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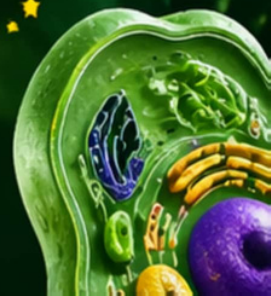
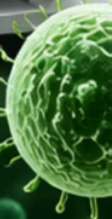
BIOLOGY

HSC-I

GUESS PAPER

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Short Questions | Long Questions | Most Important Topics

Chapters: 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 11 · 12 · 13 · 15

PREPARED BY: STUDY BEES ● FBISE BOARD ● ANNUAL 2026
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CH — 01 | CELL & SUB-CELLULAR ORGANELLES

◆ SHORT QUESTIONS ◆

- Q1. Structures and composition of different cell wall layers?
- Q2. What are the functions of plasma membrane proteins?
- Q3. What are the advantages of induced pluripotent cells?
- Q4. Diagram of mitochondria with functions of the labelled parts?
- Q5. Double membraneous, single and non membraneous organelles.
- Q6. Why lysosomes are called suicidal bags?

◆ LONG QUESTIONS ◆

- L1. Structure and functions of cytoplasm
- L2. Endoplasmic reticulum and its types?

CH — 02 | BIOLOGICAL MOLECULES

◆ SHORT QUESTIONS ◆

- Q1. Peptide linkage?
- Q2. **Page 65 Bees tables most important.**
- Q3. Roles of waxes and terpenes?
- Q4. What are prostaglandins?
- Q5. Clover leaf model of tRNA?
- Q6. **Properties of Water?**
- Q7. Sequence of Amino Acid?
- Q8. Phospholipids?
- Q9. Steroids?

◆ LONG QUESTIONS ◆

- L1. Glycosidic linkage in sucrose, lactose and maltose?
- L2. Structural conformations in proteins?
- L3. What are acylglycerol explain with equations?

CH — 03 | ENZYMES

◆ SHORT QUESTIONS ◆

- Q1. What are ribozymes?
- Q2. Types of cofactor?
- Q3. How activation energy effects the rate of enzymatic reaction? With Graph?
- Q4. Explain the examples of non-competitive inhibition?
- Q5. What are prosthetic groups?
- Q6. Describe ions of heavy metals as irreversible non-competitive inhibitors?

◆ LONG QUESTIONS ◆

- L1. Differentiate between both models of enzyme action (At least 6)?
- L2. Classification of enzymes?
- L3. Factors affecting enzyme action? Explain with graphs?

CH — 04 | BIOENERGETICS

◆ SHORT QUESTIONS ◆

- Q1. Explain role of light in photosynthesis? Action spectrum graph also?
- Q2. Explain the oxidation of Pyruvate to Acetyl Co-A?
- Q3. What are the components of respiratory electron transport chain?
- Q4. What are different types of fermentation? Explain.
- Q5. Role of water in photosynthesis?
- Q6. Absorption spectrum?

◆ LONG QUESTIONS ◆

- L1. Calvin Cycle?
- L2. Z-Scheme of photosynthesis?
- L3. Krebs Cycle?
- L4. Glycolysis?

CH — 05 | ACELLULAR LIFE

◆ SHORT QUESTIONS ◆

- Q1. Classification of viruses on the basis of capsid and genome.
- Q2. How do virus survive unfavourable conditions outside the host?
- Q3. What are prions and viroids?
- Q4. What are opportunistic diseases?
- Q5. Which actions are not the causes of AIDS?
- Q6. What is meant by host guest and master slave relationship in lytic and lysogenic cycle? (M.Imp)

◆ LONG QUESTIONS ◆

- L1. Life Cycle of HIV?
- L2. Lytic and lysogenic cycle in detail?

