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chapter 1

This is a preview of the draft version of the quiz

Quiz Type	Graded Quiz
Points	46
Assignment Group	Assignments
Shuffle Answers	No
Time Limit	No Time Limit
Multiple Attempts	No
View Responses	Always
Show Correct Answers	Immediately
One Question at a Time	No

Due	For	Available from	Until
-	Everyone	-	-

Preview

Score for this quiz: **0** out of 46
Submitted May 7 at 10:04pm
This attempt took less than 1 minute.

Unanswered

Question 1

0 / 1 pts

Which of the following statements about cells is correct?

- Single cells cannot exist independently.
- Cells are limited in size, which is between 200 to 500 micrometers in diameter.
- Some cells are non-living in nature.

Correct Answer

- Both prokaryotic and eukaryotic organisms are made up of cells.

Unanswered

Question 2

0 / 1 pts

A cell lacking which of the following structures is most likely to be a prokaryote?

Correct Answer

- Nuclear membrane
- Cell membrane
- Cytoplasm
- Nucleic acid

Unanswered

Question 3

0 / 1 pts

Which of the following types of cells use deoxyribonucleic acid (DNA) as their genetic material but do not have their DNA encased within a nuclear envelope?

- animal
- plant

Correct Answer

- archaean
- fungi

Unanswered

Question 4

0 / 1 pts

To understand the chemical basis of inheritance, we must understand the molecular structure of DNA. This is an example of the application of which concept to the study of biology?

- evolution
- emergent properties

Correct Answer

- reductionism
- feedback regulation

Unanswered

Question 5

0 / 1 pts

A double-stranded DNA molecule with three guanine and five thiamine nucleotides (in 5 3 strand) has how many nucleotides in total?

- 3
- 5
- 8

Correct Answer

- 16

Unanswered

Question 6

0 / 1 pts

Which of the following statements is true regarding the complexity of biological systems?

- An understanding of the interactions between different components within a living system is an approach towards understanding reductionism.

Correct Answer

- Knowing the function of a component of a living system can provide insights into the structure and organization of the living system.
- Understanding the chemical structure of DNA reveals how it directs the functioning of a living cell.
- An ecosystem displays complex properties of the biotic component only.

Unanswered

Question 7

0 / 1 pts

Which statement about ecological organization is correct?

- An organism is part of a community.

Correct Answer

- A community is part of a population.
- An ecosystem is made up of organisms only
- Biosphere is a part of the ecosystem

Unanswered

Question 8

0 / 1 pts

Apple on tree ripens ripe apple produces ethylene ethylene signals neighboring apples to ripen neighbor apples produce more ethylene more apples ripen. The above process is an example of which of the following?

Correct Answer

- positive feedback regulation
- negative feedback regulation
- chemical cycling
- emergent properties

Unanswered

Question 9

0 / 1 pts

Which of the following is the correct order of organization of genetic material from smallest to largest?

gene, nucleotide, chromosome, genome

chromosome, genome, nucleotide, gene

genome, chromosome, gene, nucleotide

Correct Answer

nucleotide, gene, chromosome, genome

Unanswered

Question 10

0 / 1 pts

As letters are to English language, _____ is/are to genetic information.

proteins

Correct Answer

nucleotides

DNA double helix

carbohydrates

Unanswered

Question 11

0 / 1 pts

Three important research developments that have made the genomic and proteomic approaches possible are _____.

Correct Answer

high throughput technology, bioinformatics, and interdisciplinary research teams

bioinformatics, gene therapy, and genetically modified organisms

computers, nanotechnology, and bioinformatics

cloning, computers, and gene therapy

Unanswered

Question 12

0 / 1 pts

Which of the following questions is considered a thought-provoking scientific query?

How long ago did the Pterosaurs live on this planet?

Does the amount of solute in water affect the boiling point of the solution?

Who invented the telescope?

Correct Answer

How many tigers are left in India?

Unanswered

Question 13

0 / 1 pts

Which of the following statements about genetic information is correct?

