CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Programme: B. Voc. - Retail and Logistics Management (RLM)   Session: 2021-22

Semester: I (Regular)   Max. Time: 3 Hours

Course Title: Principles and Practices of Management   Max. Marks: 37.5

Course Code: RLM-101

Instructions: Question No.1 is compulsory. Attempt one question from each unit.

Q1. Attempt any five questions: (1.5*5=7.5)

a) What is the role of management in business?

b) Highlight the importance of strategy in execution of a task.

c) Define staffing.

d) What do you mean by delegate of authority?

e) Define decentralisation.

f). Why is employee motivation so important?

g) Define 'gangplank'.

h) What are the features of controlling function?

UNIT I

Q2) A) Explain nature, importance and process of planning.   (5)

B) Discuss advantages of setting objectives.   (2.5)

or

Q3) A) Discuss decision making process.   (5)

B) Elaborate different types of decisions.   (2.5)

UNIT II

Q4) A) Discuss various forms of organisation structure.   (5)

B) Distinguish between formal and informal organisation.   (2.5)

or

Q5) A) Discuss major features of scientific and administrative theories.   (5)

B) Explain Mckinsey 7S framework.   (2.5)

UNIT III

Q6) A) Discuss various kinds of leadership styles. (5)

B) Elaborate various types of motivation. (2.5)

or

Q7) A) Explain managerial grid in detail. (5)

B) Discuss nature and objectives of staffing. (2.5)

UNIT IV

Q8) A) Discuss scope and process of controlling. (5)

B) Elaborate the importance of strategic control. (2.5)

or

Q9) A) Describe traditional and modern factors in control effectiveness. (5)

B) What is the role of operational control in modern business? (2.5)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Programme: B. Voc. - Retail and Logistics Management (RLM)   Session: 2021-22

Semester: I (Regular)   Max. Time: 3 Hours

Course Title: Business Statistics   Max. Marks: 37.5

Course Code: RLM-103

Instructions: Question No.1 is compulsory. Attempt one question from each Unit.

Q1. Attempt any five questions: (5x1.5=7.5)

a) Define statistics.

b) Define mode.

c) Write the merits of quartile.

d) What is the significance of graph?

e) What is mean deviation?

f) What is the difference between single and multiple correlations?

g) Write the formula of Karl Pearson coefficient correlation.

h) Define Lorenz curve.

UNIT I

Q2. A) Define statistics. Discuss the importance of statistics in different disciplines. (5)

    B) What are the characteristics of statistics? (2.5)

or

Q3. A) Describe essential parts, rules and types of tabulation. (5)

    B) Discuss the advantages and disadvantages of bar chart and pie chart. (2.5)

UNIT II

Q4) A) What are the measures of central tendency? Compare each other. (5)

    B) Discuss advantages and disadvantages of arithmetic mean. (2.5)

or

Q5) A) Find out Q1, D7, P90   of given series (5)

C.I	0-10	10-20	20-30	30-40
f	4	3	2	1

B) Discuss various kinds of partition values? (2.5)

UNIT III

Q6) A) Compute coefficient of quartile deviation from following data (5)

Marks	10	20	30	40	50	60
No. of students	4	7	15	8	7	2

B) Discuss merit and demerits of quartile deviation? (2.5)

or

Q7) A) Calculate mean deviation from mean for the following series (5)

C.I	2-4	4-6	6-8	8-10
F	3	4	2	1

B) Discuss merits and demerits of mean deviation? (2.5)

UNIT IV

Q8) A) Find out the correlation coefficient of given series with the help of Karl Pearson correlation coefficient methods: (5)

X	1	2	3	4	5	15
Y	7	6	4	5	3	25

B) Elaborate properties of coefficient of correlation. (2.5)

or

Q9) A) Calculate correlation co-efficient for the following data: (5)

X	5	10	5	11	12	4	3	2	7	1
y	1	6	2	8	5	1	4	6	5	2

B) Discuss significance of the correlation. (2.5)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Programme: B. Voc. - Retail and Logistics Management (RLM) **Session: 2021-22**

Semester: I (Regular) **Max. Time: 3 Hours**

Course Title: Business Statistics **Max. Marks: 37.5**

Course Code: RLM-103

Instructions: Question No.1 is compulsory. Attempt one question from each Unit.

Q1. Attempt any five questions: (5x1.5=7.5)

a) Define statistics.

b) Define mode.

c) Write the merits of quartile.

d) What is the significance of graph?

e) What is mean deviation?

f) What is the difference between single and multiple correlations?

g) Write the formula of Karl Pearson coefficient correlation.

h) Define Lorenz curve.

UNIT I

Q2. A) Define statistics. Discuss the importance of statistics in different disciplines. (5)

 B) What are the characteristics of statistics? (2.5)

or

Q3. A) Describe essential parts, rules and types of tabulation. (5)

 B) Discuss the advantages and disadvantages of bar chart and pie chart. (2.5)

UNIT II

Q4) A) What are the measures of central tendency? Compare each other. (5)

 B) Discuss advantages and disadvantages of arithmetic mean. (2.5)

or

Q5) A) Find out Q_1, D_7, P_{90} of given series (5)

C.I	0-10	10-20	20-30	30-40
f	4	3	2	1

 B) Discuss various kinds of partition values? (2.5)

UNIT III

Q6) A) Compute coefficient of quartile deviation from following data (5)

Marks	10	20	30	40	50	60
No. of students	4	7	15	8	7	2

B) Discuss merit and demerits of quartile deviation? (2.5)

or

Q7) A) Calculate mean deviation from mean for the following series (5)

C.I	2-4	4-6	6-8	8-10
F	3	4	2	1

B) Discuss merits and demerits of mean deviation? (2.5)

UNIT IV

Q8) A) Find out the correlation coefficient of given series with the help of Karl Pearson correlation coefficient methods: (5)

X	1	2	3	4	5	15
Y	7	6	4	5	3	25

B) Elaborate properties of coefficient of correlation. (2.5)

or

Q9) A) Calculate correlation co-efficient for the following data: (5)

X	5	10	5	11	12	4	3	2	7	1
y	1	6	2	8	5	1	4	6	5	2

B) Discuss significance of the correlation. (2.5)

CENTRAL UNIVERSITY OF HARYANA

Programme: B. Voc. - Retail and Logistics Management (RLM)   Session: 2021-22

Semester: I (Regular)   Max. Time: 3 Hours

Course Title: RETAIL MANAGEMENT-I   Max. Marks: 37.5

Course Code: RLM-102

Instructions: Question No.1 is compulsory. Attempt one question from each unit.

Q1. Attempt any five questions: (5x1.5=7.5)

a) What do you understand by post purchase experience?

b) List out the features of departmental store.

c) Enumerate the importance of e-commerce.

d) What is warehouse?

e) Write the main features of free-standing location.

f) How visual merchandising plays vital role in retail store?

g) What are convenience goods?

h) Differentiate between store-based and non-store-based retailing.

UNIT I

Q2. A) Define retailing? What are the various functions of retailing?   (5)

   B) Explain the various factors which are responsible for growth of retailing in India.   (2.5)

   or

Q3. A) Explain the evolution of retailing in India.   (5)

   B) What are the various features of retailing?   (2.5)

UNIT II

Q4. A) Write a note on theories of retail development.   (5)

   B) What do you mean by consumer cooperative?   (2.5)

   or

Q5. A) Explain about non-traditional retailing?   (5)

   B) What do you understand by online retailing?   (2.5)

UNIT III

Q6. A) What is retail consumer behaviour? How do culture, social and personal factors affect consumer behaviour? (5)

B) Why is consumer behaviour important to retailer? (2.5)

or

Q7. A) Define consumer decision making process and also explain various stages of decision making process. (5)

B) Discuss buyer roles in consumer decision making. (2.5)

UNIT IV

Q8. A) Explain the concept and importance of retail locations. (5)

B) What are the different types of retail location? (2.5)

or

Q9. A) What are the key factors which you keep in your mind while determining the location decision? (5)
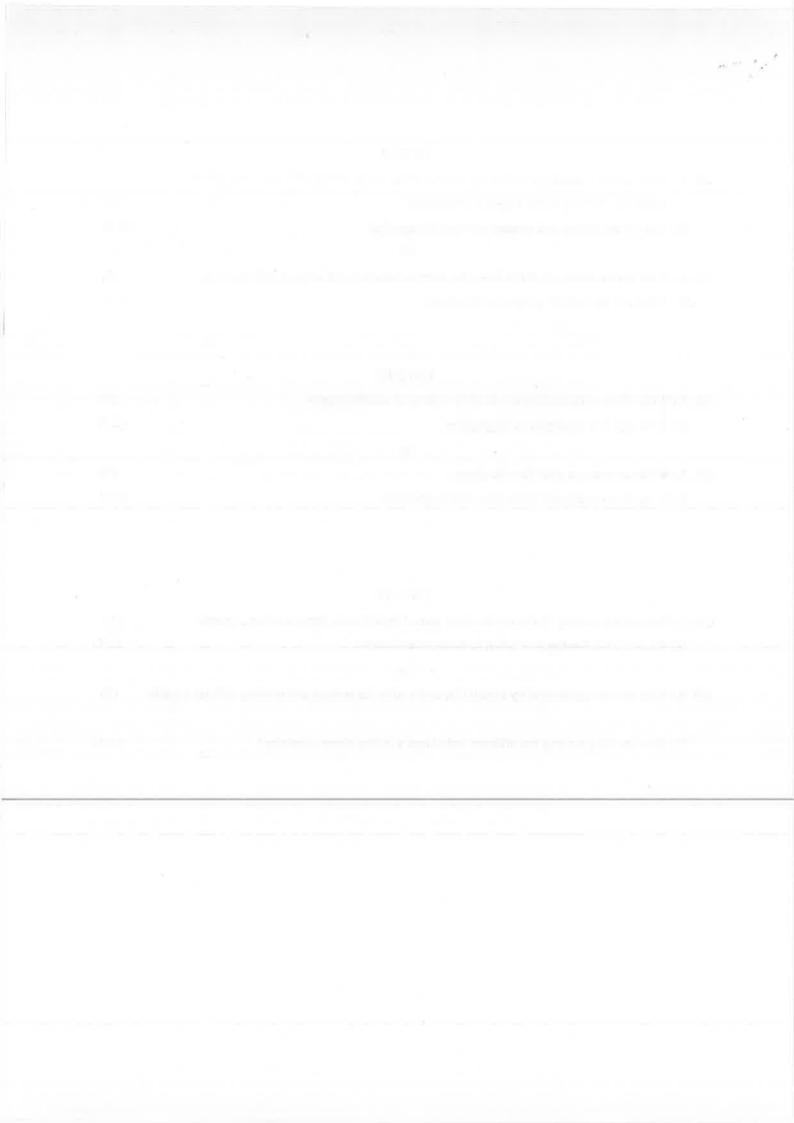
B) What is planned business site? (2.5)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Programme: B. Voc. - Retail and Logistics Management (RLM)   Session: 2021-22

Semester: I (Regular)   Max. Time: 3 Hours

Course Title: Speaking and Writing Skills in English   Max. Marks: 37.5

Course Code: RLM-104

Instructions: Question No.1 is compulsory. Attempt one question from each unit.

