F.Sc PART II CLASS CHEMISTRY GUESS PAPER 2023.

ALL PUNJAB BOARD

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SLO'S BASED EXAMINATION.

B I O L O G Y

CHAPTER NO. 15 HOMEOSTASIS

SHORT QUESTIONS.

1. Differentiate between osmoonformers and osmoregulators.
2. Name the organs of urinary system and write their major functions.
3. What are causes of kidney failure?
4. By what physical processes do solutes enter or leave blood during dialysis?
5. What is a main problem with a kidney transplant once it has been carried out?
6. Describe the importance of kidney donation for the benefit of kidney failure patients.
7. Define anhydrobiosis with an example
8. Wht is a renal failure?

LONG QUESTIONS:

1. Describe the structure of nephron in detail.
2. Explain causes and treatment of kidney stone.
3. What is a dialysis? Why it is required? Write a note on types of dialysis.
4. Account the excretory system in earthworm.
5. Highlight the role of liver an an excretory organ.

CHAPTER NO. 16 SUPPORT AND MOVEMENTS

SHORT QUESTIONS.

1. Define heartwood. And sap wood.
2. Difference between Phototactic movement and chemotactic movement.
3. Define A band and I band.
4. What is cross bridges?
5. Define antagonism.
6. Difference between effective stroke and recovery stroke.
7. Difference between tetanus and muscle tetany?
8. What is a ligament and nutation?
9. Distinguish between the following. Osteocytes and osteoblast. Bone and cartilage.

LONG QUESTIONS:

1. Define Joints. How the they classified? Explain.
2. Describe a hinge joint and explain how it is moved by antagonistic muscle.
3. Define secondary growth explain.
4. Difference between exoskeleton and endoskeleton.
5. List the functions of skeleton.
6. Distinguish between fibrous, cartilaginous and synovial joints.

CHAPTER NO. 17 COORDINATION AND CONTROL

SHORT QUESTIONS.

1. Difference between CNS and PNS?
2. Define the term hormone.
3. What are the commercial applications of auxins?
4. Define biological rhythms and circannal.
5. Difference between Receptors and Effecgtors.
6. Difference between Dendron and dendrites.
7. Define salutatory impulse.
8. Define sympathetic system and parasympathetic system.
9. What is Epilepsy.
10. Difference between Nervous coordination and Chemical coordination.
11. Difference between instinctive behavior and learning behavior.

LONG QUESTIONS:

1. Define nerve impulse. Explain the mechanism involved by labelled diagram.
2. How is the nervous system of Planaria better developed than that of hydro?
3. Describe the structure and functions of the different parts of human brain.

CHAPTER NO. 18 REPRODUCTION:

SHORT QUESTIONS.

1. Define vernalisation.
2. Difference between Asexual and Sexual production.
3. How is a seed formed?
4. Difference between oogenesis and spermatogenesis in humans?
5. What is the importance of seed in the life cycle of a plant?

LONG QUESTIONS:

1. Describe human menstrual cycle.
2. What structures are associated with the human female reproductive system? What are their functions?
3. What are functions of Placenta during pregnancy?

CHAPTER NO. 19 GROWTH AND DEVELOPMET.

SHORT QUESTIONS.

1. Define Primary and secondary growth.
2. Define correlation
3. Difference between inhibitory and compensatory effect.
4. Difference between hypoblast and epiblast.
5. Define regeneration.
6. What is differentiaton?
7. Define embryonic induction.
8. Difference between growth and development.
9. What is meristem?

LONG QUESTIONS:

1. What is growth, discuss different phases and condition for growth?
2. What is development, describe the principles of development in detail.

CHAPTER NO. 20 CHROMOSOMES AND DNA.

SHORT QUESTIONS.

1. Define Karyotype.
2. Define heterochromatin and euchromatin.
3. Define semi-conservative.
4. What are the three major classes of RNA?
5. What is the function of RNA polymerase in transcription?
6. What is the three dimensional shapes of DNA?

