SLR-DP-1

Seat No.	

Set P

M.Tech. (Semester - I) (New) (CBCS) Examination Oct/Nov-2019
Cosmetic Technology
COSMETIC CHEMISTRY – I

Day & Date: Monday, 18-11-2019 Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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

Q.1 Fill in the blanks by choosing correct alternatives given below. **14**

1) When ionic product is _____ solubility product, then only precipitation occurs.
   a) More than b) Less than
   c) Equal to d) All of the above

2) Impure compound contain _____.
   a) Impurity b) Foreign matter
   c) Both a and b d) All of the above

3) pH of water is _____.
   a) 3 b) 2
   c) 7 d) 5

4) _____ compounds are analyzed in non aqueous titration.
   a) Weak acid or base b) Strong acid or base
   c) Both a and b d) None of the above

5) _____ is levis acid.
   a) NH_4 b) NH_3
   c) OH d) SO_2

6) Limit test is must be _____.
   a) Specific b) Sensitive
   c) Both a and b d) None of the above

7) _____ is used as a solvent in non-aqueous titration.
   a) Water b) Chloroform
   c) Glacial acetic acid d) Both b and c

8) _____ is acidic radical.
   a) Na^+ b) K^+
   c) Cl- d) None of the above

9) _____ is example of toxic impurities.
   a) Lead b) Arsenic
   c) Both a and b d) None of the above

10) pH of acid is _____.
   a) 1 b) 7
   c) Both a and b d) None of the above

11) The concept of conjugate acid-base pair is given by _____.
   a) Arrhenius b) Lowry-Breasted
   c) Lewis d) None of the above

12) _____ methods are used to purify the inorganic compound.
   a) Washing b) Drying
   c) Recrystallization d) All of the above

13) Oxidation means _____.
   a) Loss of electron b) Gain of electron
   c) Both a and b d) None of the above

14) _____ is heavy metal.
   a) Arsenic b) Sodium
   c) Chlorine d) None of the above

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

1) Distinguish between aqueous titration and non-aqueous titration.
2) Draw diagram of apparatus used in limit test for arsenic.
3) Define:
   i) Reduction
   ii) Oxidation
4) Write note on common ion effect.
5) Write about principle in limit test for chlorine.

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

1) Write note on types of impurities.
2) Discuss in detail solvents used in non-aqueous titration.
3) Write a note on standard solution.

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

1) Write about indicators used in acid-base titration.
2) Write in brief about limit test and its significance.
3) Write note on qualitative analysis.

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

1) Explain the theoretical basis or principle involved in inorganic qualitative analysis.
2) Discuss in detail acid - base titration. Write note on acid-base titration curves.

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

1) Discuss the concept of pH, pH scale and its significance.
2) Write down the qualitative analysis of Na and Cl.
3) Explain in detail limit test for arsenic.

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

1) Write note on buffer solution.
2) Define impurities. Give the methods for purification of inorganic substance.

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

a) Explain in detail how the impurities get incorporated in final product.
b) Write down acid-base theories.
c) Define non-aqueous titration. Write note on indicators used and applications of non-aqueous titrations.

SLR-DP-2

Seat No.	

Set P

M.Tech (Semester - I) (New) (CBCS) Examination Oct/Nov-2019
Cosmetic Technology
ANATOMY & PHYSIOLOGY - I

Day & Date: Tuesday, 05-11-2019 Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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

Q.1 Fill in the blanks by choosing correct alternatives given below. 14

1) _____ are the secondary organ of vision.
   a) Rod and cone b) Cornea
   c) Both a and b d) All of these

2) _____ canine teeth are present in adult.
   a) 4 b) 2
   c) 3 d) 1

3) Which of the following are two main layers of skin?
   a) Epidermis b) Dermis
   c) Both a and b d) None of the above

4) Permanent teeth are _____ in number.
   a) 20 b) 15
   c) 8 d) 32

5) Endocrine glands are _____.
   a) Ductless gland b) Duct gland
   c) Only b d) None of the above

6) Hard kertain is present in _____.
   a) Hair b) Skin
   c) Nail d) None of the above

7) The part of the hair in the skin is called as _____.
   a) Root b) Shaft
   c) Bulb d) None of the above

8) _____ is endocrine gland.
   a) Pituitary gland b) Thyroid gland
   c) Adrenal gland d) All of the above

9) _____ is largest organ of body.
   a) Skin b) Heart
   c) Kidney d) Brain

10) Epidermal cells in basal layer are interconnected to each other by desmosomal junction are _____.
   a) Markel cells b) Keratinocytes
   c) Both a and b d) Melanocytes