Q.1 Attempt any five questions. (1.5*5=7.5)

a) What are the uses of 'can' modal?

b) Differentiate between biography and autobiography.

c) Write down the importance of 'CC' and 'BCC'.

d) What are attention getters?

e) List out the rules for using article 'an'.

f) How presentation is different from public speaking?

g) What is kinesics?

h) When do we use present indefinite tense in English?

UNIT-I

Q2. A) What is non-verbal communication? Explain the various elements of on- verbal

communication? (5)

B) Discuss rules related to future tense. (2.5)

or

Q3. A) What are the dynamics of professional presentation? Write down the steps involved in

making an effective presentation? (5)

B) How to make a group presentation effectively? (2.5)

UNIT-II

Q4. A) What is public speaking? What are various components involved in effective public speaking? How to make a speech interesting? (5)

    B) List out the causes and strategies to avoid stage fear. (2.5)

or

Q5. A) What is conversation? Write down the purpose and features of good conversation. (5)

    B) What are the various telephone etiquettes? (2.5)

UNIT-III

Q6. A) Write down various steps involved in writing an autobiography. (5)

    B) Give any five examples of biographies. (2.5)

or

Q7. A) Write an essay on your favorite place. (5)

    B) Write down examples of any five autobiographies. (2.5)

UNIT IV

Q8. A) Define blog writing. Write a note about some blogs that are famous among people. (5)

    B) Enumerate advantages of email in business activities. (2.5)

or

Q9. A) What do you understand by e-mail? Describe rules for writing and sending official e-mails. (5)

    B) How the blog writing has affected individual's ability about creativity? (2.5)

CENTRAL UNIVERSITY OF HARYANA

Programme: B. Voc. - Retail and Logistics Management (RLM)   **Session: 2021-22**

Semester: I (Regular)   **Max. Time: 3 Hours**

Course Title: RETAIL MANAGEMENT-I   **Max. Marks: 37.5**

Course Code: RLM-102

Instructions: Question No.1 is compulsory. Attempt one question from each unit.

Q1. Attempt any five questions: (5x1.5=7.5)

a) What do you understand by post purchase experience?

b) List out the features of departmental store.

c) Enumerate the importance of e-commerce.

d) What is warehouse?

e) Write the main features of free-standing location.

f) How visual merchandising plays vital role in retail store?

g) What are convenience goods?

h) Differentiate between store-based and non-store-based retailing.

UNIT I

Q2. A) Define retailing? What are the various functions of retailing?   (5)

B) Explain the various factors which are responsible for growth of retailing in India.   (2.5)

or

Q3. A) Explain the evolution of retailing in India.   (5)

B) What are the various features of retailing?   (2.5)

UNIT II

Q4. A) Write a note on theories of retail development.   (5)

B) What do you mean by consumer cooperative?   (2.5)

or

Q5. A) Explain about non-traditional retailing?   (5)

B) What do you understand by online retailing?   (2.5)

UNIT III

Q6. A) What is retail consumer behaviour? How do culture, social and personal factors affect consumer behaviour? (5)

B) Why is consumer behaviour important to retailer? (2.5)

or

Q7. A) Define consumer decision making process and also explain various stages of decision making process. (5)

B) Discuss buyer roles in consumer decision making. (2.5)

UNIT IV

Q8. A) Explain the concept and importance of retail locations. (5)

B) What are the different types of retail location? (2.5)

or

Q9. A) What are the key factors which you keep in your mind while determining the location decision? (5)

B) What is planned business site? (2.5)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Programme: B. Voc. - Retail and Logistics Management (RLM)

Semester: I (Regular)

Course Title: RETAIL MANAGEMENT-I

Course Code: RLM-102

Session: 2021-22

Max. Time: 3 Hours

Max. Marks: 37.5

Instructions: Question No.1 is compulsory. Attempt one question from each unit.

Q1. Attempt any five questions: (5x1.5=7.5)

   a) Define retailing.

   b) Write a note on impact of rise of the web in retailing.

   c) What affects consumer motivation?

   d) Define consumerism.

   e) What is 'Haats'?

   f) List out the characteristics of specialty store.

   g) What is retail attraction model?

   h) Define the term 'Sorting' in retailing.

UNIT I

Q2. A) What is retailing? Discuss the challenges and opportunities of retailing in India. (5)

   B) Explain the intervention of information technology in retailing. What are its uses? (2.5)

<div align="center">or</div>

Q3. A) What is the importance of retailing? In what way do retailers offer convenience to consumers,

      wholesaler and producers? (5)

   B) What are the drivers of retail growth in India? (2.5)

UNIT II

Q4. A) Discuss cyclical theories of retailing. (5)

   B) Explain various types of non-store-based retailing. (2.5)

<div align="center">or</div>

Q5. A) Explain the different types of organized retail format with suitable examples. (5)

   B) Define ownership-based retailing. (2.5)

UNIT III

Q6. A) Write a detailed note on consumer decision making process. (5)

    B) Discuss how various reference groups influence consumer behaviour. (2.5)

<div align="center">or</div>

Q7. A) Explain the importance of understanding psychological concept like personality, attitude and perception in the retail marketing segment. (5)

    B) How the buying decision process is different in shopping on the internet? (2.5)

UNIT IV

Q8. A) Explain the role of location in retailing and also explore various factors which influence retailer in determining the location decision process. (5)

    B) 'Retailers in India are facing number of challenges' Elucidate. (2.5)

<div align="center">or</div>

Q9. A) Define freestanding sites/isolated store location with its advantages and disadvantages. (5)

    B) Explain various issues involved in selecting retail store. (2.5)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Instructions: Question No.1 is compulsory. Attempt one question from each unit.

Q.1 Attempt any five questions.   (1.5*5=7.5)

a) What are the uses of the 'must' modal?

b) Name the platforms which provide an opportunity to create blogs.

c) List out the difference between presentation and public speaking.

d) Write down the uses of 'CC' and 'BCC'.

e) What are attention getters?

f) Enumerate the rules for using article 'the'.

g) What is vocalics?

h) When and how do we use past indefinite tense in English?

UNIT-I

Q2. A) Write eight parts of speech in detail with examples.   (5)

    B) What is non-verbal communication? Name its elements.   (2.5)

                                   or

Q3. A) What is professional presentation? Write various steps involved in the making of an effective presentation.   (5)

    B) What are the differences between Individual and group presentations?   (2.5)

UNIT-II

Q4. A) What is public speaking? What are the various components involved in effective public speaking? (5)

    B) What is conversation? How to be good at conversation? (2.5)

or

Q5. A) What are the various telephone etiquettes? Why it is important to have telephone etiquette? (5)

    B) How to make speech interesting? (2.5)

UNIT III

Q6. A) What do you mean by sentence completion technique? Mention its importance. (5)

    B) Write down about your school life. (2.5)

or

Q7. A) What do you mean by autobiographical writing? How you can write a good autobiography? (5)

    B) Write a biographical sketch of your favourite teacher. (2.5)

UNIT-IV

Q8. A) What is an E-mail? Discuss its components and uses. (5)

    B) Elaborate Do's and Don'ts of Email. (2.5)

or

Q9. A) What is blogging? How to write an effective blog? (5)

    B) Draw a draft of e-mail. (2.5)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Programme: B. Voc. - Retail and Logistics Management (RLM)   Session: 2021-22

Semester: I (Regular)   Max. Time: 3 Hours

Course Title: Principles and Practices of Management   Max. Marks: 37.5

Course Code: RLM-101

Instructions: Question No.1 is compulsory. Attempt one question from each unit.

Q1. Attempt any five questions: (1.5*5=7.5)

a) Is management a science or an art? Explain.

b) Define strategy.

c) Name the 6Ms that management brings together.

d) What is scientific management? Who is the father of scientific management?

e) What is laissez- faire style of leadership?

f) Highlight the role of first step in controlling process.

g) What is functional organisation?

h) Why is employee motivation so important?

UNIT I

Q2) A) Define planning and discuss the process of planning.   (5)

   B) Discuss the importance of planning.   (2.5)

or

Q3) A) Discuss the process of decision making.   (5)

   B) Describe the essentials of policy formulation.   (2.5)

UNIT II

Q4) A) What is line organisation? Discuss the features of line organisation and why it is better than other forms of organisation?   (5)

   B) Discuss advantages of work specialization.   (2.5)

or

Q5) A) Discuss any three theories of organisation.   (5)

   B) What are the principles of delegation of authority?   (2.5)

UNIT III

Q6) A) Discuss various objectives and functions of staffing. (5)

B) What are the characteristics of a good leader? (2.5)

or

Q7) A) Describe various factors affecting staffing. (5)

B) Discuss authoritarian leadership style. (2.5)

UNIT IV

Q8) A) Describe various levels of control. (5)

B) Discuss modern techniques of controlling. (2.5)

or

Q9) A) What is controlling? Discuss the process of controlling. (5)

B) What is the role of operational control in modern business? (2.5)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Programme: B. Voc. - Retail and Logistics Management (RLM)　　　　Session: 2021-22

Semester: I (Regular)　　　　Max. Time: 3 Hours

Course Title: Business Statistics　　　　Max. Marks: 37.5

Course Code: RLM-103

Instructions: Question No.1 is compulsory. Attempt one question from each Unit.

Q1. Attempt any five questions:　　　　(5x1.5=7.5)

a) What is primary data?

b) What are the objectives of frequency distribution?

c) Find mode of 3,3,2,2,1,11,11,2 data set.

d) What is the relationship between mean, median and mode? Write the equation.

e) Define dispersion.

f) Find out the range for given series x: 5,7,6,3,8,6,1 .

g) What is Lorenz curve?

h) Define correlation.

