

# PRACTICE QUESTIONS

## CHAPTER 6 - Molecular Biology of the Gene

**Chromatin condenses in a final shape called \_\_\_\_\_.**

- A. Chromosome**
- B. RNA**
- C. Nucleotide**
- D. Gene**

**Nucleic acids (DNA or RNA) are composed of:**

- A. Nucleotides**
- B. Monosaccharides**
- C. Amino acids**
- D. Fatty acids and glycerol**

**DNA information is transcribed into \_\_\_\_\_.**

- A. Nucleic acid**
- B. Single-strand RNA**
- C. Amino acids**
- D. Double-strand DNA**

الجواب : B

**Which of the following bases is found in RNA but not DNA?**

- A. Cytosine**
- B. Adenine**
- C. Uracil**
- D. Thymine**

The process of copying a gene's DNA sequence into a sequence of RNA is called \_\_\_\_\_.

- A. Replication.
- B. Translation
- C. Transcription
- D. Photosynthesis

**Transcription and translation of a gene composed of 30 nucleotides would form a protein containing no more than \_\_\_\_\_ amino acids.**

- A. 10**
- B. 30**
- C. 60**
- D. 90**

**A DNA strand with the sequence AACGTAACG is transcribed. What is the sequence of the mRNA molecule synthesized?**

- A. TTCGTAACG**
- B. UUGCAUUGC**
- C. UUCGUAACG**
- D. TTGCATTGC**



The sugar in RNA is \_\_\_\_\_ , the sugar in DNA is \_\_\_\_\_.

- A. Deoxyribose / Ribose
- B. Ribose / Dextrose
- C. Ribose / Deoxyribose
- D. Deoxyribose / Glucose

**How many amino acids are encoded by the universal genetic code?**

- A. 3**
- B. 12**
- C. 20**
- D. 100**

الجواب : C

**Each nucleotide in a DNA molecule consists of:**

- A. phosphate group, hexose sugar and nitrogenous base.**
- B. sulfonyl group, pentose sugar, and nitrogenous base.**
- C. phosphate group, pentose sugar and nitrogenous base.**
- D. phosphate group, glucose , and nitrogenous base.**

**A stretch of chromosome that codes for a trait is called:**

- A. Chromatin**
- B. Gene**
- C. Chromatid**
- D. Histone**

**Translation is the process by which:**

- A. mRNA is created from DNA.**
- B. mRNA is created from proteins.**
- C. mRNA is decoded in ribosomes to protein**
- D. All of the above**

**Which of the following is a purine?**

- A. Cytosine**
- B. Adenine**
- C. Uracil**
- D. Thymine**

The product of translation is a \_\_\_\_\_.

- A. t- RNA
- B. Protein
- C. r-RNA
- D. m-RNA

**Which of the processes below occur in the nucleus?**

- A. Replication and translation**
- B. Replication and transcription**
- C. Transcription and translation**
- D. All of the above**



**A codon is a sequence of \_\_\_\_\_ nucleotides.**

**A. 2**

**B. 3**

**C. 4**

**D. 6**

**During translation, a nucleotide sequence is converted into a/an \_\_\_\_\_.**

- A. Monosaccharide sequence**
- B. Amino acid sequence**
- C. Fatty acids sequence**
- D. Nucleic acids sequence**

**Translation is the process by which:**

- A. mRNA is created from DNA.**
- B. mRNA is created from proteins.**
- C. mRNA is decoded in ribosomes to protein**
- D. All of the above**

## **Nucleic acids**

- A. are also called nucleotides**
- B. do not contain purine**
- C. are polymers**
- D. do not contain uracil**

**DNA replication results in:**

- A. 2 completely new DNA molecules**
- B. 1 new molecule of RNA**
- C. 1 new DNA molecule, 1 old molecule is conserved**
- D. 2 DNA molecules that each contain a strand of the original**

**DNA replication follows a \_\_\_\_\_ model.**

- A. Conservative**
- B. Semi-Conservative**
- C. Semi-Parallel**
- D. Dispersive**

**In prokaryotic cells, transcription takes place in the \_\_\_\_\_.**

- A. Nucleus**
- B. Nucleolus**
- C. Cytoplasm**
- D. Ribosome**

**Which of the following are pyrimidines?**

- A. Adenine and Cytosine**
- B. Adenine and Guanine**
- C. Cytosine and Guanine**
- D. Cytosine and Thymine**



**The production of two identical DNA daughters is called:**

- A. Transcription**
- B. Translation**
- C. Replication**
- D. Segregation**

**Which of the following are purines?**

- A. Adenine and Cytosine**
- B. Adenine and Guanine**
- C. Cytosine and Guanine**
- D. Cytosine and Thymine**

\_\_\_\_\_ joins the DNA strands together.