- mRNA is the only type of RNA found in a eukaryotic cell
- **Correct Answer** All forms of life employ the same genetic code
- A typical human liver cell has one set of chromosomes
- DNA is not found in prokaryotic cells

Unanswered **Question 14** 0 / 1 pts

Which of these provides evidence of the common ancestry of all life?

- **Correct Answer** near universality of the genetic code
- structure of the nucleus
- structure of cilia
- structure of chloroplasts

Unanswered **Question 15** 0 / 1 pts

Two organisms are _____ if they share more classification levels.

- closer together in the biosphere they live
- further apart in the food chain
- easier to tell apart
- **Correct Answer** more similar in characteristics

Unanswered **Question 16** 0 / 1 pts

Which branch of biology is concerned with the naming and classifying of organisms?

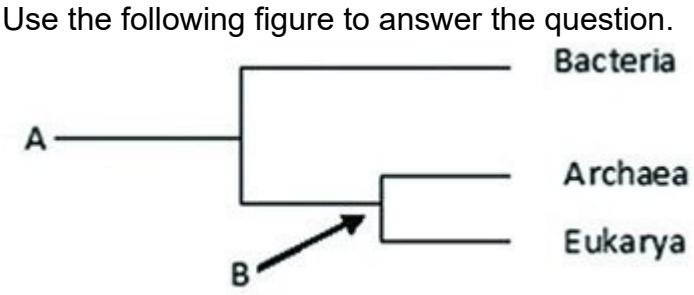
- informatics
- **Correct Answer** taxonomy
- genomics
- evolution

Unanswered

Question 17

0 / 1 pts

Use the following figure to answer the question.



Describe groups labeled A and B.

- A is the most recent species to evolve on Earth whereas B is an ancestor of group "A"
- A is the most recent species to evolve on Earth whereas B is the last common ancestor of Archaea and Eukarya
- A is the common ancestor of all life whereas B is the common ancestor of Bacteria and Archaea

Correct Answer

- A is the common ancestor of all life whereas B is the last common ancestor of Archaea and Eukarya

Unanswered

Question 18

0 / 1 pts

An individual is suffering from a streptococcus infection in their throat. Which of the following do the individual and the streptococcus bacteria have in common?

- They both belong to the same domain.

Correct Answer

- They both are made up of cells.
- They both have genetic material in their nucleus.
- The individual and *Streptococcus* have nothing in common.

Unanswered

Question 19

0 / 1 pts

Which of the following is an example of genetic variation?

- Two brothers who are twins
- One sibling is vegan, the other eats meat

Correct Answer

- One sibling has brown eyes, the other has green
- One of the twins has a scar the other does not

Unanswered

Question 20

0 / 1 pts

Which of the following is one of Charles Darwin's observations?

Individuals in a population are similar in their traits.

Correct Answer

Many of the traits in an individual are heritable.

A population avoids competition by producing only as many offspring as can successfully reproduce on their own.

Species generally are not adapted to their environments.

Unanswered

Question 21

0 / 1 pts

The evolution two or more species from one species as a result of different populations becoming reproductively isolated from each other is best described as _____.

Correct Answer

adaptive radiation

creationism

natural selection

prototype

Unanswered

Question 22

0 / 1 pts

Cotton-topped tamarins are small primates with tufts of long white hair on their heads. While studying these creatures, researchers noticed that males with longer hair get more opportunities to mate and father more offspring. Which of the following research questions would best test the hypothesis that having longer hair is adaptive in these males?

test whether other traits in these males are also adaptive

look for evidence of hair in ancestors of tamarins

Correct Answer

determine if hair length is heritable

test whether males with shaved heads are still able to mate

Unanswered

Question 23

0 / 1 pts

Following a scientific method, which of the following is the correct order of steps?

