

BIO1001: General Biology - Homework 2

User: Yohandi

Test: Homework 2

Attempt Score: 10 out of 10 points

Questions and Answers

Question 1

The process by which genotype becomes expressed as phenotype is _____.

Selected Answer: [C] gene expression

Correct Answer: C

- A. gene regulation
- B. transcription
- [C] gene expression
- D. translation

Question 2

Which of the following turns off transcription by binding to the operator?

Selected Answer: [B] repressor

Correct Answer: B

- A. RNA polymerase
- [B] repressor
- C. promoter
- D. lactose

Question 3

Repressors act by blocking the binding of _____ to the operator.

Selected Answer: [RNA polymerase]

Correct Answer: RNA polymerase

- promoters
- DNA polymerase
- the operon
- [RNA polymerase]

Question 4

In general, hormones that bind to plasma membrane receptors _____.

Selected Answer: [C] cannot pass through cell membranes

Correct Answer: C

- A. are steroid hormones
- B. bind to DNA and cause changes in transcription
- [C] cannot pass through cell membranes
- D. are produced in the interstitial fluid

Question 5

What would enable a single RNA transcript to be translated into different polypeptides?

Selected Answer: [A] The RNA transcript can be spliced more than one way.

Correct Answer: A

- [A] The RNA transcript can be spliced more than one way.
- B. The coded polypeptide may be modified in more than one way.
- C. The length of the RNA transcript tail can vary.
- D. Two different genes can produce the same RNA transcript, which will then be translated differently.

Question 6

Hershey and Chase proved that DNA is the transforming principle. They observed that the isotope accumulated in the bacteria was:

Selected Answer: [C] ^{32}P

Correct Answer: C

- A. ^{31}P
- B. ^{35}S
- [C] ^{32}P
- D. ^{15}N

Question 7

Which of the following can act as a vector to introduce new genes into a cell?

Selected Answer: [D] plasmids

Correct Answer: D

- A. primers
- B. ligase

- C. restriction enzymes
- [D] plasmids

Question 8

HindIII is a restriction enzyme that cuts the DNA sequence AAGCTT between the two A bases. How many times would HindIII cut the following DNA molecule?

GTAAGCTTCGACAAGCTTGCTGA

Selected Answer: [C] 2 times

Correct Answer: C

- A. 0 times
- B. 1 time
- [C] 2 times
- D. 3 times

Question 9

To make restriction fragments, a DNA sample is treated with _____.

Selected Answer: [B] restriction enzymes

Correct Answer: B

- A. DNA ligase
- [B] restriction enzymes
- C. DNA polymerase
- D. lysozyme

Question 10

Bone is a type of _____.

Selected Answer: [connective tissue]

Correct Answer: connective tissue

- [connective tissue]
- epithelial tissue
- extracellular matrix
- adipose tissue

Question 11

The basic unit of nervous tissue is the _____.

Selected Answer: [C] neuron

Correct Answer: C

- A. dendrite
- B. axon
- [C] neuron
- D. brain

Question 12

Homeostasis _____.

Selected Answer: [C] is the maintenance of a relatively stable internal environment

Correct Answer: C

- A. is the maintenance of an unchanging internal state
- B. is a pathological condition
- [C] is the maintenance of a relatively stable internal environment
- D. is the way the internal environment influences the external environment

Question 13

When body temperature is too low, which of the following occurs?

Selected Answer: [A] Blood vessels in the skin constrict.

Correct Answer: A

- [A] Blood vessels in the skin constrict.
- B. Muscles relax
- C. Sweat glands are activated.
- D. Blood vessels at the body surface dilate and fill with blood.

Question 14

Most nutrient absorption occurs in which part of the digestive system?

Selected Answer: [C] the several meters of the small intestine that come after the duodenum

Correct Answer: C

- A. stomach
- B. duodenum
- [C] the several meters of the small intestine that come after the duodenum
- D. large intestine

Question 15

The epithelial cells lining the intestine have surface projections that increase the area for absorption. These projections are called _____.

Selected Answer: [C] microvilli

Correct Answer: C

- A. villi
- B. mucus
- [C] microvilli
- D. bile

Question 16

Certain amino acids are called essential because they _____.

Selected Answer: [B] cannot be made by the body from other compounds

Correct Answer: B

- A. are required for making protein
- [B] cannot be made by the body from other compounds
- C. store energy
- D. are required for making nucleic acids

Question 17

In prokaryotic and eukaryotic cells, the synthesis of the protein chains is initiated with:

Selected Answer: [D] Methionine

Correct Answer: D

- A. Arginine
- B. Valine
- C. Serine
- [D] Methionine

Question 18

Which of the following is a response of our innate defense system?

Selected Answer: [B] inflammation

Correct Answer: B

- A. active immunity
- [B] inflammation
- C. cell-mediated immunity

- D. movement of red blood cells to the affected site

Question 19

The functions of antibodies include _____.

Selected Answer: [D] the clumping of invader cells

Correct Answer: D

- A. the deactivation of complement proteins
- B. stimulating the production of antigens
- C. the phagocytosis of invading bacteria
- [D] the clumping of invader cells

Question 20

Hormones are usually transported through _____ and affect only cells with _____.

Selected Answer: [C] blood vessels... specific receptors

Correct Answer: C

- A. ducts... specific receptors
- B. intercellular junctions... cell junctions
- [C] blood vessels... specific receptors
- D. blood vessels... cell junctions

Question 21

A substance that can elicit an immune response from a lymphocyte is called a(n) _____.

Selected Answer: [D] antigen

Correct Answer: D

- A. interferon
- B. pathogen
- C. antibody
- [D] antigen

Question 22

When a B or T cell is primed by an interaction with its particular antigen, the cell _____.

Selected Answer: [C] grows, divides, and differentiates further

Correct Answer: C

- A. dies, killing the antigen
- B. engulfs the antigen and destroys it
- [C] grows, divides, and differentiates further
- D. sticks to other cells with attached antigens to form a large clot

Question 23

Which of the following types of cells does HIV preferentially infect?

Selected Answer: [C] helper T cells

Correct Answer: C

- A. cytotoxic T cells
- B. natural killer cells
- [C] helper T cells
- D. phagocytic cells

Question 24

Which of the following is NOT true about the autonomic nervous system?

Selected Answer: [D] It functions voluntarily and consciously.

Correct Answer: D

- A. It uses two motor neurons and one ganglion for each impulse.
- B. It uses preganglionic and postganglionic axons.
- C. It is a part of the peripheral nervous system
- [D] It functions voluntarily and consciously.

Question 25

In a chemical synapse, what is the name of the gap between the sending and receiving cells?

Selected Answer: [C] synaptic cleft

Correct Answer: C

- A. synaptic terminal
- B. action potential
- [C] synaptic cleft
- D. myelin sheath