

Question 1

When forming a protein from 50 amino acid molecules, how many water molecules (H_2O) are produced in this process?

- A) 50 molecules
- B) 49 molecules
- C) 25 molecules
- D) 100 molecules

Question 2

The plasma membrane differs from the cell wall in a plant cell in that it _____.

- A) Is a fully permeable structure thickened with lignin
- B) Is composed mainly of complex carbohydrates only
- C) Is a semi-permeable structure characterized by selective permeability
- D) Is present in all plant cells and absent in animal cells

Question 3

Which of the following is considered a non-membranous cellular structure involved in whose synthesis RNA and proteins participate, and is responsible for protein synthesis?

- A) Centriole
- B) Ribosome
- C) Lysosome
- D) Nucleolus

Question 4

This enzyme reaches its highest activity when its concentration is _____.

- A) 0.1
- B) 0.2
- C) 0.3
- D) 0.4

Question 5

Which of the following describes the relationship between the three figures?

(Where: (1) represents DNA, (2) represents the Cell, and (3) represents Protein)

- A) (1) controls the synthesis of (3) inside (2)
- B) (3) controls the synthesis of (2) inside (1)
- C) (2) controls the synthesis of (1) inside (3)
- D) (1) controls the synthesis of (2) inside (3)

Question 6

From the provided graph, which of the following represents the cell that produces the most ATP molecules?

- A) X (س)
- B) Y (ص)
- C) Z (ع)
- D) L (ل)

Question 7

What is the number of somatic chromosomes in a normal female gamete (egg cell)?

- A) 22
- B) 23
- C) 45
- D) 46

Question 8

What is the number of somatic chromosomes in a skin cell of a female with Turner syndrome?

- A) 22
- B) 44
- C) 45
- D) 46

Question 9

Which of the following is incorrect under normal conditions regarding the nuclear content of a human sperm cell?

- A) A short or long sex chromosome
- B) 22 somatic chromosomes
- C) Half the number of chromosomes found in a somatic cell
- D) A pair of sex chromosomes

Question 10

Which of the following is a common trait among all mammals?

- A) The mother gives birth to live young
- B) The born young are fully developed
- C) The mother nurses her young
- D) The father nurses his young

Question 11

When scientists studied a certain organism, it was found that its genetic material is surrounded by a nuclear membrane, contains chloroplasts, and does not belong to the plant kingdom. What do you expect this organism to be?

- A) Bacteria
- B) Amoeba
- C) *Chlamydomonas* alga
- D) *Euglena*

Question 12

Lactose intolerance is a disorder caused by a genetic defect resulting in the inability to digest lactose. When would you expect this condition to be discovered?

- A) In newborns
- B) In children at 6 years of age
- C) In adults
- D) In the elderly

Question 13

Which of the following substances is not considered an organic compound?

- A) Glycine
- B) Ribose
- C) Steroids
- D) Sodium nitrate

Question 14

An amino acid consists of a constant part and a variable part. The variable part is the _____.

- A) Carboxyl group
- B) Amine group
- C) Alkyl group (R-group)
- D) Hydrogen atom

Question 15

RNA shares a common characteristic with deoxyribonucleic acid (DNA) in _____.

- A) The number of oxygen atoms making up the sugar
- B) The number of hydrogen atoms making up the sugar
- C) All types of nitrogenous bases
- D) None of the above

Question 16

The sequence of amino acids in proteins formed inside the human body is determined according to _____.

- A) Proteins present in food
- B) Amino acids absorbed in the intestines
- C) Digestive system enzymes
- D) Genetic information in DNA

Question 17

Milk helps in building body cells because it contains _____.

- A) Galactose
- B) Simple lipids
- C) Casein
- D) Water

Question 18

A human digestive enzyme digests its substrate at the fastest rate at 20°C. What happens if the enzyme and substrate are placed at 50°C?

- A) The nature of the enzyme changes (denatures) and it stops functioning
- B) The enzyme continues to function at the same rate
- C) The reaction occurs at a faster rate
- D) The reaction occurs at a slower rate