

Assignment Question Paper

Session: 2023-24	Max. Marks: 30
Program Name: PGBCH	
Course Code: PGBCH-101N	Course Name: Cell and Biomolecules

SECTION -A		2*6=12 marks
Q. No.	Short answer type question (approx. 200 -300 words)	Marks
1	What is the biochemistry? Write the history and scope of biochemistry.	2
2	Discuss in detail the cell wall structure and chemical composition of prokaryotic and eukaryotic cells.	2
3	What are the cell organelles? Discuss briefly.	2
4	What are the similar difference between bacteria and archaea?	2
5	What are the ribosomes? Discuss its role in cell biology.	2
6	Why are mitochondria called powerhouse of energy? Write structure and function of mitochondria	2
SECTION -B		6*3=18 marks
	Long answer type question (approx. 500 -800 words)	Marks
7	Distinguish between the functional role of bacterial flagella, pili and fimbriae with suitable examples and structure.	6
8	What are proteins? Write the role of amino acids in the formation of secondary, tertiary and quaternary structures of protein with suitable examples.	6
9	Write a short note on size, shape and arrangement of cells in microorganism.	6

Assignment Question Paper

Session: 2023-24	Max. Marks: 30
Program Name: PGBCH	
Course Code: PGBCH-102N	Course Name: Analytical Biochemistry

SECTION -A		2*6=12 marks
Q. No.	Short answer type question (approx. 200 -300 words)	Marks
1	What is the role of analytical biochemistry in laboratory? Write the basics understanding of spectroscopy	2
2	Define chromatography. Explain principle of thin layer, ion exchange, affinity chromatography.	2
3	What do you mean by principles of centrifugation? Explain types of centrifuges.	2
4	Define electrophoresis? Explain general principles of electrophoresis.	2
5	Explain the basic principles and instrumentation of scanning electron microscopy (SEM).	2
6	Explain X-ray diffraction and principle of NMR.	2
SECTION -B		6*3=18 marks
	Long answer type question (approx. 500 -800 words)	Marks
7	Explain the techniques and applications of visible, UV spectroscopy and atomic adsorption spectroscopy.	6
8	Explain the principle and instrumentation of high performance liquid chromatography (HPLC), affinity and ion exchange chromatography.	6
9	Explain the general principle of electrophoresis, native-PAGE, SDS-PAGE and agarose gel electrophoresis for DNA.	6

Assignment Question paper

Session: 2023-24	Max. Marks: 30
Program Name: M.Sc.- Biochemistry	
Course Code: PGBCH-103N	Course Name: Bioenergetics and Metabolism

SECTION -A		2*6=12 marks
Q. No.	Short answer type question (approx. 200 -300 words)	Marks
1	Discuss the concept of free energy and how it is different from standard free energy?	2
2	What is the relationship between equilibrium constant and standard free energy change?	2
3	Write a short note on photosynthetic light reactions?	2
4	What do you understand by phosphorylation?	2
5	Write short notes on- a-Isozymes b-Abzymes	2
6	Differentiate between Coenzymes and cofactors.	2
SECTION -B		6*3=18 marks
	Long answer type question (approx. 500 -800 words)	Marks
7	How do you calculate ΔG for the given reaction?	6
8	What is the role of prosthetic group in enzymes? How do prosthetic groups differ from coenzyme?	6
9	What is the importance of the light reaction in photosynthesis? What are the two main products of photosynthetic light reactions? How many ATP are produced in light reaction	6

Assignment Question Paper

Session: 2023-24	Max. Marks: 30
Program Name: PGBCH	
Course Code: PGBCH-106N	Course Name: Nutrition & Physiology

SECTION -A		2*6=12 marks
Q. No.	Short answer type question (approx. 200 -300 words)	Marks
1	What are basic concepts of nutrition? Discuss the nutrition and physiology of human.	2
2	Explain the dietary requirement of carbohydrates, lipids and proteins.	2
3	What do you mean by vitamins? Explain water soluble and fat soluble vitamins with examples.	2
4	Define blood and blood-composition? Explain erythrocytes, leucocytes and thrombocytes.	2
5	What is digestion? Explain different parts of alimentary canal in animal system.	2
6	Define respiration with its types? Explain inspiration and expiration.	2
SECTION -B		6*3=18 marks
	Long answer type question (approx. 500 -800 words)	Marks
7	What is the measurement of caloric value of food? Explain basal metabolic rate (BMR) and factors affecting BMR.	6
8	What are the essential and non-essential amino acids? Explain their physiological functions and toxicity of nutrients.	6
9	What are roles of enzymes in digestive system? Discuss gastric, pancreatic, intestinal and bile secretions.	6

Assignment Question Paper

Session: 2023-24	Max. Marks: 30
Program Name: PGBCH	
Course Code: PGBCH-107N	Course Name: Bio Statistics

SECTION -A		2*6=12 marks
Q. No.	Short answer type question (approx. 200 -300 words)	Marks
1	What do you mean by Statistics? Write its history and scope of bio-statistics.	2
2	Explain the role of mode, median and mode in data analysis.	2
3	What are the basic concepts of probability? Explain additive, multiplicative law of probability and conditional probability.	2
4	What are the source of vital statistics, demographic data and probability distributions?	2
5	Explain different types of errors, chi-square tests, t-tests and z-tests.	2
UNIT 6 Short answer type question (approx. 200 -300 words)		
6	Explain analysis of variance, co-variance and ANOVA.	2
SECTION -B		6*3=18 marks
	Long answer type question (approx. 500 -800 words)	Marks
7	What is the significance of research? Discuss the measures of central tendency, measures of dispersion and measures of asymmetry.	6
8	What are the basic concepts of probability? Explain probability mass function and probability density functions.	6
9	Write a short on vital statistics. Explain poisson distribution, geometric distribution, normal distribution and exponential distribution.	6

Assignment Question Paper

Session: 2023-24	Max. Marks: 30
Program Name: PGBCH	
Course Code: PGBCH-108N	Course Name: Clinical Biochemistry

SECTION -A		2*6=12 marks
Q. No.	Short answer type question (approx. 200 -300 words)	Marks
1	What is the role of clinical biochemistry in laboratory? Write the significance of biochemistry.	2
2	Discuss the genetic information in DNA and genetic damage by ionization radiation.	2
3	What do you mean by nutrition? Discuss control of water and electrolyte metabolism.	2
4	What are the gut hormones and clinical disorder?	2
5	What are the electrolytes? Discuss its role in metabolism.	2
6	What are the proteins? Explain their structures with their functions.	2
SECTION -B		6*3=18 marks
	Long answer type question (approx. 500 -800 words)	Marks
7	What are the different roles of biochemistry in laboratory? Explain pH control of respiration and metabolic process.	6
8	What are the hormones? Write various roles of different hormones in animal systems with examples.	6
9	Write a short note on proteins. Explain their different types and structures.	6