

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages: 02

Total No. of Questions: 09

B.Sc. (BT) (Sem.-1)
INORGANIC CHEMISTRY
Subject Code: BSBT-101-18
M.Code: 75324

Date of Examination: 11-06-2026

Time: 3 Hrs.

Max. Marks: 60

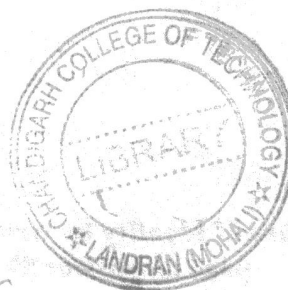
INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Answer briefly:

- (a) What do you mean by ionization energy?
- (b) Define the term atomic radii.
- (c) What is electronegativity?
- (d) Explain the effective nuclear charge with example.
- (e) What are coordination compounds? Give two examples of coordination compounds.
- (f) Explain the hybridization of H_2O , ICl_2 , and SF_6 .
- (g) What is optical isomerism?
- (h) What is crystal field splitting energy?
- (i) Define the term hybridization.



May - 2026

SECTION-B

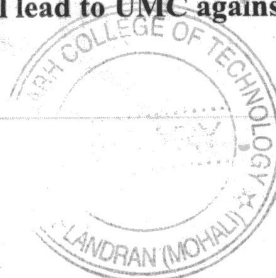
2. Why is there back bonding?
3. What is Werner's coordination theory?
4. Explain hybridization of SF_6 , IF_7 , BF_3 , and XeF_4 .
5. What is the molecular orbital theory?
6. What are covalent bonds and the directional characteristics of covalent bonding?

SECTION-C

7. Explain the crystal field theory.
8. Explain hydrogen bonding and Van der Waals forces.
9. Explain the structure of paramagnetism, diamagnetism, and ferromagnetism.

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

May - 2026



Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 05

**B.Com Hon/BA JAMC/ B.Sc(BT/GWD/IT/MLS)
B.Voc. BTA/ BHMCT / BTTM / BBA / BCA (Sem-1)**

ENGLISH

Subject Code : BTHU103-18

M.Code : 75085

Date of Examination : 13-06-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. All questions are **COMPULSORY**.
2. Q1, Q2 and Q3 carry **TEN** marks each.
3. Q4 and Q5 carry **FIFTEEN** marks each

1. Differentiate between the following:

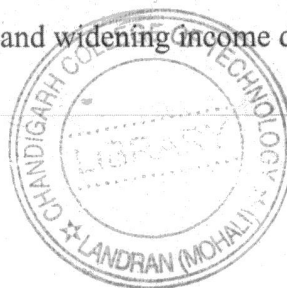
- (i) Spoken and written communication
- (ii) Summarizing and Paraphrasing
- (iii) Literary and Knowledge Texts
- (iv) Analysis and Interpretation
- (v) Intra-personal and Inter-personal Communication

2. Differentiate between personal, social and business communication.

3. Explain barriers to communication.

4. Read the following passage carefully and answer the questions that follow:

Sustainable development has emerged as a guiding principle for balancing economic growth with environmental protection and social well-being. Traditionally, economic development was measured primarily by indicators such as Gross Domestic Product (GDP), often ignoring environmental degradation and social inequality. However, this approach has proven to be shortsighted, as unchecked industrialization and resource exploitation have led to severe ecological damage and widening income disparities.

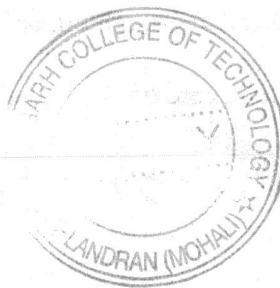


Sustainable development emphasizes the need to meet present needs without compromising the ability of future generations to meet their own. This requires a shift towards renewable energy sources, responsible consumption, and inclusive growth policies. Governments, businesses, and individuals all have a role to play in this transition. For instance, corporations are increasingly adopting environmentally responsible practices, not only due to regulatory pressures but also because consumers are becoming more conscious of sustainability issues. Despite these efforts, achieving sustainable development remains a complex challenge. Conflicts often arise between economic interests and environmental priorities. Developing countries, in particular, face the dilemma of pursuing rapid growth while minimizing environmental impact. Therefore, innovative solutions, international cooperation, and long-term planning are essential to ensure that development is both inclusive and sustainable.

Questions:

- (i) What is meant by sustainable development?
 - (ii) Why is GDP an incomplete measure of development?
 - (iii) What are the key components of sustainable development?
 - (iv) What challenges do developing countries face?
 - (v) Why are corporations adopting sustainable practices?
 - (vi) Find a word that means "use of resources" and make a sentence of your own.
 - (vii) What is the theme of this passage?
5. Write a letter to your friend about how wars affect the lives of common people.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.



Roll No.

Total No. of Pages: 02

Total No. of Questions : 09

B.Sc.(BT) (Sem.-1)

INTRODUCTION TO BIOTECHNOLOGY

Subject Code : BSBT-102-18

M.Code : 75325

Date of Examination : 19-06-2026

Time : 3 Hrs.

Max. Marks : 60

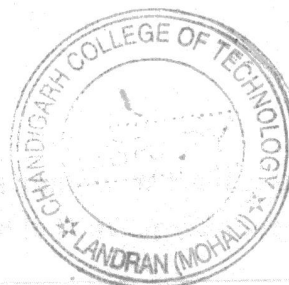
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION - A

1. Answer the following :

- (a) Define industrial biotechnology.
- (b) Name any two biotechnology research institutions in India.
- (c) What is Bt cotton?
- (d) What is insect-resistant crop? Give examples.
- (e) Write two advantages of GM crops.
- (f) Name two yeast-based food products.
- (g) What is microbial fermentation?
- (h) What microorganism is used for penicillin production?
- (i) What is L-asparaginase?
- (j) What is acetic acid fermentation?



May - 2026

SECTION -B

2. Discuss the structure and functions of cerebrosides, prostaglandins and cholesterol.
3. Write a detailed note on nomenclature and classification of enzymes.
4. Explain different level of structural organization of proteins.
5. Explain how pyruvate is converted to acetyl-CoA under aerobic conditions. Discuss the regulation of pyruvate dehydrogenase and its physiological significance.
6. Compare and contrast glycolysis and gluconeogenesis.

SECTION -C

7. Explain and draw a detailed flow chart of the tricarboxylic acid (TCA) cycle showing each intermediate, enzyme, and cofactor. Explain the energy yield at each step.
8. Classify amino acids based on polarity, charge, and nutritional requirement (essential vs. non-essential). Provide examples for each group.
9. Explain the β -oxidation of an even-chain fatty acid, showing how acetyl-CoA, NADH, and FADH_2 are produced at each cycle.

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

May-2026



Roll No.

