Roll No. [ ] Total No. of Pages : 02

Total No. of Questions : 09

B.Sc. Hons. (Microbiology) (Sem.–1)

CHEMISTRY-I

Subject Code : BSMB103-19

M.Code : 78981

Date of Examination : 17-05-2023

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 Atom and Molecule.

b) Significance of wave function.

c) Inductive Effect.

d) Enantiomers with examples.

e) Dipole moment.

f) Flying wedge projection formula.

g) Meso compounds using suitable examples.

h) Erythro and Threo nomenclature.

i) Define racemic resolution.

j) Centre of symmetry.

(S2)-252 College of Pharmacy LIBRARY Landran, Mohali

SECTION-B

2. What are isomers? Give its types using suitable examples.

3. Discuss Bhor's Atomic model along with its merits and demerits.

4. Comment on IUPAC system of nomenclature using suitable examples.

5. What is racemic modification? Give methods for performing racemic modifications.

6. Discuss on the stereochemistry of Allenes and Biphenyls.

SECTION-C

7. Discuss in detail about methods used for the resolution of chiral mixture.

8. Give the details of :

a) Hydrogen bonding

b) Conjugation

c) Resonance

d) Polarity of bonds.

9. Write in detail about Quantum numbers and their significance.

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)

INORGANIC CHEMISTRY

Subject Code : BSBT-101-18

M.Code : 75324

Date of Examination : 19-05-2023

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 is the Effective nuclear-charge?

b) Explain the covalent bond.

c) Explain the coordination number with examples.

d) Explain the geometrical isomerism.

e) Explain the paramagnetism and diamagnetism.

f) What are Vander waal forces?

g) Explain the structure of H_2O molecule?

h) What electron affinity.

i) What is the oxidation number?

j) What is inert pair effect?

SECTION-B

2) Explain the valence bond theory and its limitations.

3) Explain the structure of SF_6 and ClF_4.

4) Explain the effect of temperature on paramagnetism.

5) Explain electronegativity and its trend in period.

6) Explain Inter and Intra molecular H-bonding.

SECTION-C

7) Explain the back bonding with examples.

8) Explain the crystal field theory.

9) Explain the Werner's coordination theory

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

College of Pharmacy LIBRARY

July- 2023

Roll No. ☐☐☐☐☐☐☐☐☐☐

Total No. of Questions : 09

Total No. of Pages : 02

B.Sc.(BT) (Sem.–1)

BASICS OF BIOSCIENCES

Subject Code : BSBT-107-18

M.Code : 75330

Date of Examination : 24-05-2023

Time : 3 Hrs.

Max. Marks : 30

INSTRUCTIONS TO CANDIDATES :

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

SECTION-A

1. **Answer briefly :**

   a) Oligosaccharide

   b) Vertebrates

   c) Anaphase

   d) Phospholipids

   e) Diversity

   f) Neuron

   g) Function of root

   h) Vascular tissue in plants

   i) Function of kidney

   j) Shrub.

SECTION-B

2. Discuss the basic features of Kingdom Monera.

3. Explain the significance of Meiosis.

4. Explain the morphology of flower.

5. Describe the organization of Plant cell.

6. Explain the role of protein in cell.

SECTION-C

7. Write a note on the cell as the Basic unit of life.

8. Discuss the structural organization in Animals.

9. Explain the biological classification.

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

July-2023

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 : 26-05-2023

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) Traditional Biotechnology.

   b) Marine Biotechnology.

   c) Biotechnology in healthcare sector.

   d) BT cotton.

   e) GM papaya.

   f) Food Biotechnology.

   g) Food quality determinants.

   h) L-asparaginase.

   i) Alcoholic beverages.

   j) Beers vs. wine.

SECTION-B

2. Explain the importance of biotechnology in pharmaceutical sector.

3. Give an overview of important biotechnological applications in agriculture sector.

4. Compare properties of GM cotton and GM tomato. Also write a brief note on commercial aspects of GM crops in India.

5. Explain microbiological processes involved in developing value added food products and beverages.

6. Write a brief note on the fermentative production of acetic acid.

SECTION-C

7. What is biotechnology? Explain its importance in the agricultural, environmental and food sectors.

8. Discuss important microbiological procedures to obtain processed foods of high quality.

9. Define Fermentation Biotechnology. Illustrate its importance in producing microbial enzymes and beverages.

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.

July-2023

Roll No. Total No. of Pages : 02

Total No. of Questions : 09

B.Sc.(BT) (Sem–1)

BIOCHEMISTRY AND METABOLISM

Subject Code : BSBT-103-18

M.Code : 75326

Date of Examination : 12-06-2023

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 are amphibolic pathways?

b) In which compartment of cell TCA cycle occurs?

c) What is the role of cholesterol in fluid mosaic model?

d) Draw structure of Galactose.

e) Difference between Homopolysaccharides and Heteropolysaccharides.

f) What are Co-enzymes? Give explanation.

g) What are the main features of enzyme active sites?

h) Give example of any Disaccharides.

i) Explain the salient features of secondary structure of protein.

j) What are the pyrimidines?

SECTION-B

2. Write a note on regulation of glycolysis.
3. Write different classifications of enzymes.
4. Write a note on cerebrosides and gangliosides.
5. Draw well labeled structures of aromatic amino acid?
6. What are glycoproteins? Give their functions.

SECTION-C

7. Write a note on classification of protein.
8. Classify lipids along with their structures and functions.
9. Explain complete oxidation of one module of glucose.

Chandigarh College of Pharmacy LIBRARY

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.

July-2023

Roll No. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Total No. of Questions : 11

Total No. of Pages : 04

B.Voc. (Child Caregiver) / B.A.(JAMC) / BBA / BBA (Business Economics) / BBA (Event Management) / BBA (Rural Development) / BBA (SIM) / B.Com (Hons) / BCA / BHMCT / B.Sc. Hons. (Microbiology / Nutrition and Dietetics / Artificial Intelligence & Machine Learning / Bio Technology / Environment Science / Fashion Design / Graphics & Web Designing / Information Technology / Medical Lab Sciences / Operation Theatre Technology / Radiotherapy Technology / Bachelor of Tourism and Travel Management) (Sem.–1)

HUMAN VALUES, DE-ADDICTION & TRAFFIC RULES

Subject Code : HVPE-101-18

M.Code : 93322

Date of Examination : 21-01-23

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/True/False :

a. Physical facilities are necessary but ..... for humans.
भौतिक सुविधाएं मनुष्य के लिए आवश्यक हैं, लेकिन .... हैं।
ਭੌਤਿਕ ਸਹੂਲਤਾਂ ਮਨੁੱਖ ਲਈ ਜ਼ਰੂਰੀ ਹਨ, ਲੇਕਿਨ ..... ਹਨ।

b. Animal order in nature contains ..... and .....
प्रकृति में पशु आदेश में ..... और ..... होता है।
ਕੁਦਰਤ ਵਿੱਚ ਪਸ਼ੂ ਆਦੇਸ਼ ਵਿੱਚ ..... ਅਤੇ ..... ਹੁੰਦਾ ਹੈ।

c. Self-exploration is the process for ..... Education.
आत्म–अध्ययन ..... शिक्षा के लिए प्रक्रिया है।
ਸਵੈ–ਅਧਿਐਨ ..... ਸਿੱਖਿਆ ਲਈ ਪ੍ਰਕਿਰਿਆ ਹੈ।

d. To be in a state of liking is .....
पसंद के हिसाब से एक अवस्था में होना ..... है।
ਪਸੰਦ ਦੇ ਹਿਸਾਬ ਵਲੋਂ ਇੱਕ ਦਸ਼ਾ ਵਿੱਚ ਹੋਣਾ ..... ਹੈ।

e. Right understanding + ... = Mutual prosperity.
सही समझ +..... = पारस्परिक समृद्धि।
ਠੀਕ ਸਮਝ +..... = ਆਪਸੀ ਖੁਸ਼ਹਾਲੀ।

f. Existence is nature submerged in space.
अस्तित्व अंतरिक्ष में डूबी हुई प्रकृति है।
ਅਸਤੀਤਵ ਖਲਾਅ ਵਿੱਚ ਸਮਾਈ ਹੋਈ ਕੁਦਰਤ ਹੈ।

g. There is no self-regulation in Nature.
प्रकृति में कोई आत्म–नियमन नहीं है।
ਕੁਦਰਤ ਵਿੱਚ ਕੋਈ ਆਤਮ–ਨਿਯਮਤਾ ਨਹੀ ਹੈ।

h. Developing ethical competence in individual ensures professional ethics.
व्यक्ति में नैतिक क्षमता का विकास पेशेवर नैतिकता सुनिश्चित करता है।
ਵਿਅਕਤੀ ਵਿੱਚ ਨੈਤਿਕ ਸਮਰੱਥਾ ਦਾ ਵਿਕਾਸ ਪੇਸ਼ੇਵਰ ਨੈਤਿਕਤਾ ਪੱਕੀ ਕਰਦਾ ਹੈ।

i. Holistic technologies should be eco-friendly and people-friendly.
समग्र प्रौद्योगिकियों पर्यावरण के अनुकूल और लोगों के अनुकूल होना चाहिए।
ਸਰਬਾਂਗੀ ਤਕਨੀਕਾਂ ਪਰਿਆਵਰਣ ਦੇ ਅਨੁਕੂਲ ਅਤੇ ਲੋਕਾਂ ਦੇ ਅਨੁਕੂਲ ਹੋਣੀਆਂ ਚਾਹੀਦੀਆਂ ਹਨ।

j. The value "care" is related with body.
मूल्य ''ध्यान'' शरीर के साथ संबंधित है।
ਮੁੱਲ ਧਿਆਨ ਸਰੀਰ ਦੇ ਨਾਲ ਸੰਬੰਧਤ ਹੈ।

SECTION-B (5 × 4 = 20)

2. What are the basic guidelines of value education?
मूल्य शिक्षा की बुनियादी दिशा–निर्देश क्या हैं?
ਮੁੱਲ ਸਿੱਖਿਆ ਦੇ ਬੁਨਿਆਦੀ ਦਿਸ਼ਾ–ਨਿਰਦੇਸ਼ ਕੀ ਹਨ?

