d) Production of ATP
- 13) The symbiotic association between fungi and the roots of plants is \_\_\_\_\_.
  - a) Rhizosphere
  - b) Phyto sphere
  - c) Mycorrhizae
  - d) Lichen
- 14) Blood agar is often used to observe changes in the appearance of the agar around the colonies growing on this medium. This medium could then be called as \_\_\_\_\_.
  - a) Selective
  - b) Designated
  - c) Differential
  - d) Defined

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

- 1) Enlist the organisms and culture media involved in Preservative efficacy testing as per USP.
- 2) What is Bacterial capsule and Slime layer?
- 3) Define CFU.
- 4) What are Preservatives. Give two examples of Chemical Preservatives.
- 5) Mention the components of MacConkey agar.

**B) Writ notes on. (Any Two) 06**

- 1) Microbial control using Autoclave.
- 2) Radiation and its types.
- 3) What are antibiotics, explain action of Mechanism of Streptomycin.

**Q.3 A) Answer the following. (Any two) 08**

- 1) General characteristics of Yeast and Mould.
- 2) What is Flagella? Explain its Arrangement and function.
- 3) Write a note on serial dilution technique.

**B) Answer the following. (Any one) 06**

- 1) Maintenance and Preservation of Pure culture.
- 2) Discuss the various methods of enumeration of Microorganisms.

**Q.4 A) Answer the following. (Any two) 10**

- 1) Discuss Nutritional classification in Bacteria.
- 2) What are ciliates? Explain using one example.
- 3) What are disinfectants and factors related to action of Disinfectants.

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

- 1) Explain Enrichment culture technique.
- 2) What are inclusion Bodies in Bacteria? Explain using examples.

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

- a) What is culture media. Explain Synthetic and Non- Synthetic media.
- b) Discuss in details Stain and Staining techniques.
- c) Discuss Life cycle of Virus.

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Set **P**

**Five Years Integrated M. Tech (Semester - VIII) (New/Old) (CBCS)**  
**Examination: March/April-2024**  
**COSMETIC TECHNOLOGY**  
**Herbal Cosmetics-II (CT3805)**

Day & Date: Thursday, 16-05-2024  
 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 the correct alternative****14**

- 1) Herbal cosmetics are the preparations, which represent cosmetics associated with \_\_\_\_\_.  
 a) bioactive ingredients or pharmaceuticals.  
 b) non bioactive ingredients or pharmaceuticals.  
 c) synthetic ingredients or pharmaceuticals.  
 d) none
- 2) The active principle limonene in orange peel is targeted in which part of the plant?  
 a) mericarp  
 b) pericarp  
 c) rhizome  
 d) seed
- 3) The family of Lemonis \_\_\_\_\_.  
 a) Rutaceae  
 b) Leguminosae  
 c) Lauraceae  
 d) Liliaceae
- 4) The potential source of vitamin C is present in \_\_\_\_\_.  
 a) Citral  
 b) Citron  
 c) Citrus  
 d) Citrum
- 5) Crocin is the chief colouring principle of \_\_\_\_\_.  
 a) Indian saffron  
 b) Saffron  
 c) Honey  
 d) Lotus
- 6) Daucuscarota is the official source of which plant grown underground \_\_\_\_\_.  
 a) Onion  
 b) Carrot  
 c) Potato  
 d) Tapioca
- 7) The synonym of Grapefruit is \_\_\_\_\_.  
 a) Prohibited fruit  
 b) Passion fruit  
 c) Formidable fruit  
 d) Forbidden fruit
- 8) Nymphaceae is the family of \_\_\_\_\_.  
 a) Kamal  
 b) White lily  
 c) Lotus  
 d) All of these
- 9) Luteolin. Apigenin are the chief constituents of \_\_\_\_\_.  
 a) False daisy  
 b) True daisy  
 c) Bhingraj  
 d) both a & c