UNIT I

Q2) A) Define statistics. Discuss the importance of statistics in different disciplines.　　　　(5)

　　B) What are the limitations of statistics?　　　　(2.5)

or

Q3) A) Elaborate the methods of collecting primary data.　　　　(5)

　　B) What are the objectives of tabulation?　　　　(2.5)

UNIT II

Q4) A) What are the measures of central tendency? Discuss objectives, advantages and disadvantages of measures of central tendency.　　　　(5)

　　B) Find out the mean of given series 2,3,5,6,8,9,4,6,5,7 .　　　　(2.5)

or

Q5) A) Find out Q1, D7, P90 of given series:　　　　(5)

C.I	0-10	10-20	20-30	30-40
f	4	3	2	1

　　B) Discuss various kinds of partition values.　　　　(2.5)

UNIT III

Q6) A) Find out the standard deviation of following series: (5)

X	2	3	4	5	6
f	5	4	3	7	1

B) Discuss the merits and demerits of mean deviation. (2.5)

or

Q7) A) Find out the quartile deviation of following series (5)

C.I	0-10	10-20	20-30	30-40	40-50
f	3	4	1	2	6

B) Discuss the merits and demerits of quartile deviation. (2.5)

UNIT IV

Q8) A) Find out the correlation coefficient of given series with the help of spearman's rank correlation coefficient : (5)

X	11	10	13	9	7	3	15	16
Y	21	25	23	27	16	19	11	30

B) What is the significance of correlation? (2.5)

or

Q9) A) Find out the coefficient of correlation by concurrent deviation method. (5)

X	150	154	160	172	160	165	180
Y	200	180	170	160	190	180	172

B) Discuss types of correlation. (2.5)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April 2022

Programme:	**B.Voc. Biomedical Sciences**	**Session:**	**2021-22**
Semester:	**1st**	**Max. Time:**	**3 Hours**
Course Title:	**Basic Organic Chemistry**	**Max. Marks:**	**50**
Course Code:	**BMS-102**		

Instructions:

1. Question no. 1 has seven parts and students need to answer any five. Each part carries two Marks.

2. Question no. 2 to 5 have three parts and students need to answer two parts of each question. Each part carries five marks.

Q 1. (5X2=10)

a) Predict the product: $CH_3CH_2CH_2OH$ ----- alc. KOH ---->

b) Predict the major product of the following reaction and explain it their formation: CH3CH=CH2 + HBr ------->

c) Define nucleophiles. Give an example.

d) What happens when methyl bromide is treated with sodium in the presence of dry ether?

e) Acid catalyzed dehydration of t-butanol is faster than n-butanol. Why?

f) Define Huckel's rule of aromaticity.

g) Write the structure of anthracene and mention two uses.

Q 2. (2X5=10)

a) Write a short note on inductive effects.

b) Write a short note on reactive intermediates.

c) (i) Why is benzylic carbocation more stable than allylic carbocation? Explain.

(ii) Arrange the following in increasing order of basicity. Give an explanation. CH_3NH_2, $C_6H_5NH_2$, NH_3

Q3. (2X5=10)

a) (i) Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular masses. Explain.

(ii) Explain how the hydroxyl group attached to a carbon of benzene ring activates it towards electrophilic substitution.

b) Write a short note on conformations of n-butane.

c) (i) Explain why Grignard reagents should be prepared under anhydrous conditions.

(ii) The treatment of alkyl chloride with aqueous KOH leads to the formation of alcohols but in the presence of alcoholic KOH, alkenes are major products. Explain

Q 4. (2X5=10)

a) Write structural formulas and names of four possible aldol condensation products from propanal and butanal. Indicate which aldehyde acts as nucleophile and which as electrophile in each case.

b) Write a short note on Hoffmann Bromamide Reaction.

c) Write a short note on transesterification.

Q 5.   (2X5=10)

a) What is friedel craft alkylation? Give the mechanism. List down the limitations of this reaction.

b) (i) How benzene is different from alkene, although both contain C=C double bonds.

(ii) Write down the properties of benzene.

c) Write the reaction for sulphonation of benzene. Explain the mechanism.

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations April, 2022</u>

Programme: B.Voc. (Biomedical Sciences)   **Session: 2021-22**

Semester: First   **Max. Time: 3 Hours**

Course Title: Human Physiology   **Max. Marks: 50**

Course Code: BMS-101

Instructions:

1. Attempt all 5 questions

2. Question no. 1 has 13 parts and students need to answer any ten. Each part carries one mark.

3. Question no. 2 to 5 carries 10 marks each. Option has been given in each question. Attempt any one for 10 marks.

Q 1.   **(10X1=10)**

  a) Amount of glucose found in the urine is in the range of ....

  b) Name two organs with highest proportions of water in the body?

  c) Define interstitial fluid?

  d) What is acid base balance?

  e) Hormone released by pineal gland is ....

  f) When acetylcholine is bound to receptor but gate remain closed, this state of receptor is

  called............

  g) When a photon is absorbed by rhodopsin, conformational changes occur causing all............

  to........... forms.

  h) .... is condition where hemoglobin increase abnormally.

  i) ....cell produce HCL in stomach

  j) Bone forming cells originate from............

  k) Megakaryotes cell develop into ....

  l) .... is the common factor in both pathways of clotting.

  m) Hydroxyapatite in bone matrix that gives bone its hardness is primarily composed of............

Q 2:

  a) Differentiate between oncogenes and tumor suppressor gene with suitable example.

                                                                            (5 marks)

  b) Explain briefly apoptosis with suitable diagram.   (5 marks)

                              Or

Write short note on following:

      a)   Sickle cell anemia   (5 marks)

      b)   Thalassemia   (5 marks)

Q3.

    a) What is role of calcium in blood?   (5 marks)

    b) Write short note on calcium homeostasis.   (5 marks)

<p align="center">or</p>

    a) Explain why the stomach does not digest itself?   (5 marks)

    b) Write the role of following components of digestive system   (5 marks)

        i)   Bacterial Flora present intestine.

        ii)   Goblet cells

        iii)   Gastric juice

        iv)   Chief cells

        v)   Parietal cells

Q 4.

a) In the form of flow chart, describe the direction of blood flow in the kidney?   (3 marks)

b) Describe the structure of nephron with labeling?   (2 marks)

c) Describe acetylcholine receptor.   (5 marks)

<p align="center">or</p>

a) Draw flow diagram explaining of molecular consequences of photon absorption. (5 marks)

b) Describe how renin-angiotensin-Aldosterone system regulates blood pressure in the body? (5marks)

Q 5.

    a) In the form of flow chart, describe the process of regulation of water intake in the body?

                                                    (4 marks)

    b) Drawing the picture, describe how the hormones are released by the hypothalamus-pituitary axis? (6 marks)

<p align="center">Or</p>

a) Describe the four types of buffer system in the body?   (4 marks)

b) Describe the regulation of release of insulin by Beta cells of the pancreas? (6 marks)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April, 2022

Programme: B.Voc Biomedical Sciennces

Session: 2021-22

Semester: I

Course Title: Human Physiology

Max. Time: 3 Hours

Max. Marks: 50

Course Code: BMS-101

Instructions:

1. Attempt all 5 questions

2. Question no. 1 has 13 parts and students need to answer any ten. Each part carries one mark.

3. Question no. 2 to 5 carries 10 marks each. Option has been given in each question. Attempt any one for 10 marks.

Q 1. (10X1=10)

a) Amount of glucose found in the urine is in the range of ....

b) Name two organs with highest proportions of water in the body?

c) Define interstitial fluid?

d) What is acid base balance?

e) Hormone released by pineal gland is ....

f) When acetylcholine is bound to receptor but gate remain closed, this state of receptor is called............

g) When a photon is absorbed by rhodopsin, conformational changes occur causing all............ to........... forms.

h) .... is condition where hemoglobin increase abnormally.

i) ....cell produce HCL in stomach

j) Bone forming cells originate from............

k) Megakaryotes cell develop into ....

l) .... is the common factor in both pathways of clotting.

m) Hydroxyapatite in bone matrix that gives bone its hardness is primarily composed of............

Q 2:

a) Differentiate between oncogenes and tumor suppressor gene with suitable example.

(5 marks)

b) Explain briefly apoptosis with suitable diagram. (5 marks)

Or

Write short note on following:

a) Sickle cell anemia (5 marks)

b) Thalassemia (5 marks)

Q3.

    a) What is role of calcium in blood?   (5 marks)

    b) Write short note on calcium homeostasis.   (5 marks)

or

    a) Explain why the stomach does not digest itself?   (5 marks)

    b) Write the role of following components of digestive system   (5 marks)

        i)   Bacterial Flora present intestine.

        ii)   Goblet cells

        iii)   Gastric juice

        iv)   Chief cells

        v)   Parietal cells

Q 4.

a) In the form of flow chart, describe the direction of blood flow in the kidney?   (3 marks)

b) Describe the structure of nephron with labeling?   (2 marks)

c) Describe acetylcholine receptor.   (5 marks)

or

a) Draw flow diagram explaining of molecular consequences of photon absorption. (5 marks)

b) Describe how renin-angiotensin-Aldosterone system regulates blood pressure in the body?
(5marks)

Q 5.

    a) In the form of flow chart, describe the process of regulation of water intake in the body?

                                                (4 marks)

    b) Drawing the picture, describe how the hormones are released by the hypothalamus-pituitary

        axis? (6 marks)

Or

a) Describe the four types of buffer system in the body?   (4 marks)

b) Describe the regulation of release of insulin by Beta cells of the pancreas? (6 marks)

Programme:	**B.Voc. Biomedical Sciences**	**Session:**	**2021-22**
Semester:	**First**	**Max. Time:**	**3 Hours**
Course Title:	**Basic Organic Chemistry**	**Max. Marks:**	**50**
Course Code:	**BMS-102**		

Instructions:

1. Question no. 1 has seven parts and students need to answer any five. Each part carries two Marks.

2. Question no. 2 to 5 have three parts and students need to answer two parts of each question. Each part carries five marks.

Q 1. (5X2=10)

   a) Predict the product: $CH_3CH_2CH_2OH$ ----- alc. KOH ---->

   b) Predict the major product of the following reaction and explain it their formation: $CH3CH=CH2$ + HBr —------>

   c) Define nucleophiles. Give an example.

   d) What happens when methyl bromide is treated with sodium in the presence of dry ether?

   e) Acid catalyzed dehydration of t-butanol is faster than n-butanol. Why?

   f) Define Huckel's rule of aromaticity.

   g) Write the structure of anthracene and mention two uses.

Q 2. (2X5=10)

   a) Write a short note on inductive effects.

   b) Write a short note on reactive intermediates.

   c) (i) Why is benzylic carbocation more stable than allylic carbocation? Explain.

