

FORMAN CHRISTIAN COLLEGE
(A Chartered University)
QUESTION BANK PART 1 BIOLOGY

Chapter 1

Short Questions

- 1- What is biome? (2014)
- 2- What is hydroponic culture technique? (2014)
- 3- Differentiate between deductive and inductive reasoning. (20(2014)+(2016)+(2017))
- 4- Differentiate between micro and macromolecules? (20(2014)+(2018))
- 5- What is biome? (2014)
- 6- Write the name of four eras of geological times. (2016)
- 7- What is pylatic lineage? (2016)+(2017))
- 8- Define theory. Give important features of a god theory. (2015)
- 9- Define population, give its one example. (2015)
- 10- What is deductive reasoning? Give one example. (2015)
- 11- Define parasitology. (2016)
- 12- Differentiate between anatomy and morphology. (2017)
- 13- Define ecosystem with an example. (2018)
- 14- Differentiate between gene therapy and chemotherapy. (2018)

Long Questions

1. Describe biological organization at organelles and cell level (2014, 2015)
2. Explain any three steps in biological method. (2015)
3. What is cloning? Discuss its methods and applications. (2014, 2017)
4. Describe the role of drug treatment to control disease. (2016)
5. Discuss service of Biology in field of disease control. (2017)
6. How biology has helped mankind in conservation and protection of environment? (2018, 2016)
7. Write a note on population and community level of biological organization. (2018)

Chapter 2

Short Questions

- 1- What is glycosidic bond? (2016)
- 2- What is peptide bond? (2014)
- 3- Write the general formula of amino acid. (2014)
- 4- What is heat capacity of water? Give its importance. (2016)
- 5- Sketch the structure of ribofuranose and glucopyranose. (2015)+(2018)
- 6- Give difference between saturated and un saturated fatty acids. (2015)
- 7- Show peptide bond between two amino acids. (2017)
- 8- What did F.Sanger conclude about insulin? (2017)
- 9- What are biomolecules? Give two examples. (2017)
- 10- Define heat of vaporization of water. (2018)

Long Questions

1. Describe biological properties and importance of water. (2015)
2. What are polysaccharides? Describe different types and give examples. (2014, 2016, 2017)
3. Give the classification of proteins. (2016)
4. Write the Watson and Crick model of DNA. (2017, 2018)
5. Give an account of acylglycerols. (2018)

Chapter 3

Short Questions

- 1- Define prosthetic group and give example. (2016)
- 2- What is induce fit model? (2016)
- 3- Define inhibitors and give an example. (2016)
- 4- Differentiate between apoenzyme and holoenzyme. (2014)+(2016)
- 5- What is co-factor? Give its types. (2014)+(2016)
- 6- What is irreversible inhibitor? (2014)
- 7- Why enzymes are denatured at high temperature? (2016)+(2017)
- 8- Define active site of enzyme. (2014)
- 9- What do you know about lock and key model? (2014)+(2015)
- 10- Differentiate between irreversible and reversible inhibitors? (2014)
- 11- Define enzyme inhibitors. Give its two types. (2015)+(2016)
- 12- What is induce fit model of enzyme reaction. (2015)+(2017)
- 13- Give difference between prosthetic group and activator. (2015)
- 14- What is optimum pH? Give one example. (2015)
- 15- Define prosthetic group and apoenzyme. (2017)
- 16- Differentiate between competitive and non-competitive inhibitors. (2017)+(2018)
- 17- Differentiate between prosthetic group and co-enzyme. (2018)
- 18- Differentiate between substrate and active site of an enzyme. (2018)
- 19- Define feedback mechanism of enzyme with diagram. (2018)
- 20- What is effect of change in pH on working of enzymes? (2018)
- 21- What is meant by optimum temperature? Give an example. (2018)
- 22-

Chapter 4

Short Questions

- 1- What is cisternae? (2014)
- 2- Write down salient features of cell theory. (2014)
- 3- What is endocytosis? (2016)
- 4- Write role of glyoxysomes. (2016)
- 5- What is glycogenesis type II disease? (2014)
- 6- Give the name of Robert Hooke publication on cell discovery. (2016)
- 7- What is endocytosis? Differentiate between phagocytosis and pinocytosis. (2016)
- 8- Define differentially permeable membrane. (2014)
- 9- What are storage diseases? Give an example. (2015)
- 10- Give the important functions of cytoplasm. (2015)
- 11- What are peroxisomes? (2015)
- 12- What is chromoplast? Give its functions. (2015)
- 13- Give the chemical composition of primary and secondary cell wall. (2017)
- 14- What are microfilaments? Give their functions. (2017)
- 15- Define fluid mosaic model of cell membrane. (2017)
- 16- Write down two functions of golgi apparatus. (2017)
- 17- Give the function of endoplasmic reticulum. (2018)
- 18- Define autophagosome. (2018)
- 19- What is resolution of human eye and electron microscope? (2018)