- 10) In Indian culture, Holy basil is known as \_\_\_\_\_ herb.
  - a) Tulsi
  - b) Turmeric
  - c) both a & b
  - d) Sandalwood
- 11) Which herb has multiple benefits according to Ayurveda as *Rasayani*, *Pushtida*?
  - a) Tulsi
  - b) Akarkara
  - c) Carrot
  - d) all of these
- 12) Beetroot belongs to the family of \_\_\_\_\_.
  - a) Rutaceae
  - b) Rubiaceae
  - c) Chenopodiaceae
  - d) Cascaraceae
- 13) Baby products are used on infants & children below the age of \_\_\_\_\_.
  - a) 1
  - b) 3
  - c) 5
  - d) 7
- 14) Herbal cosmetics are also called as \_\_\_\_\_.
  - a) Mineral cosmetics
  - b) Natural cosmetics
  - c) both
  - d) none

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

- 1) Define Herbal cosmetics.
- 2) Name different dosage forms used as Herbal cosmetics.
- 3) What are the three basic approaches for proper skin care?
- 4) Define extraction. Classify different methods of extraction.
- 5) Write any two uses of Raktachandan.

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

- 1) Discuss the pharmacognostic scheme (synonym, biological source, family, uses) of Hibiscus.
- 2) Give a formula to prepare herbal powder for protection against itchy back.
- 3) Give different uses of Carrot for skin care.

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

- 1) How will you extract active constituents from Tulsi / Holy basil?
- 2) Discuss the preparation of Hair oil incorporating herbal actives with a proper formula & method of preparation.
- 3) Discuss the pharmacognostic scheme (synonym, biological source, chemical constituents, family, uses) of Papaya.

**b) Answer the following. (Any One) 06**

- 1) What are hair- tonics? How will you prepare a tonic using herbal ingredients?
- 2) Discuss the pharmacognostic scheme (synonym, biological source, chemical constituents, family, uses) of any one hair care cosmetic.

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

- 1) Discuss Soxhlet method of extraction of herbal actives.
- 2) Discuss the scope of studying "Herbal Cosmetics".
- 3) Discuss the pharmacognostic scheme (synonym, biological source, chemical constituents, family, uses) of Pomegranate.

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

- 1) Discuss the pharmacognostic scheme (synonym, biological source, chemical, constituents, family, uses) of Majistha.
- 2) How will you prepare Cold cream containing aloe vera gel?

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

- a)** How Volatile oils are prepared?
- b)** Discuss the pharmacognostic scheme (synonym, biological source, chemical constituents, family, uses) of Palash.
- c)** Discuss the pharmacognostic scheme (synonym, biological constituents, family, uses) of Umber.

<b>Seat No.</b>	
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# Management and Organizational Behavior (CT3808)

Max. Marks: 70

14

- Page 1 of 3

- 8) A means of getting a large number of ideas from a group of people in a very short time is known as \_\_\_\_\_.
  - a) Histogram
  - b) Pareto Analysis
  - c) Talent hunting
  - d) Brainstorming
- 9) Break Even Analysis is \_\_\_\_\_.
  - a) The point beyond which the industry cannot produce its products
  - b) The point at which industry has highest profit
  - c) The point at which industry has lowest profit
  - d) A point where Industry has no loss, no profit condition
- 10) Control is needed for \_\_\_\_\_.
  - a) Achievement the targets
  - b) Monitoring and improving employee's performance
  - c) Minimizing the errors
  - d) All the above
- 11) Float is \_\_\_\_\_.
  - a) Spare funds
  - b) Spare Time
  - c) Spare Product
  - d) Spare Inventory
- 12) Following are the examples of extrinsic motivation except.
  - a) Attitude
  - b) Rewards
  - c) Punishments
  - d) Leadership styles
- 13) \_\_\_\_\_ are the primary energizers of behavior.
  - a) Motives
  - b) Leadership
  - c) Controlling
  - d) Attitude
- 14) Content theories emphasize on the idea that motivation depends upon the \_\_\_\_\_.
  - a) Individual needs
  - b) Organizational need
  - c) Society Need
  - d) None of above

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

- 1) Explain the term Scalar Chain.
- 2) Explain in short about Illumination Experiment.
- 3) Explain sources of Authority.
- 4) What do you mean by Control and Quality Circle?
- 5) State different kinds of motivation.

