

chapter wise biology 12 mcq question

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Introduction

When it comes to mastering 12th grade biology, one of the most effective tools in a student's arsenal is the chapter wise biology 12 MCQ question bank. Multiple choice questions (MCQs) are not only a staple of competitive examinations such as the JEE, NEET, and various state board tests, they also serve as a powerful method of self assessment, reinforcing concepts and revealing gaps in understanding. By organizing MCQs on a chapter by chapter basis, learners can systematically target each unit of the curriculum, ensuring comprehensive coverage without the risk of overlooking crucial topics. This article will guide you through the benefits of a chapter wise approach, provide sample questions for each major chapter, and share proven strategies for effective revision and exam success.

The Power of Chapter Wise Biology 12 MCQ Questions

Biology is a subject that thrives on depth, interconnectivity, and application. A chapter wise biology 12 MCQ question set offers several distinct advantages:

- **Focused Revision** – Instead of juggling the entire syllabus, students can concentrate on one chapter at a time, allowing for deeper conceptual understanding.
- **Progress Tracking** – By keeping a record of correct and incorrect answers per chapter, learners can monitor improvement and identify persistent weak areas.
- **Time Management** – During exam practice, a chapter wise layout helps allocate time proportionally based on difficulty and personal familiarity.
- **Exam Pattern Familiarity** – Many competitive exams present questions in a chapter specific manner. Practicing with chapter wise biology 12 MCQs mirrors this format, building confidence.
- **Resource Efficiency** – Teachers and tutors can design targeted study plans, and parents can guide their children more effectively.

Understanding the 12th Biology Syllabus Structure

The CBSE 12th biology syllabus is divided into eight main chapters, each addressing a distinct theme:

1. Cell Structure and Function
2. Cell Cycle and Cell Division
3. Genetics
4. Biotechnology and its Applications
5. Evolution
6. Ecology and Biodiversity
7. Human Physiology
8. Reproductive Biology

Each chapter contains sub topics that can be further broken down into specific concepts, such as the structure of the nucleus, mitotic checkpoints, or Mendelian inheritance patterns. By mapping MCQs to these sub topics, students can achieve granular mastery.

Sample Chapter Wise MCQs for 12th Biology

Below you will find a curated set of multiple choice questions for each chapter. These questions are designed to test conceptual understanding, application, and analysis, mirroring the style of national board examinations.

Chapter 1: Cell Structure and Function

1. Which of the following organelles is primarily responsible for ATP production?

- A) Ribosome
- 2. B) Mitochondrion
- 3. C) Golgi apparatus
- 4. D) Endoplasmic reticulum

- A) Store proteins
- B) Synthesize DNA
- C) Maintain turgor pressure
- D) Produce ribosomes

- A) Lipids only
- B) Proteins only
- C) Lipids and proteins
- D) Carbohydrates only

- A) Protein synthesis
- B) Lipid synthesis
- C) Storage of ions
- D) DNA replication

- A) Only chemical signals
- B) Only electrical signals
- C) Both chemical and electrical signals
- D) Neither chemical nor electrical signals

Chapter 2: Cell Cycle and Cell Division

1. The G2 phase of the cell cycle is primarily associated with:

- A) DNA replication
- 2. B) Preparation for mitosis
- 3. C) Cell growth
- 4. D) Cytokinesis

- A) Prophase
- B) Metaphase
- C) Anaphase
- D) Telophase

- A) Cyclin B
- B) Cdk1
- C) Anaphase-promoting complex (APC)
- D) p53

- A) Diploid cells

- B) Haploid gametes
- C) Polyploid cells
- D) Aneuploid cells
- A) G1 checkpoint
- B) G2 checkpoint
- C) M checkpoint
- D) S checkpoint

Chapter 3: Genetics

1. According to Mendel, the law that states that a trait is inherited from a single pair of alleles is called:

- A) Law of Segregation
- 2. B) Law of Independent Assortment
- 3. C) Law of Dominance
- 4. D) Law of Incomplete Dominance

- A) 9:3:3:1
- B) 3:1
- C) 1:1:1:1
- D) 9:6:2:1
- A) Silent mutation
- B) Missense mutation
- C) Nonsense mutation
- D) Both B and C
- A) Gene duplication
- B) Gene deletion
- C) Gene fusion
- D) All of the above
- A) Blood type
- B) Eye color
- C) Cystic fibrosis
- D) Sickle cell anemia

Chapter 4: Biotechnology and its Applications

1. CRISPR-Cas9 technology primarily works by:

- A) Randomly mutating DNA
- 2. B) Targeted DNA cleavage
- 3. C) Enhancing gene expression
- 4. D) Suppressing protein synthesis
- A) PCR
- B) DNA sequencing
- C) Isothermal amplification
- D) Rolling circle amplification
- A) DNA polymerase
- B) Ligase

- C) Helicase
- D) Primase
- A) Fermentation
- B) Gene therapy
- C) Transgenic crops
- D) Cell culture
- A) Create genetically modified organisms
- B) Produce identical copies of an organism
- C) Sequence genomes
- D) Repair damaged DNA

Chapter 5: Evolution

1. Natural selection acts upon:

- A) Genes only
- B) Traits only
- C) Individuals with heritable traits
- D) Populations as a whole

- A) Fossil record
- B) Comparative anatomy
- C) Molecular biology
- D) All of the above
- A) Evolution is gradual and constant
- B) Evolution occurs in rapid bursts followed by stasis
- C) Evolution is driven solely by mutation rates
- D) Evolution is random
- A) Eukaryotes
- B) Prokaryotes
- C) Viruses only
- D) Plants only
- A) Genetic drift
- B) Gene flow
- C) Mutation
- D) Natural selection

Chapter 6: Ecology and Biodiversity

1. Biomass in an ecosystem is measured in:

- A) Grams per square meter
- B) Joules per square meter
- C) Kilocalories per square meter
- D) All of the above

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