11) Lacrimal gland is example of _____.
   a) Exocrine gland b) Endocrine gland
   c) Both a and b d) None of the above

12) _____ hormone secreted by pituitary gland.
   a) Growth hormone b) Thyroxine
   c) Both a and b d) None of the above

13) _____ is present in pulp cavity of teeth.
   a) Blood vessels b) Nerve
   c) Both a and b d) None of the above

14) Melatonin is secreted by _____.
   a) Pineal gland b) Thyroid gland
   c) Pituitary gland d) None of the above

Q.2 A) Answer the following questions. (Any Four) **08**
1) Define cell and draw neat label diagram of cell.
2) Mention different types of hormone released by pancreas.
3) Why lysosomes are called as suicidal bag?
4) Give the classification of tissue.
5) Enlist the endocrine glands in the human body.

B) Write Notes. (Any Two) **06**
1) Write note on Melanocytes.
2) Write a note on Nervous tissue.
3) Write down the difference between baby skin and adult skin.

Q.3 A) Answer the following questions. (Any Two) **08**
1) Write in detail functions of skin.
2) Write a note on pancreas.
3) Write about Muscular tissues.

B) Answer the following questions. (Any One) **06**
1) Explain the keratinisation.
2) Write a note on anatomy of skin.

Q.4 A) Answer the following questions. (Any Two) **10**
1) Write about skin colour and pigmentation.
2) Write a note on eye.
3) Explain thyroid gland.

B) Answer the following questions. (Any One) **04**
1) Write in brief about teeth.
2) Draw a neat labelled diagram of hair and write note on hair growth cycle.

Q.5 Answer the following questions. (Any Two) **14**
1) Define cell. Explain the in brief cell organelles.
2) Define tissue, Classify them. Write in brief epithelial tissues.
3) Write down the anatomy and physiology of pituitary gland.

SLR-DP-3

Seat No.	

Set P

M.Tech.(Semester - I) (New) (CBCS) Examination Oct/Nov-2019
Cosmetic Technology
FUNDAMENTAL CHEMISTRY - I

Day & Date: Thursday, 07-11-2019 Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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

Q.1 Fill in the blanks by choosing correct alternatives given below. **14**

1) Melting point of states of matter depend upon strength of
   a) Intermolecular force b) Volume
   c) Molecule d) Atoms

2) Which of the following will have the highest boiling point
   a) methanol b) ethanol
   c) propanol d) butanol

3) Which molecular formula indicates 2-methyl pentane?
   a) C_5H_{12} b) C_6H_{14}
   c) C_5H_{10} d) C_6H_{12}

4) Minimum energy required to activate the reaction is called as
   a) activation complex b) activation energy
   c) activation rate d) none of the above

5) Hybridisation of ethane is
   a) SP b) SP^2
   c) SP^3 d) all of these

6) Aliphatic unsaturated hydrocarbon containing double bond called as
   a) alkane b) alkene
   c) alkylene d) none of above

7) Crude petroleum and natural gas are source of
   a) alkene b) alkane
   c) alkyne d) all of these

8) Alkene are the class of
   a) hydroalkane b) hydrocarbon
   c) hydroalkene d) none of these

9) Crude oil present in the
   a) earth surface b) under the earth's crust
   c) in water d) all of these

10) Surface tension of water is
   a) 0.0728 b) 0.0745
   c) 0.728 d) 0.745

11) Transition from solid to liquid phase is called
   a) M.P b) B.P
   c) vaporization d) condensation

12) -COOH is group of
   a) basic b) alcoholic
   c) carboxylic d) none of these

13) In Reduction of alkyl halide which catalyst is used _____.
   a) Zinc b) Platinum
   c) Copper d) All of these

14) The number of moles of solute present in 1 kg of solvent is called _____.
   a) molality b) molarity
   c) normality d) both a and b

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

1) Give the structures of cyclohexanes.
2) Define Normality and Molarity.
3) Write IUPAC names of $CH_3CH_2CH_2COOH$ and CH_3CH_2CHO.
4) Define dipole moment.
5) What are ethers?

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

1) Effect of temperature and pressure on viscosity
2) Conformations of alkanes
3) Cis - Trans isomerism

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

1) Explain concept of surface tension in detail.
2) Define and give the classification of hydrocarbons.
3) What is acetylene? Explain the methods for its preparation.

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

1) Write down the preparation of alkane and give its properties.
2) Explain the Markovnikov and Anti-Markovnikov rule with its example.