**B) Write Notes on. (Any Two)** **06**

- 1) Differentiate between Motivation and Inspiration.
- 2) Explain the features of Quality circle.
- 3) Write advantages and disadvantages of Job Enlargement.

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

- 1) Explain meaning of Unity of Command, Division of Work, Unity of Direction?
- 2) Explain Herzberg Two-Factor theory.
- 3) What do you mean by Job Enrichment?

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

- 1) Write Neo Classical approach.
- 2) Explain different types of waste present in Industry as per KAIZEN?

- Q.4 A) Answer the following. (Any Two) 10**
- 1) Define Group and elaborate its different types.
  - 2) Explain the importance of Motivation in cosmetic industry.
  - 3) Write a note on different types of planning.
- B) Answer the following. (Any One) 04**
- 1) Explain Principles of Delegation of Authority.
  - 2) Write down merits and demerits of Centralization of Power.
- Q.5 Answer the following. (Any Two) 14**
- a) Define Team and state different types of Team.
  - b) Elaborate in detail about steps of Planning.
  - c) Explain in detail about process of controlling.

P

## Advance Cosmetic Technology – I (CT3901)

Max. Marks: 70

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

## 14

- 1) Identify the unit operation \_\_\_\_\_.  
a) Compaction  
b) Adsorption  
c) Moulding  
d) All the above
- 2) If cosmetic contain potentially allergic substance (Listed in Annex III of EU Directive) manufacturer has to declare its presence on label when present in higher concentration than \_\_\_\_\_ for product remain on the skin.  
a) 0.001 %  
b) 0.01 %  
c) 0.1 %  
d) 0.05 %
- 3) Identify the self-preservative substance used in the cosmetic formulations.  
a) Lactic acid  
b) Tea tree oil  
c) Caprylyl alcohol  
d) All the above
- 4) Absorption of medicaments is better from \_\_\_\_\_.  
a) Mineral oil  
b) W/O emulsions  
c) Benzene  
d) Water insoluble vehicle.
- 5) \_\_\_\_\_ was the first molecule designed as penetration enhancer.  
a) DMSO  
b) DMF  
c) Azone  
d) DCMS
- 6) Identify the different example of coating material used as coating material in microencapsulation process.  
a) Ethyl cellulose  
b) Polyethylene  
c) Silicon  
d) Polyvinyl acrylate
- 7) Eau de perfume contain \_\_\_\_\_ % of aromatic compound.  
a) 1-5  
b) 5-15  
c) 15-20  
d) 25-30
- 8) Following are the statements related with French Pressure Cell, except.  
a) Temperature of the system is difficult to achieve  
b) Working volume is relatively small  
c) Liposome size obtained is relatively small as compared with sonication method  
d) It is rapid and reproducible method



- 9) Fullerenes are \_\_\_\_\_.
  - a) A spherical cages containing 28 to more than 100 carbon atoms of  $C_{60}$
  - b) A thin Monolayer film having size 1-100 nm
  - c) A cylindrical structure of hexagonal network of carbon atom
  - d) None of above
- 10) Following are the examples of antimicrobial preservatives except.
  - a) Benzoic acid
  - b) Methyl parabene
  - c) Phenoxyethanol
  - d) BHA
- 11) A microencapsulation process, where the direct polymerization of single monomer is carried out at the particle surface is known as \_\_\_\_\_.
  - a) In situ polymerization
  - b) Interfacial polymerization
  - c) Cross linking Polymerization
  - d) None of above
- 12) Following group is general classification of perfume, identify the different class.
  - a) Woody
  - b) Leather
  - c) Chypre
  - d) Citrus
- 13) In 2014 EU commission banned \_\_\_\_\_.
  - a) Isopropyl paraben
  - b) Isobutyl paraben
  - c) Phenyl paraben
  - d) All the above
- 14) As per COSMOS water must comply with hygienic standard \_\_\_\_\_.
  - a) CFU less than 50/ml
  - b) CFU less than 100/ml
  - c) CFU less than 200/ml
  - d) None of above