3. Explain harmony in family.
परिवार में तालमेल के बारे में बताएं।
ਪਰਿਵਾਰ ਵਿੱਚ ਤਾਲਮੇਲ ਦੇ ਬਾਰੇ ਵਿੱਚ ਦੱਸੋ।

4. 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?
ਇਰਾਦਾ ਅਤੇ ਸਮਰੱਥਾ ਦੇ ਵਿੱਚ ਕੀ ਅੰਤਰ ਹੈ? ਕਿਵੇਂ ਅਸੀਂ ਗਲਤੀ ਕਰਦੇ ਹਾਂ?

5. Explain competence in Professional-Ethics.
पेशेवर नैतिकता में क्षमता समझाओ।
ਪੇਸ਼ੇਵਰ ਨੈਤਿਕਤਾ ਵਿੱਚ ਸਮਰੱਥਾ ਸਮਝਾਓ।

Dec-2022

SECTION-C

(5 × 6 = 30)

7. Compare the four orders in nature on the basis of their salient aspects.

मुख्य पहलुओं के आधार पर प्रकृति में चार आदेशों की तुलना करें।

ਮੁੱਖ ਪਹਿਲੂਆਂ ਦੇ ਆਧਾਰ ਉੱਤੇ ਕੁਦਰਤ ਵਿੱਚ ਚਾਰ ਆਦੇਸ਼ਾਂ ਦੀ ਤੁਲਨਾ ਕਰੋ।

OR

What is the meaning and purpose of Self-Exploration?

स्वयं-अन्वेषण के अर्थ और उद्देश्य क्या हैं?

ਆਤਮ-ਅਧਿਐਨ ਦੇ ਮਤਲੱਬ ਅਤੇ ਉਦੇਸ਼ ਕੀ ਹਨ?

8. Describe basic human aspirations. What are the requirements to fulfill basic human aspirations ?

बुनियादी मानवीय आकांक्षाएं क्या हैं? बुनियादी मानवीय आकांक्षाओं को पूरा करने के लिए आवश्यकताओं का वर्णन करें?

ਬੁਨਿਆਦੀ ਮਾਨਵੀ ਇੱਛਾਵਾਂ ਕੀ ਹਨ? ਬੁਨਿਆਦੀ ਮਾਨਵੀ ਇੱਛਾਵਾਂ ਨੂੰ ਪੂਰਾ ਕਰਨ ਲਈ ਜ਼ਰੂਰਤਾਂ ਦਾ ਵਰਣਨ ਕਰੋ?

OR

How is a human-being co-existence of Self and Body? Explain Pre-conditioning, Sensation and Natural-Acceptance.

इंसान स्वयं और शरीर का सह-अस्तित्व कैसे है? पूर्व-मान्यता, संवेदना और प्राकृतिक-स्वीकृति समझाओ।

ਮਨੁੱਖ ਸਵੈ ਅਤੇ ਸਰੀਰ ਦਾ ਸਹਿ-ਅਸਤਿਤਵ ਕਿਵੇਂ ਹੈ? ਪੂਰਵ-ਮਾਨਤਾ, ਸੰਵੇਦਨਾ ਅਤੇ ਸਹਿਜ-ਸਵਿਕਰਿਤੀ ਸਮਝਾਓ।

9. Explain the process of self-exploration with the help of a suitable diagram.

एक उपयुक्त आरेख की मदद से आत्म-अन्वेषण की प्रक्रिया को समझाईये।

ਇੱਕ ਢੁੱਕਵੇਂ ਚਿੱਤਰ ਦੀ ਮਦਦ ਨਾਲ ਆਤਮ-ਅਧਿਐਨ ਦੀ ਪਰਿਕ੍ਰਿਆ ਨੂੰ ਸਮਝਾਓ।

OR

What are the problems we are facing today because of operating on the basis of pre-conditioned desires?

पूर्व-मानता इच्छाओं के आधार पर परिचालन करने से हम आज क्या-क्या समस्याओं का सामना कर रहे हैं।

ਪੂਰਵ-ਮਾਨਤਾ ਇੱਛਾਵਾਂ ਦੇ ਆਧਾਰ ਉੱਤੇ ਚੱਲਣ ਕਰਕੇ ਅੱਜ ਅਸੀਂ ਕਿਹੜੀਆਂ-ਕਿਹੜੀਆਂ ਸਮੱਸਿਆਵਾਂ ਦਾ ਸਾਮਣਾ ਕਰ ਰਹੇ ਹਾਂ

[M- 93322]

[illegible]

ਮੌਜੂਦਾ ਸਮਾਂ ਵਿਚ ਪੇਸ਼ੇ ਦੇ ਮੁੱਖ ਅਨੈਤਿਕ ਤਰੀਕੇ ਕੀ ਹਨ? ਮੂਲ ਕਾਰਨ ਅਤੇ ਸੰਭਵ ਸਮਾਧਾਨ ਦਾ ਵਿਸ਼ਲੇਸ਼ਣ ਕਰੋ।

OR

What are the five dimensions of Human Endeavour in society?

समाज में मानव प्रयास के पांच आयाम क्या हैं?

ਸਮਾਜ ਵਿੱਚ ਮਨੁੱਖੀ ਕੋਸ਼ਿਸ਼ ਦੇ ਪੰਜ ਪਹਿਲੂ ਕੀ ਹਨ?

11. What are the broad holistic criteria for evaluation of technologies, production systems and management models? How do they map with the comprehensive human goal?

प्रौद्योगिकी, उत्पादन प्रणाली और प्रबंधन मॉडल के मूल्यांकन के लिए व्यापक समग्र मापदंड क्या हैं? कैसे वे व्यापक मानव लक्ष्य के साथ मेल खाती है?

ਤਕਨਾਲੋਜੀ, ਉਤਪਾਦਨ ਸਿਸਟਮ ਅਤੇ ਪ੍ਰਬੰਧਨ ਮਾਡਲ ਦੀ ਪੜਤਾਲ ਕਰਨ ਲਈ ਵਿਆਪਕ ਸੰਪੂਰਨ ਮਾਪਦੰਡ ਕੀ ਹਨ? ਕਿਵੇਂ ਉਹ ਵਿਆਪਕ ਮਨੁੱਖ ਲੰਕਸ਼ ਦੇ ਨਾਲ ਮੇਲ ਖਾਂਦੀ ਹੈ?

OR

Explain self-organisation and health.

आत्म-संगठन और स्वास्थ्य के बारे में बताएं।

ਆਤਮ-ਸੰਗਠਨ ਅਤੇ ਸਿਹਤ ਦੇ ਬਾਰੇ ਵਿੱਚ ਦੱਸੋ।

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.

[M- 93322]

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 : 17-01-23

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. **Define the following:**

   a) Marine Biotechnology

   b) Traditional Biotechnology.

   c) Pre processed food

   d) BT Crops

   e) Biofertilizer

   f) Biopharmaceuticals

   g) Genetic Engineering

   h) Biopesticides

   i) Upstream Processing

   j) Bioreactors.

SECTION-B

2. Write a note on Microbial Fermentation.
3. Write about Environmental Biotechnology and its scope.
4. Write a note on BT Crops.
5. List applications of Biotechnology in Healthcare.
6. Discuss role of fermentation in Enzyme production.

SECTION-C

7. Discuss Applications of Biotechnology in Food Processing and Product Development.
8. Elaborate on industrial production of Beverages.
9. Discuss application of biotechnology in development of Fungal and Insect resistance plants.

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.

DEC-2022

Roll No. Total No. of Pages : 02

Total No. of Questions : 09

B.Sc.(BT) (Sem.–1)

BASICS OF BIOSCIENCES

Subject Code : BSBT-107-18

M.Code : 75330

Date of Examination : 14-01-23

Time : 3 Hrs. **Max. Marks : 30**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.**
2. **SECTION-B contains FIVE questions carrying $2^1/_2$ (Two and Half) marks each and students has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying FIVE marks each and students has to attempt any TWO questions.**

SECTION-A

1. **Answer briefly :**

a) Glucose

b) Annelids

c) S p'.ase

d) Mammals

e) Plant Cell wall

f) Muscle cell

g) Connective tissue

h) 2 examples of Protista

i) Mitochondria

j) Stamen.

