PRACTICE QUESTIONS

CHAPTER 6 - Molecular Biology of the Gene

1

حل : زياد الجهني

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

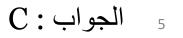
DNA information is transcribed into ______.

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

الجواب : B

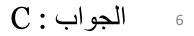
Which of the following bases is found in RNA but not DNA?

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



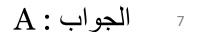
The process of copying a gene's DNA sequence into a sequence of RNA is called ______.

- 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.

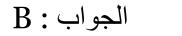
- A. 10
- **B. 30**
- **C.** 60
- **D. 90**



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

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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:

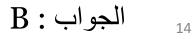
- A. Chromatin
- B. Gene
- C. Chromatid
- D. Histone

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

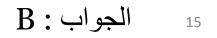
Which of the following is a purine?

- 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

B: الجواب

A codon is a sequence of _____nucleotides.

A. 2
B. 3
C. 4
D. 6

B: الجواب

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.

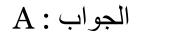
- A. DNA polymerase
- B. DNA ligase
- C. Helicase
- **D.** Primase

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

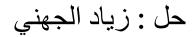
When transcription occurs, what molecules are involved?

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

الجواب : A

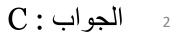
PRACTICE QUESTIONS

CHAPTER 7 : Unifying Concepts Of Animal Structure And Function



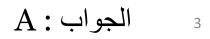
Which of these is not a connective tissue?

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



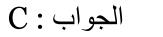
What tissue makes up most of your heart?

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



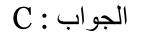
Which of these are voluntary muscles?

- 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

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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

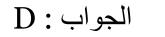
Which of the following tissue does cover the body and line organs and cavities?

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

الجواب: D

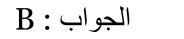
Simple columnar epithelium is found in ______.

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



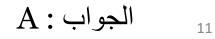
What type of muscle is responsible for contractions of the stomach and small intestine?

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



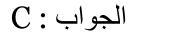
Which tissue protects organs inside the body?

- 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



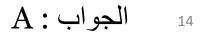
Which epithelial tissue lines the respiratory tract?

•

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

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

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



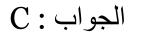
The muscle tissue which is responsible for the voluntary movement of the body is called______.

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



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

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



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

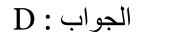
- A. Cardiac muscle
- **B.** Skeletal muscle
- C. Smooth muscle
- D. Squamous epithelium

The largest mass of nervous tissues is found in _____:

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

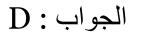
Cells can be squamous, cuboidal, or columnar.

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



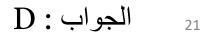
Which of the following tissues is incorrectly paired with its function?

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



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

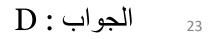


What structure connects bones to other muscles?

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

Adipose tissue is a type of _____.

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

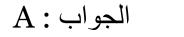


The only major type of tissue specialized for movement is the _____ tissue.

- 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

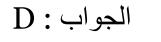
What is a group of cells working together to perform one or more functions?

- 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

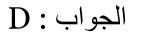


This type of muscle tissue is found only in the heart.

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

The epithelial tissue that lines the esophagus is called:

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



The epithelial tissue that lines the capillaries is called:

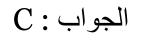
- A. Simple squamous
- **B. Startified columnar**
- C. Simple cuboidal
- **D.** Simple columnar

Which epithelial tissue lines the trachea ?

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

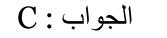
Studying the structure of an organism is called _____studying the function is called _____.

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



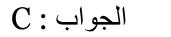
The blood matrix, is commonly called:

- 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.