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

- 1) Name the bacteria for which the microbial test for water is done.
- 2) Give the ideal properties of humectant.
- 3) Comment on personnel source of contamination.
- 4) Give limitations of nanoparticles.
- 5) Draw neat labeled diagram of double shaft paddle mixture.

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

- 1) Origin and processing of ingredients as per COSMOS.
- 2) Benefit and drawbacks of natural preservatives.
- 3) Composition of perfume.

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

- 1) What are parabens? Why they are popular as preservatives?
- 2) Describe microencapsulation by solvent evaporation.
- 3) Explain control of microbial contamination in cosmetic manufacturing.

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

- 1) Give challenges in formulating herbal cosmetics.
- 2) Define penetration enhancers; give its ideal properties along with advantages and disadvantages.

- Q.4 A) Answer the following. (Any Two) 10**
- 1) Discuss coacervation phase separation method of microencapsulation.
  - 2) Sizing of lipid suspension by French Pressure Cell.
  - 3) Discuss physical penetration enhancement.
- B) Answer the following. (Any One) 04**
- 1) What is moulding? Give methods of preparation of compacts.
  - 2) What is mixing? Give types of mixtures.
- Q.5 Answer the following. (Any Two) 14**
- a) Give ideal properties of preservatives along with factors effecting on action of preservatives.
  - b) Explain preparation of liposomes by lipid film hydration.
  - c) Comment on nano sized identifiable material used in cosmetics.

Seat No.	
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**Five Year Integrated (M. Tech) (Semester - IX) (New) (CBCS)****Examination: March/April-2024****COSMETIC TECHNOLOGY****Advanced Cosmetic Technology - II (CT3902)**

Day &amp; Date: Wednesday, 22-05-2024

Max. Marks: 70

Time: 11:00 AM To 02:00 PM

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

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

- 1) Core material in Microcapsules exist in \_\_\_\_\_ form.
  - a) Solid
  - b) Liquid
  - c) Both A) and B)
  - d) None of the above
- 2) \_\_\_\_\_ is an example of film former used in nail polish formulation.
  - a) Dibutyl Pthalate
  - b) Xylene
  - c) Cellulose Nitrate
  - d) Ethyl Acetate
- 3) Nail paint removers are also known as \_\_\_\_\_.
  - a) Nail washers
  - b) Nail cleansers
  - c) Both A) and B)
  - d) None of the above
- 4) For sustained drug release following are used.
  - a) Injectables
  - b) Microcapsules
  - c) Shampoos
  - d) Creams
- 5) In spray congealing, \_\_\_\_\_ air is passed in chamber.
  - a) Hot air
  - b) Cold air
  - c) Both A) and B)
  - d) None of the above
- 6) Gelling agents are also known as \_\_\_\_\_.
  - a) Gelators
  - b) Co-agulants
  - c) Formulators
  - d) Promoters
- 7) Sunlight accelerates expiration of cosmetics. This statement about cosmetics is \_\_\_\_\_.
  - a) True
  - b) False
  - c) None of the above
  - d) All of these
- 8) Mascara is applied while \_\_\_\_\_ for better results.
  - a) Traveling on a bus
  - b) Walking in garden
  - c) Steady position
  - d) None of the above
- 9) Which of the following methods used evaluation of microcapsule?
  - a) SEM
  - b) XRD
  - c) In- vitro drug release
  - d) All of these
- 10) Which of the following is NOT type of microcapsule?
  - a) Mono core
  - b) Poly core
  - c) Matrix
  - d) None of theses