Long Questions

1. Discuss structure and functions of endoplasmic reticulum. (2014)
2. Write a note on glyoxysomes. (2015)
3. Write a note on Ribosomes. (2015)
4. What are plastids? Explain the structure and function of chloroplast. Draw figure. (2016, 2014)
5. What are lysosomes? Explain their phagocytic role with the help of diagram. (2017, 2018)
6. Define cell membrane. Explain its functions. (2018)

Chapter 5

Short Questions

- 1- Write down four characteristics of viruses. (2014)
- 2- What are pocks? (2016)
- 3- Write four names of viral diseases common in human beings. (2016)
- 4- What are symptoms of small pox? (2014)
- 5- Sketch and label diagram of bacteriophage. (2015)
- 6- Define species and virology. (2015)
- 7- What are prions? (2017)
- 8- Define binomial nomenclature. Give an example. (2017)
- 9- Differentiate between procariotique and eucariotique. (2017)
- 10- Write down five postulates of germ theory of disease by Robert Koch. (2018)
- 11- Write down biological classification of corn. (2018)

Long Questions

1. Describe Linnean's system of binomial nomenclature in detail. Give its rules. (2014)
2. What is AIDS? How's it transmitted? (2015)
3. Describe some viral diseases, which are common in Pakistan. (2016)
4. What is hepatitis? Give its symptoms and discuss its three common types. (2014, 2016, 2017)
5. Describe lytic cycle of bacteriophage (with diagram). (2017, 2018)
6. Write a note on small-pox and polio. (2018)

Chapter 6

Short Questions

- 1- Differentiate between gram positive and gram negative bacteria. (2014)
- 2- Write down misuses of antibiotics. (2016)
- 3- What are pilli? Give their functions. (2016)
- 4- Differentiate between streptococcus and staphylococcus bacteria. (2014)
- 5- What is periplasmic space? In which bacteria is it present? (2015)
- 6- Name three general shapes of bacteria and explain only one. (2015)
- 7- Differentiate between tetrad and sarcina. (2017)
- 8- Differentiate between lophotrichous and amphitrichous. (2017)
- 9- Differentiate between amphitrichous and peritrichous bacteria. (2018)

Long Questions

1. Explain general characteristics of cyanobacteria with special reference to Nostoc. (2014)
2. Classify bacteria with reference to presence of flagella. (2014)
3. Discuss growth and reproduction in bacteria. (2015)
4. Explain cell wall of bacteria with special reference to gram staining. (2016)
5. Differentiate between gram positive and gram-negative bacteria. (2016)
6. Explain about use and misuse of antibiotics. (2017)
7. Discuss nutrition in bacteria. (2015, 2017, 2018)
8. Describe habitat, structure and reproduction in nostoc. (2018)

Chapter 7

Short Questions

- 1- Give two examples of chlorophyta. (2014)
- 2- Name the body size and locomotory organs of zooflagellates. (2016)
- 3- What is sleeping sickness? (2016)
- 4- What are actinopods? (2016)
- 5- What are kelps? (2016)
- 6- Write down functions and micro and macro nuclei in ciliates. (2014)
- 7- Write down four characteristics and green algae similar to plants. (2014)
- 8- Write down two differences between fungi and oomycetes. (2014)
- 9- What are choanoflagellates? (2014)+(2015)+(2017)
- 10- What are protists? How are they different from animals and plants? (2016)
- 11- What are trichonymphs? (2016)
- 12- Why phytophthora infestans is infamous in human history? (2016)
- 13- What are red tides? (2015)+(2018)
- 14- How algae differ from plants? (2015)+(2017)
- 15- What are apicomplexans? Give one example. (2015)
- 16- Write down two characteristics of ciliates. (2015)+(2018)
- 17- What are diatoms? (2015)+(2018)
- 18- How ciliates are different from other protozoans? (2017)
- 19- Write down two characteristics of apicomplexans. (2017)
- 20- What do you know about giant amoeba? (2017)
- 21- What is chlorella? Give its importance. (2017)
- 22- Write down two characteristics of dinoflagellates. (2017)
- 23- Write four important features of algae. (2018)
- 24- Write down importance of algae. (2018)
- 25- Write down evolutionary significance of euglenoids. (2018)
- 26- How do flagellates get food? (2018)
- 27- Write down ecological role of dinoflagellates. (2018)