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

1) Define & explain following terms.
   a) Melting point
   b) Freezing point
   c) Vaporization
   d) Condensation
2) What are the industrial preparation methods of alkane?
3) Define intermolecular force and its impact on states of matter.

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

1) Explain sp, sp^2, sp^3 hybridization.
2) Explain different laws of osmotic pressure?

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

1) Explain isomerism and its type in brief.
2) Write a note on classification, structure, preparation of carboxylic acids.
3) Write down the quantitative analysis of carbon and hydrogen by Liebig's method.

SLR-DP-4

Seat No.	

Set P

M. Tech. (Semester – I) (New) (CBCS) Examination Oct/Nov-2019
Cosmetic Technology
NATURAL COSMETIC AGENTS – I

Day & Date: Saturday, 09-11-2019 Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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

Q.1 Fill in the blanks by choosing the correct alternatives given below. 14

1) Plant that lack a woody stem is called _____.
   a) Herbs b) Shrubs
   c) Both a and b d) None of the above

2) Pectin is obtained from _____.
   a) Citrus simon b) Citrus aurantium
   c) Gracilaria d) Both a and b

3) How many carbon atom is present in bioses _____.
   a) Three b) Two
   c) Four d) Six

4) Fruits are _____ herbs.
   a) Organised b) Unorganised
   c) Both a and b d) None of these

5) Ovules of the flowers after fertilization are converted into _____.
   a) Fruits b) Seeds
   c) Leaf d) None of these

6) Starch contain _____.
   a) β-amylose b) α-amylose
   c) Both a and b d) None of the above

7) Which of the following is identification test for carbohydrates?
   a) Molisch’s test b) Fehling's test
   c) Barfoed's test d) All of the above

8) Unorganised herbs are _____ in nature.
   a) Solid b) Liquid
   c) Semi solid d) All of these

9) Which of the following is example of fixed oil obtained from animal source?
   a) Cod liver oil b) Shark liver oil
   c) Both a and b d) Castor oil

10) Extract is _____ herbs.
   a) Unorganised b) Organised
   c) Both a and b d) None of these

11) Water soluble fraction constituting about 85% of gum in guar gum known as _____.
   a) Arabin b) Agarose
   c) Guaran d) None of these

12) Stem may be _____.
   a) Aerial b) Sub aerial
   c) Underground d) All of these

13) In which classification system drugs are classified according to the chemical nature of their most important constituents?
   a) Morphological classification b) Chemical classification
   c) Pharmacological classification d) Taxonomical classification

14) Depending upon the type of product of hydrolysis polysaccharides are classified as _____.
   a) Pentosans b) Hexosans
   c) Both a and b d) None of these

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

1) Define and classify the lipids.
2) Classify the stem on the basis of presence of mechanical tissues with short explanations and example.
3) Write down the biological source and method of preparation of lanolin.
4) Enlist different layers of pericarp and classify fruit with example.
5) Give the general identification test for lipids.

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

1) Write a note on Herbs.
2) Write note on Mucilages.
3) Write a note on pharmacological classification of drugs of natural origin.

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

1) Write down the biological source, method of preparation, chemical constituents and uses of sesame oil.
2) Write down the biological source, chemical constituents and uses of agar.
3) Write down the merits and demerits of the following:
   i) Taxonomical classification.
   ii) Morphological classification.

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

1) Write down the biological sources, method of preparation, chemical constituent and uses of Olive oil.
2) Write down the method of preparation, chemical constituents and uses of castor oil.

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

1) Write down the biological sources, method of preparation, chemical constituent and uses of spermaceti.
2) Write a note on seed.
3) Define and classify carbohydrates with detail explanation and examples.

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

1) Distinguish between leaf and leaflet.
2) Write down the biological source, chemical constituents and uses of potato starch.

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

1) Write down the biological source, method of preparation, chemical constituents and uses of Bees wax.

2) Write down the general identification tests for carbohydrates.

3) Write about history of natural product in cosmetic and medicine.

SLR-DP-5

Seat No.	

Set P

M. Tech (Semester - I) (New) (CBCS) Examination Oct/Nov-2019
Cosmetic Technology
ELEMENTARY MATHEMATICS

Day & Date: Wednesday, 13-11-2019 Max. Marks: 70
Time: 11:30 AM To 02:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Calculator is not allowed.