SECTION-B

2. Discuss the basic features of Kingdom Fungi.
3. Write a note on the role of vascular tissue in plants.
4. Explain the role of epithelial tissue in animals.
5. Describe the organization of prokaryotic cell.
6. Explain the functions of Lipids.

SECTION-C

7. Write a note on the morphological features of animals.
8. Describe in detail the anatomy of plant.
9. Discuss the different stages of Meiosis.

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.

DEC–2022

Roll No. [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] Total No. of Pages : 02

Total No. of Questions : 09

B.Sc.(BT) (Sem.–1)

BIOCHEMISTRY AND METABOLISM

Subject Code : BSBT-103-18

M.Code : 75326

Date of Examination : 12-01-23

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) Homopolysaccharides

   b) Gangliosides

   c) Fibrous and Globular proteins

   d) Active site

   e) Oxidative phosphorylation

   f) Transition state

   g) Essential amino acids

   h) Nucleoside and Nucleotides

   i) Apoenzyme

   j) Cis and Trans fatty acids

SECTION-B

2. List general properties of Monosaccharides.
3. Write a note on structure and function of Phospholipids.
4. How are Enzymes classified?
5. What is Electron Transport chain? Discuss briefly.
6. Write a note on biological functions of Glycoproteins.

SECTION-C

7. Elaborate on levels of structural organization of Proteins.
8. What is β-Oxidation ? Discuss significance and steps involved.
9. Discuss pathway of TCA 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.

Dec-2022

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 : 10-01-2023

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) Define electronegativity.

   b) Why the first ionization energy of Al is lower than Mg?

   c) Define atomic radius of an element.

   d) Why the electron affinities of halogens are high?

   e) State Slater's rule.

   f) Calculate the bond order of O_2.

   g) What is the hybridisation of H_2O molecule?

   h) Write down the formula of the complex.

   Hexaammineecobalt(III) chloride

   i) Write down the name of the following complex:

   $[CO(NO_2)_3(NH_3)_3]$

   j) *"$[FeF_6]^{3-}$ is colourless but $[Fe(SCN)]^{2+}$ is intense red coloured"*. Explain.

SECTION-B

2. Discuss the variation in ionisation energy along a period and down a group in periodic table.

3. Discuss Mulliken-Jaffe electronegativity concept.

4. Write down the shapes and hybridisation of following molecules or ions:

   NH_3, $SnCl_2$, SF_6, IF_7 and XeF_4.

5. Discuss geometrical isomerism in coordination chemistry with suitable example.

6. Discuss the formation of $[Cr(NH_3)_6]^{3+}$ complex ion on the basis of Valance Bond Theory (VBT).

SECTION-C

7. Describe the postulates of valance bond theory (VBT) of coordination compounds.

8. Write short notes on paramagnetism and diamagnetism.

9. Calculate the CFSE for following metal complexes:

   a) $[MnI_4]^{2-}$

   b) $[Fe(CN)_6]^{4-}$

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.

Dec – 2022

Roll No.

Total No. of Questions : 08

Total No. of Pages : 01

B.Sc. (BT) (2018 & Onwards) (Sem.–1)

INORGANIC CHEMISTRY

Subject Code : BSBT-101-18

M.Code : 75324

Time : 2 Hrs.

Max. Marks : 30

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE question(s), each question carries 6 marks.

Q1) What is Effective Nuclear Charge? Calculate the effective nuclear charge for a 3d-electron in zinc atom.

Q2) What are the factors which effect the formation of covalent compounds?

Q3) What is Diagonal Hybridization? Discuss the structure of BeF_2 molecule.

Q4) Differentiate between atomic orbital and molecular orbital.

Q5) What are non-polar and polar covalent bonds? Give examples.

Q6) Compare the valence bond theory with molecular orbital theory.

Q7) Explain the term electronegativity. How is it related to electron affinity and ionization energy?

Q8) Differentiate between geometrical and optical isomers by taking suitable example.

Note: Any student found attempting answer sheet from any other person(s), using incriminating material or involved in any wrong activity reported by evaluator shall be treated under UMC provisions.

Student found sharing the question paper(s)/answer sheet on digital media or with any other person or any organization/institution shall also be treated under UMC.

Any student found making any change/addition/modification in contents of scanned copy of answer sheet and original answer sheet, shall be covered under UMC provisions.

DEC-2020

Roll No.

Total No. of Questions : 18 Total No. of Pages : 02

B.Sc. (BT) (2018 & Onwards) (Sem.–1)

INTRODUCTION TO BIOTECHNOLOGY

Subject Code : BSBT-102-18

M.Code : 75325

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

Answer briefly :

Q1. Name any two enzymes used in food industry

Q2. Which organism is responsible for production of penicillin at industrial level?

Q3. What is a Bluebiotechnology?

Q4. What is the significance of *Bacillus thuringiensis* in agriculture biotechnology?

Q5. What is the starting substrate for beer? Which microbe is responsible for its beer production?

Q6. How does yeast help in food processing?

Q7. What factors are enhanced for improving the quality of food?

Q8. What is the role of DBT? Give their centre in India.

Q9. Cite some examples of transgenic plants and animals.

Q10. How GM papaya is better over its normal variety?

DEC-2020

SECTION-B

Q11. What are the different parameters on which quality of food is checked?

Q12. What is Fermentation Process?

Q13. What is Genetically Modified Foods ? Give its application.

Q14. How does Biotechnology helps in healthcare industry?

Q15. Discuss the pros and cons of BT Brinjal?

SECTION-C

Q16. Discuss about the role of microbes in food industry.

Q17. Discuss about different branches of Biotechnology and their future scope?

Q18. Discuss about the production of **any two** :

a) Acetic acid

b) Antibiotic

c) Enzymes

d) Beverages

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 Questions : 18 Total No. of Pages : 02

B.Sc. (Non Medical) (2018 & Onwards) (Sem.–1)

INORGANIC CHEMISTRY

Subject Code : BSNM-102-18

M.Code : 75743

Time : 3 Hrs. Max. Marks : 50

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark 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

Define the following :

1) What is the De-brogile equation?

2) What is electronegatvity?

3) What is slater rule?

4) What are vander waal's forces?

5) What is radius ratio?

6) What is the insulators?

7) What is Pauli's exclusion principle?

8) What is significance of Effective nuclear charge?

9) What is the cubic close packing?

10) What is the bond order?

(S105) 166

SECTION-B

11) Explain the Cesium chlonde structure by crystal lattices.

12) Explain the Fajan's Rule.

13) Explain Born-Haber cycle

14) Giving reasons, explain that Radial angular wave functions.

15) Write a note on Hund's rule.

SECTION-C

16) Explain the following shape of

a) s orbital and d orbital.

b) MO diagrams of O_2

17) Explain Wurtzite and Zinc blend structure.

18) Explain the VSEPR theory and its shortcomings.

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 Questions : 18

Total No. of Pages : 02

B.Sc. (BT) (2014 to 2017) (Sem.–1)

INORGANIC CHEMISTRY

Subject Code : BSBT-103

M.Code : 47022

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

Answer briefly :

1. What do you mean by Ionisation Energy?
2. Out of F and Cl, which has more electron affinity and why?
3. Why are noble gases inert in nature?
4. What do you mean by the term Clatharates? Give example.
5. Why do noble gases need to be liquefied?
6. Differentiate between Ionic and Covalant Bond.
7. What do you mean by Hydrogen Bonding?
8. What are the two different geometries shown by coordination number 4?
9. What is meant by the term CFSE?
10. What is Ferromagnetism?

125

SECTION-B

11. Draw the stereoisomers possible for [Pt(F)(Cl)(Br)(I)]
12. Discuss the structure of diborane in detail
13. Draw CF splitting diagram for octahedral geometry.
14. What is Valence Bond theory? What are its limitations?
15. Discuss Werner's theory of co-ordination compounds.

SECTION-C

16. Draw molecular orbital diagram of CO and compare its stability with CO. Also discuss bonding orbitals of CO^-, CO, CO^+
17. a) Discuss the postulates of CFT. Why CF Splitting of Octahedral is more than that of Tetrahedral Complexes?

    b) Calculate the CFSE for Fe^{2+}, high spin and low spin complexes.
18. Draw the geometries of the following compounds

    XeF_4, ClF_4, PF_6, IF_7, $SnCl_2$

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.

DEC-2020

125

Roll No. _____

Total No. of Questions : 08 Total No. of Pages : 02

B.Sc. (BT) (2014 TO 2017) (Sem.–1)

TECHNICAL WRITING & COMMUNICATION SKILLS

Subject Code : BSBT-101

M.Code : 47021

Time : 2 Hrs. Max. Marks : 30

INSTRUCTIONS TO CANDIDATES :

1. **Attempt any FIVE question(s), each question carries 6 marks.**

Q1) Describe the types of communication.

Q2) Discuss the points to be taken into consideration for scientific and technical writing.

Q3) Choose the correct form of verbs :

a. The university was (found / founded) by the Chief Minister.

b. Yesterday afternoon, I (lied / lay) on the couch in front of the television.

c. After dinner, the mother (lay / laid) the child in the cradle.

d. If you can't grow a tree, at least never (fall / fell) one in your life.

e. At the far end of the road, a tree was being (saw / sawed).