- Observation → Analysis → Hypothesis → Conclusion → Communicate results → Experiment
- Observation → Hypothesis → Experiment → Communicate results → Analysis → Conclusion
- Experiment → Hypothesis → Observation → Analysis → Conclusion → Communicate results

Correct Answer

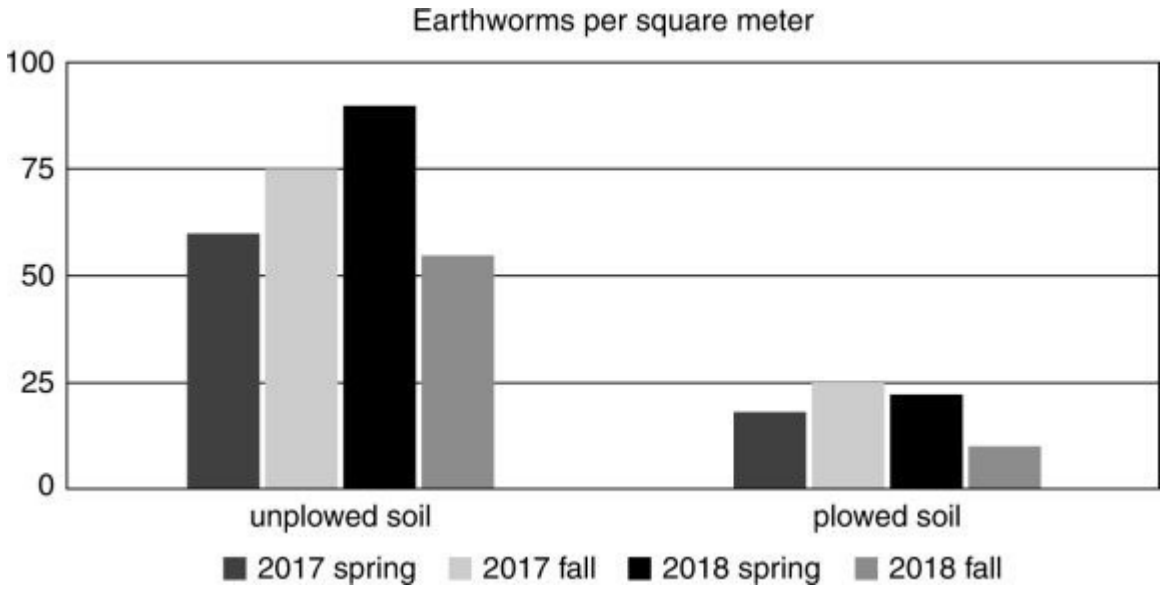
- Observation → Hypothesis → Experiment → Analysis → Conclusion → Communicate results

Unanswered

Question 24

0 / 1 pts

Use the information in the graph to answer the following question.



The data can best be used to address which of the following questions?

Correct Answer

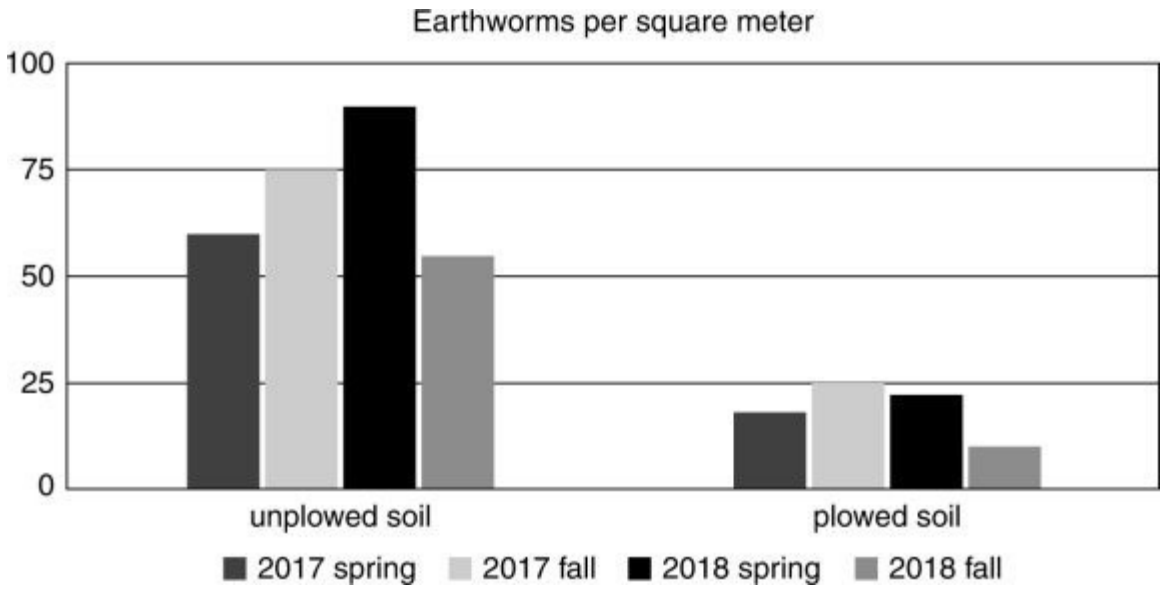
- What is the impact of plowing soil on the number of earthworms?
- Does season has an impact on the size of the earthworms?
- Does plowing have an impact on the size of the earthworms?
- What is the impact of plowing on the speed of growth of the earthworms?

