

TOSS-UP

1) BIOLOGY *Multiple Choice* Which of the following organelles is found in both, a eukaryotic cell and a prokaryotic cell?

- W) lysosomes
- X) ribosomes
- Y) mitochondria
- Z) nucleus

ANSWER: X) RIBOSOMES

BONUS

1) BIOLOGY *Short Answer* The liquid found inside plant cell vacuoles is known as what?

ANSWER: CELL SAP

TOSS-UP

2) BIOLOGY *Multiple Choice* In which organelle does protein synthesis take place?

- W) lysosome
- X) mitochondrion
- Y) ribosome
- Z) Golgi apparatus

ANSWER: Y) RIBOSOME

BONUS

2) BIOLOGY *Short Answer* Which organelle contains enzymes for digestion?

ANSWER: LYSOSOME

TOSS-UP

3) BIOLOGY *Short Answer* All human cells have 46 chromosomes except for which kind of cells?

ANSWER: SEX CELLS (accept GAMETES or REPRODUCTIVE CELLS)

BONUS

3) BIOLOGY *Short Answer* The endoplasmic reticulum consists of a network of membranous tubules and sacs known as what?

ANSWER: CISTERNAE

TOSS-UP

4) BIOLOGY *Multiple Choice* Consider a situation in which a plant cell has a secondary cell wall. In this secondary cell wall, what is the angle, rounded off to the nearest ten degrees, between two adjacent cellulose fibrils in consecutive lamellae?

W) 40

X) 50

Y) 60

Z) 70

ANSWER: Y) 60

BONUS

4) BIOLOGY *Short Answer* The middle lamella is usually composed of which complex polysaccharide?

ANSWER: PECTIN

TOSS-UP

5) BIOLOGY *Multiple Choice* In liver cells, which organelle is responsible for removing the phosphate from the initial product of glycogen hydrolysis?

- W) rough ER
- X) smooth ER
- Y) Golgi apparatus
- Z) lysosome

ANSWER: X) SMOOTH ER

BONUS

5) BIOLOGY *Short Answer* Most secretory proteins are what kind of proteins?

ANSWER: GLYCOPROTEINS

TOSS-UP

6) BIOLOGY *Short Answer* Which pole of a Golgi body acts as the shipping department for the Golgi body?

ANSWER: TRANS FACE

BONUS

6) BIOLOGY *Short Answer* In plant cells, what is the name of the membrane surrounding the central vacuole?

ANSWER: TONOPLAST

TOSS-UP

7) BIOLOGY *Multiple Choice* The inner membrane of mitochondria have inner foldings known as what?

- W) mitochondrial matrix
- X) inclusions
- Y) DNA
- Z) cristae

ANSWER: Z) CRISTAE

BONUS

7) BIOLOGY *Short Answer* Which organelle is the site of cellular respiration?

ANSWER: MITOCHONDRION

TOSS-UP

8) BIOLOGY *Multiple Choice* Plastids filled with starch are known as what?

- W) amyloplasts
- X) leucoplasts
- Y) chromoplasts
- Z) chloroplasts

ANSWER: W) AMYLOPLASTS

BONUS

8) BIOLOGY *Short Answer* Besides kingdom plantae, what is the other only kingdom in which chloroplasts are found in cells?

ANSWER: PROTISTA

TOSS-UP

9) BIOLOGY *Short Answer* What does ECM stand for?

ANSWER: EXTRACELLULAR MATRIX

BONUS

9) BIOLOGY *Short Answer* The most abundant glycoprotein in the ECM of animal cells is what?

ANSWER: COLLAGEN

TOSS-UP

10) BIOLOGY *Short Answer* What are the most abundant lipids in most membranes?

ANSWER: PHOSPHOLIPIDS

BONUS

10) BIOLOGY *Short Answer* A molecule that has a hydrophilic region and a hydrophobic region, is defined as being what?

ANSWER: AMPHIPATHIC

TOSS-UP

11) BIOLOGY *Multiple Choice* Which of the following is NOT one of the three main types of intercellular junctions?

- W) desmosomes
- X) tight junctions
- Y) plasmodesmata
- Z) gap junctions

ANSWER: Y) PLASMODESMATA

BONUS

11) BIOLOGY *Short Answer* What term is used to describe the motion of cytoplasm within cells?