Total No. of Pages : 04

Total No. of Questions : 11

B.Voc. (Child Caregiver) / B.A.(JAMC) / BBA / BBA (SIM) / B.Com (Hons) / BCA / BHMCT / B.Sc. Hons. (Nutrition and Dietetics / Artificial Intelligence & Machine Learning / Bio Technology / Fashion Design / Graphics & Web Designing / Information Technology / Medical Lab Sciences / Operation Theatre Technology) / BTM / M.Com (Sem.-1,2)

HUMAN VALUES, DE-ADDICTION & TRAFFIC RULES

Subject Code : HVPE-101-18

M.Code : 93322

Date of Examination : 24-06-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is compulsory.
2. SECTION-B contains FIVE questions. Each question carry FOUR marks. Attempt All.
3. SECTION-C contains FIVE questions with internal choice. Each question carry SIX marks. Attempt All.

SECTION-A

(10 × 1 = 10)

1. Fill in the blanks. Write True/False :

- a. Animal order in nature contains..... and
प्रकृति में पशु आदेश में..... और होता है।
कुदरत में पशु आदेश में..... और होता है।
- b. To be in a state of liking is
पसंद के हिसाब से एक अवस्था में होना..... है।
पसंद के हिसाब से अधिक भौतिक सुविधाओं होने की भावना है।
- c. Physical facilities are necessary but for humans.
भौतिक सुविधाओं मनुष्य के लिए आवश्यक है, लेकिन..... हैं।
भौतिक सुविधाओं मनुष्य के लिए आवश्यक है, लेकिन..... हैं।
- d. is a feeling of having more than required physical facilities.
..... आवश्यकता से अधिक भौतिक सुविधाओं होने की भावना है।
..... लोभ है जिसे अधिक भौतिक सुविधाओं होने की भावना है।
- e. is right evaluation.
..... सही मूल्यांकन है।
..... ठीक लेना है।

- f. Holistics technologies should be eco-friendly and people-friendly.
समग्र प्रौद्योगिकियों पर्यावरण के अनुकूल और लोगों के अनुकूल होना चाहिए।
समग्र प्रौद्योगिकियों पर्यावरण के अनुकूल और लोगों के अनुकूल होना चाहिए।
- g. There is no self-regulation in nature.
प्रकृति में कोई आत्म-नियमन नहीं है।
कुदरत में कोई आत्म-नियमन नहीं है।
- h. Developing ethical competence in individual ensures professional ethics.
व्यक्ति में नैतिक क्षमता का विकास पेशेवर नैतिकता सुनिश्चित करता है।
व्यक्ति में नैतिक क्षमता का विकास पेशेवर नैतिकता सुनिश्चित करता है।
- i. Existence is nature submerged in space.
अस्तित्व अंतरिक्ष में डूबे हुए प्रकृति है।
अस्तित्व अंतरिक्ष में डूबे हुए प्रकृति है।
- j. The value "care" is related with body.
मूल्य "ध्यान" शरीर के साथ संबंधित है।
मूल्य "ध्यान" शरीर के साथ संबंधित है।

SECTION-B

(5 × 4 = 20)

2. Differentiate between intention and competence. How do we come to confuse between the two?
इरादा और क्षमता के बीच क्या अंतर है? कैसे हम गलती करते हैं?
इरादा और क्षमता के बीच क्या अंतर है? कैसे हम गलती करते हैं?
3. Explain harmony in family.
परिवार में तालमेल के बारे में बताएं।
परिवार में तालमेल के बारे में बताएं।
4. What are the basic guidelines of value education?
मूल्य शिक्षा की बुनियादी दिशानिर्देश क्या हैं?
मूल्य शिक्षा की बुनियादी दिशानिर्देश क्या हैं?
5. What is prosperity? What is the difference between prosperity and wealth?
समृद्धि क्या है? समृद्धि और धन के बीच अंतर है?
समृद्धि क्या है? समृद्धि और धन के बीच अंतर है?
6. Explain self-organisation and health.
आत्म संगठन और स्वास्थ्य के बारे में बताएं।
आत्म संगठन और स्वास्थ्य के बारे में बताएं।



May - 2026

SECTION-C

(6 × 5 = 30)

7. What do you mean by universal order? What could be your role in moving towards it?

ਆਪ ਸਾਰਵਭੌਮਿਕ ਸਾਨਕੀਯ ਆਦੇਸ਼ ਦੇ ਕੀ ਸਮਝਦੇ ਹੋ? ਇਸਦੇ ਅਧੀਨ ਭੂਮਿਕਾ ਕੀ ਹੋ ਸਕਦੀ ਹੈ?

ਤੁਸੀਂ ਸਾਰਵਭੌਮਿਕ ਮਾਨਵੀ ਆਦੇਸ਼ ਵਲੋਂ ਕੀ ਸਮਝਦੇ ਹੋ? ਇਸ ਵਿੱਚ ਆਪਣੀ ਭੂਮਿਕਾ ਕੀ ਹੋ ਸਕਦੀ ਹੈ?

OR

- What are the five dimensions of human endeavour in society?

ਸਮਾਜ ਵਿੱਚ ਮਨੁੱਖੀ ਕੋਸ਼ਿਸ਼ ਦੇ ਪੰਜ ਪਹਿਲੂ ਕੀ ਹਨ?

ਸਮਾਜ ਵਿੱਚ ਮਨੁੱਖੀ ਕੋਸ਼ਿਸ਼ ਦੇ ਪੰਜ ਪਹਿਲੂ ਕੀ ਹਨ?

8. What are the broad holistic criteria for evaluation of technologies, management models and production systems?

ਪ੍ਰਾਗਮਤਿਕ, ਪ੍ਰਬੰਧਨ ਮਾਡਲ ਅਤੇ ਉਤਪਾਦਨ ਪ੍ਰਣਾਲੀਆਂ ਦੇ ਮੁਲਾਂਕਣ ਲਈ ਵਿਆਪਕ ਮਾਪਦੰਡ ਕੀ ਹਨ?

ਸਰਬੰਗੀ ਤਕਨੀਕੀ, ਪਰਬੰਧਨ ਮਾਡਲ ਅਤੇ ਉਤਪਾਦਨ ਪ੍ਰਣਾਲੀਆਂ ਦੇ ਲੇਖੇ ਜੋਖਾ ਲਈ ਵਿਆਪਕ ਮਾਪਦੰਡ ਕੀ ਹਨ?

OR

What is the need of Value-Education?

ਮੁੱਲ ਸਿੱਖਿਆ ਦੀ ਕੀ ਜ਼ਰੂਰਤ ਹੈ?

ਮੁੱਲ ਸਿੱਖਿਆ ਦੀ ਕੀ ਜ਼ਰੂਰਤ ਹੈ?

9. What are the four orders in nature? Explain briefly.

ਪ੍ਰਕ੍ਰਿਤੀ ਵਿੱਚ ਚਾਰ ਆਦੇਸ਼ ਕੀ ਹਨ? ਸੰਖੇਪ ਸਮਝਾਓ।

ਪ੍ਰਕ੍ਰਿਤੀ ਵਿੱਚ ਚਾਰ ਆਦੇਸ਼ ਕੀ ਹਨ? ਸੰਖੇਪ ਸਮਝਾਓ।

OR

How there is Recyclability and Self-Regulation in Nature?

