

9th Biology Guess Paper 2025

These guess papers are prepared according to the new paper pattern 2025 issued by the board and based on SLOs.

Your exam paper will be divided as follows:

- **25% Conceptual**
- **75% Knowledge-Based**
- **25% Analytical + Application-Based**

S.No	Most Important Short Questions (Chapter # 1)
1	Define Biochemistry and describe its importance.
2	Define horticulture.
3	What do you know about molecular biology?
4	Write the two observations of AFA King.
5	Write names of four writings of Abdul Malik Asmai.
6	What is a biological problem?
7	How is Horticulture useful for man?
8	Define observations and write their types.
9	What is a parasite?
10	Define bio-economics.
11	Differentiate between cell biology and histology.
12	Write down the scientific name of the mustard plant and also write down its two uses.
13	Define Cell Biology.
14	What is bio-economics?
15	Define pharmacology.
16	Differentiate between morphology and anatomy.
17	Write the contributions of Jabir Bin Hayan.
18	Define histology and morphology.
19	What is meant by cellular organization? Give an example.
20	Define micro molecules and give an example.
21	Define species and habitat.
22	Define tissues and give an example.
23	Define the biosphere level.
24	Define bio-elements. How many bio-elements are making up the body mass of living organisms?
25	What is socio-biology?
26	Define tissue level.
27	Differentiate between micro molecules and macro molecules.
28	Define anatomy.
29	Define parasites and give an example.
30	What are unicellular organisms?

31	Write down the scientific name of the mustard plant and frog.
32	Write down the role of the biotechnology profession in the field of biology.
33	Define community with one example.
34	State about Bu Ali Sina's achievements in biology.

S.No	Most Important Short Questions (Chapter # 2)
1	Define biological law.
2	What is the role of bioinformatics in data analysis?
3	Define Biology.
4	What is meant by data organization?
5	How observations are made?
6	Define Bioinformatics.
7	What were the four major observations of malaria in the last part of the 19th century?
8	Define hypothesis.
9	Differentiate between qualitative and quantitative observations.
10	Write two characteristics of a hypothesis.
11	What is meant by the biological problem?
12	What is the importance of Cinchona bark?
13	Define the scientific method.
14	What is the incubation period?
15	Define deductions.
16	What are deductions?
17	What is meant by the organ system level?
18	How can we formulate a hypothesis?
19	Define the biological method.
20	What are observations?
21	What is reporting of results?
22	Write two benefits of the productive theory.
23	Write down the contributions of French Army physician Laveran.
24	Define ratio and proportion.
25	Write two observations described by A.F.A. King.
26	Give examples of qualitative observations and quantitative observations.
27	What is the zone of life?
28	Why quantitative observations are more accurate?
29	Define scientific law with examples
30	How welts appear when mosquito bites?
31	Write the difference between Control group and Experimental group.
32	Write the difference between Culex and Anopheles mosquito.

S.No	Most Important Short Questions (Chapter # 3)
1	Differentiate between taxonomy and systematics.
2	What is meant by taxa? Write the names of any two taxa.
3	Why are viruses at the border line of living and non-living organisms?
4	Define systematic.
5	Define species.
6	Write down any two characteristics of kingdom Protista.
7	Define binomial nomenclature. Who introduced it?
8	Write major characteristics of kingdom Animalia.
9	Write the role of biodiversity in the ecosystem.
10	Write two aims of classification.
11	Differentiate between prions and viroids.
12	Why is the Indus Dolphin an endangered species?
13	How do forests keep balance in the biosphere?
14	What is the role of the Eucalyptus plant in disturbing the water table?
15	Define biodiversity.
16	Write down two characteristics of kingdom Monera.
17	Write a note on three Kingdom classification.
18	Write down the role of Carolus Linnaeus in Biology.
19	Write two points on the importance of biodiversity.
20	What is the basis of classification?
21	Write names of two endangered species in Pakistan.
22	Write two functions of the smooth endoplasmic reticulum.
23	What is the difference between autotrophs and heterotrophs?
24	Write down two characteristics related to the importance of biodiversity.