Chapter 8

Short Questions

- 1- Enlist four plant diseases caused by fungi. (2014)
- 2- Differentiate between obligate and facultative parasite. (2016)+(2015)+(2018)
- 3- Name the type and hyphae and sexual spores in sac fungi. (2016)
- 4- Write down two similarities between plants and fungi. (2014)
- 5- What are carnivorous fungi? (2014)
- 6- Write four important points of algae. (2014)
- 7- Differentiate between fungus like protists and fungi. (2014)
- 8- What is histoplasmosis? (2014)+(2017)
- 9- Why rust and smut are called so? (2014)
- 10- What is nuclear mitosis? (2016)
- 11- What are lichens? Write about their ecological role. (2015)
- 12- Define lichens. Give its significance. (2015)
- 13- Differentiate between plasmogamy and karyogamy. (2015)+(2017)
- 14- What are septate and non-septate hyphae? (2015)+(2017)
- 15- What do you know about budding and parasexuality? (2015)
- 16- What are conidia and spores? (2017)
- 17- What is meant by parasexuality? Give its importance. (2018)
- 18- Differentiate between conidiophores and coenocytic hypha. (2018)
- 19- Differentiate between ascus and basidium. (2018)
- 20- What are toad stools? Give example. (2018)
- 21-

Long Questions

1. Describe land adaptations in Fungi. (2014)
2. Explain taxonomic status of fungi. (2015)
3. Explain mutualistic nutrition in fungi. (2016)
4. Describe asexual reproduction in fungi. (2017)
5. Explain various economic gains due to fungi. (2017)
6. Write down economic losses due to fungi. (2015, 2018)
7. Write a note on Ascomycota. (2018)

Chapter 9

Short Questions

- 1- Differentiate between ovule and seed. (2014)
- 2- Why bryophytes are called amphibious plants? (2014)+(2015)
- 3- Differentiate between microphyll and megaphyll. (2016)
- 4- Define double fertilization. (2015)+(2016)+(2017)
- 5- Write down two steps involved in evolution of seed. (2014)
- 6- Describe adaptation of bryophytes to land habitat. (2014)
- 7- Write two advanced characteristics of anthocerosida sporophyte. (2016)
- 8- What are gymnosperms? Give an example. (2016)
- 9- Give common name of adiantum. (2015)
- 10- Differentiate between bryophytes and tracheophytes. (2017)
- 11- Define circinate vernation. (2017)+(2018)
- 12- Define ovule and embryo sac. (2017)
- 13- What are fronds? (2018)
- 14- Write botanical name of two plants belong to family solanaceae. (2018)
- 15- Differentiate between microgametophyte and megagametophyte. (2018)

Long Questions

1. Discuss economic importance of family poaceae (2014, 2016)
2. What is alternation of generation? Give its significance. (2015)
3. Describe the different adaptive characters for terrestrial environment in bryophyte. (2016)
4. Give detailed life cycle of adiantum and sketch it. 2017
5. Write a note on Lycopsida. (2017)
6. Discuss evolution of megaphyll leaf. (2014, 2015, 2018)
7. Describe prothallus of adiantum. (2018)

Chapter 10

Short Questions

- 1- What is metamorphosis? (2014)+(2017)
- 2- Write two adaptation in organism that live in aquatic environment. (2014)
- 3- What is hermaphrodite organism? (2014)
- 4- What is polymorphism? (2014)
- 5- Write basic characteristics of chordates, give example. (2016)
- 6- What are coral reefs? (2016)
- 7- Define swim bladder. Give its functions. (2014)
- 8- What is regeneration? Give example. (2016)
- 9- How sponges reproduce asexually? (2016)
- 10- What are diploblastic animals? (2014)
- 11- Define placenta. Write its functions. (2014)
- 12- Write the two differences between protostomes and deuterostomes. (2015)+(2016)