Q.1 Fill in the blanks by choosing correct alternatives given below. **14**

1) $\sin(2x) =$ _____.
   a) $2\ sinx$ b) $2\sin x\cos x$
   c) $2\cos x$ d) $-2\sin x\ \cos x$

2) Using logarithm, 2.53*3.48 = _____.
   a) 88.044 b) 0.88044
   c) 8.8044 d) 880.44

3) Median of 11,42,35,15,20,21,13 is _____.
   a) 21 b) 20
   c) 15 d) 13

4) With usual notations, the formula for loss is _____.
   a) Cost Price-Selling Price b) Price-Cost Price
   c) Selling Price -Cost Price d) Selling Price – Price

5) The rate of change of velocity is called as _____.
   a) acceleration b) motion
   c) minima d) distance

6) Standard deviation for ungrouped frequency distribution is calculated by _____.
   a) $\sqrt{\frac{\sum fi\bar{x}i^2}{N} - x_i^2}$ b) $\sqrt{\frac{\sum(x_i-\bar{x})^2}{N}}$
   c) $\sqrt{\frac{\sum fix_{i^2}}{N} - \bar{x}^2}$ d) $\sqrt{\frac{\sum fix_{i^2}}{N} + \bar{x}^2}$

7) -45^0 = _____.
   a) $\frac{-\pi^C}{4}$ b) $\frac{\pi^C}{4}$
   c) π^C d) $2\pi^C$

8) The derivative of e^X is _____.
   a) 1 b) e^{-x}
   c) e^x d) $\log(e^{-x})$

9) The mean for ungrouped frequency distribution is calculated by _____.
   a) $\sum\frac{fix_i}{n}$ b) $\sum\frac{fixi}{\sum fi}$
   c) $\sum\frac{fix_i^2}{n}$ d) None of these

10) Mean of 10,15,8,9,11,14,7,6 is _____.
   a) 22 b) 22.5
   c) 10 d) 12

11) Using logarithm, $\frac{28}{3.52}$ = _____.
   a) 795 b) 7.95
   c) 79.5 d) 0.795

12) $\frac{d}{dx}(3x+4) =$ _____.
   a) 4 b) $3x$
   c) 3 d) $4x$

13) $\frac{\pi}{15} radians$ = _____.
   a) 90^0 b) 13^0
   c) 65^0 d) 12^0

14) $\frac{d}{dx} Sec\ x =$ _____.
   a) $cosec\ x$ b) $-\sec x * \tan x$
   c) $\sec x * \cot x$ d) $\sec x * \tan x$

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

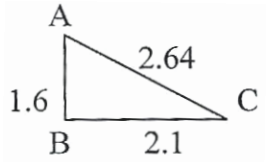
1) Convert following into radians
   i) 8 degree
   ii) 15 degree
2) State formula for percentage profit.
3) State formula for
   i) Length of a class
   ii) Midpoint of a class
4) Define frequency curve.
5) Define mean.

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

1) Degrees and Radians
2) Arithmetic Mean
3) Percentage calculation

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

1) Given the side lengths of a right angled triangle. Find all trigonometric ratios for angle A and C.



2) Find the derivatives of the following
   i) $\sqrt{\log x} + e^x$
   ii) $\frac{1}{x^8}$
3) Find the maxima or minima of given function
   i) $f(x) = (2-x)^2$ domain = (1, 4)

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

1) A shopkeeper purchases 12 notebooks each for Rs.20 and 15 books each for Rs. 110. He sold one notebook for Rs. 18 and one book for Rs. 128. Find profit or loss he made. Also calculate percentage profit or percentage loss of shopkeeper.

2) If $\sin\theta = \frac{4}{5}$ and $\cos\alpha = \frac{-12}{13}$ then find $\cos(\alpha - 0)$

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

1) Obtain median for following frequency distribution

X	5-10	10-15	15-20	20-25	25-30	30-35
F	8	10	12	14	16	18

2) Steve sells an article for Rs. 520 and he makes profit of 20%. Then find cost price of an article.

3) Calculate correlation coefficient for following data.

X	5	8	13	18	19	25
Y	2	6	8	10	13	16

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

1) Write note on Trigonometric ratios.
2) Convert the following degrees to radians
   i) 85°
   ii) 52°

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

1) Write note on maxima and minima.

2) Following data gives the marks of students.

Marks	10-15	15-20	20-25	25-30	30-35	35-40
No. of students	8	5	10	18	6	3

Draw histogram and frequency curve for given data.

3) Write a note on measures of variation.

SLR-DP-13

Seat No.	