S.No	Most Important Short Questions (Chapter # 4)
1	What is meant by the fluid mosaic model?
2	Differentiate between chromosomes and chromatin.
3	Write down two functions of phloem tissue.
4	Define magnification and resolution power.
5	What is centrosome?
6	Define turgor pressure.
7	Why is the cell membrane called a semi-permeable barrier?
8	What is a hypertonic solution and hypotonic solution?
9	Explain the fluid mosaic model.
10	Differentiate between magnification and resolving power.
11	What is meant by cytoskeleton?
12	Differentiate between primary and secondary cell wall.

13	State the cell theory.
14	What is meant by cytoplasm?
15	Write two functions of cytoplasm.
16	Differentiate between diffusion and facilitated diffusion.
17	Define plasmodesmata.
18	What is Micrograph?
19	Define diffusion and facilitated diffusion.
20	Differentiate between sieve tube cells and companion cells.
21	What are thylakoids?
22	Define active transport.
23	Differentiate between transmission electron microscope (TEM) and scanning electron microscope (SEM).
24	How did Robert Hooke discover the cells?
25	What is endocytosis? Write its two forms.

S.No	Most Important Short Questions (Chapter # 5)
1	What is metastasis?
2	What changes take place in metaphase-1 during meiosis?
3	Differentiate between chiasmata and crossing over.
4	Differentiate between diploid and haploid cells.
5	What is the difference between malignant and benign tumors?
6	When and who observed the process of mitosis?
7	How does meiosis produce variations in the next generation?
8	What do you know about G ₀ -phase?
9	Define crossing over.
10	What changes occur in a cell during the S-phase of the cell cycle?
11	How does asexual reproduction take place in Hydra?
12	Why is meiosis called reduction division?
13	Write the name of phases of karyokinesis (in sequence).
14	Differentiate between disjunction and non-disjunction.
15	What is crossing over and where does it occur?
16	How does cytokinesis occur in animals?
17	Define cell cycle.
18	How does cytokinesis occur in plants?
19	What is meant by apoptotic bodies?
20	Differentiate between karyokinesis and cytokinesis.
21	What is meant by metastasis?
22	Define meiosis.
23	How does phragmoplast form in plant cells?

24	What is meant by tetrad?
25	Compare chromosomes and chromatin.
26	Write any one significance of meiosis.
27	Define mitosis.
28	Differentiate between growth and development.
29	Why is mitosis absent in prokaryotes?
30	What is synapsis? Where does it occur?
31	Define karyokinesis.
32	Define chromosomes.
33	What is the difference between somatic cells and germ line cells?
34	How do blebs differ from apoptotic bodies?
35	What is binary fission?
36	Write down the causes of tumor formation.
37	What is meant by regeneration?
38	Differentiate between benign and malignant tumors.
39	How does mitosis help in cell replacement in the body?
40	Differentiate between disjunction and non-disjunction.
41	Define synapsis.
42	What is meant by tumor?
43	What is the role of lysosomes in necrosis?
44	How does phragmoplast form in cytokinesis?
45	Define cell cycle. Name its two major phases.
46	What is meant by metastasis?

S.No	Most Important Short Questions (Chapter # 6)
1	Define activation energy.
2	What is meant by denaturation of enzyme?
3	Define inhibitors and activators.
4	What is meant by co-factors and co-enzymes?
5	Write any two uses of enzymes.
6	How do enzymes affect to lower the activation energy? Write any two factors.
7	Define metabolism.
8	How does the value of pH affect the working of an enzyme? Give an example.
9	Write the use of enzymes in the food industry.
10	Define biological detergent.
11	Define prosthetic group.
12	Which is called a biological detergent?
13	What is co-enzyme? Write its one function.
14	Define biocatalysts and write two benefits of biocatalysts.
15	Differentiate between intracellular and extracellular enzymes.
16	Define optimum temperature.