ਪ੍ਰਕ੍ਰਿਤੀ ਵਿੱਚ ਆਵਾਜ਼-ਨਿਯਮਨ ਅਤੇ ਆਵਾਜ਼-ਨਿਯਮਨ ਕੀ ਹੈ?

ਪ੍ਰਕ੍ਰਿਤੀ ਵਿੱਚ ਆਵਾਜ਼-ਨਿਯਮਨ ਅਤੇ ਆਵਾਜ਼-ਨਿਯਮਨ ਕੀ ਹੈ?

10. What do you understand by competence in professional ethics? Elaborate.

ਆਪ ਪੇਸ਼ਾਵਰੀ ਐਥਿਕਸ ਵਿੱਚ ਕੌਸ਼ਲਤਾ ਕੀ ਹੈ? ਸਮਝਾਓ।

ਤੁਸੀਂ ਪੇਸ਼ਾਵਰੀ ਐਥਿਕਸ ਵਿੱਚ ਕੌਸ਼ਲਤਾ ਕੀ ਹੈ? ਸਮਝਾਓ।

OR

What is the meaning and purpose of Self-Exploration?

ਸਵ-ਅਨੁਵੇਸ਼ਣ ਦਾ ਅਰਥ ਅਤੇ ਉਦੇਸ਼ ਕੀ ਹੈ?

ਆਵਾਜ਼-ਅਨੁਵੇਸ਼ਣ ਦਾ ਅਰਥ ਅਤੇ ਉਦੇਸ਼ ਕੀ ਹੈ?

11. What is happiness? What is the wrong notion about attaining happiness? What are the problems faced due to the wrong notions about happiness and prosperity?

ਖੁਸ਼ੀ ਕੀ ਹੈ? ਖੁਸ਼ੀ ਪ੍ਰਾਪਤ ਕਰਨ ਦੇ ਗਲਤ ਧਾਰਨਾ ਕੀ ਹੈ? ਖੁਸ਼ੀ ਅਤੇ ਸਮ੍ਰਿਤੀ ਦੇ ਗਲਤ ਧਾਰਨਾ ਦੇ ਕਾਰਨ ਪੈਦਾ ਹੋਈਆਂ ਸਮੱਸਿਆਵਾਂ ਕੀ ਹਨ?

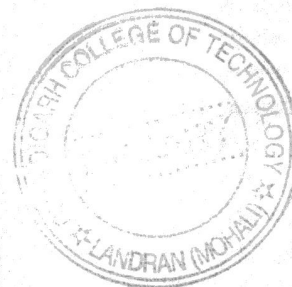
ਖੁਸ਼ੀ ਕੀ ਹੈ? ਖੁਸ਼ੀ ਪ੍ਰਾਪਤ ਕਰਨ ਦੇ ਗਲਤ ਧਾਰਨਾ ਕੀ ਹੈ? ਖੁਸ਼ੀ ਅਤੇ ਸਮ੍ਰਿਤੀ ਦੇ ਗਲਤ ਧਾਰਨਾ ਦੇ ਕਾਰਨ ਪੈਦਾ ਹੋਈਆਂ ਸਮੱਸਿਆਵਾਂ ਕੀ ਹਨ?

OR

Describe in brief the salient value in human relationships.

ਮਾਨਵੀ ਸੰਬੰਧਾਂ ਵਿੱਚ ਮੁੱਖ ਮੁੱਲਾਂ ਦਾ ਵਰਨਣ ਕਰੋ।

ਮਾਨਵੀ ਸੰਬੰਧਾਂ ਵਿੱਚ ਮੁੱਖ ਮੁੱਲਾਂ ਦਾ ਵਰਨਣ ਕਰੋ।



May-2026

Note : Disclosure of Identity by writing Mobile No. or Making of Passing request on any page of Answer Sheet will lead to UMC against the Student.

Roll No.

Total No. of Pages: 02

Total No. of Questions : 09

B.Sc.(BT) (Sem.-1)

INTRODUCTION TO BIOTECHNOLOGY

Subject Code : BSBT-102-18

M.Code : 75325

Date of Examination : 19-06-2026

Time : 3 Hrs.

Max. Marks : 60

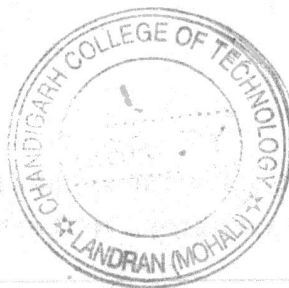
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION - A

1. Answer the following :

- Define industrial biotechnology.
- Name any two biotechnology research institutions in India.
- What is Bt cotton?
- What is insect-resistant crop? Give examples.
- Write two advantages of GM crops.
- Name two yeast-based food products.
- What is microbial fermentation?
- What microorganism is used for penicillin production?
- What is L-asparaginase?
- What is acetic acid fermentation?



May - 2026

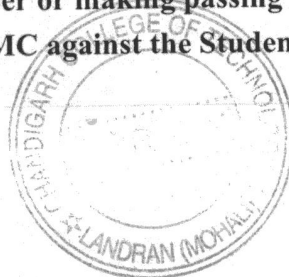
SECTION-B

2. Describe the major branches of biotechnology.
3. Give an overview of biotechnology research in India and mention important biotechnology institutions.
4. What are genetically modified (GM) foods? Explain with examples.
5. Describe the role of microorganisms in food production, highlighting yeast and bacterial processes.
6. Explain the production of beer by microbial fermentation.

SECTION-C

7. Discuss the role of biotechnology in improving agricultural productivity.
8. Describe the production of acetic acid by fermentation.
9. Write short notes on the following:
 - (a) GM papaya
 - (b) GM tomato

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC against the Student.



Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc.(BT) (Sem.-2)
INTRODUCTION TO MICROBIOLOGY

Subject Code : BSBT-202-18

M.Code : 75873

Date of Examination : 12-05-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION - A

1. Write briefly :

- a. Explain Whittaker's system of classification of microbes.
- b. Discuss phases of growth.
- c. Discuss various physical and chemical agents to kill microbes.
- d. Write an outline classification of algae by Fritsch.
- e. What is spontaneous generation theory and how was it disproved?
- f. Distinguish between Gram positive and Gram negative bacteria.
- g. Briefly explain morphological features of fungi.
- h. Give examples of nitrogen fixing microbes in agriculture.
- i. Define synchronous growth.
- j. Discuss sporulation.

SECTION-B

2. Define generation time. Derive an expression for calculating specific growth rate and

generation time of a bacterial population.

3. Explain the morphology and structure of viruses.
4. Discuss the contribution of Louis Pasteur, Robert Koch, J. Lister and J. Tyndall in the development of microbiology.
5. Write a detailed note on diseases caused by microbial pathogens.
6. Discuss principle and applications of bright field and fluorescent microscopy.