CH — 06 | PROKARYOTES

◆ SHORT QUESTIONS ◆

- Q1. What is meant by exponential growth of bacteria?
- Q2. Phases of growth with graph? (M.Imp)
- Q3. Experiment of Lederberg and Tatum?
- Q4. What is chemotherapy?
- Q5. What are some physical methods to control bacteria?
- Q6. Diversity of shape and size in bacteria?
- Q7. Bacterial flora of humans? (Imp)

◆ LONG QUESTIONS ◆

- L1. What are cyanobacteria?
- L2. Endospore formation in bacteria?
- L3. Modes of nutrition in bacteria? (Both)

CH — 07 | PROTISTS AND FUNGI

◆ SHORT QUESTIONS ◆

- Q1. Why fungi are classified as separate kingdom?
- Q2. What are lichens?
- Q3. Mycorrhizae?
- Q4. What are edible fungi?

◆ LONG QUESTIONS ◆

- L1. What are ecological impacts of fungi?

CH — 08 | KINGDOM PLANTAE

◆ SHORT QUESTIONS ◆

- Q1. What are some plant adaptations in bryophytes?
- Q2. What is meant by heteromorphic alternation of generation?
- Q3. What is meant by circinate vernation?
- Q4. Botanical names in exercise?
- Q5. Classification of angiosperms table?

◆ LONG QUESTIONS ◆

- L1. Psilopsida, Lycopsida and Sphenopsida?

CH — 09 | DIVERSITY IN PLANT FUNCTION

◆ SHORT QUESTIONS ◆

- Q1. Why carnivorous plants prey on insects?
- Q2. Explain uptake of water by roots and pathways?
- Q3. Explain movement of water in and out of the cell in different osmotic conditions?

- Q4.** What are the adaptations in plants to cope with low and high temperature?
- Q5.** Plant growth regulators?
- Q6.** What is meant by interconversion of phytochromes?
- Q7.** Thermoregulation in plants?

◆ LONG QUESTIONS ◆

- L1.** Explain ascent of sap?
- L2.** Explain opening and closing of stomata by two theories?
- L3.** Explain tropic movement in plants?
- L4. Photoperiodism (M.Imp)**
- L5. Vernalization? (M.Imp)**
- L6.** Translocation of organic solutes? (With diagram)

CH — 11 | REPRODUCTION

◆ SHORT QUESTIONS ◆

- Q1.** Explain the hormone regulation of male reproductive system?
- Q2.** List the sequence through which sperm passes from the seminiferous tubules of testes to the fallopian tube of the female?
- Q3.** Role of corpus luteum in menstrual cycle?

◆ LONG QUESTIONS ◆

- L1. Female reproductive system with diagram? (Imp)**
- L2.** Hormonal regulation of female reproductive system with graph?

CH — 12 | INHERITANCE

◆ SHORT QUESTIONS ◆

- Q1.** Differentiate between incomplete and co-dominance?
- Q2.** Explain the transmission principle of ABO BG system?
- Q3.** Differentiate between dominance and epistasis?
- Q4.** Patterns of sex determination?
- Q5.** Cross numericals in Exercise + pg 332 + pg 334
- Q6.** Sex linkage in humans?
- Q7.** Sex linked disorders in humans?

◆ LONG QUESTIONS ◆

- L1.** Explain polygenic inheritance in wheat colour?
- L2.** Define epistasis by the example of labrador retriever?
- L3.** Pedigree charts on page 337?

CH — 13 | CHROMOSOMES, DNA & GENE EXPRESSION

◆ SHORT QUESTIONS ◆

- Q1.** Models of DNA Replication?
- Q2.** Explain post transcriptional modifications of mRNA?

Q3. Down syndrome, Klinefelter syndrome and Turner syndrome?

Q4. Phenylketonuria?

Q5. Useful aspects of mutation?

◆LONG QUESTIONS◆

L1. How it was proved that DNA replication is according to semi-conservative model? All Experiments?

L2. Mechanism of DNA Replication?

L3. Gene Expression?

L4. Translation?

CH — 15 | ECOLOGY

◆SHORT QUESTIONS◆

Q1. Explain the trophic levels?

Q2. What is the role of decomposers in an ecosystem?

◆LONG QUESTIONS◆

L1. What is meant by xerarch succession?

L2. Nitrogen cycle?

■ **NOTE:** Questions marked in RED / BOLD are Most Important (M.Imp). Prepare all short and long questions thoroughly. Best of Luck! — Study Bees Official