- A. DNA polymerase
- B. DNA ligase
- C. Helicase
- D. Primase

**Which of the processes below occur in the nucleus?**

- A. Replication and translation**
- B. Replication and transcription**
- C. Transcription and translation**
- D. All of the above**

**The enzyme that link DNA nucleotides to a growing daughter strand.**

- A. DNA polymerase**
- B. DNA ligase**
- C. Helicase**
- D. Primase**

**Serves as a template, dictating transcription of a complementary sequence of nucleotides in mRNA.**

- A. Protein**
- B. Gene**
- C. Amino acid**
- D. tRNA**

**When transcription occurs, what molecules are involved?**

- A. DNA and mRNA**
- B. mRNA, and rRNA**
- C. mRNA and tRNA**
- D. DNA and tRNA**

A : الجواب

# PRACTICE QUESTIONS

## CHAPTER 7 : Unifying Concepts Of Animal Structure And Function



**Which of these is not a connective tissue?**

- A. Blood**
- B. Bone**
- C. Muscle**
- D. Cartilage**

**What tissue makes up most of your heart?**

- A. Muscle**
- B. Adipose**
- C. Connective**
- D. Epithelial**

**Which of these are voluntary muscles?**

- A. Only cardiac muscles**
- B. Only smooth muscles**
- C. Skeletal muscles**
- D. Cardiac and smooth muscles**

**The main matrix of bones is \_\_\_\_\_.**

- A. White blood cells**
- B. Plasma**
- C. Calcium and phosphate**
- D. Lipid**

**Red blood cells are found in which type of tissue?**

- A. Nervous tissue**
- B. Connective tissue**
- C. Muscle tissue**
- D. Epithelial tissue**

**Which of the following has a single layer but appears stratified?**

- A. Stratified squamous epithelium**
- B. Pseudostratified columnar epithelium**
- C. Simple squamous epithelium**
- D. Simple cuboidal epithelium**

**Which of the following tissue does cover the body and line organs and cavities?**

- A. Nervous tissue**
- B. Connective tissue**
- C. Muscle tissue**
- D. Epithelial tissue**

**Simple columnar epithelium is found in \_\_\_\_\_.**

- A. Kidneys**
- B. Liver**
- C. Capillaries**
- D. Small intestines**



**What type of muscle is responsible for contractions of the stomach and small intestine?**

- A. Skeletal muscle**
- B. Smooth muscle**
- C. Cardiac muscle**
- D. All of them**

**Which tissue protects organs inside the body?**

- A. Epithelial tissues**
- B. Muscular tissues**
- C. Neurons**
- D. All answers are correct**

**A dense tissue with large number of collagenous fibers organized into bundles. This is the dominant tissue in tendons and ligaments.**

- A. Adipose tissue**
- B. Loose connective tissue**
- C. Fibrous connective tissue**
- D. Cartilage**

**Which epithelial tissue lines the respiratory tract?**

- A. Pseudo-stratified columnar**
- B. Simple columnar**
- C. Simple cuboidal**
- D. Simple squamous**

A : الجواب

The term \_\_\_\_\_ refers to the fact that a tissue has more than one layer of cells.

- A. Stratified
- B. Cuboidal
- C. Simple
- D. Pseudo

**The muscle tissue which is responsible for the voluntary movement of the body is called\_\_\_\_\_.**

- A. Cardiac muscle**
- B. Skeletal muscle**
- C. Smooth muscle**
- D. Loose connective tissue**

**B : الجواب**

**Which of the following connective tissue is responsible for oxygen and nutrients transportation?**

- A. Bones**
- B. Adipose**
- C. Blood**
- D. Cartilage**

الجواب : C

**Which muscle is found in the walls of the digestive tract?**

- A. Cardiac muscle**
- B. Skeletal muscle**
- C. Smooth muscle**
- D. Squamous epithelium**

الجواب : C



**The largest mass of nervous tissues is found in\_\_\_\_\_:**

- A. Brain and spinal cord**
- B. Liver**
- C. Pancreas**
- D. Stomach**

**A : الجواب**

**Cells can be squamous, cuboidal, or columnar.**

- A. Connective tissue**
- B. Muscle tissue**
- C. Nervous tissue**
- D. Epithelial tissue**