ANSWER: CYTOPLASMIC STREAMING

TOSS-UP

12) BIOLOGY *Short Answer* Singer and Nicolson created a model for membranes in 1972. What is the name of this model?

ANSWER: FLUID MOSAIC MODEL

BONUS

12) BIOLOGY *Short Answer* What are the two most abundant membrane proteins?

ANSWER: INTEGRAL PROTEINS AND PERIPHERAL PROTEINS

TOSS-UP

13) BIOLOGY *Multiple Choice* Which of the following allows hydrophilic substances to avoid contact with the lipid bilayer and gain access into a cell?

- W) enzymes
- X) intercellular junctions
- Y) transport proteins
- Z) extracellular matrix

ANSWER: Y) TRANSPORT PROTEINS

BONUS

13) BIOLOGY *Short Answer* Diffusion across a membrane is better known as what kind of transportation?

ANSWER: PASSIVE TRANSPORT

TOSS-UP

14) BIOLOGY *Multiple Choice* The diffusion of water across a selectively permeable membrane is known as what process?

- W) active transport
- X) facilitated diffusion
- Y) osmosis
- Z) plasmolysis

ANSWER: Y) OSMOSIS

BONUS

14) BIOLOGY *Multiple Choice* Which of the following is the first step of the sodium-potassium pump?

- W) Binding of a sodium ion to the protein
- X) Loss of phosphate
- Y) Phosphorylation causes protein to change its conformation
- Z) Potassium ions binding triggers release of a phosphate group

ANSWER: W) BINDING OF A SODIUM ION TO THE PROTEIN

TOSS-UP

15) BIOLOGY *Short Answer* A transport protein that generates voltage across a membrane is known as what?

ANSWER: ELECTROGENIC PUMP

BONUS

15) BIOLOGY *Short Answer* What is the most common electrogenic pump in plants, bacteria and fungi?

ANSWER: PROTON PUMP

TOSS-UP

16) BIOLOGY *Short Answer* Which process involves the taking in of macromolecules by the formation of vesicles derived from the plasma membrane?

ANSWER: ENDOCYTOSIS

BONUS

16) BIOLOGY *Multiple Choice* Which of the following is not one of the three types of endocytosis in animal cells?

- W) receptor-mediated
- X) phagocytosis
- Y) pinocytosis
- Z) exocytosis

ANSWER: Z) EXOCYTOSIS

TOSS-UP

17) BIOLOGY *Multiple Choice* Which of the following is not a product of cellular respiration?

- W) carbon dioxide
- X) water
- Y) oxygen
- Z) heat

ANSWER: Y) OXYGEN

BONUS

17) BIOLOGY *Short Answer* What does NAD^+ stand for?

ANSWER: nicotinamide adenine dinucleotide

TOSS-UP

18) BIOLOGY *Short Answer* Metabolic pathways that release stored energy via breaking down complex molecules are known as what?

ANSWER: CATABOLIC PATHWAYS

BONUS

18) BIOLOGY *Short Answer* Partial degradation of sugars that occurs without the help of oxygen is known as what catabolic process?

ANSWER: FERMENTATION

TOSS-UP

19) BIOLOGY *Short Answer* What are the three metabolic stages of respiration?

ANSWER: GLYCOLYSIS, KREBS CYCLE, ELECTRON TRANSPORT CHAIN AND OXIDATIVE PHOSPHORYLATION

BONUS

19) BIOLOGY *Short Answer* The decomposition of glucose in cellular respiration occurs in which two stages of respiration?

ANSWER: KREBS CYCLE AND GLYCOLYSIS

TOSS-UP

20) BIOLOGY *Short Answer* Plants are what kind of autotrophs?

ANSWER: PHOTOAUTOTROPHS

BONUS

20) BIOLOGY *Short Answer* Autotrophs that produce their organic compounds by obtaining energy through oxidizing inorganic substances are known as what?

ANSWER: CHEMOAUTOTROPHS

TOSS-UP

21) BIOLOGY *Multiple Choice* Which part of a leaf absorbs light energy?

- W) chloroplasts
- X) stomata
- Y) mesophyll
- Z) chlorophyll

ANSWER: Z) CHLOROPHYLL

BONUS

21) BIOLOGY *Short Answer* In which membrane does chlorophyll reside?

ANSWER: THYLAKOID MEMBRANES

TOSS-UP

22) BIOLOGY *Multiple Choice* Photosynthesis is composed of how many main processes?