   (ii) Arrange the following in increasing order of basicity. Give an explanation. $CH_3NH_2, C_6H_5NH_2, NH_3$

Q3. (2X5=10)

   a) (i) Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular masses. Explain.

   (ii) Explain how the hydroxyl group attached to a carbon of benzene ring activates it towards electrophilic substitution.

   b) Write a short note on conformations of n-butane.

   c) (i) Explain why Grignard reagents should be prepared under anhydrous conditions.

   (ii) The treatment of alkyl chloride with aqueous KOH leads to the formation of alcohols but in the presence of alcoholic KOH, alkenes are major products. Explain

Q 4. (2X5=10)

a) Write structural formulas and names of four possible aldol condensation products from propanal and butanal. Indicate which aldehyde acts as nucleophile and which as electrophile in each case.

b) Write a short note on Hoffmann Bromamide Reaction.

c) Write a short note on transesterification.

Q 5. (2X5=10)

a) What is friedel craft alkylation? Give the mechanism. List down the limitations of this reaction.

b) (i) How benzene is different from alkene, although both contain C=C double bonds.

   (ii) Write down the properties of benzene.

c) Write the reaction for sulphonation of benzene. Explain the mechanism.

Name of Programme	: B.Voc (Industrial Waste Management)	
Year & Semester	: April 2022, Semester-I	
Course Name	: Concepts in chemistry	
Course Code	:IWM-102	
Maximum Marks	:50	Duration: 3Hrs

Attempt any five questions selecting one question from each unit. Question 1 is compulsory.

(2x5)

Question 1: Very short type or definitions:

a. Explain, why the order of electron affinities for the elements in group is O<S>Se>Te>Po.

b. Which has lowest IE_2 and why (Na or Mg)?

c. Define Autocatalysis with example.

d. What is thermodynamic basis of Hess's law?

e. Which carbene is more stable and why?

f. Define carbonium ion and write its structure.

g. Define Alkalinity and Acidity.

h. Define w/w and w/v.

UNIT-I

Question 2: **(6,4)**

A. Define ionization energy. On what factors it depends? How does the ionization energy of the elements vary as we move down a group and along a period?

B. What are the basic postulates of Werner's theory of coordination?

OR

A. Write down limitations of valence bond theory and find hybridization, structure, magnetic character of $\{Fe\ (CN)_6\}^{2-}$.

B. Square planar complexes do not exhibit optical isomerism and tetrahedral complexes do not exhibit geometrical isomerism. Why?

UNIT-II

Question 3: (6,4)

    A. Define equilibrium constant and derive relationship between K_p and KC.

    B. Describe various factors on which rate of reaction depend.

<div align="center">OR</div>

    A. Derive mathematical expression for Van·t hoff equation.

    B. State first law of thermodynamics in two different ways. Derive its mathematical formulation.

UNIT-III

Question 4: (6,4)

    A. What are carbanions? Discuss the relative stabilities of primary, secondary and tertiary carbanions.

    B. What are electrophiles and nucleophiles? Classify the following as electrophile and nucleophiles: SO_3, $AlCl_3$, $C_2H_5NH_2$, NO_2^+, :CX_2, $C_6H_5CH_2^+$?

<div align="center">OR</div>

    A. What are the main types of organic reactions? Explain, giving suitable examples.

    B. Write methods of synthesis and structure of ketones.

UNIT-IV

Question 5: (6,4)

    A. What is buffer solution? Discuss buffer equation and buffer capacity.

    B. Differentiate between primary standard and secondary standard.

<div align="center">OR</div>

    A. Explain redox reaction in detail.

    B. Explain Acid- Base titration in detail.

I Semester UG Term End Semester Examination April, 2022

Name of Programme	: B. Voc. (Industrial Waste Management)
Year & Semester	: April 2022, Semester-I
Course Name	: Introductory Biology
Course Code	: IWM-101
Maximum Marks	: 50 **Duration: 3Hrs**

Attempt any five questions selecting one question from each unit. Question 1 is compulsory.

Question 1. Do any five:-   (2x5)

a. What do you mean by physiology?
b. Define metabolism and its types.
c. Give the examples of nitrifying bacteria.
d. Give the difference between leucoplast and chromoplast?
e. Write a short note on Enzyme-Substrate complex?
f. Differentiate between oligosaccharides and polysaccharides.
g. Write a short note on palaentological evidence.
h. Give the differences between respiration and combustion.

UNIT-I

Question 2.   (6, 4)
A. Explain Lamarck's theory of evolution in detail.
B. What is the spontaneous generation hypothesis?

OR

A. Give the evidences in the support of evolution.
B. Explain human evolution in detail.

UNIT-II

Question 3.   (6, 4)
A. Explain kingdom fungi in detail. Also give its types.
B. Give the characteristics of animal kingdom with classification.

OR

A. Give the structure and life history of parasite plasmodium.
B. Differentiate between Prokaryotic and Eukaryotic organisms.

UNIT-III

Question 4.   (6, 4)
A. What do you mean by cell division? Also explain stages of mitosis and meiosis.
B. Give the all phases of cell cycle.

OR

A. Explain structure and functions of biomolecules- nucleic acid and lipids.
B. What are the differences between mitosis and meiosis?

UNIT-IV

Question. 5.   (6, 4)
A. Explain the process of photosynthesis in detail. Also give the factors affecting photosynthesis.
B. Give the differences between aerobic and anaerobic respiration.

OR

A. Grouping of organisms based on energy need and mineral nutrition.
B. Explain glycolysis and fermentation process with all steps.

Iˢᵗ Semester UG Term End Semester Examination April, 2022
(Regular)

Name of Programme	: B.Voc (Industrial Waste Management)
Year & Semester	: April 2022, Semester-I
Course Name	: Concepts in chemistry
Course Code	:IWM-102
Maximum Marks	:50 **Duration: 3Hrs**

Attempt any five questions selecting one question from each unit. Question 1 is compulsory.

(2x5)

Question 1: Very short type or definitions:

   a. Explain, why the order of electron affinities for the elements in group is O<S>Se>Te>Po.

   b. Which has lowest IE_2 and why (Na or Mg)?

   c. Define Autocatalysis with example.

   d. What is thermodynamic basis of Hess's law?

   e. Which carbene is more stable and why?

   f. Define carbonium ion and write its structure.

   g. Define Alkalinity and Acidity.

   h. Define w/w and w/v.

UNIT-I

Question 2:   **(6,4)**

   A. Define ionization energy. On what factors it depends? How does the ionization energy of the elements vary as we move down a group and along a period?

   B. What are the basic postulates of Werner's theory of coordination?

<div align="center">OR</div>

   A. Write down limitations of valence bond theory and find hybridization, structure, magnetic character of $\{Fe (CN)_6\}^{2-}$.

   B. Square planar complexes do not exhibit optical isomerism and tetrahedral complexes do not exhibit geometrical isomerism. Why?

UNIT-II

Question 3:   **(6,4)**

A. Define equilibrium constant and derive relationship between K_p and KC.

B. Describe various factors on which rate of reaction depend.

<div align="center">OR</div>

A. Derive mathematical expression for Van't hoff equation.

B. State first law of thermodynamics in two different ways. Derive its mathematical formulation.

<div align="center">UNIT-III</div>

Question 4: (6,4)

A. What are carbanions? Discuss the relative stabilities of primary, secondary and tertiary carbanions.

B. What are electrophiles and nucleophiles? Classify the following as electrophile and nucleophiles: SO_3, $AlCl_3$, $C_2H_5NH_2$, NO_2^+, $:CX_2$, $C_6H_5CH_2^+$?

<div align="center">OR</div>

A. What are the main types of organic reactions? Explain, giving suitable examples.

B. Write methods of synthesis and structure of ketones.

<div align="center">UNIT-IV</div>

Question 5: (6,4)

A. What is buffer solution? Discuss buffer equation and buffer capacity.

B. Differentiate between primary standard and secondary standard.

<div align="center">OR</div>

A. Explain redox reaction in detail.

B. Explain Acid- Base titration in detail.

Name of Programme	**: B. Voc. (Industrial Waste Management+ BMS)**
Year & Semester	**: June 2022, Semester-I (Re-appear)**
Course Name	**: English Communication I**
Course Code	**: IWM-103 BMS 103**
Maximum Marks	**: 25** **Duration: 3Hrs**

Attempt any five questions selecting one question from each unit. Question 1 is compulsory.

Question 1. Attempt any five: -   (5)

a. Encoding
b. Channel
c. Feedback
d. Group discussion
e. Advantages of e-mail
f. Kinesics
g. Critical Listening
h. Difference between CV and a Resume.

UNIT-I
Question 2.   (3, 2)
A. What are Organizational barriers. Explain various common organizational barriers.
B. Explain Five methods by which we can overcome barriers in communication.
OR
A. Define Communication. Explain the process of communication with the help of a well labelled diagram.
B. What are Perspectives in Communication. Name the various filters of the same.

UNIT-II
Question 3.   (3, 2)
A. Define Verbal Communication. Enumerate five advantages of oral communication?
B. How can we say Colour is a means of non-verbal communication?
OR
A. Define Communication Styles? Name all the styles of Communication.
B. Give tips for communication if one has Considerate Communication style. ·

UNIT-III
Question 4.   (3, 2)
A. Elaborate on Active versus Passive Listening
B. What do we mean by 'Listening in Difficult Situations' Also specify certain tips in this difficult situation?
OR
A. Briefly describe all the factors that decide when and when not to use written communication.
B. Differentiate between Listening, Hearing and Thinking with examples.

UNIT-IV
Question. 5.   (3, 2)
A. What do you mean by interviews? What are the objectives behind conducting interviews
B. Give tips for success in Group Discussion.
OR
A. Write a Job Application Letter with a detailed Resume for the following advertisement:

Assume that you are Manish Mehta. You completed your BTech in Chemical Engineering from IIT, Delhi in July 2001. Since then you have been working as a chemical engineer at Haldia Petrochemicals Limited, Haldia. You are a dynamic professional with excellent communication, interpersonal and negotiation skills. You are proficient in MS-DOS, Microsoft Windows, Excel and Word 2000. Design a résumé for the position of chemical engineer in an expanding multinational petrochemical company based in Mumbai.

B. Imagine yourself to be the Instructor of a course in which 75 students have registered. Draft an e-mail to be sent to all these students asking them to select a topic of their choice and prepare for a professional presentation of 10 minutes.