- 13- What is polymorphism? Give one example. (2015)
- 14- Name four harmful effects of insects. (2016)
- 15- Give three basic characteristics of phylum chordate. (2016)+(2017)
- 16- What is polymorphism? Give example. (2015)+(2016)
- 17- Differentiate between sac like and tube like digestive system. (2015)
- 18- What are cnidocyst? (2015)
- 19- What is metamorphosis? (2015)
- 20- Give two characteristics of deuterostomes. (2015)
- 21- Name two hemichordates. (2015)
- 22- Differentiate between radial and bilateral symmetry. (2015)+(2017)
- 23- Differentiate between parazoa and eumetazoa. (2017)
- 24- What are archaeopteryx? give its two characteristics. (2017)
- 25- Give two examples of sponges. (2017)
- 26- Differentiate between polyps and medusases. (2017)
- 27- What is meristematic segmentation? In which phylum is it present? (2017)
- 28- Differentiate between oligochaeta and poly chaeta. (2018)
- 29- What is meant by arachnida, give its two features? (2018)
- 30- Differentiate between gastropods and cephalopods. (2018)
- 31- What is regeneration, give its importance. (2018)
- 32- Differentiate between coelomates and acoelomates. (2018)
- 33- Differentiate between diploblastic and triploblastic organism. (2018)
- 34- Write down affinities of echinoderm with hemichordates. (2018)

Chapter 11

Short Questions

- 1- Give the importance of ATP. (2014)
- 2- Define the term Bioenergetics. (2014)
- 3- What is glycolysis? Where it takes place in cell? (2016)
- 4- How action spectra can be obtained? (2016)
- 5- What is cellular respiration? (2016)
- 6- What is payoff phase of glycolysis? (2016)
- 7- How does carbon dioxide absorb by cell wall of mesophyll cells? (2016)
- 8- Define photosynthesis with equation. (2014)+(2015)+(2017)
- 9- What do you mean by action spectrum. (2014)
- 10- What are accessory pigments? Give their one importance. (2015)
- 11- What is fermentation? Give its two types. (2015)
- 12- Differentiate between antenna complex and reaction center. (2017)
- 13- Give the function spectrophotometer. (2017)
- 14- Define glycolysis. Where does it take place? (2017)
- 15- Write the photolysis of water in photosynthesis. (2018)
- 16- What is Z-scheme of photosynthesis? (2018)
- 17- Differentiate between photophosphorylation and oxidative photophosphorylation. (2018)
- 18- Define alcoholic fermentation. Write its equation. (2018)

Long Questions

1. What is glycolysis? Give its Outline (sketch). (2014)
2. Describe in detail cyclic phosphorylation with the help of a diagram. (2015)
3. What is photophosphorylation? Explain non-cyclic photophosphorylation. (2015, 2016)
4. Give in detail the phases of Calvin cycle. (2014, 2017)
5. Draw and label Z-scheme/non-cyclic phosphorylation. (2017)
6. Sketch Krebs Cycle, (no description). (2016, 2018)

7. Sketch Calvin cycle (no description). (2018)

Chapter 12

Short Questions

- 1- Give two functions of human liver. (2014)
- 2- What are fluid feeders? (2014)
- 3- Differentiate between diarrhea and constipation. (2014)
- 4- Name three pairs of salivary glands in humans. (2016)
- 5- What is detritus feeding? Give example. (2016)+(2015)
- 6- Write down symptoms in plants caused by deficiency of phosphorous and potassium. (2016)
- 7- What are functions of secretin? (2014)
- 8- Define fluid feeders. (2014)
- 9- Write down deficiency symptoms of potassium and magnesium in plants. (2014)
- 10- What is food poisoning? Give its symptoms. (2016)
- 11- Give the composition of saliva. (2016)
- 12- What is chlorosis? Name two elements. (2015)
- 13- Whose deficiency cause chlorosis? (2015)
- 14- What is filter feeding? (2015)
- 15- What are insectivorous plants? How they get their carbohydrates? (2015)
- 16- Names the hormones secreted by digestive system of human. (2015)
- 17- Differentiate between pepsin and pepsinogen.
- 18- How trypsinogen is activated? (2017)
- 19- What is dyspepsia? Give its characteristics. (2017)
- 20- Differentiate between appendix and appendicitis. (2017)
- 21- How diarrhea and constipation is caused? (2017)
- 22- Differentiate between ingestion and egestion. (2017)
- 23- What is heart burn or pyrosis?
- 24- What is myoglobin? Give its importance. (2017)
- 25- Write the role of human pancreas in digestion. (2018)
- 26- What are piles? (2018)
- 27- How Sundew (Drosera) shows its insectivorous activity? (2018)
- 28- Differentiate between extracellular and intracellular digestion. (2018)
- 29- Enlist the enzymes of digestive juice of pancreas with their function. (2018)