17	Write down the use of enzymes in the brewing industry.
18	How enzymes work together in metabolic pathways?
19	Define Optimum pH with an example.
20	Write down two characteristics of enzymes.
21	What is the function of amylase and lipase?
22	How enzymes lower the activation energy?
23	Define the specificity of enzyme. Give an example.
24	Why are enzymes called biocatalysts?
25	What is the role of enzymes in the paper industry?
26	Name two important vitamins which act as coenzymes.
27	How are enzymes used as biological detergents?
28	Describe Emil Fischer's Lock and Key model.
29	Define "Lock & Key Model" of enzymes.
30	Differentiate between anabolism and catabolism.
31	Why is the induced fit model more acceptable?
32	Explain the induced-fit model.
33	What is meant by enzyme activity?
34	What is meant by Emil Fischer's Lock and Key model?
35	How do fertilizers affect enzyme activity?

S.No	Most Important Short Questions (Chapter # 7)
1	Define glycolysis.
2	What is Krebs Cycle?
3	Write down two important uses of fermentation (Anaerobic Respiration).
4	Define ATP.
5	Define pigments.
6	Why is ATP called the currency of energy of all cells?
7	Define respiration.
8	What are redox reactions?
9	What is meant by Photolysis of water?
10	What is the role of chlorophyll in photosynthesis?
11	What do you mean by photosystem?
12	How does temperature affect photosynthesis?
13	Define photosynthesis.
14	Why is it incorrect to say that the energy-releasing step of respiration is the electron transport chain?
15	Write the effects of carbon dioxide concentration on the process of photosynthesis.
16	Which products are produced during photosynthesis?
17	What is the Z-Scheme and why is it called so?

18	Differentiate between aerobic respiration and anaerobic respiration.
19	Write down the effect of temperature on photosynthesis.
20	Define glycolysis and write down name of its products.
21	Which compound enters into Kreb's cycle?

S.No	Most Important Short Questions (Chapter # 8)
1	Define dietary fiber.
2	Define macronutrients and micronutrients.
3	Define insoluble dietary fibers.
4	What is vascular surgery?
5	What do you know about night blindness?
6	What is night blindness?
7	Why is vitamin C important?
8	What is the Cohesion-Tension Theory?
9	What is the role of calcium in the human body?
10	Differentiate between major minerals and trace minerals.
11	Differentiate between nutrition and nutrients.
12	How will you differentiate between bolus and chyme?
13	What is meant by bolus?
14	What is the effect of Chyme on pepsin?
15	What is optimum temperature?
16	Write down two symptoms of scurvy.
17	Give two symptoms of constipation.
18	What is oral cavity? Write its two functions.
19	What is mastication?
20	What is the role of calcium in plants?
21	Write down the role of nitrogen in plants.
22	What is fertilizer? Write names of types of fertilizer.
23	Define saturated fatty acids.
24	Which diseases occurs due to lack of vitamin "C" and "D"

S.No	Most Important Short Questions (Chapter # 9)
1	Differentiate between cohesion and adhesion.
2	Write names of two proteins present in blood plasma.
3	Differentiate between atherosclerosis and arteriosclerosis.
4	What are eosinophils? Write down one function.
5	Define leukocytes.
6	Write the effects of dengue fever on platelets.
7	Write down the names of different chambers of the human heart.
8	Define heart rate and pulse rate.
9	Define angioplasty and bypass surgery.
10	Write names of mosquitoes that cause Dengue fever and Malaria.
11	Write down any four sources of protein.
12	Describe two preventive measures to avoid Dengue Fever.
13	Write the name of the universal blood donor group and universal recipient group.
14	What is meant by pressure-flow mechanism?
15	How is plasma separated from blood?
16	Define transpiration and write the names of factors that affect its rate.
17	How is pus formed at infectious sites?
18	Define peristalsis.
19	Why is transpiration necessary for plants?
20	Differentiate between source and sink.
21	Define transpiration.
22	What is meant by transpiration pull? Write its advantages.
23	Define Leukemia (blood cancer).
24	Define blood circulatory system.
25	Define arteries and veins.
26	Differentiate between veins and arteries.
27	What is the Rh blood group system, and who discovered it?
28	What is the difference between sources and sinks?
29	What do you know about villi?
30	What is transpirational pull?
31	Which type of blood cells decrease in number during Dengue fever?
32	Why is the human heart called a double pump?
33	Write any two treatments of Dengue fever.