Name of Programme	: **B. Voc. (Industrial Waste Management+ BMS)**
Year & Semester	: **April 2022, Semester-I**
Course Name	: **English Communication I**
Course Code	: **IWM-103 BMS 103**
Maximum Marks	: **25** **Duration: 3Hrs**

Attempt any five questions selecting one question from each unit. Question 1 is compulsory.

Question 1. Write a short note on any five:-   (5)

a. Define Communication.
b. Three P's of a business letter
c. Feedback
d. What are barriers to communication.
e. Advantages of e-mail
f. Brainstorming
g. PS and PPS in a business letter
h. Difference between CV and a Resume.

UNIT-I

Question 2.   (3, 2)
A. What are Semantic barriers. Explain various common semantic barriers.
B. What are interpersonal barriers? What are its specific causes?

OR

A. Define Communication. Explain the process of communication with the help of a well labelled diagram.
B. Define Feedback. What are its essential characteristics?

UNIT-II

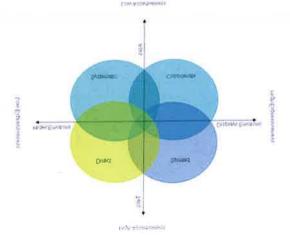**Question 3.**   (3, 2)
A. Explain Pitch Variation. What effect it gives to our voice?
B. How can we say Colour is a means of non-verbal communication?

OR

A. Explain the figure shown here. By whom it was proposed and what does it refer to?

B. Briefly describe how to make effective use of body language.

UNIT-III

Question 4.   (3, 2)

A. Enumerate TEN barriers to active listening.
B. What do we mean by 'Listening in Difficult Situations' Also specify certain tips in this difficult situation?

OR

A. Briefly describe all the factors that decide when and when not to use written communication.
B. Differentiate between Listening, Hearing and Thinking with examples.

UNIT-IV

Question. 5.   (3, 2)

A. Enumerate ten success factors ad ten failure factors of an interview.
B. Name the evaluation components of a GD? Briefly explain them.

OR

A. Write a Job Application Letter with a detailed CV for the following advertisement:
Wanted a service advisor at our Kolkata office. You should preferably be an automobile engineer with 2 to 4 years of relevant experience. A pleasant personality and good communication skills are essential. Please send your detailed résumé with a covering letter to Topsel Toyota, 25, Ganesh Chandra Avenue, Kolkata-700 013. E-mail: topcal@vsnl.com.

B. You are Manish Agarwal, Purchase Manager, Career Consultants, Camac Street, Kolkata. Write an order letter to the Sales Manager of Balaji Solutions, GC Avenue, Kolkata. You want four Travel Mate Acer notebooks, Model TM 244 FX-P26A, at the quoted price of ` 49,999/- each. You are ready to pay ` 4000/- for freight and handling. You want four carrybags at an extra cost of ` 4000/-. You are sending a crossed bank draft for ` 207996/- in favour of Bajaj Solutions, Kolkata. You want the delivery within a week.

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations April 2022</u>

Programme:	B.Voc. Biomedical Sciences	**Session:**	2021-22
Semester:	1st	**Max. Time:**	3 Hours
Course Title:	Basic Organic Chemistry	**Max. Marks:**	50
Course Code:	BMS-102		

Instructions:

1. Question no. 1 has seven parts and students need to answer any five. Each part carries two Marks.

2. Question no. 2 to 5 have three parts and students need to answer two parts of each question. Each part carries five marks.

Q 1. (5X2=10)

a) Predict the product: $CH_3CH_2CH_2OH$ ----- alc. KOH ---->

b) Predict the major product of the following reaction and explain it their formation: CH3CH=CH2 + HBr ------->

c) Define nucleophiles. Give an example.

d) What happens when methyl bromide is treated with sodium in the presence of dry ether?

e) Acid catalyzed dehydration of t-butanol is faster than n-butanol. Why?

f) Define Huckel's rule of aromaticity.

g) Write the structure of anthracene and mention two uses.

Q 2. (2X5=10)

a) Write a short note on inductive effects.

b) Write a short note on reactive intermediates.

c) (i) Why is benzylic carbocation more stable than allylic carbocation? Explain.

(ii) Arrange the following in increasing order of basicity. Give an explanation. $CH_3NH_2, C_6H_5NH_2, NH_3$

Q3. (2X5=10)

a) (i) Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular masses. Explain.

(ii) Explain how the hydroxyl group attached to a carbon of benzene ring activates it towards electrophilic substitution.

b) Write a short note on conformations of n-butane.

c) (i) Explain why Grignard reagents should be prepared under anhydrous conditions.

(ii) The treatment of alkyl chloride with aqueous KOH leads to the formation of alcohols but in the presence of alcoholic KOH, alkenes are major products. Explain

Q 4. (2X5=10)

a) Write structural formulas and names of four possible aldol condensation products from propanal and butanal. Indicate which aldehyde acts as nucleophile and which as electrophile in each case.

b) Write a short note on Hoffmann Bromamide Reaction.

c) Write a short note on transesterification.

Q 5.   (2X5=10)

a) What is friedel craft alkylation? Give the mechanism. List down the limitations of this reaction.

b) (i) How benzene is different from alkene, although both contain C=C double bonds.

(ii) Write down the properties of benzene.

c) Write the reaction for sulphonation of benzene. Explain the mechanism.

Programme:	**B.Voc. (Biomedical Sciences)**	**Session: 2021-22**
Semester:	**First**	**Max. Time: 3 Hours**
Course Title: Human Physiology		**Max. Marks: 50**
Course Code: BMS-101		

Instructions:

1. Attempt all 5 questions

2. Question no. 1 has 13 parts and students need to answer any ten. Each part carries one mark.

3. Question no. 2 to 5 carries 10 marks each. Option has been given in each question. Attempt any one for 10 marks.

Q 1.   **(10X1=10)**

   a) Amount of glucose found in the urine is in the range of ....

   b) Name two organs with highest proportions of water in the body?

   c) Define interstitial fluid?

   d) What is acid base balance?

   e) Hormone released by pineal gland is ....

   f) When acetylcholine is bound to receptor but gate remain closed, this state of receptor is called............

   g) When a photon is absorbed by rhodopsin, conformational changes occur causing all............ to........... forms.

   h) .... is condition where hemoglobin increase abnormally.

   i) ....cell produce HCL in stomach

   j) Bone forming cells originate from............

   k) Megakaryotes cell develop into ....

   l) .... is the common factor in both pathways of clotting.

   m) Hydroxyapatite in bone matrix that gives bone its hardness is primarily composed of............

Q 2:

   a) Differentiate between oncogenes and tumor suppressor gene with suitable example.

                                                                                                   (5 marks)

   b) Explain briefly apoptosis with suitable diagram.   (5 marks)

                                              Or

Write short note on following:

   a)   Sickle cell anemia   (5 marks)

   b)   Thalassemia   (5 marks)

Q3.

    a) What is role of calcium in blood?   (5 marks)

    b) Write short note on calcium homeostasis.   (5 marks)

<center>or</center>

    a) Explain why the stomach does not digest itself?   (5 marks)

    b) Write the role of following components of digestive system   (5 marks)

        i)   Bacterial Flora present intestine.

        ii)   Goblet cells

        iii)   Gastric juice

        iv)   Chief cells

        v)   Parietal cells

Q 4.

a) In the form of flow chart, describe the direction of blood flow in the kidney?   (3 marks)

b) Describe the structure of nephron with labeling?   (2 marks)

c) Describe acetylcholine receptor.   (5 marks)

<center>or</center>

a) Draw flow diagram explaining of molecular consequences of photon absorption. (5 marks)

b) Describe how renin-angiotensin-Aldosterone system regulates blood pressure in the body? (5marks)

Q 5.

    a)   In the form of flow chart, describe the process of regulation of water intake in the body?

                         (4 marks)

    b)   Drawing the picture, describe how the hormones are released by the hypothalamus-pituitary axis? (6 marks)

<center>Or</center>

a) Describe the four types of buffer system in the body?   (4 marks)

b) Describe the regulation of release of insulin by Beta cells of the pancreas? (6 marks)

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations April, 2022</u>

Programme: B.Voc Biomedical Sciennces

Session: 2021-22

Semester: I

Course Title: Human Physiology

Course Code: BMS-101

Max. Time: 3 Hours

Max. Marks: 50

Instructions:

1. Attempt all 5 questions

2. Question no. 1 has 13 parts and students need to answer any ten. Each part carries one mark.

3. Question no. 2 to 5 carries 10 marks each. Option has been given in each question. Attempt any one for 10 marks.

Q 1.   **(10X1=10)**

 a) Amount of glucose found in the urine is in the range of ....

 b) Name two organs with highest proportions of water in the body?

 c) Define interstitial fluid?

 d) What is acid base balance?

 e) Hormone released by pineal gland is ....

 f) When acetylcholine is bound to receptor but gate remain closed, this state of receptor is called............

 g) When a photon is absorbed by rhodopsin, conformational changes occur causing all............ to........... forms.

 h) .... is condition where hemoglobin increase abnormally.

 i) ....cell produce HCL in stomach

 j) Bone forming cells originate from...........

 k) Megakaryotes cell develop into ....

 l) .... is the common factor in both pathways of clotting.

 m) Hydroxyapatite in bone matrix that gives bone its hardness is primarily composed of...........

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 a) Differentiate between oncogenes and tumor suppressor gene with suitable example.

(5 marks)

 b) Explain briefly apoptosis with suitable diagram.   (5 marks)

Or

Write short note on following:

     a)   Sickle cell anemia   (5 marks)

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Q3.

    a) What is role of calcium in blood?   (5 marks)

    b) Write short note on calcium homeostasis.   (5 marks)

<div align="center">or</div>

    a) Explain why the stomach does not digest itself?   (5 marks)

    b) Write the role of following components of digestive system   (5 marks)

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a) Draw flow diagram explaining of molecular consequences of photon absorption. (5 marks)

b) Describe how renin-angiotensin-Aldosterone system regulates blood pressure in the body? (5marks)

Q 5.

    a) In the form of flow chart, describe the process of regulation of water intake in the body?

        (4 marks)

    b) Drawing the picture, describe how the hormones are released by the hypothalamus-pituitary axis? (6 marks)

<div align="center">Or</div>

a) Describe the four types of buffer system in the body?   (4 marks)

b) Describe the regulation of release of insulin by Beta cells of the pancreas? (6 marks)

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations April 2022</u>

Programme:	**B.Voc. Biomedical Sciences**	**Session:**	**2021-22**
Semester:	**First**	**Max. Time:**	**3 Hours**
Course Title:	**Basic Organic Chemistry**	**Max. Marks:**	**50**
Course Code:	**BMS-102**		

Instructions:

1. Question no. 1 has seven parts and students need to answer any five. Each part carries two Marks.

2. Question no. 2 to 5 have three parts and students need to answer two parts of each question. Each part carries five marks.

