

Science Bowl Biology Questions

TOSS-UP

1) BIOLOGY *Short Answer* What is the definition of biology:

ANSWER: STUDY OF LIFE; LIVING ORGANISMS, ETC.

BONUS

1) BIOLOGY *Multiple Choice* Who was the first person to make a biological observation through a microscope:

- W) Isaac Newton
- X) Rene Descartes
- Y) Galileo Galilei
- Z) Gregor Johann Mendel

ANSWER: Y) GALILEO GALILEI

TOSS-UP

2) BIOLOGY *Short Answer* What is the most common term for the substance recognized as foreign and able to elicit antibody production:

ANSWER: ANTIGEN

BONUS

2) BIOLOGY *Multiple Choice* Which of the following are antigens that have entered the body from the outside:

- W) Autoantigens
- X) Tumor antigens
- Y) Endogenous antigens
- Z) Exogenous antigens

ANSWER: Z) EXOGENOUS ANTIGENS

TOSS-UP

3) BIOLOGY *Short Answer* Which of the following species are NOT considered eukaryotic:

- W) Protistans
- X) Archaeobacteria Eubacteria
- Y) Animals
- Z) Fungi

ANSWER: X) ARCHAEBACTERIA EUBACTERIA

BONUS

3) BIOLOGY *Short Answer* What is the ONLY exclusive part of the cell that prokaryotic creatures possess, while none of the eukaryotic creatures do:

ANSWER: BACTERIAL FLAGELLUM

TOSS-UP

4) BIOLOGY *Short Answer* What does the cell theory state in its most basic form:

ANSWER: THE CELL IS THE FUNDAMENTAL UNIT OF LIFE (accept variations)

BONUS

4) BIOLOGY *Short Answer* Who was the first to discover and define the cell:

ANSWER: Y) ROBERT HOOKE

TOSS-UP

5) BIOLOGY *Short Answer* Who introduced the theory of evolution:

ANSWER: CHARLES DARWIN

BONUS

5) BIOLOGY *Short Answer* What is the “driving force” of Darwin’s theory and sums up most of his thoughts in two words:

ANSWER: NATURAL SELECTION

TOSS-UP

6) BIOLOGY *Short Answer* What is the definition of genetics:

ANSWER: SCIENCE OF HEREDITY; VARIATION IN ORGANISM (accept variations)

BONUS

6) BIOLOGY *Short Answer* What diagram represents the probability of different variations of offspring occurring:

ANSWER: PUNNETT SQUARE

TOSS-UP

7) BIOLOGY *Short Answer* Where does the majority of the energy needed for life come from:

ANSWER: THE SUN

BONUS

7) BIOLOGY *Short Answer* What are the two most common processes in converting trapped energy into usable energy:

ANSWER: METABOLISM AND CELLULAR RESPIRATION

TOSS-UP

8) BIOLOGY *Short Answer* How many major systems are there in the human body:

ANSWER: 5 (nervous, respiratory, immune, endocrine, circulatory)

BONUS

8) BIOLOGY *Short Answer* Which of the 5 systems in the human body handles processes associated with the brain:

ANSWER: NERVOUS SYSTEM

TOSS-UP

9) BIOLOGY *Short Answer* Name the traditional 5 kingdoms:

ANSWER: MONERA, PROTISTA, FUNGI, ANIMALIA, PLANTAE (any order)

BONUS

9) BIOLOGY *Short Answer* What are the 3 parts of the modern three-domain system:

ANSWER: ARCHAEA, BACTERIA, EUKARYA (any order)

TOSS-UP

10) BIOLOGY *Short Answer* How many bones are there in the human body:

ANSWER: 206

BONUS

10) BIOLOGY *Multiple Choice* Which of these bones is part of the face:

W) Ethmoid bone

X) Hyoid bone

Y) Vomer bone

Z) Incus

ANSWER: Y) VOMER BONE

TOSS-UP

11) BIOLOGY *Short Answer* How many chambers of the heart are there in the human body:

ANSWER: 4 (left atrium, right atrium, left ventricle, right ventricle)

BONUS

11) BIOLOGY *Multiple Choice* In general, which chamber is considered most important:

- W) Left ventricle
- X) Right ventricle
- Y) Left atrium
- Z) Right atrium

ANSWER: W) LEFT VENTRICLE

TOSS-UP

12) BIOLOGY *Short Answer* Why do birds such as raptors have better vision than humans:

ANSWER: DENSER PHOTORECEPTORS IN RETINA (anything similar)

BONUS

12) BIOLOGY *Multiple Choice* About how many times sharper is a raptor's vision than that of a human:

- W) 2
- X) 4
- Y) 6
- Z) 8

ANSWER: Z) 8

TOSS-UP

13) BIOLOGY *Short Answer* What molecule is mostly always present in lipids:

ANSWER: GLYCEROL

BONUS

13) BIOLOGY *Short Answer* What are proteins made up of:

ANSWER: AMINO ACIDS

TOSS-UP

14) BIOLOGY *Short Answer* Who recommended the use of low temperatures to control bleeding and swelling:

ANSWER: HIPPOCRATES

BONUS

14) BIOLOGY *Multiple Choice* At what temperature, equivalent to that of a certain liquid substance, can cells be indefinitely suspended in:

ANSWER: LIQUID NITROGEN TEMPERATURE (between 66 K and 77.2 K)

TOSS-UP

15) BIOLOGY *Short Answer* What is the definition of microbiology:

ANSWER: STUDY OF LIFE THAT IS TOO CANNOT BE SEEN BY HUMAN EYE

BONUS

15) BIOLOGY *Short Answer* Who first introduced bacteria:

ANSWER: ANTON VON LEEUWENHOEK

TOSS-UP

16) BIOLOGY *Short Answer* What are the three main parts of the brain:

ANSWER: CEREBRUM, CEREBELLUM, SPINAL CORD

BONUS

16) BIOLOGY *Short Answer* Which part of the brain controls balance of the human body:

ANSWER: CEREBELLUM

TOSS-UP

17) BIOLOGY *Short Answer* When does the heart stop to rest:

ANSWER: NEVER; DEATH

BONUS

17) BIOLOGY *Multiple Choice* About how many times does the heart beat in the average human lifetime:

- W) 1 million
- X) 1.5 billion
- Y) 2.5 billion
- Z) 1 trillion

ANSWER: Y) 2.5 BILLION

TOSS-UP

18) BIOLOGY *Short Answer* What branch of biology usually refers to genetic engineering:

ANSWER: BIOTECHNOLOGY

BONUS

18) BIOLOGY *Multiple Choice* Which of the following does biotechnology NOT apply in:

- W) Health care
- X) Crop production
- Y) Agriculture
- Z) Government

ANSWER: Z) GOVERNMENT

TOSS-UP

19) BIOLOGY *Short Answer* What is the study of fungi:

ANSWER: MYCOLOGY

BONUS

19) BIOLOGY *Short Answer* What was the first fungus based medication:

ANSWER: PENICILLIN

TOSS-UP

20) BIOLOGY *Short Answer* What is the study of prehistoric life:

ANSWER: PALEONTOLOGY

BONUS

20) BIOLOGY *Multiple Choice* How long ago is the earliest evidence of life we have:

W) 1.2 million years

X) 2.5 million years

Y) 3.8 million years

Z) 5 million years

ANSWER: Y) 3.8 MILLION YEARS

TOSS-UP

21) BIOLOGY *Short Answer* Where are chromosomes found:

ANSWER: CELLS

BONUS

21) BIOLOGY *Short Answer* What are chromosomes made up of:

ANSWER: DNA AND PROTEIN

TOSS-UP

22) BIOLOGY *Short Answer* What is the study of reptiles and amphibians:

ANSWER: HERPETOLOGY

BONUS

22) BIOLOGY *Multiple Choice* In what medicinal way has snake venom been used:

- W) Curing brain disease
- X) Treating heart attack cases
- Y) Treating broken bones
- Z) Curing spinal issues

ANSWER: X) TREATING HEART ATTACK CASES

TOSS-UP

23) BIOLOGY *Short Answer* What is the study of birds:

ANSWER: ORNITHOLOGY

BONUS

23) BIOLOGY *Short Answer* Why are the bones in birds' wings so much lighter than that of humans' arms:

ANSWER: THE BONES IN THE WINGS ARE HOLLOW (accept close answers)

TOSS-UP

24) BIOLOGY *Short Answer* What does DNA stand for:

ANSWER: DEOXYRIBONUCLEIC ACID

BONUS

24) BIOLOGY *Short Answer* How does DNA physically differ from RNA:

ANSWER: DNA IS DOUBLE STRANDED; RNA IS SINGLE STRANDED

TOSS-UP

25) BIOLOGY *Short Answer* What is the medical condition in which a person's spine is curved or rotated:

ANSWER: SCOLIOSIS

BONUS

25) BIOLOGY *Short Answer* What two letters of the alphabet does a spine that has scoliosis resemble:

ANSWER: S AND C (any order)