SECTION-C

7. How do nitrogen-fixing microbes establish symbiotic relationship with plants, and what are the benefits of these interactions for both the microbes and plants?
8. How do environmental factors such as pH or nutrient availability influence the antibiosis interactions among soil microbes?
9. Discuss the following:
 - a) Production of heterologous proteins in microbes.
 - b) Photosynthesis fermentation and its products.



May - 2026

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

Total No. of Questions : 09

Total No. of Pages :03

B.Sc. (BT) (Sem.-2)

BIOSTATISTICS

Subject Code : BSBT-203-18

M.Code : 75874

Date of Examination : 15-05-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly:

- What are Null Hypothesis and Alternative Hypothesis?
- What is a Random Sample? Give an example.
- What are the objectives and properties of Probability?
- A class of Biotechnology has 55 boys and 35 girls. Find the relative frequency of each gender.
- Mention different techniques for Curve Smoothing.
- What is Probable Error? How is the probable error of the correlation coefficient calculated?
- Write key features, advantages, and disadvantages of the graphical presentation of data.
- Define the terms Coefficient of Correlation and Coefficient of Determination.
- What is the role of Local Control in experimental design?

- j) For the two frequency distributions given below, the mean calculated from the first was 25.4 and that from the second was 32.5. Find the values of x and y.

Class	Distribution I	Distribution II
10-20	20	4
20-30	15	8
30-40	10	4
40-50	x	2x
50-60	y	y

SECTION – B

2. What are Normal, Binomial, and Poisson Distributions? Give their properties and characteristics.
3. Compute the mean and standard deviation of a given frequency distribution.

X	0-8	8-16	16-24	24-32	32-40	40-48
f	8	7	16	24	15	7

4. What are the applications of Fourier Transformation in Biostatistics?
5. What are the key differences between the method of averages and least squares?
6. Discuss the reasons and benefits of Randomization in the Design of Experiments.

SECTION – C

7. (a) Describe key characteristics, benefits, and limitations of Randomized Block Design.
(b) What are the common operations involved in Matrix Manipulation? Why is it important?
8. How are derivative curves generated? Give their applications in the field of Biotechnology.
9. (a) Differentiate between Correlation and Regression Analysis.
(b) Find the relationship between mean thyroxine level and gestational age. Is there a significant association between thyroxine and gestational age?

May - 2026

May - 2026

[illegible]

Total No. of Questions: 09

B.Sc. (BT) (Sem.-3)

ORGANIC CHEMISTRY

Subject Code: BSBT-301-18

M.Code :76608

Date of Examination: 08-06-2026

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly:
- What do you mean by electrometric effect?
 - Define the term electrophile.
 - Define the term organic reagent.
 - What do you mean by alkenes?
 - Define the term conformation of alkenes.
 - What do you mean by aryl group?
 - What is Hyperconjugation?
 - Explain the term aromatic nucleus.
 - What do you mean by resonance energy?
 - What do you mean by the physical properties of cycloalkanes?

May - 2026



SECTION-B

2. Explain the chemical properties of Dienes.
3. Explain the formation of cycloalkanes.
4. What are Singlet and Triplet carbenes?
5. What are the Molecular Orbitals (MO) of benzene?
6. What are the physical and chemical properties of Free Radicals?

SECTION-C

7. Explain the Kolbe's reaction with mechanism..
8. What is the Carbocation and its properties?
9. Explain the physical and chemical properties of phenol.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.



[illegible]

Total No. of Questions : 09

MOLECULAR BIOLOGY

Subject Code :BSBT-303-18

M.Code :76610

Date of Examination:10-06-2026

Time : 3 Hrs.

Max. Marks : 60

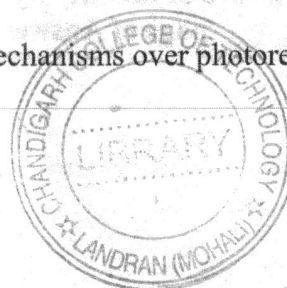
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly:

- (a) Differentiate between histone and non-histone proteins
- (b) Importance of introns and exons in gene expression
- (c) Explain the function of EF-P (Elongation Factor P) in prokaryotic protein synthesis
- (d) Why are mRNA processing steps like capping and splicing absent in prokaryotic transcription?
- (e) Explain co-transcriptional translation in prokaryotes
- (f) What is the primary role of the operator in the lac operon?
- (g) What are the three structural genes of the lac operon, and what is the product of each gene?
- (h) Why is RNA processing not required for prokaryotic mRNA?
- (i) Which protein can reverse central dogma?
- (j) What is the main advantage of dark repair mechanisms over photoreactivation?



SECTION-B

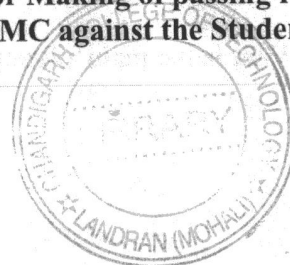
2. Discuss the differences in the chemical nature, structure, and primary functions of histone and non-histone proteins within a eukaryotic cell's chromatin
3. Why dark excision repair is called "dark"? Discuss its types and significance
4. Describe the process of transcription in prokaryotes, highlighting the roles of RNA polymerase, sigma factor, and promoter sequences in the initiation, elongation, and termination stages
5. Explain the mechanism of the Lac Operon in *E. coli*
6. Discuss the role of ribosomes in translation.

SECTION-C

7. Describe the process of DNA replication prokaryotes,
8. Define mutation. Discuss its types and various mutagens causing mutations.
9. Write short notes on the following:
 - (a) Inhibitors of translation
 - (b) Genetic code and its characteristics

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

May-2026



Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc. (BT) (Sem.-3)

INTRODUCTION TO COMPUTERS

Subject Code : BSBT-307-18

M.Code : 76614

Date of Examination : 12-06-2026

Time : 3 Hrs.

Max. Marks : 60

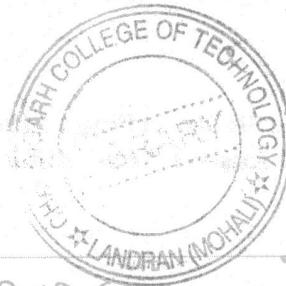
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION - A

1. Answer briefly :

- Define computer and its characteristics.
- Differentiate between analog and digital computers.
- What is a stored program concept?
- Define algorithm.
- What is primary memory?
- Name any two secondary storage devices.
- What is a joystick?
- Define plotter. How it works?
- What is bioinformatics?
- What is sequence alignment?



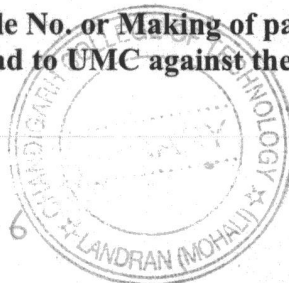
SECTION-B

2. Explain milestones in computer development.
3. Describe types of computers based on working.
4. Explain different types of primary memory.
5. Discuss magnetic disks and their working.
6. Discuss NCBI data model.

