TOSS-UP

1. BIOL; Multiple Choice: Which of the following structures of the cell has a membrane?

(W) Centrosome

(X) Mitochondrion

(Y) Ribosome

(Z) Cytoskeleton

ANSWER: X - MITOCHONDRION

BONUS

1. BIOL; Short Answer: How many membranes does the mitochondrion have?

ANSWER: TWO

TOSS-UP

1. BIOL; Short Answer: In which phase of mitosis does the cleavage furrow appear?

ANSWER: TELOPHASE

BONUS

2. BIOL; Short Answer: What is the term for an imaginary plane where chromosomes align themselves, perpendicular to the spindle fibers of a dividing cell?

ANSWER: METAPHASE PLATE

TOSS-UP

1. BIOL; Multiple Choice: Which of the following is not a primary tissue type?

(W) Connective

(X) Muscle

(Y) Epithelium

(Z) Cardiac

ANSWER: X - CARDIAC

BONUS

3. BIOL; Short Answer: List the primary germ layers.

ANSWER: ECTODERM, MESODERM, ENDODERM (in no particular order)

TOSS-UP

1. BIOL; Multiple Choice: Which type of epithelial tissue allows distension inside the urinary bladder?

(W) Pseudostratified Columnar

(X) Simple Columnar

(Y) Stratified Cuboidal

(Z) Transitional

ANSWER: Z - TRANSITIONAL

BONUS

4. BIOL; Short Answer: Which type of epithelial tissue is allows gas diffusion in the alveoli of the lungs?

ANSWER: SIMPLE SQUAMOUS

TOSS-UP

1. BIOL; Short Answer: Which mechanism of secretion are the lactiferous glands using?

ANSWER: APOCRINE

BONUS

5. BIOL; Short Answer: Which type of membrane lines close body cavities, such as the periotoneum?

ANSWER: SEROUS MEMBRANE

TOSS-UP

1. BIOL; Multiple Choice: What are sensory epithelial cells in the epidermis detecting soft pressure called?

(W) Merkel Cells

(X) Melanocytes

(Y) Keratinocytes

(Z) Langerhan’s Cells

ANSWER: W - KERATINOCYTES

BONUS

6. BIOL; Short Answer: What is the most abundant epithelium-based cell in the epidermis?

ANSWER: KERATINOCYTES

TOSS-UP

1. BIOL; Short Answer: Which inorganic compound accounts for ⅔ of bone weight?

ANSWER: CALCIUM PHOSPHATE

BONUS

7. BIOL; Short Answer: What substance, resistant to compression and twisting, forms when calcium phosphate reacts with calcium hydroxide?

ANSWER: HYDROXYAPATITE CRYSTALS

TOSS-UP

1. BIOL; Multiple Choice: Which of the following do Meissner’s corpuscles detect?

(W) Pain

(X) Deep Pressure

(Y) Burn

(Z) Soft Touch

ANSWER: Z – SOFT TOUCH

BONUS

8. BIOL; Short Answer: Which sensory receptors for cutaneous sensations are located in the hypodermis?

ANSWER: PACINIAN CORPUSCLES

TOSS-UP

1. BIOL; Multiple Choice: What type of bone is the scapula classified as?

(W) Wormian Bone

(X) Flat Bone

(Y) Sesamoid Bone

(Z) Irregular Bone

ANSWER: X – FLAT BONE

BONUS

9. BIOL; Short Answer: What type of bones is almost cuboidal in shape?

ANSWER: SHORT BONE

TOSS-UP

1. BIOL; Multiple Choice: How many bones does the appendicular division of an average human adult skeleton contain?

(W) 82

(X) 119

(Y) 126

(Z) 140

ANSWER: Y - 126

BONUS

10. BIOL; Short Answer: How many bones does the axial division of an average human adult skeleton contain?

ANSWER: 80

TOSS-UP

1. BIOL; Short Answer: Which cranial suture is located between the right and left parietal bones?

ANSWER: SAGITTAL SUTURE

BONUS

11. BIOL; Short Answer: Which cranial suture is located between the two parietal bones and the occipital bone?

ANSWER: LAMBDOID SUTURE

TOSS-UP

1. BIOL; Short Answer: Name the five vertebral regions.

ANSWER: CERVICAL, THORACIC, LUMBAR, SACRAL, COCCYGEAL (in no particular order)