**Which of the following tissues is incorrectly paired with its function?**

- A. Connective – Support**
- B. Nervous- Sense stimuli**
- C. Muscular- Movement**
- D. Epithelial – transmit signals**

D : الجواب

**Identify the correct order of the following items, according to size (from smallest to largest):**

- A. Organism-cells-tissues**
- B. Organism- tissues- cells**
- C. Tissues –cells-organism**
- D. Cells – tissues- organism**

**What structure connects bones to other muscles?**

- A. Tendons**
- B. Cartilage**
- C. Ligaments**
- D. Neurons**

A : الجواب

**Adipose tissue is a type of \_\_\_\_\_.**

- A. Muscle tissue**
- B. Nervous tissue**
- C. Epithelial tissue**
- D. Connective tissue**

The only major type of tissue specialized for movement is the \_\_\_\_\_ tissue.

- A. Epithelial
- B. Nervous
- C. Muscle
- D. Connective

**The primary purpose of stratification, or layering, in epithelial tissue is for increased \_\_\_\_\_.**

- A. Protection**
- B. Secretion**
- C. Transmit signals**
- D. Storage**



**Sparse number of cells surrounded by an extracellular matrix. It binds and supports other tissues.**

- A. Muscle tissue**
- B. Connective tissue**
- C. Nervous tissue**
- D. Epithelial tissue**

**Ligaments connect:**

- A. Ends of two muscles**
- B. Bones to bones**
- C. Epithelia to underlying tissues**
- D. Muscles to bones**

**What is a group of cells working together to perform one or more functions?**

- A. Tissue**
- B. Organ**
- C. Organ system**
- D. Organism**

**What organ comes after the skin in term of size?**

- A. Bladder**
- B. Stomach**
- C. Heart**
- D. Liver**

**D : الجواب**

**This type of muscle tissue is found only in the heart.**

- A. Smooth**
- B. Skeletal**
- C. Cardiac**
- D. All of them**

**The epithelial tissue that lines the esophagus is called:**

- A. Pseudo-stratified columnar**
- B. Stratified columnar**
- C. Simple cuboidal**
- D. Stratified squamous**

**D : الجواب**

**The epithelial tissue that lines the capillaries is called:**

- A. Simple squamous**
- B. Stratified columnar**
- C. Simple cuboidal**
- D. Simple columnar**

**Which epithelial tissue lines the trachea ?**

- A. Pseudo-stratified ciliated columnar**
- B. Simple ciliated columnar**
- C. Simple ciliated cuboidal**
- D. Simple ciliated squamous**

A : الجواب



Studying the structure of an organism is called \_\_\_\_\_studying the function is called\_\_\_\_\_.

- A. Physiology/ Anatomy
- B. Ecology /Physiology
- C. Anatomy /Physiology
- D. Physiology /Ecology

C : الجواب

**The blood matrix, is commonly called:**

- A. Collagen**
- B. Serum**
- C. Plasma**
- D. Platelets**

**What type of tissue holds most organs together?**

- A. Adipose tissue**
- B. Smooth muscle tissue**
- C. Loose connective tissue**
- D. Fibrous connective tissue**

**A connective tissue consisting of a dense matrix of collagen fibers and elastic fibers embedded in a rubbery ground substance.**

- A. Adipose**
- B. Cartilage**
- C. Blood**
- D. Bone**

**Lines the ovaries and kidney tubules.**

- A. Simple squamous epithelium**
- B. Simple cuboidal epithelium**
- C. Simple columnar epithelium**
- D. Pseudostratified columnar epithelium**

**Which is a description of nervous tissue?**

- A. Sparse number of cells surrounded by an extracellular matrix. It binds and supports other tissues.**
- B. Cells with branching extensions that form a communication network all over the body.**
- C. Cells with contractile proteins that function mainly in movement.**
- D. Flat sheets of cells that cover the body and line its organs and cavities.**

**Which is a description of epithelial tissue?**

- A. Sparse number of cells surrounded by an extracellular matrix. It binds and supports other tissues.**
- B. Cells with branching extensions that form a communication network all over the body.**
- C. Cells with contractile proteins that function mainly in movement.**
- D. Flat sheets of cells that cover the body and line its organs and cavities.**

**Which is a description of Muscle tissue?**

- A. Sparse number of cells surrounded by an extracellular matrix. It binds and supports other tissues.**
- B. Cells with branching extensions that form a communication network all over the body.**
- C. Cells with contractile proteins that function mainly in movement.**
- D. Flat sheets of cells that cover the body and line its organs and cavities.**