Long Questions

1. Describe digestion in stomach of man. (2014)
2. Give the role of large intestine in human beings. (2015, 2016)
3. Describe parasitic and symbiotic nutrition in plants. (2014)
4. Describe digestion in planaria. (2016)
5. Describe digestion in hydra. (2017)
6. Discuss the process of nutrition in insectivorous plants. (2017)
7. Write a note on digestion in amoeba (with diagram). (2018)
8. Discuss digestion and absorption in small intestine. (2018)

Chapter 13

Short Questions

- 1- What is emphysema? (2016)
- 2- Write two properties of respiratory surfaces. (2014)
- 3- How pH and temperature effect the capacity of heamoglobin to combine with oxygen. (2014)
- 4- What is inspiration? (2016)
- 5- What is respiratory distress syndrome? (2016)+(2015)+(2017)
- 6- What are blue babies? (2014)
- 7- What is diving reflex? (2014)+(2017)+(2018)
- 8- What is lungs cancer? (2014)
- 9- Why oxygen can be easily obtained from air as compared to water? (2014)
- 10- How does respiration take place in earthworm? (2016)
- 11- What are alveoli? Give their dunctions. (2016)
- 12- Give the composition of breath air in humans. (2016)
- 13- Give two properties of respiratory surfaces in animals. (2016)
- 14- What is photorespiration? (2015)
- 15- Differentiate between pulmonary and cutaneous respiration. (2015)
- 16- What are parabronchi? (2015)
- 17- What is rubisco? Give its functions. (2015)
- 18- How exhalation and inhalation do occur in cockroach? (2015)
- 19- What are alveoli? Give their function. (2015)
- 20- Define respiratory surface. Give its properties. (2015)
- 21- What are spiracles? Give their functions. (2017)
- 22- Enlist type of respiration in frog. (2017)
- 23- How air is belter medium for respiration than water.
- 24- What is asthma? Give its cause. (2017)
- 25- Write different ways of respiration in frog. (2018)
- 26- What is larynx or voice box? (2018)
- 27- What is diaphragm? In which group of animals it is found? (2018)
- 28- What is rate of breathing at rest and exercise? (2018)
- 29- Differentiate between bronchi and bronshioles. (2018)

Chapter 14

Short Questions

- 1- What is guttation? (2014)
- 2- Define immunity. (2014)
- 3- Differentiate between active and passive immunity. (2014)
- 4- Differentiate between plasmolysis and deplasmolysis. (2016)+(2017)
- 5- What is single circuit heart? Give an example. (2016)
- 6- Differentiate between apoplast and symplast pathway. (2016)
- 7- What is pressure potential? (2015)
- 8- What are blue babies? (2015)+(2016)+(2017)
- 9- What is pressure flow theory? Who proposed it? (2015)
- 10- Differentiate between single and double circuit heart. (2015)
- 11- What is humoral immune response. (2017)
- 12- Differentiate between thrombus and embolus. (2017)
- 13- Describe CO₂ concentration in artery and venous blood. (2017)+(2018)
- 14- What is imbibition? (2018)
- 15- What is honey dew? Give its composition. (2018)
- 16- What are factors affecting capacity of hemoglobin to combine with oxygen. (2018)
- 17- What do you know about bleeding in plants? (2018)
- 18- What is cell-mediated and humoral immune response? (2018)

Long Questions

1. What are lymph nodes? Give their functions. (2014)
2. Discuss transpiration as a necessary evil. (2014, 2015)
3. Give various components and functions of Lymphatic System. (2015, 2016)
4. Describe the blood plasma in detail (2016)
5. Soil water moves and reaches xylem tissues by various pathways, explain. (2017)
6. Write a comprehensive note on functions of blood. (2017)
7. What is transpiration? Give the factors affecting rate of transpiration. (2018)
8. Discuss two main types of immunity. (2018)