Q4) Fill in the blanks with appropriate pronouns :

a. _____ am the one who cares for _____.

b. When _____ came to the room, _____ was locked.

c. He said to his wife, "_____ will buy a silk saree for _____ on_____ birthday".

d. Here is_____ book, take_____ away

e. We often deceive_____ .

Q5) What do you understand by effective listening skills?

Q6) Describe different types of business correspondence in detail.

Q7) Discuss the complete procedure of a group discussion.

Q8) Write a job application letter along with your resume. Invent the necessary details.

Note: Any student found attempting answer sheet from any other person(s), using incriminating material or involved in any wrong activity reported by evaluator shall be treated under UMC provisions.

Student found sharing the question paper(s)/answer sheet on digital media or with any other person or any organization/institution shall also be treated under UMC.

Any student found making any change/addition/modification in contents of scanned copy of answer sheet and original answer sheet, shall be covered under UMC provisions.

Roll No. _____ Total No. of Pages : 02

Total No. of Questions : 18

B.Sc. (BT) (2014 to 2017) (Sem.–1)

INTRODUCTION & FUNDAMENTALS OF BIOTECHNOLOGY

Subject Code : BSBT-105

M.Code : 47023

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

Answer briefly :

1. What is a buoyant density?
2. Which organism is used to study eukaryotic system?
3. What is a blue biotechnology?
4. By which microscopy you can visualise :
   a) Motility b) Cell organelles
5. Name the dyes used for visualising bacteria under light microscope.
6. Give the name(s) of medium used for culturing Saccharomyces.
7. What is a cryoprotectant? Where it is used?
8. Why do we need to preserve a microbial culture?
9. What is the partition coefficient?
10. What is Beer's Lambert law?

SECTION-B

11. Explain the procedure for isolating a pure culture from soil?
12. What is principle of agarose gel electrophoresis? Which biomolecules are separated by this technique?
13. What is principle behind paper chromatography?
14. What is model organism? Give its significance
15. What are the laboratory requirements for growth of mammalian cells?

SECTION-C

16. Discuss about different methods used for preserving and maintaining a microbial culture?
17. Discuss about different branches of biotechnology and their future scope?
18. Write short note on **any two** :
    a) Lyophilization c) UV-Vis spectroscopy
    b) Culture medium. d) Electron microscope

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.

DSC-2020

Roll No. Total No. of Pages : 02

Total No. of Questions : 18

B.Sc. (Biotechnology) (2018 Batch) (Sem.–1)

BASICS OF BIOSCIENCES

Subject Code : BSBT-107-18

M.Code : 75330

Time : 3 Hrs. Max. Marks : 30

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE marks 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 FIVE marks each and students have to attempt any TWO questions.

SECTION-A

Describe briefly :

Q1 Glucose

Q2 Protists

Q3 G_0 phase

Q4 Mitochondria

Q5 Plasma membrane

Q6 Neuron

Q7 Meristematic tissue

Q8 Xylem

Q9 Function of Liver

Q10 Seed

(S2)-366
Dec-2020

SECTION-B

Q11 Discuss the basic features of Kingdom Monera.

Q12 Write a note on the role of phloem in plants.

Q13 Explain the role of connective tissue in animals.

Q14 Describe the organization of prokaryotic cell.

Q15 Explain the secondary structure of protein.

SECTION-C

Q16 Write a note on the Structural organization in Animals.

Q17 Describe in detail the anatomy of plant.

Q18 Discuss the different stages of Mitosis with well labeled diagram.

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.

(S2)-366

Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 18

B.Sc. (BT) (2018 & Onwards) (Sem.–1)

BIOCHEMISTRY AND METABOLISM

Subject Code : BSBT-103-18

M.Code : 75326

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

Define :

Q1. Disaccharides.

Q2. Cerebrosides

Q3. Purines and pyrimidines

Q4. Apoenzyme

Q5. Metalloenzymes

Q6. Gluconeogenesis

Q7. Activation Energy

Q8. Secondary structure

Q9. Fibrous proteins

Q10. Essential fatty Acids

Chandigarh College of Pharmacy (Lalkaty) LIBRARY
DSC-2020

SECTION-B

Q11. Write properties of Polysaccharides.

Q12. List properties of Fatty acids.

Q13. Discuss the concept of Activation energy and Transition state.

Q14. Write a note on Glycoproteins.

Q15. Discuss the process of Glycogenolysis.

SECTION-C

Q16. Elaborate on Glycolysis and fate of Pyruvate.

Q17. What is β-Oxidation? Discuss Steps involved.

Q18. How are Enzymes Classified? Discuss.

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 : 05

B.Com.(Hons.)/B.Sc.(MLS/BT/BTTM) (2018 & Onwards)/B.Sc.(FD)/ BA(JAMC)/BBA/BBA(Business Economics/Event Management/RD)/ BHMCT(2018 Onwards)/BBA(SIM)(2018 Batch)/B.Sc.(IT)/BCA/ B.Voc.(BeautyTherapy and Asthetics/Graphics & Web Designing)/B.Sc.(Nutrition & Dietics (2019 Batch) (Sem.–1)

ENGLISH

Subject Code : BTHU-103-18

M.Code : 75085

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. Discuss how communication is the most vital part of any organization?

2. Explain the importance of clarity, adequacy and feedback in any type of communication. Also discuss the role of body language in communication.

3. Read the following passage and answer the questions that follow :

A leader is made, not born. A true leader is not necessarily the one at the helm of affairs; he is one whose position others would want to emulate. So, who is a true leader? A true leader is one who would be able to guide others, either by doing something himself or by directing a specific course of action. A sympathetic or a democratic leader is one who understands the problems of others at the workplace. He has a sympathetic word for them and he is able to understand them and always has an encouraging word for his teammates or colleagues. In today's competitive world, enhancement of one's standing in the workplace depends not on the number of years put in as in the good old days, but on performance, on actual results. If you are capable of outstanding work, your stature in an organization automatically goes up and there would be many who would want to emulate you. This attribute makes you a leader in the true sense of the term. "*Can I aspire to be a leader?*" You might ask yourself that question. Yes, definitely. Put in the right effort in the right direction and a leader what you shall be. If you want to succeed in life, you need to have firm determination. Our ways of achieving things might be entirely different because each one of us is a unique individual.

Questions :

a. Who is a true leader?

b. Why should a leader be sympathetic or understanding?

c. How can a person become a leader?

d. What is the role of outstanding performance by an employee in an organization?

e. How can success be achieved?

4. Write a letter to your friend discussing the ways to keep the environment clean and healthy.

5. Give a detailed analysis of any book that you have read recently.

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.

Dec-2020

Roll No. [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Total No. of Pages : 02

Total No. of Questions : 05

B.Com.(Hons.)/B.Sc.(MLS/BT/BTTM) (2018 & Onwards)/B.Sc.(FD)/ BA(JAMC)/BBA/BBA(Business Economics/Event Management/RD)/ BHMCT(2018 Onwards)/BBA(SIM)(2018 Batch)/B.Sc.(IT)/BCA/ B.Voc.(BeautyTherapy and Asthetics/Graphics & Web Designing)/B.Sc.(Nutrition & Dietics (2019 Batch) (Sem.–1)

ENGLISH

Subject Code : BTHU-103-18

M.Code : 75085

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. Discuss how communication is the most vital part of any organization?

2. Explain the importance of clarity, adequacy and feedback in any type of communication. Also discuss the role of body language in communication.

3. Read the following passage and answer the questions that follow :

A leader is made, not born. A true leader is not necessarily the one at the helm of affairs; he is one whose position others would want to emulate. So, who is a true leader? A true leader is one who would be able to guide others, either by doing something himself or by directing a specific course of action. A sympathetic or a democratic leader is one who understands the problems of others at the workplace. He has a sympathetic word for them and he is able to understand them and always has an encouraging word for his teammates or colleagues. In today's competitive world, enhancement of one's standing in the workplace depends not on the number of years put in as in the good old days, but on performance, on actual results. If you are capable of outstanding work, your stature in an organization automatically goes up and there would be many who would want to emulate you. This attribute makes you a leader in the true sense of the term. "*Can I aspire to be a leader?*" You might ask yourself that question. Yes, definitely. Put in the right effort in the right direction and a leader what you shall be. If you want to succeed in life, you need to have firm determination. Our ways of achieving things might be entirely different because each one of us is a unique individual.

Questions :

a. Who is a true leader?

b. Why should a leader be sympathetic or understanding?

c. How can a person become a leader?

d. What is the role of outstanding performance by an employee in an organization?

e. How can success be achieved?

4. Write a letter to your friend discussing the ways to keep the environment clean and healthy.

5. Give a detailed analysis of any book that you have read recently.

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.

Dec-2020

Roll No. _____ Total No. of Pages : 02

Total No. of Questions : 18

B.Sc. (BT) (2014 to 2017) (Sem.–1)

COMPUTER APPLICATION IN BIOTECHNOLOGY

Subject Code : BSBT-107

M.Code : 47024

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

Write briefly :

1) What do you mean by the term data?

2) What is the working cycle of computer?

3) What is Memory?

4) What are two main types of mouse?

5) What is the use of Optical Mark Reader?

6) What is the use of Cache Memory?

7) What is Application Software?

8) What are analogue computers?

9) What is CLUSTAL?