Unanswered

Question 25

0 / 1 pts

Use the information in the graph to answer the following question.



Which of the following claims is best supported using the graph?

- Plowing has no effect on the number of earthworms in the soil.
- More earthworms are found in the soil in spring than in fall.
- Plowed soil contains more earthworms than unplowed soil.

Correct Answer

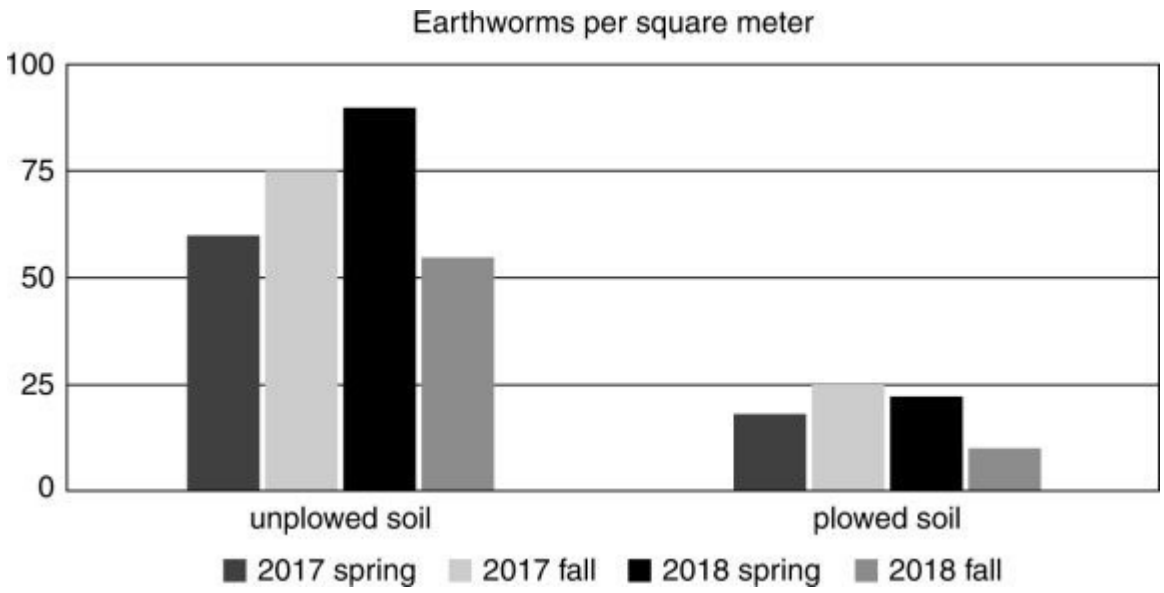
- Unplowed soil contains more earthworms than plowed soil.

Unanswered

Question 26

0 / 1 pts

Use the information in the graph to answer the following questions.



Based on the bar graph, which season, year, and soil condition were the worst for cultivating earthworms?

- spring 2017, unplowed soil
- fall 2018, unplowed soil
- spring 2017, plowed soil

Correct Answer

- fall 2018, plowed soil

Unanswered

Question 27

0 / 1 pts

How does a scientific theory differ from a scientific hypothesis?

Theories are proposed to test scientific hypotheses.