- 11) In preparation of Neosomes, what type of surfactants are used?
  - a) Cationic
  - b) Non-ionic
  - c) Anionic
  - d) Ionic
- 12) Liposomes are composed of Phospholipids, \_\_\_\_\_ and Drug molecules.
  - a) Cholesterol
  - b) Carbohydrates
  - c) Drug
  - d) water
- 13) Sleeping with Make-up on results in, \_\_\_\_\_
  - a) Eye infection
  - b) Blood shot eyes
  - c) Eye scratches
  - d) All the above
- 14) Following are limitations in screening procedures except \_\_\_\_\_.
  - a) A limited sample sizes
  - b) Inadequate long-term studies
  - c) Good quality product
  - d) Difficulty' in predicting allergic reaction

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

- 1) Define Film formers. Enlist its examples.
- 2) Define Microcapsules and draw its neat and labelled diagram.
- 3) Define Liposomes and Neosomes.
- 4) Define Cosmetics. Enlist steps involved in development of new cosmetics.
- 5) Enlist evaluation tests for
  - i) Lipstick
  - ii) Creams

**B) Write Notes. (Any Two)** **06**

- 1) Spray drying
- 2) Cuticle cream
- 3) Organogels

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

- 1) Write note on Colours and Pearlescent pigments used in Nail paints.
- 2) Write note on evaluation of Microcapsules.
- 3) Draw diagram of Discosomes and write its advantages and disadvantages.

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

- 1) Explain factors affecting Neosome preparation.
- 2) Write note on Nail bleaches and Nail oils.

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

- 1) Write in detail Safety concerns of cosmetics.
- 2) Write in detail about Nail paints removers.
- 3) Explain loading techniques of liposomes.

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

- 1) What is congealing study of Microcapsules?
- 2) Elaborate Nitrocellulose as Film forming agent.

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

- a) Explain in detail coating materials used in microcapsules along with its advantages and disadvantages.
- b) Write detail note on evaluation tests of Nail paints.
- c) Write in detail characterization of Liposomes.

Seat No.	
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Set **P**

**Five Year Integrated M. Tech. (Semester - X) (New) (CBCS)**  
**Examination: March/April-2024**  
**COSMETIC TECHNOLOGY**  
**Research Methodology (CT4001)**

Day & Date: Tuesday, 21-05-2024  
 Time: 03:00 PM To 05:00 PM

Max. Marks: 35

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

**Q.1 Choose the correct options.****05**

- 1) In selection of the problem, the researcher should consider following problem \_\_\_\_\_.
  - a) Research interest
  - b) Topic of significance
  - c) Resources available
  - d) All of the above
- 2) High-flexibility is the example of \_\_\_\_\_ sampling.
  - a) Random
  - b) Simple
  - c) Cluster
  - d) None of the above
- 3) The research design should be clear and match with \_\_\_\_\_.
  - a) Subject
  - b) Hypothesis
  - c) Objective
  - d) All of the above
- 4) Technical reports involve \_\_\_\_\_ steps.
  - a) Five
  - b) Seven
  - c) Six
  - d) Eight
- 5) In report writing, the statement of research should be write in \_\_\_\_\_ language.
  - a) Technical
  - b) Non-technical
  - c) Coding
  - d) None of the above

**Q.2 Short answer questions. (Any Five)****10**

- a) Define research.
- b) What is filed research?
- c) What is research design?
- d) Give the sources of literature.
- e) Give the difference between technical report and popular report.
- f) What is research report?

**Q.3 Answer the following.****10**

- a) Explain types of report and significance of report writing.
- b) Explain bibliography in detail.

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

- a) Explain different types of report writing.
- b) Describe the objective of research.