- W) 1
- X) 2
- Y) 3
- Z) 4

ANSWER: X) 2 (Light reactions and Calvin cycle)

BONUS

22) BIOLOGY *Short Answer* Who first proposed the idea that oxygen in photosynthesis, came from the splitting of water, and not carbon dioxide?

ANSWER: C. B. VAN NIEL

TOSS-UP

23) BIOLOGY *Multiple Choice* In light reactions, light absorbed by chlorophyll drives a transfer of electrons and hydrogen into an acceptor known as what?

- W) NAD^+
- X) $NADP^+$
- Y) ATP
- Z) ADP

ANSWER: X) $NADP^+$

BONUS

23) BIOLOGY *Short Answer* In the Calvin cycle, fixed carbon is reduced to carbohydrate through addition of which subatomic particles?

ANSWER: ELECTRONS

TOSS-UP

24) BIOLOGY *Short Answer* : Substances that absorb visible light are known commonly as what?

ANSWER: PIGMENTS

BONUS

24) BIOLOGY *Short Answer* The pigments in chloroplasts mainly absorb two colors of light. What are these two colors?

ANSWER: RED AND BLUE

TOSS-UP

25) BIOLOGY *Multiple Choice* Which stage of photosynthesis produces sugar?

- W) Photosystem I
- X) Photosystem II
- Y) light reactions
- Z) Calvin cycle

ANSWER: Z) CALVIN CYCLE

BONUS

25) BIOLOGY *Short Answer* What is the first phase of the Calvin cycle?

ANSWER: CARBON FIXATION

TOSS-UP

26) BIOLOGY *Multiple Choice* Bacteria reproduce through which process?

ANSWER: BINARY FISSION

BONUS

26) BIOLOGY *Short Answer* A cell's total hereditary endowment of DNA is known as its what?

ANSWER: GENOME

TOSS-UP

27) BIOLOGY *Multiple Choice* Which of the following cells does NOT contain 46 chromosomes?

- W) red blood cells
- X) liver cells
- Y) egg cells
- Z) squamous cells

ANSWER: Y) EGG CELLS

BONUS

27) BIOLOGY *Multiple Choice* Which of the following correctly lists the order of the five subphases of mitosis from first to last?

- W) prophase, metaphase, anaphase, telophase, prometaphase
- X) prometaphase, metaphase, prophase, telophase, anaphase
- Y) prophase, prometaphase, metaphase, telophase, anaphase
- Z) prophase, prometaphase, metaphase, anaphase, telophase

ANSWER: Z) PROPHASE, PROMETAPHASE, METAPHASE, ANAPHASE, TELOPHASE

TOSS-UP

28) BIOLOGY *Short Answer* Consider a situation in which a doctor removed some cells from the surface of your tongue. The cells bordering the vacancy would begin to divide until the vacancy was filled. This phenomenon is known as what?

ANSWER: DENSITY-DEPENDENT INHIBITION

BONUS

28) BIOLOGY *Short Answer* On some occasions, a cancer cell can proliferate into a larger mass of cancer cells within a tissue. What is this mass known as?

ANSWER: TUMOR

TOSS-UP

29) BIOLOGY *Short Answer* A gene's pinpoint location along the length of a chromosome is known as the gene's what?

ANSWER: LOCUS

BONUS

29) BIOLOGY *Short Answer* Chromosomes that make up a pair are known as what?

ANSWER: HOMOLOGOUS CHROMOSOMES (accept HOMOLOGUES)

TOSS-UP

30) BIOLOGY *Multiple Choice* Consider two parent cells. One undergoes mitosis, while the other undergoes meiosis. Which of the following best describes number of daughter cells from each process?

- W) Mitosis would produce 4 daughter cells; meiosis would produce 2 daughter cells
- X) Mitosis would produce 2 daughter cells; meiosis would produce 4 daughter cells
- Y) Mitosis would produce 2 daughter cells; meiosis would produce 2 daughter cells
- Z) Mitosis would produce 4 daughter cells; meiosis would produce 4 daughter cells

ANSWER: X) MITOSIS WOULD PRODUCE 2 DAUGHTER CELLS; MEIOSIS WOULD PRODUCE 4 DAUGHTER CELLS

BONUS

30) BIOLOGY *Short Answer* In the process of mitosis, the parent and daughter cells are genetically identical. What is the common term for what these two cells are?

ANSWER: CLONES