Q 1.   (5X2=10)

a) Predict the product: $CH_3CH_2CH_2OH$ ----- alc. KOH ---->

b) Predict the major product of the following reaction and explain it their formation: CH3CH=CH2 + HBr ------->

c) Define nucleophiles. Give an example.

d) What happens when methyl bromide is treated with sodium in the presence of dry ether?

e) Acid catalyzed dehydration of t-butanol is faster than n-butanol. Why?

f) Define Huckel's rule of aromaticity.

g) Write the structure of anthracene and mention two uses.

Q 2.   (2X5=10)

a) Write a short note on inductive effects.

b) Write a short note on reactive intermediates.

c) (i) Why is benzylic carbocation more stable than allylic carbocation? Explain.

(ii) Arrange the following in increasing order of basicity. Give an explanation. CH_3NH_2, $C_6H_5NH_2$, NH_3

Q3.   (2X5=10)

a) (i) Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular masses. Explain.

(ii) Explain how the hydroxyl group attached to a carbon of benzene ring activates it towards electrophilic substitution.

b) Write a short note on conformations of n-butane.

c) (i) Explain why Grignard reagents should be prepared under anhydrous conditions.

(ii) The treatment of alkyl chloride with aqueous KOH leads to the formation of alcohols but in the presence of alcoholic KOH, alkenes are major products. Explain

Q 4.   (2X5=10)

a) Write structural formulas and names of four possible aldol condensation products from propanal and butanal. Indicate which aldehyde acts as nucleophile and which as electrophile in each case.

b) Write a short note on Hoffmann Bromamide Reaction.

c) Write a short note on transesterification.

Q 5.   (2X5=10)

a) What is friedel craft alkylation? Give the mechanism. List down the limitations of this reaction.

b) (i) How benzene is different from alkene, although both contain C=C double bonds.

    (ii) Write down the properties of benzene.

c) Write the reaction for sulphonation of benzene. Explain the mechanism.

CENTRAL UNIVERSITY OF HARYANA

End Semester Exams (Regular), June- 2022

Programme : B.Voc. Biomedical Sciences   Max Marks : 50
Semester   : 6ᵗʰ Semester   Max Time   : 3 hrs
Paper Name : Immunology
Paper Code   : BMS-601

Attempt all 5 questions. Each question carries 10 marks.

Q1. State whether the following statements are True or false. Give reason in support of your answer. Attempt any ten.   **(10 marks)**
    (i)   Innate immunity has memory.
    (ii)   Hapten alone can activate immune system
    (iii)   B-cell mature in thymus.
    (iv)   Class switching occur result in antibody with high affinity
    (v)   B-cell react with Tc cells.
    (vi)   Adaptive immunity is not antigen dependent.
    (vii) Membrane attack complex is common in all type of complement system.
    (viii) Attenuated Vaccines revert back into virulent strain.
    (ix)   IgG is more potent in activating complement system compared to IgM.
    (x)   Somatic hypermutation occur in constant region of light chain.
    (xi)   Polyvalent antibodies are produced by hybridoma technology.
    (xii) Protein are antigenic not immunogenic.

Q2. Define following terms :   **(10 marks)**
    (i)   Affinity maturation
    (ii)   Clonal selection theory
    (iii)   Allotypes
    (iv)   Avidity
    (v)   Adjuvant
          Or
Describe in detail the structure of an antibody.   **(10 marks)**

Q3. Describe the different types Vaccination with suitable example.
          Or
Describe the classical complement system.   **(10 marks)**

Q4. Describe the immunoelectrophoresis.   **(10 marks).**
          Or
Describe ELISA technique.   **(10 marks)**

Q5. Describe Type 3 hypersensitivity.   **(10 marks)**
          Or
Describe (i) Primary and secondary immune response   **(5 marks)**
         (ii) Draw diagram of antigen presenting cell interacting with Tₕ cell.(5marks)

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations June-2022</u>

Programme: B.Voc. Biomedical Sciences   **Session: 2021-22**

Semester: IV   **Max. Time: 3 Hours**

Course Title: PHARMACOLOGY (Regular/Reappear)   **Max. Marks: 50**

Course Code: BMS-402

Instructions:

1. Question no. 1 has fourteen parts and students need to answer any ten. Each part carries one mark.

2. Question no. 2 to 5 carry two parts. Each part carries 10 marks. Attempt any one part.

Q 1.   (1X10=10)

    a) Define drug?

    b) Define Pharmacokinetics?

    c) Define Pharmacodynamics?

    d) What is Placebo effect?

    e) Activated Charcoal show its therapeutic activity due to its property of ....

    f) Females have smaller body size and require doses that are on the lower side of the therapeutic range (True/False).

    g) Define Pharmacogenetics?

    h) Expand NSAIDs?

    i) What is the function of diuretic drug?

    j) Muscarinic is a type of .... receptor.

    k) What are catecholamines?

    l) Which amino acid is used as precursor molecule for the synthesis of catecholamines?

    m) Give one example of B2 agonist?

    n) Nicotinic receptor is blocked by ....

Q 2.   (10)

    a) What is difference between the generic name and proprietary name of a drug? (3)

    b) What is the difference between pharmacopeia and formularies? (2)

    c) What is Bioavailability? How is it calculated? (2)

    d) What is the significance of bioequivalence? (2)

    e) What is apparent volume of distribution? (1)

Or

Q 2.   (10)

    a) Describe the systemic route of drug administration? (5)

    b) What is biotransformation? Citing one example, demonstrate how a drug is metabolized by phase I and phase II reactions? (5)

Q 3. (10)

    a) Why clinical trials are done? Describe its different phases? (5)

    b) What are the types and subtypes of adrenergic receptors? (2)

    c) What is therapeutic index? How is it calculated? (2)

    d) Give one example of chemical antagonism? (1)

<div align="center">Or</div>

Q 3. (10)

    a) Describe the concept of randomization and masking in context of clinical trials? (2)

    b) Describe the rules to decide the expiry date of pharmaceuticals? (3)

    c) Describe the effect of drug potency and drug efficacy? What is its relevance in choosing the drug for prescription against a particular disease? (5)

Q 4. (10)

    a) In flowchart, describe how catecholamines are synthesized? (4)

    b) What are the types and subtypes of adrenergic receptors? (2)

    c) Mention the type of cholinergic neurotransmitters and give one example of their agonist and antagonist? (4)

<div align="center">Or</div>

Q 4. (10)

    a) Describe the process of synthesis of acetylcholine, its storage and destruction in a nerve cell? (5)

    b) Mention two physiological actions of atropine? (2)

    c) Give example of tissue/organs where muscarinic and nicotinic receptors are present? (2)

    d) What is anti-cholinesterase's? (1)

Q 5. (10)

    a) What is the mechanism of action of any diuretic drug? (5)

    b) Mention five mechanism by which antibacterial drugs show antibacterial activity. Give one example in each category? (5)

<div align="center">Or</div>

Q 5. (10)

    a) Describe the mechanism of action of anti-inflammatory drugs? (5)

    b) Name one anti-cancer drug and describe its mechanism of action? (5)

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations June-2022</u>

Programme: B.Voc Biomedical Sciences   **Session: 2021-22**
Semester: VI   **Max. Time: 2 Hours**
Course Title: Medicinal Chemistry (Regular)   **Max. Marks: 25**
Course Code: BMS-603

Instructions:

1. Question no. 1 has seven parts and students need to answer any five. Each part carries one mark.

2. Question no. 2 to 5 carry two parts. Each part carries 5 marks. Attempt any one part.

Q 1.   (1X5=5)
   a) Diazepam is the derivative of ....?
   b) SAR
   c) What is the need of lead modification?
   d) HTS
   e) Lead molecule
   f) Desensitization
   g) Bioisosteres

Q 2.   (5)

    Write a note on the process of modern rational drug design?

<center>Or</center>

Q 2.   (5)

    Describe the discovery of Librium as an example of drug discovery without rational drug design?

Q 3.   (5)

   a) What is the difference between a pharmacophore and auxophore? (2)

   b) According to Lipinski, what are the properties of drug like molecules? (3)

<center>Or</center>

Q 3.   (5)

    Write a note on the sources of lead molecule? (5)

Q 4.   (5)

    Write a detailed note the structural modifications to increase the potency, therapeutic index and ADME properties? (5)

<center>Or</center>

Q 4.   (5)

    Describe the significance of Hansh's equation and Taft's equation? (5)

Q 5.   (5)

    Citing one example, describe the mechanism of action of alkylating agents?

<center>Or</center>

Q 5.   (5)

   a) What factors are to be considered while designing the agonists? (2)

   b) What is the concept of tolerance and dependence? (2)

   c) What is partial antagonism? (1)

Programme: **B. Voc. Biomedical Sciences**   Session: **2021-22**
Semester: **2ⁿᵈ**   Max. Time: **3 Hours**
Course Title: **Concepts in Chemistry-II**   Max. Marks: **50**
Course Code: **BMS-201 (Reappear)**

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries two and half Marks.

2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries five marks.

Q 1.   (4X2.5=10)

   a) Explain second law of thermodynamics.
   b) What are BOD and COD?
   c) What are the applications of IR spectroscopy?
   d) Arrange and explain the order of Aromaticity in following compounds:
            Pyrrole, Furan Benzene, and Thiophene.
   e) Identify the heterocyclic compound present in the following drug.

Q 2.   (2X5=10)

   a) Write a short note on collision theory.
   b) Give the applications of colloidal solution.
   c) Explain the ways by which hardness of water can be removed.

Q 3.   (2X5=10)

   a) What are the applications of UV spectroscopy?
   b) Describe the various modes of vibrations in a molecule joined by covalent bond.
   c) Explain the applications of IR spectroscopy.

Q 4.   (2X5=10)

   d) State the applications of chelates in pharmaceutical preparations?
   e) Write the different forces which are responsible for the formation of complexes.
   f) Write down the structure of EDTA. State its various applications.

Q 5.   (2X5=10)

   a) Write a short note on synthesis of Thiophene
   b) Pyridine is more basic than pyrrole. Explain.
   c) Why Pyrrole have higher boiling point as compared to furan and thiophene?