10) What is the significance of Sequence Alignment?

Dec-2020

SECTION-B

11) What is the difference between Hardware and Software, Digital and Analog Computer ?

12) Explain the various components of computer by using Block Diagram.

13) Explain the hierarchy of Printers.

14) Write a note on Optical disks.

15) Describe any one method for protein secondary structure prediction.

SECTION-C

16) Explain Various input devices in detail.

17) Explain Primary memory in detail.

18) Describe the distance based methods for Phylogenetic analysis.

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 : 18

B.Sc. (BT) (2018 & Onwards) (Sem.–1)

INTRODUCTION TO BIOTECHNOLOGY

Subject Code : BSBT-102-18

M.Code : 75325

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

Answer briefly :

Q1 Name any two enzymes used in food industry.

Q2 Which organism is responsible for production of penicillin at industrial level?

Q3 What is a Bluebiotechnology?

Q4 What is the significance of *Bacillius thuringiensis* in agriculture biotechnology?

Q5 What is the starting substrate for beer? Which microbe is responsible for its beer production?

Q6 How does yeast help in food processing?

Q7 What factors are enhanced for improving the quality of food?

Q8 What is the role of DBT? Give their centre in India.

Q9 Cite some examples of transgenic plants and animals.

Q10 How GM papaya is better over its normal variety?

Chandigarh College of Engineering & Technology
2020

SECTION-B

Q11 What are the different parameters on which quality of food is checked?

Q12 What is Fermentation Process?

Q13 What is Genetically Modified Foods? Give its application.

Q14 How does Biotechnology helps in healthcare industry?

Q15 Discuss the pros and cons of BT Brinjal?

SECTION-C

Q16 Discuss about the role of microbes in food industry.

Q17 Discuss about different branches of Biotechnology and their future scope?

Q18 Discuss about the production of **any two :**

a) Acetic acid

b) Antibiotic

c) Enzymes

d) Beverages

2020

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 : 18

B.Sc. (Biotechnology) (2018 Batch) (Sem.–1)

BASICS OF BIOSCIENCES

Subject Code : BSBT-107-18

M.Code : 75330

Time : 3 Hrs. Max. Marks : 30

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE marks 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 FIVE marks each and students have to attempt any TWO questions.

SECTION-A

Describe briefly :

Q1 Glucose

Q2 Protists

Q3 G_0 phase

Q4 Mitochondria

Q5 Plasma membrane

Q6 Neuron

Q7 Meristematic tissue

Q8 Xylem

Q9 Function of Liver

Q10 Seed

2020

(S2)-266

SECTION-B

Q11 Discuss the basic features of Kingdom Monera.

Q12 Write a note on the role of phloem in plants.

Q13 Explain the role of connective tissue in animals.

Q14 Describe the organization of prokaryotic cell.

Q15 Explain the secondary, structure of protein.

SECTION-C

Q16 Write a note on the Structural organization in Animals.

Q17 Describe in detail the anatomy of plant.

Q18 Discuss the different stages of Mitosis with well labeled diagram.

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 Questions : 08 Total No. of Pages : 01

B.Sc. (BT) (2018 & Onwards) (Sem.–1)

INORGANIC CHEMISTRY

Subject Code : BSBT-101-18

M.Code : 75324

Time : 2 Hrs. Max. Marks : 30

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE question(s), each question carries 6 marks.

Q1) What is Effective Nuclear Charge? Calculate the effective nuclear charge for a 3d-electron in zinc atom.

Q2) What are the factors which effect the formation of covalent compounds?

Q3) What is Diagonal Hybridization? Discuss the structure of BeF_2 molecule.

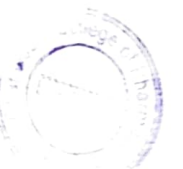
Q4) Differentiate between atomic orbital and molecular orbital.

Q5) What are non-polar and polar covalent bonds? Give examples.

Q6) Compare the valence bond theory with molecular orbital theory.

Q7) Explain the term electronegativity. How is it related to electron affinity and ionization energy?

Q8) Differentiate between geometrical and optical isomers by taking suitable example.



Note: Any student found attempting answer sheet from any other person(s), using incriminating material or involved in any wrong activity reported by evaluator shall be treated under UMC provisions.

Student found sharing the question paper(s)/answer sheet on digital media or with any other person or any organization/institution shall also be treated under UMC.

Any student found making any change/addition/modification in contents of scanned copy of answer sheet and original answer sheet, shall be covered under UMC provisions.

Roll No. Total No. of Pages : 02

Total No. of Questions : 18

B.Sc(Hons) Microbiology (Sem.–1)

CELL BIOLOGY

Subject Code : BSMB105-19

M.Code : 78983

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

Write briefly :

1) Name the dyes used for staining.

2) Which cell organelle is called power house of the cell and why?

3) Differentiate between rough and smooth ER.

4) What are the functions of actin and microtubules?

5) What is fibronectin?

6) Draw the structure of neuron.

7) Define nucleosome.

8) What is freeze drying?

9) Draw the structure of muscle cell.

10) What is CDK- cyclin?

(52)504

SECTION-B

11) Differentiate between mitosis and meiosis.

12) Write a note on cell senescence and cell death.

13) Discuss process of cell fixing of TEM.

14) Describe various stages of interphase.

15) Write a short note on exocytosis and endocytosis.

SECTION-C

16) What is cell locomotion? What are various ways by which a cell locomotes?

17) Discuss the structure and functions of mitochondria in detail and its role in generating energy.

18) Explain the structure and functions of plasma membrane with its neat and clean diagram.

Chandigarh College of Pharmacy LIBRARY Landran (Mohali)

Chandigarh College of Pharmacy LIBRARY

2020

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. [redacted] Total No. of Pages : 02

Total No. of Questions : 16

B.Sc. (Graphics and Web Designing) (Sem.–1)

ENVIRONMENTAL STUDIES

Subject Code : EVS-102-18

M.Code : 77734

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 SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

Write briefly :

1. What are the components of the environment?
2. Why is ecological energy flow important in the ecosystem?
3. Why is oil pollution an important issue in marine pollution?
4. What is meant by a hazardous waste?
5. Define Biodiversity. Why is it important?
6. List any four ecological benefits of coral reefs.
7. What are causative pollutants which lead to ozone depletion?
8. Define Noise pollution. Explain its units of measurement.
9. List any two mitigation measures of the 'Rising Sea Level'.
10. List the major health risks associated nuclear hazards.

[redacted] College of Pharmacy
2020

SECTION-B

11. Discuss the urban problems associated with the energy use. Suggest strategies to curb the same.

12. Explain the structure and functions of an ecosystem considering forest ecosystem.

13. "*Green revolution has resulted in environmental problems in Punjab*". Discuss the various environmental issues in Punjab associated with extensive agricultural activities.

14. Write notes on :

    a) Land degradation

    b) Water conservation

15. Discuss the major global effects of pollution.

16. Consider the major environmental issues in your locality. Suggest preventive measures.

2020

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 Questions : 16

Total No. of Pages : 02

B.Sc. (GWD) (Sem.–1)

CONCEPTS OF WEBSITE DESIGNING & DEVELOPMENT

Subject Code : UGWD-1903

M.Code : 77729

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 SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

Write short note on the following :

1. WWW
2. HTTP
3. Open Source
4. Bandwidth
5. DHTML
6. Search Engine
7. Module
8. Keywords for SEO
9. CMS
10. XML

2020

(S3) 1219

SECTION-B

a) What is the Internet? Give details of Internet Protocol.

b) What are the website design principles? Explain planning and navigation of site.

2 a) Explain the concept of effective Web Design.

b) What do you mean by Static and Dynamic websites?

3 How MySQL and PHP works together to create a dynamic website?

14 Define SEO and explain the working of SEO with its types.

15 What are Blogs? Give details of blog interface dashboard.

16 Define Web servers. Give details about Windows based / Linux based server.

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 Questions : 18

Total No. of Pages : 02

B.Sc.(Hons.) Microbiology (Sem.–1)

INTRODUCTION TO MICROBIOLOGY

Subject Code : BSMB101-19

M.Code : 78979

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

Write briefly :

1) Write the contributions of A. Leeuwenhoek?

2) Enlist the Koch Postulates.

3) Name two fungi species.

4) Give two-gram positive microorganisms.

5) Define generation time.

6) What is pasteurization?

7) Name the microorganism causing tetanus.

8) Name the chemical used to destroy microorganisms.

9) What is symbiosis?

10) Write about Aerobic fermentation?

Chandigarh College of Pharmacy
LIBRARY
Landran (Mohali)
2020

SECTION-B

11) Explain dark field microscopy.

12) Write a short note on the morphology of bacteria with a diagram.

13) Difference between gram-positive and gram-negative bacteria.

14) What is the role of nutritional biodiversity in bacterial growth?

15) Write a short note on the production of heterologous protein in microbes.

SECTION-C

16) What is electron microscopy and explain their types?

17) Write the growth curve of bacteria with a labelled diagram.

18) Write about fermentation technology with their types.

Chandigarh College of Pharmacy
LIBRARY
Landran, Mohali
2020

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.

2020

Roll No.