SECTION-C

7. Explain computer organization and functional units with neat diagram.
8. Explain the role of bioinformatics in modern biology. Discuss sequence alignment and database searching.
9. Explain different input and output devices of a computer with examples.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.



Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc. (BT)(Sem.-3)

IMMUNOLOGY

Subject Code : BSBT-302-18

M.Code : 76609

Date of Examination :15-06-2026

Time : 3 Hrs.

Max. Marks : 60

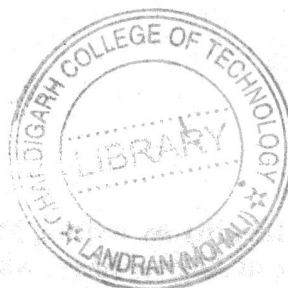
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

- 1. Write briefly:**

- (a) Edward Jenner
- (b) Innate immunity
- (c) Null cells
- (d) Function of Thymus
- (e) Epitope
- (f) Affinity
- (g) IgG
- (h) C3 convertase
- (i) TH1 cell function
- (j) HLA



SECTION-B

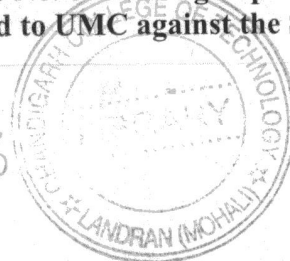
2. Discuss brief history of Immunology?
3. Discuss the role of primary lymphoid organs?
4. Describe the function of various classes of antibodies?
5. What is complement? Discuss in detail classical pathway of complement activation?
6. Discuss the mechanism of T dependent antigen recognition?

SECTION-C

7. Discuss the role of various types of cells involved in immune system?
8. Draw general structure of antibody? Explain the role of various variable and constant regions present in antibody structure.
9. Explain in detail structure and function of MHC class I molecules?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

May-2026



Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc. (BT) (Sem.-4)
GENETIC ENGINEERING
Subject Code : BSBT401-18
M.Code : 77690

Date of Examination : 09-05-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. SECTION-C contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION - A

1. Write briefly :

- a) What is transformation?
- b) What is meant by gene shuffling and how does it differ from traditional recombination?
- c) What is the main purpose of creating transgenic animals in biotechnology?
- d) How are embryonic stem cells used to introduce new genes into an organism?
- e) What is a Ti plasmid and why is it important in plant transformation?
- f) Explain the role of a micromanipulator during microinjection experiments.
- g) How does molecular pharming contribute to large-scale production of vaccines?
- h) What is random mutagenesis? Give one example.
- i) Name a plant virus commonly used as a vector and mention one of its uses.
- j) What is the significance of antibiotic resistance markers in vector selection?



May -2026

SECTION - B

2. Discuss the formation and significance of chimeric proteins in biotechnology.
3. Describe the production of therapeutic proteins through genetic engineering.
4. Write a detailed account of gene targeting and its various applications.
5. What are direct and indirect methods of gene transfer in plants? Illustrate with examples.
6. Explain the bacterial conjugation process and compare it with transduction.

SECTION - C

7. Describe the principles, methods, and applications of protein engineering.
8. Give a detailed account of animal genetic engineering techniques with examples.
9. Explain recombination mechanisms and their importance in genetic manipulation.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

**B.Sc.(Biotechnology)(Sem.-4)
INDUSTRIAL BIOTECHNOLOGY**

Subject Code : BSBT-403-18

M.Code : 77692

Date of Examination:15-05-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly:

- a) List the steps involved in wine fermentation.
- b) Define fermentation and its industrial importance.
- c) What is biosafety in industrial biotechnology?
- d) What are biocontrol agents? Give examples.
- e) What is fuel biotechnology? Give one example.
- f) Explain the importance of metabolic pathways in fermentation reactions.
- g) Define yeast transformation and state its purpose.
- h) What are selectable markers in yeast genetics?
- i) List the factors affecting microbial growth in fermentation.
- j) What is aeration and agitation in fermentation?

SECTION – B

2. Discuss the applications of environmental biotechnology in pollution control.
3. Explain the role of biofertilizers in agriculture.
4. Write a note on the industrial production of vitamins using microorganisms.
5. Explain the components of an ideal growth medium for microbial production.
6. Write a short note on the process of beer production.

SECTION – C

7. Describe the characteristics and industrial importance of *Escherichia coli*, *Bacillus*, and *Saccharomyces cerevisiae*.
8. Discuss the methods of culture preservation used in industrial microbiology.
9. Describe enzyme immobilization techniques and their industrial applications.



May - 2026

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

May - 20 26

Roll No.

--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

Bachelor of Science (Biotechnology) (Sem.-5)
IPR, ENTREPRENEURSHIP BIOETHICS & BIOSAFETY

Subject Code :BSBT-141-18

M.Code :78352

Date of Examination : 16-06-2026

Time : 3 Hrs.

Max. Marks : 40

INSTRUCTIONS TO CANDIDATES :

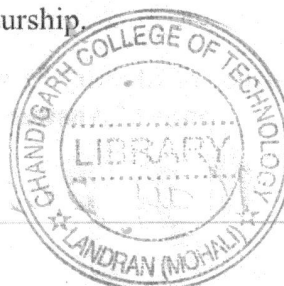
1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE marks each.
2. SECTION-B contains FIVE questions carrying TWO & HALF marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- (a) State the difference between biosafety and biosecurity.
- (b) Discuss principles of GMP.
- (c) What is trade secret? Mention the laws that govern trade secrets.
- (d) Discuss the factors influencing entrepreneurship.
- (e) Explain the role of selection of the product in establishing an enterprise.
- (f) Define bioethics.
- (g) Name one organization that provides biosafety guidelines.
- (h) What ethical issue is raised by genetic engineering?
- (i) Define patent.
- (j) Define business plan in context to entrepreneurship.

May - 2026



SECTION-B

2. Define entrepreneurship. Explain the need and importance of entrepreneurship.
3. Describe the basic regulation of excise in context to energy input, financial situations and export potential.
4. Describe the national and international ethical issues against the molecular technologies in detail.
5. Define GLP. Discuss why there is need of GLP certification in biotechnology labs.
6. Write a note on types of IPR.