LONG QUESTIONS:

1. "What is the three dimensional shape of DNA? How does three dimensional shape of DNA fit with Chargaff's observations on the proportions of purines and pyrimidine's in DNA?
2. How did Hershey and Chase determine which components of bacterial viruses contain the hereditary information?

CHAPTER NO. 21 CELL CYCLE.

SHORT QUESTIONS.

1. Difference between necrosis and apoptosis.
2. What are the functions of mitotic apparatus?
3. How can you identify the cancer cells?
4. Give importance and significance of meiosis.
5. Define chromosomal non disjunction.
6. Define cell cycle. Highlight its importance and significance.
7. In interphase a resting phase? Why?
8. In what respect does mitosis in plant cells differ from that in animal cells?

LONG QUESTIONS:

1. Why and how do the chromosomes get separated during anaphase of mitosis?
2. What is the role of centriole in an animal cell? How is this function carried out in plant cell
3. Compare Mitosis with meiosis and describe their importance.
4. Describe meiosis and explain its significance.

CHAPTER NO. 22. VARIATION AND GENETICS.

SHORT QUESTIONS.

1. X-linked traits pass direct from father to son.
2. A homozygote forms all games of the same type.
3. Carries of haemophilia show no symptoms of the disease.
4. Differentiate between Phenotype and genotype, Gene and allele, Allele and multiple allele. X-linked trait and Y-linked trait. Continuous and discontinuous variations.
5. What is a test cross? Why did Mendel devise this cross?
6. What is a universal blood donor?
7. How can linked genes be separated from each other?
8. What is multifactorial inheritance?
9. What is MODY?

LONG QUESTIONS:

1. What is incomplete dominance? Explain it with an example.
2. Define Mendel's law of segregation. Explain it with an example
3. Define Mendel's law of independent assortment. Explain it with an example.
4. What is codominance? Explain the phenomenon of codominance with an example.
5. Discuss the genetics of colour-blindness or hemophilia.

CHAPTER NO. 23 BIOTECHNOLOGY

SHORT QUESTIONS.

1. Define Taq polymerase.
2. Define bioreactors.
3. What is Dolly.
4. Explain and give examples of ex vivo and in vivo gene therapies in humans?
5. Define protoplasts.
6. Define cloning of a gene.
7. Define transgenic organisms.
8. What is gene therapy
9. How and why transgenic animals that secrete a product are often cloned?

LONG QUESTIONS:

1. What is the methodology for producing recombinant DNA to be used in gene cloning?
2. What is DNA finger printing a process that utilizes the entire genome?

CHAPTER NO. 24 EVOLUTION

SHORT QUESTIONS.

1. State endosymbiont hypothesis.
2. Define population genetics.
3. How does fossil record provide evidence of evolution?
4. How are evolutionary relationships reflected in DNA and proteins?
5. State Hardy Weinberg theorem.
6. What is the difference between endangered species and threatened species?
7. Name any five species, declared extinct in Pakistan.

LONG QUESTIONS:

1. State and explain Hardy-Weinberg theorem.
2. Describe evidences of evolution from any five branches of biology.

CHAPTER NO. 25 ECOSYSTEM

SHORT QUESTIONS.

1. Define Ecosystem.
2. Define population and community
3. Define Habitat.
4. Define synecology or community ecology.
5. Difference between Biotic and Abiotic components.
6. Define producers and consumers and decomposers.
7. Define predation and infestations.
8. What are the biogeochemical cycle?
9. Sketch three main steps in nitrogen cycle.
10. Define gazing.
11. Difference between autecology and synecology.

LONG QUESTIONS:

1. Define environment. What must environment supply for insect, green, plants, birds animals and people.
2. Define succession. Discuss succession on land.

CHAPTER NO. 26 SOME MAJOR ECOSYSTEMS

SHORT QUESTIONS.

1. Define plankton.
2. Define productivity of an ecosystem.
3. Name three zones in Lake Ecosystem.
4. Give the names of some major ecosystems on land in Pakistan.
5. How many biomes are present in the world, name only five of them?

LONG QUESTIONS:

1. Distinguish between three different zones in the lake-ecosystem.
2. What are the four major requirements for life? Which two are limiting in terrestrial ecosystem?