Set P

M.Tech. (Semester - III) (New) (CBCS) Examination Oct/Nov-2019
Cosmetic Technology
COSMETIC TECHNOLOGY I

Day & Date: Monday, 18-11-2019 Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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

Q.1 Fill in the blanks by choosing correct alternatives given below. **14**

1) A _____ seals the container to protect the contents from contamination caused by extraneous solids, moisture and microorganisms.
   a) Container b) Closure
   c) Both a and b d) None of the above

2) HLB value of w/o emulsifying agent is _____.
   a) 3-8 b) 0-3
   c) 3-16 d) 8-16

3) A concentrated solution used for treating the pharynx and nasopharynx or to prevent or treat throat infections is known as _____.
   a) Gargles b) Mouth wash
   c) Both a and b d) None of the above

4) Large sticks are commonly used for packaging of cosmetics like _____.
   a) Lipsticks b) Lip-bam
   c) Both a and b d) None of the above

5) _____ is example of hydrocolloid derived from algae.
   a) Caragenan b) Acacia
   c) Starch d) None of the above

6) _____ is the substance or Excipient which reduce the surface tension.
   a) Surfactant b) Surface active agent
   c) Both a and b d) None of the above

7) Type-I glass is also called as _____ glass.
   a) Neutral b) Soda-lime
   c) Treated Soda-lime d) All of the above

8) _____ is physical property of drug.
   a) Particle size b) Hygroscopy
   c) Crystallanity d) All of the above

9) _____ are types of enema.
   a) Evacuation b) Retention
   c) Nutritive d) All of the above

10) Chloramphenicol has A, B, C, which polymorph is selected for preparation of its dosage form.
a) A b) B
c) Both a and b d) C

11) A stage of development of a new drug and physicochemical properties of drug is known as _____.
a) development b) performulation
c) formulation d) none of the above

12) Which of the following are types of inhalers in aerosol?
a) PMDIs b) DPIs
c) Nebulizers d) All of the above

13) According to I.P. syrup contain _____ of sucrose.
a) 66.67% b) 75%
c) 55% d) 45%

14) 'Freely soluble' compound means it require _____ parts of solventto desolve 1 part of solute.
a) 1 to 10 b) 10 to 30
c) 30 to 100 d) None of the above

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

1) Define surfactant and classify them with examples.
2) Distinguish between lyophobic colloid and lyophiic colloid.
3) What are the ideal requirements of container?
4) Define terms:
   i) Lotion
   ii) Mouth wash
5) Define preformulation. What is need to do it?

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

1) Discuss in detail biodegradable polymer used for packaging of cosmetics.
2) What do you mean by monophasic liquid? Classify them according to route of administration.
3) Write a note glass as packaging material.

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

1) Write note on waste management of packaging material of cosmetic.
2) Explain in brief cosmetic application of aerosols.
3) Enlist the material used for packaging. Write down types of closures.

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

1) Explain in brief solubility enhancement methods.
2) Define hydrocolloids. Discuss in detail their properties and its application in cosmetics.

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

1) Write note on syrup.
2) Write a note evaluation of packaging material.
3) Explain in detail the cosmetic applications of surfactant.

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

1) What is HLB? Explain HLB scale and give its significance.
2) Enlist types of inhalers used in aerosols. Write note on dry powder inhaler.

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

a) Define solubility. Write down different methods used to enhance solubility.
b) Define packaging of cosmetics. Write in detail material used for container and closure.
c) Define aerosols and short note on its components. Discuss in detail evaluation of aerosols.

SLR-DP-14

Seat No.	

Set P

M.Tech. (Semester - III) (New) (CBCS) Examination Oct/Nov-2019
Cosmetic Technology
INSTRUMENTAL METHODS OF ANALYSIS – I

Day & Date: Tuesday, 05-11-2019 Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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

Q.1 Fill in the blanks by choosing correct alternatives given below. **14**

1) The range of IR region is _____.
   a) 0.7 - 2.5 μ b) 0.5 - 2.5 μ
   c) 2.5 - 0.7 μ d) 2.5 - 0.5 μ

2) The relationship between wavelengths, frequency, and velocity of light in vacuum is _____.
   a) V = c b) √v = c
   c) C = v d) √v =

3) X-ray region lies between _____.
   a) 1 to 100 A b) 10 to 100 A
   c) 1 to 10 A d) All of the above

4) 1 MHz = 10^3 = kHz = _____ Hz
   a) 103 Hz b) 106 Hz
   c) 109 Hz d) All of the above

5) A beam having only one discrete wavelength is called _____.
   a) Polychromatic b) Monochromatic
   c) Many chromatic d) None of the above