SECTION-C

7. Explain the concept of containment levels in biosafety laboratories.
8. Explain the Indian Patent Law and describe the process of obtaining a patent in India.
9. Explain the steps involved in selecting a product and its design and development process in biotechnology industries.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

May-2026



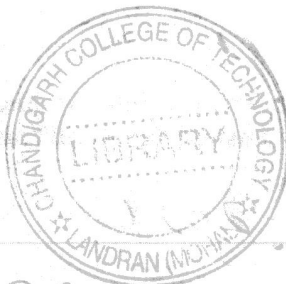
[illegible]

B.Sc. (BT)(Sem.-5)
ANIMAL BIOTECHNOLOGY
Subject Code :BSBT 139-18
M.Code : 78350

Max. Marks : 40

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **ONE** mark each.
2. SECTION-B contains **FIVE** questions carrying **TWO & HALF** ($2\frac{1}{2}$) marks each and students have to attempt any **FOUR** questions.
3. SECTION-C contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

- a) Retroviruses role in gene transfer
- b) Stem cell
- c) Foot and mouth disease
- d) Embryo transfer technique
- e) Insemination
- f) Somatic gene therapy
- g) Molecular engineering
- h) Trypanosomiasis
- i) Transgenesis
- j) Disadvantages of cloning



SECTION-B

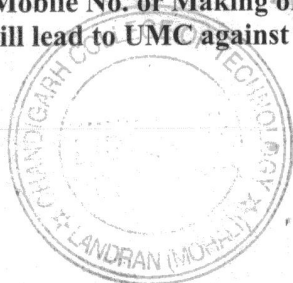
2. Describe microinjection technique in gene transfer.
3. What are transgenic animals? Explain by giving suitable example.
4. Discuss the applications of stem cell technology.
5. What is human genetic engineering?
6. What are the problems associated with applications of animal biotechnology?

SECTION-C

7. Explain the role of biotechnology in treating various animal diseases?
8. What is animal propagation? How are animal clones produced?
9. Explain the role of various vectors used in gene therapy?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

May-2026



Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc. (BT) (Sem.-5)

ORGANIC FARMING

Subject Code :BSBT 501-18

M.Code : 78346

Date of Examination : 19-06-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. **Write briefly :**
- (a) Organic farming
 - (b) Bird perches
 - (c) Soil health
 - (d) Compost
 - (e) Myco herbicides
 - (f) Trap crops
 - (g) Natural farming
 - (h) Vermicompost
 - (i) Biodynamic farming
 - (j) Green manure
- 



May - 2026

SECTION-B

2. Discuss organic farming for sustainable agriculture.
3. Describe phytoremediation.
4. Discuss the practices of organic farming.
5. Discuss the role of biofertilizers in agriculture. Explain the procedure of bio-inoculation.
6. Discuss the use of sewage and sludge as a source of nutrition.

SECTION-C

7. Write the present scenario of organic farming. Discuss the quality parameters of organic manures and their specifications.
8. Define composting. Explain the chemical changes during the process of composting and discuss about various methods of composting. Show diagrammatically the stages of composting.
9. Discuss the role of micro-organisms in degradation of pesticides.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.



Roll No.

--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 11

B.Sc. (BT) (Sem.-5)

BIOTECHNOLOGY IN FORENSIC SCIENCE

Subject Code : BSBT142-18

M.Code : 78353

Date of Examination : 13-06-2026

Time : 3 Hrs.

Max. Marks : 40

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of EIGHT questions carrying TWO marks each.
2. SECTION-B contains EIGHT questions carrying FOUR marks each and students have to attempt any SIX questions.
3. SECTION-C is COMPULSORY contains TWO questions with internal choice carrying TEN marks each.

SECTION - A

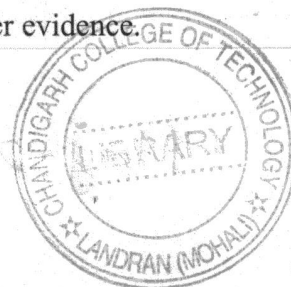
1. Write briefly :

- a) Criminalistics
- b) Double loop pattern
- c) Contusions
- d) Slant
- e) Forensic medicine
- f) Define explosive
- g) Computer virus
- h) Penlifts

SECTION-B

2. Discuss Locard's exchange principle. Cite a suitable example.
3. Discuss the procedure to search and seize computer evidence.

May -2026



4. Write a note on medico-legal aspects of injuries.
5. Write note on composite patterns.
6. How do you define cyber security? Discuss its need in the age of growing networks.
7. How modus operandi bureau works. Explain.
8. Write a note on external ballistics.
9. Discuss the procedure to analyze ink samples.

SECTION-C

10. Discuss various general and individual characteristics of handwritings. OR Discuss principle and applications of DNA fingerprinting.

OR

Discuss the various tools and techniques used in forensic science for sample analysis.

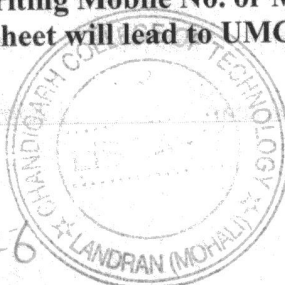
11. What are firearms? Discuss the classification of firearms along with examples. OR Classify various types of injuries and discuss their medico-legal aspects.

OR

Discuss the various branches of forensic science laboratories in India.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

May-2026



Roll No.								
-----------------	--	--	--	--	--	--	--	--

Total No. of Pages: 02

Total No. of Questions: 09

Bachelor of Science (Biotechnology) (Sem.-5)

RENEWABLE ENERGY RESOURCES

Subject Code: BSBT138-18

M.Code :78349

Date of Examination: 11-06-2026

Time: 3 Hrs.

Max. Marks: 60

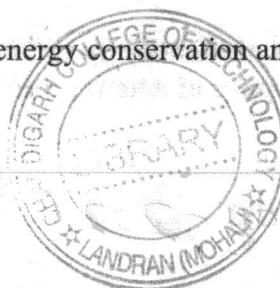
INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION A

1. Answer the following questions:

- a) Differentiate between beam radiation and diffuse radiation.
- b) Why are concentrating collectors more efficient than flat plate collectors at high temperatures.
- c) Explain the effect of temperature on the efficiency of a solar PV cell.
- d) State any two factors affecting wind energy estimation at a site.
- e) Why is site selection important for wind power plants. Mention two criteria.
- f) Explain the significance of cut-in and cut-out wind speeds in wind turbines.
- g) What is the basic working principle of OTEC systems.
- h) Compare tidal energy and wave energy based on their source and predictability.
- i) Why is C/N ratio important in biogas production.
- j) How do improved cooking stoves help in energy conservation and environmental protection.



SECTION B

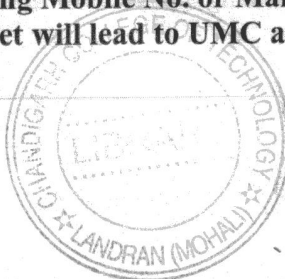
2. Explain the working principle of a flat plate collector with a neat diagram. Discuss its advantages and limitations.
3. Describe the construction and working of a wind turbine generator. Highlight the role of major components.
4. Explain the principle and working of ocean thermal energy conversion (OTEC). Mention its advantages and challenges.
5. Discuss the process of biogas production using anaerobic digestion. Explain the factors affecting gas yield.
6. Explain the methods of harnessing geothermal energy. Discuss its potential and scope in India.