Total No. of Questions : 08 Total No. of Pages : 02

B.Tech. (Bio Tech.) (2018 & Onwards) (Sem.–1)

BASIC MATHEMATICS-I

Subject Code : BTAM-107-18

M.Code : 75371

Time : 2 Hrs. Max. Marks : 30

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE question(s), each question carries 6 marks.

1. a) Find the number of different 8 letter arrangements that can be made from the letters of the word DAUGHTER, all vowels are together.

   b) Evaluate the middle term in the expansion of $\left(3x - \frac{y^2}{6}\right)^7$.

2. a) The income of a person is Rs. 3,00,000 in the first year and he receives an increase of Rs.10,000 to his income per year for the next 19 years. Find the total amount he received in 20 years.

   b) The sum of first three terms of a GP is 13/12 and their product is –1. Find the common ratio and the terms.

3. a) Find the value of $\tan \frac{13\pi}{12}$.

   b) Prove that $\tan x \tan 2x \tan 3x = \tan 3x - \tan 2x - \tan x$.

4. a) Solve $\sin 2x - \sin 4x + \sin 6x = 0$.

   b) Prove that $\frac{\sin x - \sin y}{\cos x + \cos y} = \tan \frac{x - y}{2}$.

2020

5. a) If $A = \begin{bmatrix} 3 & \sqrt{3} & 2 \\ 4 & 2 & 0 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & -1 & 2 \\ 1 & 2 & 4 \end{bmatrix}$, then verify that $(A + B)' = A' + B'$.

   b) Using properties of determinant, show that :

$$\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^3 & b^3 & c^3 \end{vmatrix} = (a - b)(b - c)(c - a)(a + b + c).$$

2020

6. Solve using matrix method $3x - 2y + 3z = 8, 2x + y - z = 1, 4x - 3y + 2z = 4$.

7. a) Two lines are passing through the point (2, 3) and intersect each other at an angle of $60°$ If the slope of one line is 2, find the equation of other line.

   b) Find Standard Deviation of the data :

x	2	5	6	8	10	12
f	2	8	10	7	8	5

8. Two regression equations of the variables x and y are $x = 19.13 - 0.87y$ and $y = 11.64 - 0.50x$. Find (i) means of x and y (ii) correlation coefficient between x and y.

Note: Any student found attempting answer sheet from any other person(s), using incriminating material or involved in any wrong activity reported by evaluator shall be treated under UMC provisions.

Student found sharing the question paper(s)/answer sheet on digital media or with any other person or any organization/institution shall also be treated under UMC.

Any student found making any change/addition/modification in contents of scanned copy of answer sheet and original answer sheet, shall be covered under UMC provisions.

2016

Roll No.

Total No. of Questions : 18

Total No. of Pages : 02

B.Sc(Hons) Microbiology (Sem.–1)

CHEMISTRY-I

Subject Code : BSMB103-19

M.Code : 78981

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

Write briefly :

1) Write the electronic configuration of element having atomic no 25.

2) Why a moving car does not seen to travel in the form of wave? Explain.

3) a. What does angular quantum number tells about an orbital?

   b. What is chiral axis?

4) Explain Pauli exclusion principle. Explain.

5) What is nucleophile and electrophile?

6) What is delocalization? Explain with example.

7) What is geometrical isomerism? Discuss E and Z method of nomenclature.

8) What are meso, erythro and threo compounds?

9) What do you mean by prochirality?

10) What is geometrical isomerism?

Chandigarh College of Engineering LIBRARY

2020

Roll No. | Total No. of Pages : 02

Total No. of Questions : 16

B.Sc. (Graphics and Web Designing) (Sem.–1)

FUNDAMENTALS OF STATISTICS

Subject Code : UGCA-1907

M.Code : 77728

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 SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

Write briefly :

1. Differentiate primary and secondary data.
2. Discuss statistical errors.
3. Explain ways to classify numerical data or raw data.
4. Give advantages and disadvantages of diagrammatic presentation of data.
5. Discuss various types of graphs.
6. Give characteristics of a good average.
7. Write relation between arithmetic mean, median and mode.
8. Find the median for 7, 8, 5, 3, 10, 15, 21, 19, 17.
9. Define Measures of Dispersion. Also, discuss properties of a good measure of dispersion.
10. Give formula for calculating coefficient of variance.

2020

SECTION-B

11. Discuss Components of a Statistical Table. What are the various types of Statistical Tables?

12. The average production of rice given in five districts (A, B, C, D, E) in West Bengal for last five years expressed in '000 metric tons. Draw a pie-chart of the above data. Figures within bracket indicating the production.

    Dist.-A (2180), Dist.-B (1860), Dist.-C (1250), Dist.-D (840), Dist.-E (570).

13. Find the arithmetic mean of the following frequency distribution :

Height (in inches)	61-63	63-66	66-69	69-72	72-75	75-78
No. of Persons	8	28	118	66	16	8

    Find also the median height.

14. The median and mode of the following frequency distributions are known to be 27 and 26 respectively. Find the values of 'a' and 'b'.

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	0	a	20	12	b

15. Calculate the mean deviation from the mean of the following frequency distribution.

Marks	5	15	25	35	45	55	65
No. of students	4	6	10	20	10	6	4

LIBRARY
2020

16. Find the standard deviation of the following frequency distribution :

Weights in lbs)	120-124	125-129	130-134	135-139	140-144	145-149	Total
No. of student	12	25	28	15	12	8	100

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 : 18

B.Sc. (BT) (2018 & Onwards) (Sem.–1)

BIOCHEMISTRY AND METABOLISM

Subject Code : BSBT-103-18

M.Code : 75326

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

Define :

Q1. Disaccharides.

Q2. Cerebrosides

Q3. Purines and pyrimidines

Q4. Apoenzyme

Q5. Metalloenzymes

Q6. Gluconeogenesis

Q7. Activation Energy

Q8. Secondary structure

Q9. Fibrous proteins

Q10. Essential fatty Acids

Chandigarh College of Pharmacy LIBRARY
2020

(S2)-376

SECTION-B

Q11. Write properties of Polysaccharides.

Q12. List properties of Fatty acids.

Q13. Discuss the concept of Activation energy and Transition state.

Q14. Write a note on Glycoproteins.

Q15. Discuss the process of Glycogenolysis.

SECTION-C

Q16. Elaborate on Glycolysis and fate of Pyruvate.

Q17. What is β-Oxidation? Discuss Steps involved.

Q18. How are Enzymes Classified? Discuss.

Chandigarh College of Pharmacy
LIBRARY
2020

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 Questions : 16

Total No. of Pages : 02

B.Sc. (IT) (2015 to 2018) / BCA (2014 to 2018) (Sem.–1)

PROGRAMMING IN C

Subject Code : BSIT/BSBC-102

M.Code : 10044

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 SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

Answer briefly :

1. List the different keywords in C.
2. How is a program compiled and executed?
3. What is the role of Header files in C program?
4. Differentiate between constants and variables.
5. What are the various Input/output statements in C?
6. List the various operators used in C.
7. How are pointers declared and initialized?
8. Differentiate between Call by value and Call by reference.
9. What is the use of storage classes?
10. Write the syntax for do-while loop.

Chandigarh College of Pharmacy Landran, Mohali LIBRARY
2020

SECTION-B

11. a) What is the use of Algorithms in developing a program? How is it different from Flowcharts?

    b) Write a C program to reverse a string.

12. Describe the following :

    a) Unions and Structures

    b) Macros in C

13. What do you mean by Recursion? What is the use of recursion in C programs? Write a program to find factorial of a number using recursion.

14. a) Describe the use of Arrays in C program with an example.

    b) List the various operators used in C along with its precedence.

15. Write brief notes on :

    a) Difference between If-else and Nested- if statement.

    b) Use of Switch statement in a C program.

16. a) What are Functions? How are Functions declared and parameters passed to functions?

    b) Write a C program to print the average of all numbers from 1 to 50.

2020

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

S31459

BBA(RD)/ BBA/BBA(SIM)/BBA(Business Economics) (2018 Batch)
(Sem.–1)

ENGLISH

Subject Code : BTHU-103-18
M.Code : 75085

Time : 3 Hrs. **Max. Marks :**

INSTRUCTION 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) How important is effective communication in today's business world? Discuss a few aspects of business where communication is very important.

2) Media communication such as computer, cell phone, LCD, video, TV etc. has become a major means of communication. Discuss its role in changing the culture of a society.

3) Analyse and interpret the following passage in your own words :

There are hundreds of superstitions which survive in various parts of the country and the study of them is rather amusing. We are told, for example, that it is unlucky to point to the new moon or to look at it through glass, but if we bow nine times to it we shall have a lucky month. Now suppose you tell a scientist that you believe a certain superstition - let us say, that the howling of a dog is a sign of death. The scientist will immediately require evidence before he can accept your belief. He will want figures to prove it. Your superstition may impress an ignorant person but it cannot face the light of facts. Your case would not carry conviction in a court of law. Any intelligent man will want to know the "reason why". What connection can there be between a howling dog and an approaching death.

4) Write a letter to your friend discussing the effect of different kinds of violence that plague the society.

5) Write a detailed analysis of any book that you have recently read.