BONUS

12. BIOL; Short Answer: How many bones are in the thoracic region?

ANSWER: TWELVE

TOSS-UP

1. BIOL; Multiple Choice: Which of the following is a type of a synovial joint?

(W) Condylar joint

(X) Suture

(Y) Sliding joint

(Z) Symphysis

ANSWER: W – CONDYLAR JOINT

BONUS

13. BIOL; Short Answer: Which carpal bone is only visible when the palm is facing up in a supinate position?

ANSWER: PISIFORM

TOSS-UP

1. BIOL; Multiple Choice: Which of the following is a definition of a sarcomere in skeletal muscle tissue?

(W) Length of an A band

(X) Length between two consecutive Z lines

(Y) Distance from the I band to the M line

(Z) Distance between the Z line to the M line

ANSWER: X – LENGTH BETWEEN TWO CONSECUTIVE Z LINES

BONUS

14. BIOL; Short Answer: What structure does a train of sarcomeres in skeletal muscle tissue make up?

ANSWER: Myofibril

TOSS-UP

1. BIOL; Short Answer: What is the hyaline cartilage located in between the ribs and the sternum?

ANSWER: COSTAL CARTILAGE

BONUS

15. BIOL; Short Answer: Which structure of the sternum ossifies in humans by the age of forty?

ANSWER: XIPHOID PROCESS

TOSS-UP

1. BIOL; Multiple Choice: Which structure of a motor neuron allows integration and fired action potential?

(W) Dendrite

(X) Soma

(Y) Axon Hillock

(Z) Node of Ranvier

ANSWER: Y – AXON HILLOCK

BONUS

16. BIOL; Short Answer: In a neuron, what are groups of ribosomes used for protein synthesis called?

ANSWER: NISSL CELLS (ALSO ACCEPT: NISSL BODIES, NISSL GRANULES)

TOSS-UP

1. BIOL; Short Answer: What are neuroglial cells wrapping around capillaries to prevent neurons from coming in contact with blood vessels?

ANSWER: ASTROCYTES

BONUS

17. BIOL; Short Answer: Which cranial meninge is the deepest layer, filling every contour of the brain?

ANSWER: PIA MATER

TOSS-UP

1. BIOL; Multiple Choice: Which of the following is not one of the twelve pairs of cranial nerves?

(W) Trigeminal

(X) Vagus

(Y) Abducens

(Z) Hyperglossal

ANSWER: Z - HYPERGLOSSAL

BONUS

18. BIOL; Short Answer: Which cranial nerve is associated with hearing and balance?

ANSWER: VESTIBULOCOCHLEAR

TOSS-UP

1. BIOL; Multiple Choice: In osmosis, in which direction does the solvent move?

(W) Hypertonic to hypotonic

(X) Isotonic to hypotonic

(Y) Hypotonic to hypertonic

(Z) Hypotonic to isotonic

ANSWER: Y – Hypotonic to hypertonic

BONUS

19. BIOL; Multiple Choice: What determines the flow of solvent in facilitated diffusion?

(W) Pressure gradient

(X) Concentration gradient

(Y) Amount of energy involved

(Z) Type of carrier protein

ANSWER: X – Concentration gradient

TOSS-UP

1. BIOL; Short Answer: What are the two nerve plexuses involved in the enteric nervous system?

ANSWER: SUBMUCOSAL PLEXUS, MYENTERIC PLEXUS (IN NO PARTICULAR ORDER)

BONUS

20. BIOL; Short Answer: Specifically, which tract in the human body does the enteric nervous system control?

ANSWER: GASTROINTENSTINAL TRACT

TOSS-UP

1. BIOL; Multiple Choice: Which of the following hormone-secreting organs do NOT have significant endocrine cells?

(W) Pancreas

(X) Kidneys

(Y) Thymus

(Z) Gonads

ANSWER: X - KIDNEYS

BONUS

21. BIOL; Short Answer: Which hormone-secreting organ is the only organ in the human body built from two individuals?

ANSWER: PLACENTA

TOSS-UP

1. BIOL; Multiple Choice: How many lymphatic organs are there in the human body?

(W) 500 to 600

(X) 100 to 200

(Y) 700 to 800

(Z) 0 – 99

ANSWER: W – 500 to 600

BONUS

22. BIOL; Short Answer: Which lymph duct is present in all humans and drains up to 75% of all lymph?

ANSWER: THORACIC DUCT

TOSS-UP

1. BIOL; Short Answer: What is the largest lymphatic organ in the human body?

ANSWER: SPLEEN

BONUS

23. BIOL; Multiple Choice: Which of the following is NOT a function of the spleen?

(W) Phagocytosis-based removal of abnormal blood cells

(X) Immune response against blood-borne antigens

(Y) Produce urea

(Z) Storage of recycled iron from erythrocytes

ANSWER: Y – PRODUCE UREA

TOSS-UP

1. BIOL; Short Answer: Which digestive organ is around 20 feet long in cadavers but only 12 feet long in live humans?

ANSWER: SMALL INTESTINE

BONUS

24. BIOL; Short Answer: In the digestive tract, in which organ must the food being digested be located for it to be considered chyme?

ANSWER: STOMACH

TOSS-UP

1. BIOL; Short Answer: Which structure in the kidney filters waste from the blood?

ANSWER: GLOMERULUS

BONUS

1. BIOL; Short Answer: What is the basic structural and functional unit for urine production?

ANSWER: NEPHRON