SECTION C

7. Explain the working of a solar thermal power plant with a neat diagram. Discuss different types of solar thermal systems and compare their performance.
8. Describe the aerodynamic principles of wind turbines and derive the expression for maximum power extraction (Betz limit). Discuss its practical significance.
9. Discuss the energy scenario and role of renewable energy sources in India. Explain the challenges and future prospects of renewable energy integration.

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

May-2026



Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc. (BT) (Sem.-5)

HUMAN BEHAVIOUR & PSYCHOLOGY

Subject Code : BSBT-137-18

M.Code : 78348

Date of Examination : 09-06-2026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Answer briefly :

- a) The scope of psychology.
- b) What are the sub-fields of psychology?
- c) What do you understand by cognitive basis of emotions?
- d) Differentiate between perception and sensation.
- e) What is the physiological basis of emotions?
- f) What are psychological tests?
- g) Define personality.
- h) What is Cattell's two types of intelligences?
- i) What is the importance of individual differences?
- j) Explain briefly the PASS model of intelligence.



may -2026

SECTION-B

2. Explain the historical perspective of psychology.
3. Explain Classical Conditioning.
4. Differentiate between extrinsic and intrinsic motivation.
5. Explain the physiological correlates of emotions.
6. What are the methods of personality assessment?

SECTION-C

7. Briefly explain the Behavioural and Cognitive approaches of psychology.
8. Give an overview of different theories of learning.
9. Explain different types of conflict. Explain the conflict handling mechanism.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

May-2026



Total No. of Questions: 09

Total No. of Pages : 02

B.Sc. (BT) (Sem.-6)
BIOTECHNOLOGY & HUMAN WELFARE
Subject Code: BSBT 148-18
M.Code: 79459
Date of Examination: 08-05-2026

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. SECTION-C **THREE** questions carrying **TEN** mark each and students have to attempt any **TWO** questions.

SECTION - A

1. (a) What is nitrogen fixation, and why is it important for plants?
- (b) Write a short note on protein engineering.
- (c) What is the role of glycosyltransferase in polysaccharide synthesis?
- (d) What is selective breeding?
- (e) What is PHB? How is PHB produced?
- (f) Discuss the major limitation of *E. coli* in monoclonal antibody production.
- (g) What are chlorinated pollutants? Give examples.
- (h) Discuss symbiotic nitrogen fixation in brief
- (i) Discuss methods for degradation of hydrocarbons.
- (j) What is DNA finger printing?

SECTION – B

2. Discuss various types of interactions between plants and microbes. Explain both beneficial and harmful interactions.
3. Define gene therapy and explain its types, methods of delivery, and applications.
4. Explain how protein engineering contributes to the formation and improvement of antibiotics.
5. Discuss the biological activities of polysaccharides and explain the mechanism involved in their secretions
6. Discuss various techniques and strategies used for effective stress management. Also highlight the importance of stress management for overall well-being.

SECTION - C

7. Discuss the role of protein engineering in the synthesis of enzymes and polysaccharides.
8. Discuss the various applications of forensic science and explain how it contributes to human welfare. Highlight its role in criminal investigations, public safety, and legal justice.
9. Describe the process of monoclonal antibody production in *E. coli*. Also, discuss the industrial and therapeutic applications of *E. coli* derived monoclonal antibodies.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.



may - 2026

Total No. of Questions: 09

Total No. of Pages : 02

B.Sc. (BT) (Sem.-6)

MEDICAL MICROBIOLOGY

Subject Code: BSBT152-18

M.Code: 79463

Date of Examination: 14-05-2026

Time: 3 Hrs.

Max. Marks: 40

INSTRUCTIONS TO CANDIDATES:

- INSTRUCTIONS TO CANDIDATES:
1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.
 2. SECTION-B contains FIVE questions carrying TWO & HALF marks each and students have to attempt any FOUR questions.
 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION - A

1. Write briefly:

- What are the main structural components of a virus?
- Write a short note on rhabdoviruses with examples.
- Mention methods used for diagnosis of *Vibrio cholerae*.
- Give difference between Gram positive and Gram-negative bacteria.
- Name one Gram-positive spore-forming bacterium and its associated disease.
- Mention safety practices followed in BSL-3 laboratories.
- Name two virulence factors at *Staphylococcus aureus* and mention their functions.
- How does septicaemia lead to septic shock?
- What is the difference between HIV and hepatitis B in terms of transmission and prevention?
- Discuss protozoan diseases that are transmitted through blood.



May - 20 26

SECTION - B

2. Explain morphology, pathogenesis, and symptoms caused by *Salmonella typhi* along with their preventive measures.
3. Describe the pathogenesis, symptoms and preventive measures of *Rickettsiaceae* and *Chlamydiae*.
4. Explain the mode of transmission, symptoms, and prevention of reoviruses.
5. Write a detail note on gastrointestinal infections.
6. Define subcutaneous infections. Discuss pathogenesis, diagnosis, and treatment of sporothrix.

SECTION -C

7. Define fungal infections. Explain causative organisms, clinical features, diagnosis, and treatment of any two major fungal infections.
8. Define viruses. Discuss any two viral diseases in detail, including its causative agent, pathogenesis, clinical features, diagnosis, and treatment
9. Explain morphology, pathogenesis, and symptoms caused by *Mycobacterium tuberculosis* along with their laboratory diagnosis, preventive measures and chemotherapy.

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

Total No. of Questions: 09

Total No. of Pages : 03

B.Sc (BT) (Sem.-6)
TECHNICAL WRITING
Subject Code: BSBT601-18
M.Code: 79456

Date of Examination: 05-05-2026

Time: 3 Hrs.

Max. Marks: 60

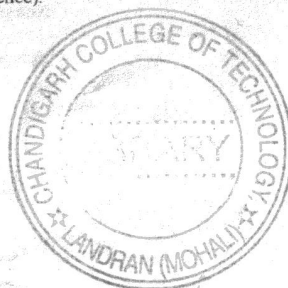
INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION - A

1. Write briefly:

- (a) Define audience analysis- in the context of technical writing.
- (b) What is persuasion in technical communication?
- (c) Give two examples of mechanisms that may be described in technical writing.
- (d) List any two research techniques commonly used in report writing.
- (e) Differentiate between technical writing and general writing (any one key difference).
- (f) Define writing outline with an example.
- (g) List two elements of a formal research report
- (h) How is grammar important in technical writing?
- (i) What is the purpose of a resume?
- (j) What are professional ethics in writing?



may-2026

SECTION - B

2. What is audience analysis? Explain how it influences the style and content of a technical document
3. What are the steps involved in writing a good proposal?
4. What is a formal research report? List and briefly explain its major components.
5. Discuss the role of library resources in technical writing?
6. Discuss the importance of grammar and style in ensuring clarity and professionalism in technical writing.