Punjabi College of Pharmacy LIBRARY Landran (Mohali)

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–2019

(S17)-2004

Roll No. [ ] [ ] [ ] [ ] [ ] [ ] [ ] Total No. of Pages : 02

Total No. of Questions : 09

B.Sc.(Biotechnology) (Sem.–1)

BASICS OF BIOSCIENCES

Subject Code : BSBT-107-18

M.Code : 75330

Time : 3 Hrs. Max. Marks : 30

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.
2. SECTION-B contains FIVE questions carrying $2^1/_2$ (Two and Half) marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying FIVE marks each and students has to attempt any TWO questions.

SECTION-A

1. **Describe briefly :**

   a) Flora and Fauna

   b) Cellular organization

   c) Kingdom protista

   d) Xylem tissue

   e) Annual rings in plants

   f) Connective tissue

   g) Endocrine *vs.* Exocrine glands

   h) Biomolecules

   i) Mitosis *vs.* Meiosis

   j) Kingdom monera

College of Pharmacy LIBRARY
DEC-2019

SECTION-B

2. Differentiate between cork cambium and vascular cambium.
3. Differentiate between prophase and telophase of mitosis.
4. Give general account of plant kingdom.
5. Describe the cell structure with a well labelled diagram.
6. What do you understand from structural organisation in animals? Explain.

SECTION-C

7. Describe the various stages of meiosis with well labelled diagrams.
8. Give a brief account of classification of animals.
9. Describe various types of animal tissues with diagrams.

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 Questions : 09 Total No. of Pages : 02

B.Sc.(BT) (2014 to 2017) (Sem.–1)

BIOSTATISTICS

Subject Code : BSBTM-09

M.Code : 47031

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 do you mean by Raw Data?

   b) Explain the notations $\bar{x}, \sigma$.

   c) Describe Relative dispersion.

   d) What are Ogives?

   e) Differentiate between Simple and Combined arithmetic mean.

   f) Define two-tailed test.

   g) What are Leptokurtic curves?

   h) Explain Cumulative Frequency.

   i) What do you mean by Geometric Mean?

   j) What are the pre-requisites of χ^2 test?

SECTION-B

2. Differentiate between Random sampling and Non - Random sampling.

3. The number of Basophils (a kind of WBC) of 30 patients of T.B. was recorded in frequencies. Calculate the Geometric Mean.

No. of Basophils	11	14	17	19	22
Frequencies	5	6	8	7	4

4. What do you mean by dispersion? Describe different types of dispersions.

5. What is analysis of variance? Explain the technique of analysis of variance for data with one-way classification.

6. What is χ^2 test? Enumerate the hypothesis on which it is based.

SECTION-C

7. What do you mean by Test of Significance of a Mean? Define Standard error of mean and Standard error of Standard Deviation.

8. What are the various ways to present the statistical data? Explain different types of Graphic Representation of Grouped data.

9. Determine the value of Chi-square from the following data :

	X_1	X_2	X_3
Y_1	7	8	5
Y_2	8	9	6
Y_3	9	7	8

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.

Govt. College Library

Dec-2019

Roll No. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc.(BT) (2014 to 2017) (Sem.–1)

COMPUTER APPLICATION IN BIOTECHNOLOGY

Subject Code : BSBT-107

M.Code : 47024

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION 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) Analogue Computers

b) Online software

c) Magnetic Tape-data representation

d) Optical disks

e) Joystick

f) Soft Copy

g) Citations

h) NCBI

i) Plotters

j) Phylogram

Dec-2019

SECTION-B

2. Explain the process of Multiple Sequence Alignment.
3. What are input devices?
4. Describe source data automation.
5. What are Bibliographic databases?
6. Explain the Genbank format.

SECTION-C

7. Explain the different types of hardware and softwares.
8. Describe the different types of phylogenetic analysis.
9. Write a note on NCBI data model.

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) (2018 Batch) (Sem.–1)

INORGANIC CHEMISTRY

Subject Code : BSBT-101-18

M.Code : 75324

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

Q1) Answer briefly :

a) Define coordination number and oxidation number.

b) Write a short note on Vander waals forces.

c) Differentiate between bonding and anti bonding molecular orbitals.

d) What is inert pair effect?

e) Explain hybridization in case of H_2O.

f) Compare the ionization energies of Na and Na^+.

g) Write IUPAC names of $K_4[Ni(CN)_4]$ and $[Co(NH_3)5Cl)Cl_2$.

h) Draw the diagrams showing back bonding in atleast two molecules.

i) What is spectrochemical series?

j) What are outer and inner orbital complexes?

Chandigarh College of Pharmacy LIBRARY

May – 2019

SECTION-B

Q2) State Slater's rules. Calculate the effective nuclear charge for one of the 3p electrons of Cl atom.

Q3) Discuss various factors affecting electron affinity.

Q4) Draw the shapes of $SnCl_2$, BF_3, ICl_2 and IF7.

Q5) What is geometrical isomerism? Discuss geometrical isomerism in $[Co(en)_2Cl_2]^+$ and $[PtCl_2(NH_3)_2]$.

Q6) Differentiate between ferromagnetism and antiferromagnetism.

SECTION-C

Q7) Write various postulates of valence bond theory. Explain hybridization and magnetic behaviour of $[Fe(CN)_6]^{4-}$ and $[FeF_6]^{3-}$.

Q8) Draw the molecular orbital energy level diagrams of O_2 and N_2. Calculate their bond orders.

Q9) a) Explain factors affecting atomic radii. Discuss the variation of atomic radii in second period of the periodic table.

b) Discuss various postulates of Werner's coordination theory giving 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) (2013 to 2017) (Sem.–1)

TECHNICAL WRITING & COMMUNICATION SKILLS

Subject Code : BSBT-101

M.Code : 47021

Max. Marks : 60

Time : 3 Hrs.

INSTRUCTION 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

Q1) Write short notes on the following :

a. Role of communication in society.

b. Business letters.

c. Analytical report.

d. Quotations.

e. Difference between Resume and Curriculum Vitae.

f. Importance of group discussion.

g. Positive gestures.

h. Badly expressed message.

i. Informal communication.

j. Negative effect of rigid attitude.

Chandigarh College of Pharmacy LIBRARY

May-2019

SECTION B

Q2) Describe different communication channels through which information flows in an organization. Also discuss how an effective communication channel ensures better productivity.

Q3) Benjamin Franklin wrote, *"Either write something worth reading or do something worth writing"*. Discuss how unity, coherence, interesting language and powerful images become helpful in effective writing style.

Q4). Write one word for the following :

a. A person who believes in god?

b. A series of three novels or works of art produced by a writer or an artist?

c. One who takes pleasure in torturing others?

d. A medicine that cures all ailments?

e. One who totally abstains from drinking liquor?

Q5) Describe the types of business letters in detail.

Q6) Discuss the advantages of effective listening. How can listening skills be improved?

SECTION-C

Q7) Draft a report on a conference on *'New approach of young generation'* organized by literary society of your institute. Being the student volunteer of the conference, the report is to be submitted by you to the Director of the institute.

Q8) *"Public speaking is as much about non-verbal communication, as it is about its verbal aspects."* Elucidate this statement by giving your point of view.

Q9) Describe the process of conducting a business meeting. Also explain how meetings in an organization contribute towards its growth and progress.

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 Questions : 09

Total No. of Pages : 02

B.Sc.(BT) (2013 to 2017) (Sem.–1)

TECHNICAL WRITING & COMMUNICATION SKILLS

Subject Code : BSBT-101

M.Code : 47021

Max. Marks : 60

Time : 3 Hrs.

INSTRUCTION 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

Q1) Write short notes on the following :

a. Role of communication in society.

b. Business letters.

c. Analytical report.

d. Quotations.

e. Difference between Resume and Curriculum Vitae.

f. Importance of group discussion.

g. Positive gestures.

h. Badly expressed message.

i. Informal communication.

j. Negative effect of rigid attitude.

Chandigarh College of Pharmacy Landran (Mohali) LIBRARY

May-2019

SECTION B

Q2) Describe different communication channels through which information flows in an organization. Also discuss how an effective communication channel ensures better productivity.

Q3) Benjamin Franklin wrote, *"Either write something worth reading or do something worth writing"*. Discuss how unity, coherence, interesting language and powerful images become helpful in effective writing style.

Q4). Write one word for the following :

a. A person who believes in god?

b. A series of three novels or works of art produced by a writer or an artist?

c. One who takes pleasure in torturing others?

d. A medicine that cures all ailments?

e. One who totally abstains from drinking liquor?

Q5) Describe the types of business letters in detail.

Q6) Discuss the advantages of effective listening. How can listening skills be improved?

SECTION-C

Q7) Draft a report on a conference on *'New approach of young generation'* organized by literary society of your institute. Being the student volunteer of the conference, the report is to be submitted by you to the Director of the institute.

Q8) *"Public speaking is as much about non-verbal communication, as it is about its verbal aspects."* Elucidate this statement by giving your point of view.

Q9) Describe the process of conducting a business meeting. Also explain how meetings in an organization contribute towards its growth and progress.