Programme: B.Voc Biomedical Sciences   Session: 2021-22

Semester: IV   Max. Time: 3 Hours

Course Title: CELL BIOLOGY (Regular/Reappear)   Max. Marks: 50

Course Code: BMS-401

Instructions:

1. Question no. 1 has fourteen parts and students need to answer any ten. Each part carries one mark.

2. Question no. 2 to 5 carry two parts. Each part carries 10 marks. Attempt any one part.

Q 1.   (1X10=10)

  a) ....is the marker molecule of lysosome.

  b) .... is the motor protein which take cargo to negative end of the cell.

  c) .... is the technique used to detect whether two proteins are interacting inside the cell.

  d) .... are the cell in which intermediate filaments are absent.

  e) If individuals' units of lipids are wedged shape, ... structure is formed by lipid molecule.

  f) The hydropathy analysis predicts .... hydrophobic helix for glycophorin.

  g) .... and............ are two oxidative enzymes of peroxisomes.

  h) Define Autocrine signaling?

  i) Define nucleoplasm?

  j) pH of lysosome is basic. (True/False)

  k) Nuclear Lamina is composed of .... filaments.

  l) Expand CDKs

  m) Oncogenes

  n) Metastasis

Q 2.   (10)

  a) Describe the process of selective transport of protein to and from the nucleus? (3)

  b) What is endo-symbiotic theory of evolution of eukaryotic cell? (3)

  c) Describe how the proteins are imported into endoplasmic reticulum by post-translational translocation? (4)

                                    Or

Q2.

  a) Describe RNA world theory? (3)

  b) Describe the mechanism of protein folding in the endoplasmic reticulum? (5)

  c) What is the function of flipase enzyme? (2)

Q 3. (10)

    a) Why mitochondria is called semiautonomous organelle? (2)

    b) Draw Fluid mosaic model of plasma membrane. (3)

    c) What are factors on which fluidity of membrane depend? (5)

Or

Q3. Write short note on

    (a) Peroxisomes (5)

    (b) FRAP Technique (5)

Q 4. (10)

    a) Discuss Fish fin experiment to show microtubules filaments have tendency to find center of the cell? (5)

    b) Describe the process of cell signaling through Receptor tyrosine pathway? (5)

Or

Q4.

    (a) Explain structure and function of actin filament. (5)

    (b) Describe the process of cell signaling through GPCR pathway? (5)

Q5. (10)

    a) Describe how p53 surveillance system regulates the cell cycle? (6)

    b) Describe intrinsic pathway of apoptosis? (4)

Or

Q5.

    a) Describe the mechanism by which antiproliferative signaling pathway regulates the cell cycle? (6)

    b) Name two cancer causing viruses? (2)

    c) What is the difference between carcinoma and sarcoma? (2)

Programme: B.Voc Biomedical Sciences   Session: 2021-22

Semester: I   Max. Time: 3 Hours

Course Title: Human Physiology (Reappear)   Max. Marks: 50

Course Code: BMS-101

Instructions:

1. Question no. 1 has fourteen parts and students need to answer any ten. Each part carries one mark.

2. Question no. 2 to 5 carry two parts. Each part carries 10 marks. Attempt any one part.

Q 1.   (1X10=10)

a) RBC count of the blood is ....

b) Amount of Hemoglobin present in blood is ....

c) Function of Insulin is ....

d) pH of Urine is ....

e) Function of saliva is ....

f) Exocrine glands ....

g) Anemia

h) Peristalsis

i) Grey Matter

j) In which organ islets of langerhans is present

k) Leucopenia

l) pH of buccal cavity is ....

m) Function of melanin is ....

n) Full form of GFR is ....

Q 2.   (10)

a) Describe the three classes of proteins present in blood plasma? (5)

b) Classify leukocytes on the basis of their lineage, their main structural features and their primary function? (5)

Or

Q2.

a) Explain the events of the cardiac cycle? (10)

Q 3.   (10)

a) Describe the principle of oxygen transport? (5)

b) How the respiratory centers in the brain controls and regulates pulmonary ventilation?(5)

Or

Q3. Write a short note on the following   (10)

    a) Meninges (b) Reflex arc (c) Ventricles of brain (d) Spinal cord (e) Types of neurons

Q 4.   (10)

Describe the major divisions of digestive tract. Explain in detail how the hormones and enzymes released by different parts of digestive tract help in digestion?

Or

Q4.

Describe the components of the membrane that establish the resting membrane potential and changes that occur to the membrane that result in the action potential?

Q5.   (10)

    a) Describe the process of urine formation in human body? (5)

    b) Name three hormones that regulate the concentration of urine in human body. Define their functions? (5)

Or

Q5.

    a) Name and mention the function of the hormones released by posterior pituitary and anterior pituitary? How the process of hormone release from anterior and posterior pituitary is different? (10)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations June 2022

Programme: B. Voc. Biomedical Sciences   **Session:** 2021-22

Semester: 3rd   **Max. Time: 3 Hours**

Course Title: Concepts in Chemistry-III   **Max. Marks: 25**

Course Code: BMS-303 (Reappear)

Instructions:

1. Question no. 1 has seven parts and students need to answer any five. Each part carries one Mark.

2. Question no. 2 and 3 have three parts and student need to answer any two parts of each question. Each part carries five marks.

Q 1.   (5X1=5)

   a) Explain Saytzeff rule.

   b) What is Hofmann rule?

   c) Why benzaldehyde don't undergo aldol condensation?

   d) Which alkene gives only acetone on ozonolysis?

   e) Name different types of organic reactions.

   f) Out of S_N^1 and S_N^2, which follows single step mechanism?

   g) What are condensation reactions?

Q 2.   (2X5=10)

   a) Differentiate between E1 and E2 elimination.

   b) Explain the initiation, propagation and termination steps in free radical reaction using an example.

   c) Write a short note on cycloaddition reactions.

Q3.   (2X5=10)

   a) Write short note on Aldol Condensation.

   b) Write short note on Diels- Alder Reaction.

   c) Write short note on Ozonolysis.

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations June 2022

Programme: B.Voc Biomedical Sciences   **Session: 2021-22**

Semester: V   **Max. Time: 3 Hours**

Course Title: Medical Genetics (Reappear)   **Max. Marks: 50**

Course Code: BMS-501

Instructions:

1. Question no. 1 has fourteen parts and students need to answer any ten. Each part carries one mark.

2. Question no. 2 to 5 carry two parts. Each part carries 10 marks. Attempt any one part.

Q 1.   (1X10=10)

    a) Turner Syndrome is a genetic disease. (True/False)

    b) Huntington disease is a genetic disease. (True/False)

    c) Define allele?

    d) Define gene?

    e) Genetic drift

    f) Barr bodies

    g) Genomic imprinting

    h) How many genes are present in mitochondrial genome in humans?

    i) Karyogram

    j) Full form of FISH is ....

    k) Pharmacogenomics

    l) Tip of chromosome is called Telomere (True/False)

    m) If the centromere occurs in the middle of chromosome, the chromosome is said to be.......

    n) Oncogenes

Q 2.   (10)

    a) What is Medical Genetics? What is its scope? (5)

    b) Write a note on the types of genetic diseases? (5)

Or

Q2.

    a) What is mutation? What are different types of mutation? (5)

    b) What is sickle cell anemia? How is it caused? (5)

Q 3.   (10)

    a) Write a note on Mendelian principles? (5)

    b) Describe the factors that cause expression of disease-causing genes? (5)

Q3.

    a) Write a note on sex linked inactivation? What is its mechanism?

    b) Write a note on mitochondrial genes and mitochondrial disorders? (5)

Q 4.   (10)

    a) What is banding. Describe its different types? (5)

    b) Write a note on the importance of gene mapping? (5)

Or

Q4.

Write a detailed note on the abnormalities related to chromosome structure and number? (10)

Q5.   (10)

Write a detailed note on disorders caused by defects in protein and lipid metabolism?

Or

Q5.

    a) What is cancer? What are its causes? (5)

    b) Write a note on prenatal diagnosis of genetic disorders (5)

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations April 2022</u>

Programme:	B.Voc. Biomedical Sciences	**Session:**	2021-22
Semester:	1st	**Max. Time:**	3 Hours
Course Title:	Basic Organic Chemistry	**Max. Marks:**	50
Course Code:	BMS-102		

Instructions:

1. Question no. 1 has seven parts and students need to answer any five. Each part carries two Marks.

2. Question no. 2 to 5 have three parts and students need to answer two parts of each question. Each part carries five marks.

Q 1.   (5X2=10)

   a) Predict the product: $CH_3CH_2CH_2OH$ ----- alc. KOH ---->

   b) Predict the major product of the following reaction and explain it their formation: CH3CH=CH2 + HBr ------->

   c) Define nucleophiles. Give an example.

   d) What happens when methyl bromide is treated with sodium in the presence of dry ether?

   e) Acid catalyzed dehydration of t-butanol is faster than n-butanol. Why?

   f) Define Huckel's rule of aromaticity.

   g) Write the structure of anthracene and mention two uses.

Q 2.   (2X5=10)

   a) Write a short note on inductive effects.

   b) Write a short note on reactive intermediates.

   c) (i) Why is benzylic carbocation more stable than allylic carbocation? Explain.

     (ii) Arrange the following in increasing order of basicity. Give an explanation. CH_3NH_2, $C_6H_5NH_2$, NH_3

Q3.   (2X5=10)

   a) (i) Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular masses. Explain.

     (ii) Explain how the hydroxyl group attached to a carbon of benzene ring activates it towards electrophilic substitution.

   b) Write a short note on conformations of n-butane.

   c) (i) Explain why Grignard reagents should be prepared under anhydrous conditions.