Correct Answer

Theories are usually an explanation for a more general phenomenon; hypotheses typically address more specific issues.

Hypotheses are usually an explanation for a more general phenomenon; theories typically address more specific issues.

Confirmed theories become scientific laws; hypotheses become theories.

Unanswered

Question 28

0 / 1 pts

Agrobacterium infects plants and causes them to form tumors. You are asked to determine how long a plant must be exposed to these bacteria to become infected. Which of the following experiments will provide the best data to address that question?

Determine the survival rate of *Agrobacterium* when exposed to different concentrations of an antibiotic.

Measure the number of tumors formed on a plant when exposed to various concentrations of *Agrobacterium.*

Measure the concentration of *Agrobacterium* in different soil environments where the plants grow.

Correct Answer

Measure the number of tumors formed on plants, which are exposed to *Agrobacterium* for different lengths of time.

Unanswered

Question 29

0 / 1 pts

Agrobacterium infects plants and causes them to form tumors. Tumor formation requires a large amount of the plant's energy for tissue formation. What could be the possible impact of tumor formation on plant reproduction? And why?

The number of offspring should increase because in general, illness increases the reproductive output of organisms.

The number of offspring should increase because the bacteria will provide energy for the plant.

Correct Answer

The number of offspring should decrease because the plant will divert energy from reproduction to tumor formation.

There should be no effect of infection on offspring production because energy for reproduction is independent of infection.

Unanswered

Question 30

0 / 1 pts

Use the following information when answering the following question.

In 1668, Francesco Redi performed a series of experiments on spontaneous generation. He began by putting similar pieces of meat into eight identical jars. Four jars were left open to the air, and four were sealed. He then did the same experiment with one variation: Instead of sealing four of the jars completely, he covered them with gauze (the gauze excluded the flies while allowing the meat to be exposed to air). In both experiments, he monitored the jars and recorded whether or not maggots (young flies) appeared in the meat.
What hypothesis was being tested in the initial experiment with open versus sealed jars?

- Spontaneous generation is more likely during the long days of summer.
- The type of meat used affects the likelihood of spontaneous generation.

Correct Answer

- Maggots do not arise spontaneously, but from eggs laid by adult flies.
- Spontaneous generation can occur only if meat is exposed to air.

Unanswered

Question 31

0 / 1 pts

Use the following information when answering the following question.
In 1668, Francesco Redi performed a series of experiments on spontaneous generation. He began by putting similar pieces of meat into eight identical jars. Four jars were left open to the air, and four were sealed. He then did the same experiment with one variation: Instead of sealing four of the jars completely, he covered them with gauze (the gauze excluded the flies while allowing the meat to be exposed to air). In both experiments, he monitored the jars and recorded whether or not maggots (young flies) appeared in the meat.
In both experiments, flies appeared in all of the open jars and only in the open jars. Which one of the following statements is correct?

- The experiment was inconclusive because Redi used only one kind of meat.
- The experiment was inconclusive because it did not run long enough.
- The experiment supports the hypothesis that spontaneous generation occurs in rotting meat.

Correct Answer

- The experiment supports the hypothesis that maggots arise only from eggs laid by adult flies.

Unanswered

Question 32

0 / 1 pts

Which of the following instructions contribute to a productive experimental design?

- include a small sample size
- do not include a control, it is a waste of resources.

Correct Answer

- alter only one condition between the control and the experimental condition
- do not run the experiment more than once, the results might become confusing

Unanswered

Question 33

0 / 1 pts

Which of the following best describes a controlled experiment?

- An experiment repeated many times to ensure that the results are accurate
- Correct Answer — An experiment includes at least two groups, one of which does not receive the experimental treatment
- An experiment that includes at least two groups, one differing from the other by two or more variables
- An experiment that includes one group for which the scientist controls all variables

Unanswered

Question 34

0 / 1 pts

Which of the following is the quality of a good scientific hypothesis?