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) (2013 to 2017) (Sem.–1)

INORGANIC CHEMISTRY

Subject Code : BSBT-103

M.Code : 47022

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

Q1) Answer briefly :

a) Draw the structure of diborane.

b) What are clathrates? Give one example.

c) Differentiate between inter- and intra-molecular hydrogen bonding.

d) Discuss the variation in ionization energy in second period of periodic table.

e) Explain hybridization in case of BeF_2.

f) What are high and low spin complexes?

g) Why group 18 elements are named as 'Noble Gases'?

h) Define electronegativity. Why F is highly electronegative?

i) Draw the shapes of d orbitals.

j) Draw possible geometrical isomers for $[Pt(py)_2(NH_3)Cl]$ complex.

Govt. Chandigarh College of Pharmacy
LIBRARY

May-2019

SECTION-B

Q2) Define ionization energy. Why ionization energy of noble gases is zero?

Q3) Draw and discuss the structures of XeF_6 and XeO_2F_2.

Q4) Differentiate between bonding and anti-bonding molecular orbitals.

Q5) What do you mean by magnetic behaviour of metal complexes? Define fer and paramagnetism.

Q6) Write a note on π-acid complexes.

SECTION-C

Q7) Explain geometrical and optical isomerism giving suitable examples of each

Q8) Draw the molecular orbital energy level diagrams of CO and N_2. Calc orders.

Q9) Discuss crystal field splitting in tetrahedral complexes. Why slitti complexes is less than octahedral complexes?

NOTE : Disclosure of identity by writing mobile number or making page of Answer sheet will lead to UMC against th

Roll No. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ] Total No. of Pages : 02

Total No. of Questions : 09

B.Sc:(BT) (2013 to 2017) (Sem.–1)

INTRODUCTION & FUNDAMENTALS OF BIOTECHNOLOGY

Subject Code : BSBT-105

M.Code : 47023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION 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 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 :

   a) Eukaryotic cell

   b) Green biotechnology

   c) Magnification

   d) PAGE

   e) TLC

   f) Pure culture

   g) Isotopes

   b) Sedimentation coefficient

   i) Spectometery

   j) SEM microscope

Chandigarh College of Pharmacy LIBRARY

May –2019

SECTION-B

2. Site out the differences between the mammalian and non mammalian cell.
3. What is the Principle of Electrophoresis?
4. What are the methods of obtaining the pure cultures?
5. Write in short the applications of biotechnology.
6. List some applications of centrifugation with example.

SECTION-C

7. a) What are the different methods of maintenance and preservation of cultures?

   b) What are the different media used for the cultivation of microbes?

8. What is the principle, types and application of electron microscope?
9. a) What are the various types of radioisotopes?

   b) What is principle of spectroscopy?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on 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) (2018 Batch) (Sem.–1)

INTRODUCTION TO BIOTECHNOLOGY

Subject Code : BSBT-102-18

M.Code : 75325

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. Define :

   a) Biotechnology

   b) Continued fermentation

   c) Marine biotechnology

   d) BT crops

   e) Bacterial based process in food industry

   f) Food quality

   g) IMTECH

   h) Antibiotic

   i) Whey

   j) Biotech Success story

Chandigarh College of Pharmacy LIBRARY

May-2019

SECTION-B

2. What is the differences between the traditional and modern Biotechnology?
3. What are GM crops? Explain with an example.
4. What is the applications of biotechnology in Pharmaceutical industry?
5. How enzyme L-Asparaginase is produced in industries?
6. Give an overview of Biotechnology Research in India.

SECTION-C

7. a) How the biotechnology is used in the enhancement of food quality.

   b) Why are GM food produced?

8. a) Discuss the process of production of pencillin antibiotic.

   b) How the plants can be made resistant to fungus and insects.

9. Explain the role of microbes such as yeast in food products. Write a short note o Biotechnology institutions in India.

NOTE : Disclosure of identity by writing mobile number or making passing requ 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) (2013 to 2017) (Sem.–1)

BASICS OF BIOSCIENCES

Subject Code : BSBTB-109

M.Code : 47029

Max. Marks : 30

Time : 3 Hrs.

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.
2. SECTION-B contains FIVE questions carrying $2^1/_2$ (Two and Half) marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying FIVE marks each and students has to attempt any TWO questions.

SECTION-A

1. Answer briefly :

   a) Define Cell theory.

   b) Any 4 characteristics of Kingdom Animalia.

   c) What are the three Domains of Life?

   d) Unique property of Nervous tissue.

   e) Define a Nucleotide.

   f) Define Aestivation.

   g) Xylem and Phloem.

   h) Cell Cycle.

   i) Ribosomes.

   j) What are the different types of RNA found in cell?

Chandigarh College of Pharmacy LIBRARY

May – 2019

SECTION-B

2. Describe the 5 kingdom Classification system.
3. Describe the structure of DNA briefly.
4. Draw a well labeled diagram of an Animal Cell.
5. Discuss briefly the various types of Animal Tissues.
6. Describe the different types of Meristems.

SECTION-C

7. Describe the structure and functions of Endoplasmic reticulum.
8. Describe the various levels of Protein Structure.
9. Describe Mitosis with the help of labelled diagrams.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing requ 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) (2018 Batch) (Sem.–1)

BASICS OF BIOSCIENCES

Subject Code : BSBT-107-18

M.Code : 75330

Max. Marks : 30

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.
2. SECTION-B contains FIVE questions carrying $2^1/_2$ (Two and Half) marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying FIVE marks each and students has to attempt any TWO questions.

SECTION-A

1. Answer briefly :

   a) Define Cell theory.

   b) Any 4 characteristics of Kingdom Fungi.

   c) What are the three Domains of Life?

   d) Unique property of Muscle tissue.

   e) Differentiate between Nucleotide and Nucleoside.

   f) Function of Connective tissue.

   g) Define Inflorescence.

   h) What are enzymes?

   i) Cell Cycle.

   j) What are the different types of RNA found in cell?

Chandigarh College of Pharmacy
LIBRARY
Landran (Mohali)

May-2019

SECTION-B

2. Describe the salient features of Kingdom Monera.
3. What are Biomolecules? Describe the structure of DNA briefly.
4. Describe the parts of a typical angiosperm flower.
5. Explain the various types of Root system.
6. Describe the secondary and tertiary structure of Proteins.

SECTION-C

7. Describe the structure and functions of Mitochondria.
8. Describe the salient features of kingdom Animalia.
9. Describe Mitosis with the help of labelled diagrams.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on a 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) (2013 to 2017) (Sem.–1)

BIOSTATISTICS

Subject Code : BSBTM-09

M.Code : 47031

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 do you mean by the term Central Tendency?

b) What is Equal Probable Events?

c) What is Alternative Hypothesis?

d) Define Coefficient of Variation.

e) What is Systematic Sampling?

f) Define Cumulative Frequency.

g) What is Level of Significance?

h) Define Statistics.

i) Define ANOVA.

j) Define Antilogarithms.

SECTION-B

2) Explain the difference between histogram and frequency polygon as a graphical representation of the distribution of data, by taking suitable examples.

3) Define Variance and standard deviation of a sample. Calculate the variance and standard deviation of the following data :

X: 16, 8, 14, 15, 13, 11, 11, 19, 10, 7.

Chandigarh College of Pharmacy LIBRARY Landran (Mohali)

May—2019

4) Explain Bayes' Theorem with an example.

5) Define Hypothesis. A manufacture claimed that at least 95% of the equipment which he supplied to a factory confronted to specifications. An examination of a sample of 200 pieces of equipment revealed that 18 were faulty. Test his claim at 5% level of significance.

6) Write a short note on :

a) Trial

b) Event

c) Sample space

SECTION-C

7) Calculate Mean, Median and Mode of the following distribution : (10)

Size	0-5	5-10	10-15	15-20	20-25	25-30	30-35
Frequency	7	13	25	30	20	4	1

8) There are three main brands of a certain powder. A set of its 120 sales is examined and found to be allocated among four groups A, B, C, D and brands I,II,III as shown under :

	Groups			
Brand	A	B	C	D
I	0	4	8	15
II	5	8	13	6
III	18	19	11	13

Is there any significant difference in brands preference? Answer at 5% level of significance using one way ANOVA Table. (Take 10 as the code value to subtract from all given values in your working) Given $F^{(3,8)}_{0.05} = 3.85$ (10)

9) a) Explain the term probability distribution. How Binomial distribution differs from Poisson distribution? Explain with help of examples. (7)

b) The probability of a man hitting a target is ¼ If he fires 7 times, what is the probability of his hitting the target atleast twice? (3)

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) (2018 Batch) (Sem.–1)

BIOCHEMISTRY

Subject Code : BSBT-103-18

M.Code : 75326

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. Define :

   a) Heteropolysaccharides

   b) Gangliosides

   c) Prosthetic group

   d) Coenzymes

   e) Glycogenolysis

   f) Apoenzyme

   g) Essential fatty acids

   h) Prostaglandins

   i) Active site.

   j) Specific activity.

Chandigarh College of Pharmacy LIBRARY Landran (Mohali)

May – 2019

SECTION-B

2. Discuss properties of Monosaccharides.
3. List properties of Nucleic acids.
4. What are Phospholipids? List structure and function.
5. What is β-Oxidation? Discuss.
6. Write a note on Oxidative phosphorylation.

SECTION-C

7. Discuss levels of organization of protein structure.
8. What is TCA cycle? Discuss its significance and the steps involved.
9. Discuss mechanism and significance of pentose phosphate pathway.

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.