Most Important Long Questions

QUESTION NO. 5 (a+b)

S.No	Chapter # 1
1	Explain population and community level.
2	Write a note on organ and organ system level.
3	Explain any five careers in biology.
4	Define biology and explain its three main divisions.
5	Draw and label a diagram of mitochondria and write down its functions.
6	How is biology related to other sciences?
7	Describe in detail the molecular level and tissue level.
8	Explain organ and organ system level in the organization of living organisms.
9	Write a note on any five careers that students of biology can adopt.
10	Explain the relationship of biology with five other branches of science.
11	Explain molecular and tissue levels.
12	Write a note on community level in biological organization and compare it with the population level.

S.No	Chapter # 3
1	Define taxonomic hierarchy and write with description.
2	Write down any five effects of deforestation.
3	Define endangered species and discuss any three types of endangered species in Pakistan.
4	Write a note on three kingdom classification system.
5	Define deforestation. Explain causes and effects of deforestation.
6	Explain three main types of organisms placed in Kingdom Protista.
7	What is biodiversity? Explain its importance.
8	Define binomial nomenclature and give its significance.
9	Explain the impact of human beings on biodiversity.
10	What is a taxon? How are taxa used in the classification of organisms?
11	Write a note on five kingdom classification.
12	Which are the last three taxa of classification?

13	Write three major steps taken by the Government of Pakistan for the conservation of biodiversity.
14	What are endangered species? Write about endangered species in Pakistan.
15	Define the term "Extinct" and explain.

QUESTION NO. 6 (a+b)

S.No	Chapter # 4
1	Explain the major differences between prokaryotic and eukaryotic cells.
2	Write a note on Golgi apparatus and lysosome.
3	Explain the structure and function of the cell membrane.
4	Explain endocytosis with a labelled diagram.
5	Write down the structure and function of the nucleus with the help of a diagram.
6	Explain the support tissues of plants.
7	Describe the structure and function of ribosomes with a diagram.
8	Explain the fluid mosaic model with a diagram.
9	Write a note on lysosomes and explain them with a labelled diagram.
10	Explain the difference between plant and animal cells with a diagram.
11	Draw and label the structure of the nucleus. Explain its structure.
12	Explain the structure of the cell wall.
13	Explain the processes of endocytosis and exocytosis.
14	Explain centrioles and vacuoles in detail.
15	How does the surface area-to-volume ratio limit cell size? Explain.

S.No	Chapter # 6
1	Write a note on the uses of enzymes.
2	Explain the mechanism of enzyme action.
3	Which factors affect the rate of enzyme action?
4	Write characteristics of enzymes.
5	Define metabolism, anabolism, and catabolism.
6	What is the use of enzymes in different industries?
7	Describe the effect of temperature and pH on rate of enzyme action.
8	Write down the note on specificity of enzyme.

QUESTION NO. 7 (a+b)

S.No	Chapter # 7
1	Explain the mechanism of respiration.
2	Write a note on ATP as the cell's energy currency.
3	Describe digestion and absorption of food in the small intestine.
4	Write a detailed note on the electron transport chain.
5	Write a note on aerobic and anaerobic respiration.
6	Explain photosynthesis with the help of an equation.
7	Describe events that occur in the light reaction.
8	Write a note on limiting factors in photosynthesis.
9	Explain with a diagram oxidation-reduction reactions.
10	Describe the light reaction of photosynthesis in detail.
11	Write a note on the dark reaction of photosynthesis.
12	Write down a note on the energy budget of respiration.

S.No	Chapter # 8
1	Describe the disorders of the gut in detail.
2	What is diarrhea? Write down its causes and treatment.
3	Describe the complete digestion in the small intestine.
4	Write a detailed note on the structure and function of the human liver.
5	Write down a comprehensive note on dietary fiber.
6	What are fertilizers? Give their importance and related environmental hazards.
7	Describe in detail the digestion in the stomach.
8	Write down any five nutrients' roles in the life of plants in detail.
9	What is malnutrition? Describe the effects of malnutrition.
10	Describe the digestion of food in the small intestine.
11	Write down a note on digestion in the large intestine.
12	Define vitamins and discuss vitamin A and vitamin D in detail.