

New SLOs based Guess Paper for SSC Annual-II Examination 2023

As per a by the Controller of Examinations Khyber Pakhtwonwa, the forthcoming SSC Annual-I (9th Class) Exam 2023 will be based on these SLOs-based papers.

BIOLOGY

UNIT NO. 1 INTRODUCTION TO BIOLOGY.

KNOWLEDGE BASED QUESTIONS. 30%

1. How the understanding of physics can help the biologist?
2. Name two Muslim Scientist and their contribution in the field of biology and medicine.
3. Define anatomy, Histology, entomology and genetics.
4. Difference between environmental and cell biology.
5. Difference between agriculture and horticulture?

APPLICATION BASED QUESTIONS. 20%

1. What is embryology?
2. What is Penilline?
3. What is pharmacology and immunology?
4. What is Forensic biologists work?

UNIT NO. 2 .SOLVING A BIOLOGICAL PROBLEM

UNDRSTANDING BASED QUESTIONS. 50%

1. What are the observation of A.F.A.King.
2. Justify mathematics as an integral part of the scientific process.
3. How the principles of ratio and proportion are used in biological method.
4. What are A.F.A King Observation about malaria?
5. What are AFA king observations? Give AFA king hypothesis about his observations.

APPLICATION BASED QUESTIONS. 20%

1. What is hypothesis and deduction?
2. What is a science? How does it work?
3. Control group is important for scientific study, how?
4. How Ronald Ross conducted the experiment to prove the mosquitoes are involved in the spread of malaria?
5. At what stage of the biological method, Hypothesis, is accepted or rejected?

LONG QUESTIONS.

1. Briefly describe observations about the causes of malaria.
2. Difference between inductive reasoning and deductive reasoning?
3. Explain that how mathematics can be used to interpret the data obtained through experimentation.

UNIT NO. 3 BIODIVERSITY.

KNOWLEDGE BASED QUESTIONS. 30%

1. What is the status of viruses in classification?
2. How does deforestation lead to desertification?
3. How you can differentiate between kingdom monera and Protista?
4. What is classification? Briefly describe the principles of classifications.
5. What do you know about the kingdom fungi?
6. Briefly explain the following four distinguishing characteristics of kingdom Protista.

UNDRSTANDING BASED QUESTIONS. 50%

1. Justify why virus are excluded from the Five-Kingdom classification system.
2. Identify causes for deforestation and its effects on biodiversity.
3. It's impact of human beings on biodiversity.
4. Why is important for a biologist to understand biological classification?
5. List down the endangered species of Pakistan and what are the reasons behind their population decrease.

APPLICATION BASED QUESTIONS. 20%

1. How can you divide the five kingdom into two groups on the basis of types of cells?
2. How many people rely on wood for heating and cooking

LONG QUESTIONS.

1. Define the term conservation. Write any three examples of the steps taken in Pakistan to conserve biodiversity.
2. Differentiate between two kingdom system and five kingdom system along their advantages and disadvantages.
3. Explain Binomial Nomenclature. What are its advantages?

UNIT NO. 4

CELLS AND TISSUES.

KNOWLEDGE BASED QUESTIONS. 30%

1. Differentiate between simple and compound tissues.
2. Difference between endocytosis and exocytosis.
3. Define turgor and also write any two points to show its importance in plants.
4. What proposed the cell theory and what are the main points of the cell theory?
5. Define cell cycle. Write only names to events occurring during interphase.
6. What is endoplasmic reticulum? Difference between smooth and rough endoplasmic reticulum.

UNDERSTANDING BASED QUESTIONS. 50%

1. Difference between simple and compound tissues.
2. Write note Mitochondria.
3. How does turgor pressure develop in a plant cell?
4. How is a prokaryotic cell different from a eukaryotic cell in terms of nuclei, cell membrane, cell wall and size?

APPLICATION BASED QUESTIONS. 20%

1. Why type of microscope would you use to study?
2. How human body made types of cells.
3. Explain why it is not enough just to say that a solution is "hypertonic".
4. Birds fly by flapping their wings. What do you think is the type of muscle responsible for wings flapping?

LONG QUESTIONS.

1. Briefly explain following animal tissues.
a. Fibrous connective tissues b. Smooth muscles c. Nervous tissues d. epithelial tissue.
b. Write a note on the structure of cell wall, cell membrane, mitochondria and chloroplast of a plant cell.
2. Difference between Prokaryotic and Eukaryotic cells.
3. Describe the types of endoplasmic reticulum.
4. Discuss kinds of muscular tissues in animals.

UNIT NO. 5

CELL CYCLE.

KNOWLEDGE BASED QUESTIONS. 30%

1. What is meant by G1 phase in a cell cycle?
2. Difference between Meiosis and mitosis.
3. What is meant by regeneration? Give example.
4. Enlist the events through which mitotic apparatus is formed in prophase in animal's cells.
5. Define cell cycle. Write only names of events occurring during interphase.
6. Difference between mitosis and meiosis.

UNDERSTANDING BASED QUESTIONS. 50%

1. Cell works as an open system explain.
2. How is mitosis significant?
3. What is cell cycle and what are its main phases?
4. Why are tumors dangerous for human body?

APPLICATION BASED QUESTIONS. 20%

1. Nucleus is visible only in interphase while chromosomes are only visible in cell division stage. Why is that?
2. During crossing over, genetic material is exchanged between sister/non-sister chromatids of homologous/non homologous chromosomes.