6) Which technique is used to separate components from complex mixture _____?
   a) Potionometry b) Calorimetery
   c) Chromatography d) None of the above

7) Sample should be separated at proper position in which Chromatography _____.
   a) Thin film b) Columns
   c) Paper d) All of above

8) Interaction of an electromagnetic radiation with molecules is called as _____.
   a) Atomic spectroscopy b) Molecular spectroscopy
   c) Electronic spectroscopy d) Nuclear spectroscopy

9) Radiation travelling in x direction then which equation apply _____.
   a) $Ey = \text{Cos}\, 2\prod\, \alpha\, (vt - x/\mu)$ b) $Ey \cos 2\prod\, a(\, vt - x/\mu)$
   c) $Ey = \cos 2\prod\, (vt - x/\mu)$ d) All of the above

10) Electromagnetic radiation is said to have an _____ nature.
   a) Only one b) Dual
   c) Dimensional d) All type

11) In column chromatography how many phases are present _____.
   a) One b) Two
   c) three d) All of the above

12) What you have to calculate the _____ paper chromatography.
   a) Wave value b) R. F value
   c) Molecular weight d) Average number

13) Flame photometry is one of the branches of the _____ spectroscopy.
   a) Molecular b) Atomic
   c) Radiation d) Wave

14) Paper chromatography detected _____.
   a) R. F value b) Length
   c) Diameter d) All of the above

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

1) Give the frequency of x-ray region.
2) Define
   i) Wave.
   ii) Wave number.
3) Enlist the components of spectrophotometer.
4) Compare the energies of Visible & IR rays.
5) Draw the diagram of electromagnetic spectrum showing all types of radiations.

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

1) Instruments used in cosmetic analysis.
2) Ultraviolet, visible, & IR radiations.
3) What is the Beers lamberts law? Explain it.

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

1) Explain single beam spectrophotometer in detail.
2) Write down the properties of an electromagnetic radiation.
3) Draw the diagram & explain working of flame photometry.

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

1) Explain about the detectors used in flame photometry.
2) Write a note on visible & UV radiations.

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

1) Explain paper chromatography & its working.
2) Write & explain types of column chromatography.
3) Give detailed classification of instrumental methods used in cosmetic industries.

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

1) Write down the applications of chromatographic methods.
2) What is mobile phase & stationary phase?

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

1) Explain different parameters to characterize electromagnetic radiations.
2) Write a note on spectroscopic titrations.
3) Give the advantages of flame photometry. Also, give some applications of it.

SLR-DP-15

Seat No.	

Set P

M.Tech. (Semester - III) (New) (CBCS) Examination Oct/Nov-2019
Cosmetic Technology
COSMETIC ENGINEERING – I

Day & Date: Thursday, 07-11-2019 Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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

Q.1 Fill in the blanks by choosing correct alternatives given below. **14**

1) Fluid mechanics includes _____.
   a) Fluid statics b) Fluid dynamics
   c) Both a and b d) None of the above

2) Which of the following methods are used for measurement of fluid flow?
   a) Direct weighing b) Hydrodynamic
   c) Direct displacement meter d) All of the above

3) Iron pipe contain _____% of carbon content
   a) 0.04 to 0.30 b) 0.61 to 1.50
   c) Less than 0.08 d) None of the above

4) The bucket are made of _____.
   a) Cast iron b) Stamped steel
   c) Wood d) Both a and b

5) Roughness factor for old steel is _____.
   a) 1.6 b) 0.6
   c) 1.0 d) 2.5

6) The joint formed by welding the edges of two parts together is called _____.
   a) Butt joint b) Edge joint
   c) T-jont d) Lap joint

7) In which conveyor fluidize bed system is used _____.
   a) Screw b) Bucket
   c) Pneumatic d) Belt

8) When the value of the Reynolds is less than 2100, the flow is _____.
   a) Turbulent b) Viscous
   c) Unsteady d) Both a and c

9) Wrought iron is _____.
   a) Tough b) Malleable
   c) Ductile d) All of the above

10) In which type of conveyor, fans or cycloid blower is connected _____.
   a) Apron b) Bucket
   c) Belt d) Pneumatic

11) A Pitot tube is bent at _____.
   a) 90^0 b) 180^0
   c) 30^0 d) None of the above

12) How many pipes are used in cross screwed fitting?
   a) 2 b) 4
   c) 3 d) 6

13) A manometer is used to measure _____.
   a) Velocity b) Viscosity
   c) Pressure d) Density

14) Name the conveyor system used for transporting unpleasant and injurious (toxic) materials _____.
   a) Belt b) Bucket
   c) Screw d) Pneumatic

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

1) Define the following:
   a) Fluid statics
   b) Fluid dynamics
2) What is direct weighing or measuring method for measurement of fluid flow and enlist devices used in hydrodynamic methods.
3) Classify the conveyors and write about Apron conveyors.
4) Draw neat labelled diagram of Orifice meter.
5) Enlist the basic elements of belt conveyor and what are the requirements for selection of belt conveyor.