- It relies on controversial factors
- Correct Answer — It should be testable in a valid period of time
- It always produces quantitative data
- It always produces qualitative data

Unanswered

Question 35

0 / 1 pts

In presenting data that result from an experiment, a group of students shows that most of their measurements fall on a straight diagonal line on their graph. However, two of their data points are "outliers" and fall far to one side of the expected relationship. Which of the following is the most reasonable way to handle the outliers when analyzing the data?

- Do not show these points because clearly something went wrong in the experiment.
- Average several trials, rule out the improbable results, and do not show them in the final work.
- Correct Answer — Show all results obtained and then try to explore the reason(s) for the variation in data.
- Change the details of the experiment until they can obtain the expected results.

Unanswered

Question 36

0 / 1 pts

In an experiment to test the hypothesis, "temperature controls sex determination in crocodile embryos" a researcher incubates crocodile eggs in incubators set at different temperatures. Which of the following correctly identifies the dependent and independent variables in the experiment?

- temperature is dependent, sex is independent
- Correct Answer — sex is dependent, temperature is independent
- type of incubator is dependent, temperature is independent

temperature is dependent, type of incubator is independent

Unanswered

Question 37

0 / 1 pts

Which of these is an example of inductive reasoning?

Correct Answer

Hundreds of individuals of a species have been observed and all are photosynthetic; therefore, the species is photosynthetic.

These organisms live in sunny regions. Therefore, they are using photosynthesis.

If protists are all single-celled, then they are incapable of aggregating.

If two species are members of the same genus, they are more alike than each of them could be to a different genus.

Unanswered

Question 38

0 / 1 pts

Which of the following best describes a model organism?

It is often pictured in textbooks and is easy for students to imagine.

Correct Answer

It is well studied, it is easy to propagate, and results are widely applicable.

It is small, inexpensive to raise, and lives a long time.

It has been chosen for study by early biologists.

Unanswered

Question 39

0 / 1 pts

Why is a scientific topic best discussed by people of varying points of view, from different subdisciplines, and representing diverse cultures?

Correct Answer

Robust and critical discussion between diverse groups improves scientific thinking.

Scientists can coordinate with others to conduct experiments in similar ways.

This is a way of ensuring that everyone gets the same results.

Scientific theory requires input from different cultures and communities.

Unanswered

Question 40

0 / 1 pts

All the organisms on your campus make up _____.

an ecosystem

Correct Answer

a community

a population

a taxonomic domain

Unanswered

Question 41

0 / 1 pts

Systems biology is mainly an attempt to _____.

analyze genomes from different species

simplify complex problems by reducing the system into smaller, less complex units

Correct Answer

understand the behavior of entire biological systems by studying interactions among its component parts

build high-throughput machines to rapidly acquire data

Unanswered

Question 42

0 / 1 pts

Which of these best demonstrates unity among organisms?

emergent properties

descent with modification

Correct Answer

the structure and function of DNA

natural selection

Unanswered

Question 43

0 / 1 pts

A controlled experiment is one that _____.

proceeds slowly so a scientist can make careful records

Correct Answer

tests experimental and control groups in parallel

is repeated many times to make sure the results are accurate

keeps all variables constant

Unanswered

Question 44

0 / 1 pts

Which of the following statements best distinguishes hypotheses from theories in science?

- Theories are hypotheses that have been proved.
- Hypotheses are guesses; theories are correct answers.

Correct Answer

- Hypotheses usually are relatively narrow in scope; theories have broad explanatory power.
- Theories are proved true; hypotheses are often contradicted by experimental results.

Unanswered

Question 45

0 / 1 pts

Which of the following is an example of qualitative data?

Correct Answer

- The fish swam in a zigzag motion.
- The contents of the stomach are mixed every 20 seconds.
- The temperature decreased from 20C to 15C.
- The six pairs of robins hatched an average of three chicks each.

Unanswered

Question 46

0 / 1 pts

Which sentence best describes the logic of scientific inquiry?

- If I generate a testable hypothesis, tests and observations will support it.
- If my prediction is correct, it will lead to a testable hypothesis.
- If my observations are accurate, they will support my hypothesis.

Correct Answer

- If my prediction turns out to be correct, my hypothesis is supported.

Quiz Score: **0** out of 46