

उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, प्रयागराज

Master of Science (Biochemistry) कार्यक्रम अधिन्यास 2020–21

कोर्स कोड : Course Code: PGBCH-101	कोर्स शीर्षक:– (Course Title) Cell Biology and Biomolecules	अधिकतम अंक : 30 Maximum Marks : 30
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Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट– (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words.

1. What you understand about biochemistry? Discuss the history scope and application of bio chemistry in current scenario.
2. How you can say that cell is basic unit of life? Briefly discuss the salient features of prokaryotic and eukaryotic cells.
3. What are lipids? Classified the lipids and write their functions with suitable example.

खण्ड ब

Section –B

अधिकतम अंक : 12

Maximum Mark : 12

नोट– (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. All questions are compulsory.

4. Define a lipids and its role in human body.
5. What are nucleic acids? Write the difference between nucleosides and nucleotides.
6. Discuss about enzyme mechanism.
7. Write the classification of amino acids and their functions.

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कोर्स कोड : Course Code: PGBCH-102	कोर्स शीर्षक:– (Course Title) Analytical Biochemistry	अधिकतम अंक : 30 Maximum Marks : 30
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अधिकतम अंक : 18

Section-A

Maximum Marks : 18

नोट– (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words.

1. What is spectroscopy? Discuss the properties of electromagnetic radiation and its role in spectroscopy.
2. Describe the principle of uv-visible spectrophotometry. Derive the Lambert Beer's Law and enumerate its properties.
3. What do you understand about separation techniques? Discuss principle and instrumentation of HPLC.

खण्ड ब

अधिकतम अंक : 12

Section –B

Maximum Mark : 12

नोट– (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. All questions are compulsory.

4. What is isoelectric focusing? Write its applications.
5. Discuss gel thin layer chromatography and its applications.
6. What is the difference between atomic and molecular spectroscopy.
7. What is the working principle of XRD? Discuss the role of XRD in biochemistry

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कोर्स कोड : Course Code: PGBCH-103	कोर्स शीर्षक:– (Course Title) Bioenergetics & Metabolism	अधिकतम अंक : 30 Maximum Marks : 30
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Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words.

1. What is Bioenergetics? Describe free energy, standard free energy and ΔG for reactions.
2. Which organelle is involved in photosynthesis? List and describe the parts of this organelle.
3. Briefly discuss the Photosynthetic light reaction.

खण्ड ब

Section –B

अधिकतम अंक : 12

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. All questions are compulsory.

4. What is Prosthetic group? Write the functions of a prosthetic group.
5. Discuss energy extraction efficiency from substrate of glycolysis, TCA and fermentation.
6. Write the process of amino acid biosynthesis.
7. What is chiral center. Discuss its role in isomers.

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कोर्स कोड : Course Code: PGBCH-105	कोर्स शीर्षक:– (Course Title) Nutrition and Physiology	अधिकतम अंक : 30 Maximum Marks : 30
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Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words.

1. What is nutrient? Describe the digestion and absorption of dietary proteins.
2. Classify the Dietary carbohydrates and write its biological importance.
3. What is Basal metabolic rate? Discuss the basic concept of metabolic rates.

खण्ड ब

Section –B

अधिकतम अंक : 12

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. All questions are compulsory.

4. What is malnutrietns? Discuss the role of under and overnuteirnts.
5. What is blood? Briefly define the types of blood cells.
6. Describe the measurement of calorific value of food.
7. Write short notes.
 - a) Trace Elements
 - b) Fat Soluble Vitamins
 - c) Red Blood Cells
 - d) Platelets

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कोर्स कोड : Course Code: PGBCH-106	कोर्स शीर्षक:– (Course Title) Bio-Statistics	अधिकतम अंक : 30 Maximum Marks : 30
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Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words.

1. What do you understand about research methodology? Discuss different types of research methodology and their significance.
2. How to measure the center tendency. Discuss with suitable example of biological sampling data.
3. Write the basic concepts of probability. Briefly discuss the additive and multiplicative law of probability.

खण्ड ब

Section –B

अधिकतम अंक : 12

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. All questions are compulsory.

4. Define the migration and morbidity.
5. What is Hypothesis? Define it types and applications.
6. White the basic principles of one way ANOVA and its significance in biochemical data analysis.
7. Short notes on
 - a) Chi-Square Tests,
 - b) t-tests,
 - c) z-tests
 - d) P Value

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कोर्स कोड : Course Code: PGBCH-107	कोर्स शीर्षक:– (Course Title) Clinical biochemistry	अधिकतम अंक : 30 Maximum Marks : 30
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Section-A

अधिकतम अंक : 18

Maximum Marks : 18

नोट— (Instructions): Section A consists of long answer questions. Answer should be in 800 to 1000 words.

1. What do you understand about clinical biochemistry? Briefly discuss its role in laboratory.
2. What are nucleic acids? Discuss its role in genetic information?
3. What are digestive disorders? Briefly describe the common digestive disorders and its effects.

खण्ड ब

Section –B

अधिकतम अंक : 12

Maximum Mark : 12

नोट— (Instructions): Section B consists of short answer questions. Answer should be in 200 to 300 words. All questions are compulsory.

4. Discuss the transport, action and measurement of hormones.
5. What are the major proteins, found in the α_2 globulin band?
6. Which protein can be used as a tumor marker for prostate cancer?
7. What is PKU? What are its symptoms and how to diagnose?