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

1) Write note on frictional losses.
2) Write a note on flanges and expansion joints.
3) Write a note on fluids.

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

1) Write about rotary positive displacement pump.
2) Write about distribution of velocities of fluid in the pipe.
3) Write about the screw conveyors.

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

1) Classify piston pump, write component, working, uses of single and double acting piston pump with neat labelled diagram.
2) Classify centrifugal pump, write construction, working and use of volute pump with neat labelled diagram.

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

1) Write down the principal, construction and working of Venturimeter with neat labelled diagram.
2) Write about the differential manometer with neat labelled diagram and derive equation to measure pressure difference.
3) Write down the construction, working, uses and advantages of turbine pump with neat labelled diagram.

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

1) Add a note on welding joint.
2) Define the following:
   i) Reynolds's number
   ii) Critical velocity
   iii) Total head
   iv) Pressure

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

1) Write down principle, construction and working of Rotameter with neat labelled diagram.

2) Write about the Bernoulli's theorem.

3) Write down principle, construction, working and advantages of Bucket conveyor with neat labelled diagram.

SLR-DP-16

Seat No.	

Set P

M. Tech. (Semester – III) (New) (CBCS) Examination Oct/Nov-2019
Cosmetic Technology
COSMETIC CHEMISTRY – III

Day & Date: Saturday, 09-11-2019 Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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

Q.1 Fill in the blanks by choosing the correct alternatives given below: **14**

1) Soap requires two major raw materials _____.
   a) Fat & alkali b) Fat & oil
   c) Oil & alkali d) All of these

2) Sodium silicate & potassium silicates are the _____ salts.
   a) Organic b) Physical
   c) Inorganic d) All of these

3) The biggest role of surfactant is the capability to lower the _____.
   a) Viscosity b) Concentration
   c) surface tension d) Ph

4) Natural silicate can exist _____.
   a) Amorphous b) Crystalline
   c) Crystalline & amorphous d) None of the above

5) _____ surfactant most commonly used in the industry.
   a) Anionic b) Cationic
   c) Amphoteric d) Non-ionic

6) Charged balanced cation contain _____ coordinate.
   a) Three b) Four
   c) Five d) Six

7) _____ is an example of Nesosilicates.
   a) Fayalite b) Rankinite
   c) Diopside d) Phenakites

8) _____ is natural amorphous silica.
   a) Diatomite b) Plants
   c) Organisms d) Cells

9) Cements is major classes of crystalline in _____ group.
   a) Natural b) Synthetic
   c) Semisynthetic d) All of the above

10) Silk powder contains _____ % water.
   a) 11% b) 12%
   c) 13% d) 14%

11) Soap is a combination of animal fat & _____.
   a) Plant oil only b) Plant oil & caustic soda
   c) Only caustic soda d) None of these

12) Silk powder contains _____ % protein.
   a) 99% b) 100%
   c) 70% d) 50%

13) Surfactant water is part of _____.
   a) Hydrophobic b) Hydrophilic
   c) Both d) None of these

14) Sodium based soap is called as _____.
   a) Hard soap b) Soft soap
   c) Hard & soft soap d) None of these

Q.2 A) Answer the following questions. (Any Four) **08**
1) Enlist the chemical properties of proteins.
2) Give industrial & medicinal uses of enzymes.
3) What are the aqueous silicates?
4) What is mean by Non-polar & polar Amino acid?
5) Give the examples of anionic, cationic, non-ionic surfactants.

B) Write short notes. (Any Two) **06**
1) Nomenclature of enzymes.
2) Sources of protein.
3) Toxicity of Silicones

Q.3 A) Answer the following questions. (Any Two) **08**
1) Explain structural units of silicates.
2) Write down applications of proteins.
3) What are clay minerals? Explain in Detail.

B) Answer the following questions. (Any One) **06**
1) Add a note on ketogenic & glycogenic amino acids.
2) What are the clinical, medicinal & other uses of enzyme?

Q.4 A) Answer the following questions. (Any Two) **10**
1) Explain secondary structure of protein.
2) Explain continues process for soap manufacturing with neat labelled diagram.
3) Give different properties of enzymes in detail.