UNIT NO. 6

ENZYMES.

KNOWLEDGE BASED QUESTIONS. 30%

1. How are enzymes specific for their substrate? Justify it with the help of diagram of shape of active site of enzyme and its specificity. Also give its two examples.
2. How variation in temperature affects enzyme activity?
3. What the characteristics of enzymes.
4. Difference between lock and key model and the induced –fit model.
5. What are the terms used to describe the temperature and the pH at which an enzyme can work most effectively in a reaction?

UNDRSTANDING BASED QUESTIONS. 50%

1. What is meant by denaturation of enzyme?
2. How are enzymes specific for the substrate?
3. In what way does an enzyme affect the chemical reaction in catalysis?
4. What do you mean by activation energy and why it is referred in the definition of enzymes?
5. In a range of 0-35 oC the rate of reaction an enzyme is proportional to temperature.

APLICATION BASED QUESTIONS. 20%

1. Why does enzyme activity increase as temperature rises?
2. Why does enzyme activity decrease at high temperature?
3. Why all enzymes are catalyst.
4. The optimum temperature for the maximum working speed of human

LONG QUESTIONS.

1. Write the characteristics of enzymes.
2. Describe the effects of concentration of substrate and pH on enzyme activity
3. Briefly describe look and key model enzyme action.
4. Why mitochondrial enzyme is called intracellular? Give justification.

UNIT NO. 7

BIO- ENERGETICS.

KNOWLEDGE BASED QUESTIONS. 30%

1. Draw the structure of ATP molecule.
2. What is the role of pigments during photosynthesis?
3. Define alcoholic fermentation and lactic acid fermentation.
4. What is the difference between oxidation and reduction?
5. Difference between aerobic and anaerobic respiration?
6. Difference between Photosynthesis and Respiration.
7. Both respiration and photosynthesis are important for living organisms. How these two processes are opposite of one another. Write four differences between respiration and photosynthesis.

UNDRSTANDING BASED QUESTIONS. 50%

1. Why is ATP regarded as the currency of the living cell?
2. What is the role of pigment during photosynthesis?
3. Why are oxidation and reduction important for plants?
4. Outline the process involved in photosynthesis?
5. Outline the mechanism of respiration while defining glycolysis.

LONG QUESTIONS.

1. Explain the synthesis and breaking of ATP through ATP-ADP cycle with proper diagrams.
2. Explain the mechanism of photosynthesis.
3. What is the concept of a limiting factor? What are the different limiting factors for photosynthesis?
4. Why is aerobic respiration considered to be more deficient than anaerobic respiration?
5. Write short note on Krebs cycle.
6. Explain the summary of light reaction and draw a diagram of Z-Scheme

UNIT NO. 8

NUTRITION.

KNOWLEDGE BASED QUESTIONS. 30%

1. Write any four deficiency symptoms of vitamin D.
2. What is malnutrition? Why it is considered to be a health hazard.
3. Difference between Macronutrients and Micronutrients.
4. Explain the effect of deficiency of Nitrogen and magnesium on the plants.
5. Balanced diet differs with age and gender. Explain.

UNDERSTANDING BASED QUESTIONS. 50%

1. Which are autotrophic and heterotrophic organisms?
2. How can the deficiency of Vitamins A cause blindness?
3. Pepsin is a powerful protein digesting enzyme. It does not digest the stomach walls, which are mostly proteins. Justify.
4. How are inorganic fertilizers important in agriculture?
5. Describe swallowing and peristalsis.

APPLICATION BASED QUESTIONS. 20%

1. How proteins can be converted into carbohydrates.
2. Which of the major components of food is needed as the main structural component of the body.
3. If due to any reason, the direction of peristalsis reverses, what would be the result?

LONG QUESTIONS.

1. Explain the importance of water in the human body.
2. Explain the role of oral cavity and pharynx in the digestive system.
3. Describe the structure of a villus, including the roles of capillaries and lacteals.

UNIT NO. 9

TRANSPORT.

KNOWLEDGE BASED QUESTIONS. 30%

1. What is translocation of food in plants?
2. What is transpiration pull? Describe the importance of transpiration in the life of the plant.
3. Write any four difference between xylem and phloem?
4. Describe the composition of human blood. What are the main function of blood cells?
5. What would happen to transpiration stream if the air is injected in xylem vessels?
6. List any four functions of plasma in human body.

UNDERSTANDING BASED QUESTIONS. 50%

1. Why are arteries important? Draw a labelled diagram of an artery.
2. Briefly describe arteriosclerosis.
3. Different between transpiration and translocation.
4. Difference between systole and diastole.
5. Why does a RBC lack cellular organelles?
6. How does the pressure-flow Theory explain the movement of sugars through phloem vessels of a plant?
7. Is the rate of transpiration higher on a sunny day or a rainy day? Why?

APPLICATION BASED QUESTIONS. 20%

1. How is plasma separated from blood?
2. Which blood cells are the most numerous in healthy human body?
3. When does our heart take rest? During sleep, during sitting, or never?
4. Through which blood vessel the oxygenated blood leaves the human heart?

LONG QUESTIONS.

1. Difference between Atherosclerosis and Arteriosclerosis.
2. Discuss the function of major arteries and veins.
3. Describe the structure of blood and its importance.
4. Describe the main functions of blood cells.
5. Briefly describe and draw the internal structure of human heart.