SECTION - C

7. Explain proposal writing. Describe the types of proposals and their key features with examples.
 8. Write a job application for the post of technical assistant in Biotechnology lab. Also draft a resume
 9. Read the following passage and make notes:
- Social media has become an integral part of modern society, influencing the way people communicate, share information, and perceive the world. Platforms like Facebook, Instagram, X (formerly Twitter), and TikTok have changed how individuals interact with each other, often blurring the lines between the virtual and real worlds. On the positive side, social media enables instant communication, allows people to stay connected across distances, and provides a platform for marginalized voices to be heard. It also serves as a tool for education, awareness, and social activism—movements like #MeToo and Black Lives Matter gained global attention due to their strong online presence. However, the

negative consequences of social media are also significant. Overuse can lead to addiction, reduced attention spans, and mental health issues such as anxiety and depression—especially among teenagers. The pressure to present a “perfect” life online can create unrealistic expectations and low self-esteem. Furthermore, misinformation spreads rapidly on these platforms, affecting public opinion and even influencing elections. Cyberbullying and invasion of privacy are also rising concerns. Despite these drawbacks, social media is here to stay, and it is up to users, educators, and policymakers to promote digital literacy, encourage responsible usage, and ensure that social media is used for constructive purposes. In a world increasingly shaped by online interaction, balancing connectivity with real-world engagement is essential for the well-being of individuals and society as a whole.

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student

[illegible]

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc (Bio Technology) (Sem.-6)

BIOINFORMATICS

Subject Code :BSBT149-18

M.Code :79460

Date of Examination : 11-05-2026

Time : 3 Hrs.

Max. Marks :40

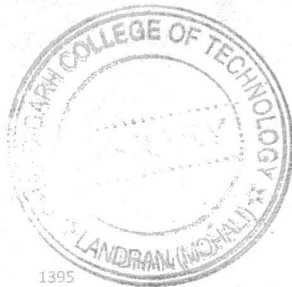
INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.
2. SECTION-B contains FIVE questions carrying TWO AND A HALF marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- (a) Define Bioinformatics.
- (b) What are biological sequence databases?
- (c) What is FASTA file format?
- (d) Define homologous sequences.
- (e) What is the purpose of scoring matrices?
- (f) What is the dot matrix method?
- (g) Define multiple sequence alignment.
- (h) What is molecular clock theory?
- (i) What is protein secondary structure prediction?
- (j) What is molecular docking?



1 | M-79460

1399

May - 2026

SECTION - B

2. Explain the goals and applications of Bioinformatics.
3. Distinguish between global and local sequence alignment.
4. Write short notes on the Needleman–Wunsch algorithm.
5. What is BLAST? Mention its types.
6. Describe the progressive method used in multiple sequence alignment.

SECTION – C

7. Explain dynamic programming methods used in pairwise sequence alignment with suitable examples.
8. Describe phylogenetic tree construction and explain the UPGMA method.
9. Discuss protein structure prediction methods including Chou–Fasman and GOR method.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

2 | M-79460

1395

Total No. of Questions : 09

Total No. of Pages : 02

Subject Code : BSBT150-18

M.Code : 79461

Date of Examination : 00-05-2026

Time : 3 Hrs.

Max. Marks : 40

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.
2. SECTION-B contains FIVE questions carrying 2½ (Two and Half) marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

1. Answer Briefly :

- What is gasohol?
- What are the primary uses of coal?
- What do you know about VAM?
- Methanogenic bacteria belong to which domain of life?
- What are conventional fuels?
- How are algal biofertilizers beneficial for the environment?
- Define Biodegradation.
- How do earthworms contribute to soil fertility?
- Which bacterium is commonly used in the bioleaching of uranium?
- Define microbial degradation of pesticides.



1 M-79461

May - 20 26

SECTION-B

2. How do fungal biofertilizers contribute to plant health?
3. What is the recent advancement in microbial hydrogen production?
4. How does burning animal dung as fuel impact air quality?
5. Write a note on soil bioremediation.
6. What are the steps involved in the bioleaching of gold?

SECTION-C

7. Explain the role of symbiotic and asymbiotic nitrogen fixing bacteria in the enrichment of soil.
8. Discuss in detail about the degradation of lignin and cellulose using microbes.
9. "Genetically modified microbes are significant for the environment". Justify.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

2 | M-79451

Roll No.

Total No. of Pages : 02

Total No. of Questions: 09

B.Sc. (Bio Technology) (Sem.-6)

PLANT BIOTECHNOLOGY

Subject Code: BSBT151-18

M.Code: 79462

Date of Examination: 18-05-2026

Time: 3 Hrs.

Max. Marks: 40

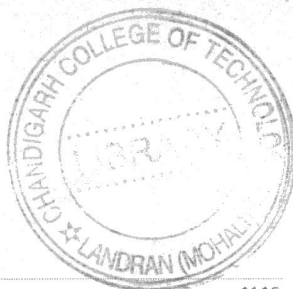
INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.
2. SECTION-B contains FIVE questions carrying TWO and HALF marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION – A

1. Answer the following questions:

- (a) Totipotency
- (b) Use of meristem culture
- (c) Advantages of micropropagation
- (d) Diploidization
- (e) Function of mannitol in protoplast isolation
- (f) Two plant growth regulators used in tissue culture
- (g) Full form of MS medium
- (h) Non-symbiotic nitrogen-fixing microorganisms
- (i) One bacterial and fungal biocontrol agent
- (j) Shoot tip culture



May - 2026

SECTION – B

2. What are the main stages of Micropropagation?
3. Define callus culture. How callus is induced in vitro?
4. How does chromosome elimination lead to haploid formation in cereals?
5. Describe the structure and function of root nodules in leguminous plants.
6. Differentiate between enzymatic and mechanical methods of protoplast isolation.

SECTION – C

7. Compare and contrast microspore culture and ovule culture for haploid production
8. Write a detailed note on somaclonal variation. How it is used in development of disease resistant and stress tolerant crop varieties
9. Discuss the types of plant tissue culture such as seed, embryo and organ culture with their procedures and uses.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

[illegible]

Total No. of Questions: 09

DEVELOPMENTAL BIOLOGY

Subject Code: BSBT 147-18

M.Code: 79458

Date of Examination: 21-05-2026

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION - A

- 1. Answer the following questions:**

- (a) Gametogenesis
- (b) Different types of eggs
- (c) Gastrulation
- (d) De-lamination
- (e) Cell commitment
- (f) Determination
- (g) Constancy
- (h) Epiboly
- (i) Blastula
- (j) Embryo



1 | M-79458

SECTION-B

2. Discuss in brief spermatogenesis and oogenesis process.
3. Explain various types of morphogenetic movements.
4. What are fate maps? Describe fate map in early embryos.
5. What is embryonic induction? Discuss its various types.
6. Discuss the development of extra embryonic membranes.

SECTION-C

7. Discuss the various types of embryonic cleavage.
8. What is embryonic differentiation? Discuss the epigenetic landscape model.
9. Discuss the process of neurulation and notogenesis.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

2 | M-79458

924

May - 2026