B) Answer the following questions. (Any One) **04**
1) Explain Kettle process for soap preparation in detail.
2) What are the uses of amino acid in cosmetic industry?

Q.5 Answer the following questions. (Any Two) **14**
a) What are the crystalline silicates? Explain in details its different types.
b) Discuss in detail the structure of protein.
c) What is silk powder 8205? Explain its properties & application.

SLR-DP-17

Seat No.	

Set P

M. Tech (Semester - III) (New) (CBCS) Examination Oct/Nov-2019
Cosmetic Technology
DRUG & COSMETIC LAWS

Day & Date: Wednesday, 13-11-2019 Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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

Q.1 Fill in the blanks by choosing correct alternatives given below. **14**

1) Drug and Magic Remedies Act _____.
   a) 1940 b) 1955
   c) 1954 d) 1960

2) Schedule Q stands for _____.
   a) Pack size of drugs
   b) Standards for cosmetics
   c) Standards for surgical dressing
   d) List of coal tar colour used in cosmetics

3) An area of _____ is recommended for creams.
   a) 25 square meter b) 15 square meter
   c) 10 square meter d) 100 square meter

4) The total strength of DTAB is _____.
   a) 8 b) 18
   c) 10 d) None of the above

5) Medicinal and Toilet Preparation Act _____.
   a) 1940 b) 1955
   c) 1954 d) 1960

6) Form no. _____ is for report of test or analysis by approved institution.
   a) 36 b) 37
   c) 39 d) 38

7) Window in the bonded laboratory provided with iron rods at a distance of not more than _____.
   a) 102 mm b) 19 mm
   c) 51 mm d) 25 mm

8) An inspector appointed for any other drugs or cosmetic by the central government or a state government under section _____.
   a) 21 b) 20
   c) 33F d) 33G

9) The vegetable carbon black powder shall be sterilized in a drying oven at _____.
   a) 150^0C b) 120^0C
   c) 100^0C d) None of the above

10) Schedule M-II stands for _____.
   a) Pack size of drugs
   b) List of coal tar colour used in cosmetics
   c) Standards for cosmetics
   d) Requirements for factory premises of cosmetics

11) On first conviction, the fine for treating animal's cruelty is _____.
   a) Rs. 10 b) Rs. 50
   c) Both a and b d) None of the above

12) Rule no. _____ for the duration of licence for manufacture of cosmetic for sale or for distribution.
   a) 140 b) 141
   c) 142 d) 143

13) Which of the following colours are permitted to be used in cosmetics?
   a) Amaranth b) Tartrazine
   c) Erythrosine d) All of the above

14) Form no _____ is for the issue of a registration certificate for import of cosmetic into India.
   a) 42 b) 43
   c) 31 d) 32

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

1) Define the following:
   i) Advertisement
   ii) Spurious cosmetic
2) Give the offences and penalties for the following:
   i) Cosmetic
   ii) Drug and Magic Remedies Act
3) Write down the objective of the following:
   i) Medicinal and Toilet Preparation Act
   ii) Animal welfare Board of India
4) Mention the equipments and area required for manufacture of hair dyes.
5) Write down offences and penalties for treating animal cruelty

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

1) Write note on Allopathic preparations.
2) Write a note on manufacturing of cosmetics.
3) Write a note on non-bonded manufactory.

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

1) Which drugs and cosmetics categories are prohibited to import from India?
2) Which are the advertisements that participation of a person is prohibited as per the Drug and Magic Remedies Act?
3) Which are the FDA licensing forms for approval of institution for carrying out test on drugs and cosmetics?

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

1) Write a note on issue of alcohol from store.
2) Mention the equipments and area required for manufacturing of tooth powder and tooth paste.

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

1) Give the constitution of committee made by central government to control and supervise the experiments performed on animals.
2) Define the following
   i) Magic Remedies
   ii) Cruelty
   iii) Denatured spirit
   iv) Spirit store
   v) Adulterated drug
3) What are the rules made by committee to secure objects? (for experimentation on animals)

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

1) Explain the rule 142 for conditions of licence for drug and cosmetic act.
2) Which categories advertisements are permitted as per the drugs and magic remedies.

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

A) Write down the equipments and area required for the manufacturing of the following cosmetic preparation.
1) Preparation used for eyes
2) Shampoos

B) Add a note on the following:
1) Structure of the bonded manufactory
2) Export under bond for medicinal and toilet preparation

C) Write down the duties of inspector.