     (ii) The treatment of alkyl chloride with aqueous KOH leads to the formation of alcohols but in the presence of alcoholic KOH, alkenes are major products. Explain
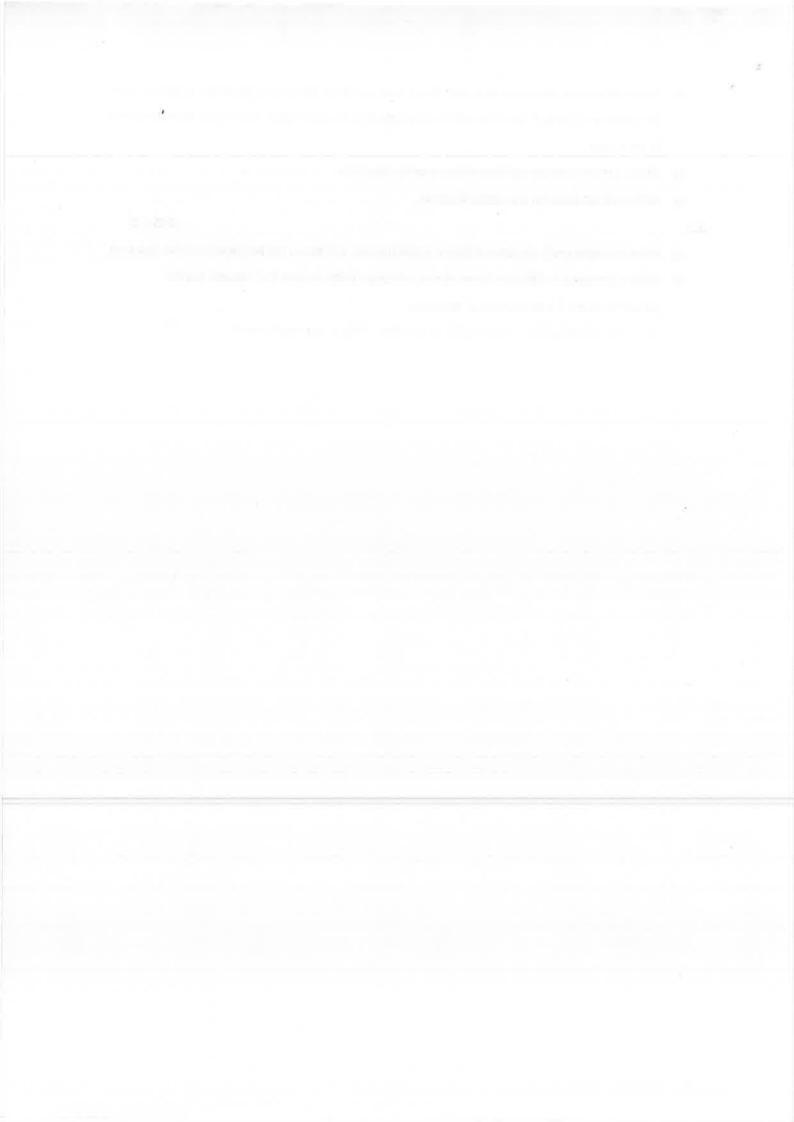
Q 4.   (2X5=10)

a) Write structural formulas and names of four possible aldol condensation products from propanal and butanal. Indicate which aldehyde acts as nucleophile and which as electrophile in each case.

b) Write a short note on Hoffmann Bromamide Reaction.

c) Write a short note on transesterification.

Q 5.   (2X5=10)

a) What is friedel craft alkylation? Give the mechanism. List down the limitations of this reaction.

b) (i) How benzene is different from alkene, although both contain C=C double bonds.

   (ii) Write down the properties of benzene.

c) Write the reaction for sulphonation of benzene. Explain the mechanism.

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April, 2022

Programme: B.Voc. (Biomedical Sciences)   **Session:** 2021-22

Semester: First   **Max. Time: 3 Hours**

Course Title: Human Physiology   **Max. Marks: 50**

Course Code: BMS-101

Instructions:

1. Attempt all 5 questions

2. Question no. 1 has 13 parts and students need to answer any ten. Each part carries one mark.

3. Question no. 2 to 5 carries 10 marks each. Option has been given in each question. Attempt any one for 10 marks.

Q 1.   **(10X1=10)**

a) Amount of glucose found in the urine is in the range of ....

b) Name two organs with highest proportions of water in the body?

c) Define interstitial fluid?

d) What is acid base balance?

e) Hormone released by pineal gland is ....

f) When acetylcholine is bound to receptor but gate remain closed, this state of receptor is called............

g) When a photon is absorbed by rhodopsin, conformational changes occur causing all............ to........... forms.

h) .... is condition where hemoglobin increase abnormally.

i) ....cell produce HCL in stomach

j) Bone forming cells originate from............

k) Megakaryotes cell develop into ....

l) .... is the common factor in both pathways of clotting.

m) Hydroxyapatite in bone matrix that gives bone its hardness is primarily composed of...........

Q 2:

a) Differentiate between oncogenes and tumor suppressor gene with suitable example.

                                                                 (5 marks)

b) Explain briefly apoptosis with suitable diagram.   (5 marks)

                              Or

Write short note on following:

   a)   Sickle cell anemia   (5 marks)

   b)   Thalassemia   (5 marks)

Q3.
    a)   What is role of calcium in blood?   (5 marks)

    b)   Write short note on calcium homeostasis.   (5 marks)

<center>or</center>

    a)   Explain why the stomach does not digest itself?   (5 marks)

    b)   Write the role of following components of digestive system   (5 marks)

        i)   Bacterial Flora present intestine.

        ii)   Goblet cells

        iii)   Gastric juice

        iv)   Chief cells

        v)   Parietal cells

Q 4.

a) In the form of flow chart, describe the direction of blood flow in the kidney?   (3 marks)

b) Describe the structure of nephron with labeling?   (2 marks)

c) Describe acetylcholine receptor.   (5 marks)

<center>or</center>

a) Draw flow diagram explaining of molecular consequences of photon absorption. (5 marks)

b) Describe how renin-angiotensin-Aldosterone system regulates blood pressure in the body? (5marks)

Q 5.

    a)   In the form of flow chart, describe the process of regulation of water intake in the body?

                           (4 marks)

    b)   Drawing the picture, describe how the hormones are released by the hypothalamus-pituitary axis? (6 marks)

<center>Or</center>

a) Describe the four types of buffer system in the body?   (4 marks)

b) Describe the regulation of release of insulin by Beta cells of the pancreas? (6 marks)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations April, 2022

Programme: B.Voc Biomedical Sciennces

Session: 2021-22

Semester: I

Course Title: Human Physiology

Course Code: BMS-101

Max. Time: 3 Hours

Max. Marks: 50

Instructions:

1. Attempt all 5 questions

2. Question no. 1 has 13 parts and students need to answer any ten. Each part carries one mark.

3. Question no. 2 to 5 carries 10 marks each. Option has been given in each question. Attempt any one for 10 marks.

Q 1.   (10X1=10)

a) Amount of glucose found in the urine is in the range of ....

b) Name two organs with highest proportions of water in the body?

c) Define interstitial fluid?

d) What is acid base balance?

e) Hormone released by pineal gland is ....

f) When acetylcholine is bound to receptor but gate remain closed, this state of receptor is called...........

g) When a photon is absorbed by rhodopsin, conformational changes occur causing all........... to........... forms.

h) .... is condition where hemoglobin increase abnormally.

i) ....cell produce HCL in stomach

j) Bone forming cells originate from............

k) Megakaryotes cell develop into ....

l) .... is the common factor in both pathways of clotting.

m) Hydroxyapatite in bone matrix that gives bone its hardness is primarily composed of...........

Q 2:

a) Differentiate between oncogenes and tumor suppressor gene with suitable example.

(5 marks)

b) Explain briefly apoptosis with suitable diagram.   (5 marks)

Or

Write short note on following:

a)   Sickle cell anemia   (5 marks)

b)   Thalassemia   (5 marks)

Q3.

    a) What is role of calcium in blood?   (5 marks)

    b) Write short note on calcium homeostasis.   (5 marks)

<div align="center">**or**</div>

    a) Explain why the stomach does not digest itself?   (5 marks)

    b) Write the role of following components of digestive system   (5 marks)

        i)   Bacterial Flora present intestine.

        ii)   Goblet cells

        iii)   Gastric juice

        iv)   Chief cells

        v)   Parietal cells

Q 4.

a) In the form of flow chart, describe the direction of blood flow in the kidney?   (3 marks)

b) Describe the structure of nephron with labeling?   (2 marks)

c) Describe acetylcholine receptor.   (5 marks)

<div align="center">**or**</div>

a) Draw flow diagram explaining of molecular consequences of photon absorption. (5 marks)

b) Describe how renin-angiotensin-Aldosterone system regulates blood pressure in the body? (5marks)

Q 5.

    a)   In the form of flow chart, describe the process of regulation of water intake in the body?

                                                                   (4 marks)

    b)   Drawing the picture, describe how the hormones are released by the hypothalamus-pituitary axis? (6 marks)

<div align="center">**Or**</div>

a) Describe the four types of buffer system in the body?   (4 marks)

b) Describe the regulation of release of insulin by Beta cells of the pancreas? (6 marks)

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations April 2022</u>

Programme:	B.Voc. Biomedical Sciences	**Session:**	2021-22
Semester:	First	**Max. Time:**	3 Hours
Course Title:	Basic Organic Chemistry	**Max. Marks:**	50
Course Code:	BMS-102		

Instructions:

1. Question no. 1 has seven parts and students need to answer any five. Each part carries two Marks.

2. Question no. 2 to 5 have three parts and students need to answer two parts of each question. Each part carries five marks.

Q 1.   (5X2=10)

   a) Predict the product: $CH_3CH_2CH_2OH$ ----- alc. KOH ---->

   b) Predict the major product of the following reaction and explain it their formation: $CH_3CH=CH_2$ + HBr ------->

   c) Define nucleophiles. Give an example.

   d) What happens when methyl bromide is treated with sodium in the presence of dry ether?

   e) Acid catalyzed dehydration of t-butanol is faster than n-butanol. Why?

   f) Define Huckel's rule of aromaticity.

   g) Write the structure of anthracene and mention two uses.

Q 2.   (2X5=10)

   a) Write a short note on inductive effects.

   b) Write a short note on reactive intermediates.

   c) (i) Why is benzylic carbocation more stable than allylic carbocation? Explain.

      (ii) Arrange the following in increasing order of basicity. Give an explanation. CH_3NH_2, $C_6H_5NH_2$, NH_3

Q3.   (2X5=10)

   a) (i) Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular masses. Explain.

      (ii) Explain how the hydroxyl group attached to a carbon of benzene ring activates it towards electrophilic substitution.

   b) Write a short note on conformations of n-butane.

   c) (i) Explain why Grignard reagents should be prepared under anhydrous conditions.

      (ii) The treatment of alkyl chloride with aqueous KOH leads to the formation of alcohols but in the presence of alcoholic KOH, alkenes are major products. Explain

Q 4.   (2X5=10)

   a) Write structural formulas and names of four possible aldol condensation products from propanal and butanal. Indicate which aldehyde acts as nucleophile and which as electrophile in each case.

   b) Write a short note on Hoffmann Bromamide Reaction.

   c) Write a short note on transesterification.

Q 5.   (2X5=10)

   a) What is friedel craft alkylation? Give the mechanism. List down the limitations of this reaction.

   b) (i) How benzene is different from alkene, although both contain C=C double bonds.

      (ii) Write down the properties of benzene.

   c) Write the reaction for sulphonation of benzene. Explain the mechanism.