ARIZONA BIOLOGY · FINAL EXAM · 50 QUESTIONS

Final Exam — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1

The nucleus of a eukaryotic cell is important mainly because it stores

Question 1

The nucleus of a eukaryotic cell is important mainly because it stores

A) Water for storage

B) ATP for movement

C) Genetic information

D) Lipids for insulation

- A Water for storage
- B ATP for movement
- C Genetic information
- D Lipids for insulation

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Flag a mistake

2

An organism with two different alleles for a gene, such as Tt, is described as

Question 2

An organism with two different alleles for a gene, such as Tt, is described as

A) Homozygous recessive

B) Heterozygous

C) Haploid

D) Homozygous dominant

A Homozygous recessive

B Heterozygous

C Haploid

D Homozygous dominant

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Flag a mistake

3

Fitness in evolutionary biology refers to an organism's ability to survive and pass its genes to

Question 3

Fitness in evolutionary biology refers to an organism's ability to survive and pass its genes to

A) Predators

B) Competitors only

C) The next species

D) Offspring

A Predators

B Competitors only

C The next species

D Offspring

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4

Abiotic factors in an ecosystem include sunlight, temperature, water, and

Question 4

Abiotic factors in an ecosystem include sunlight, temperature, water, and

A) Bacteria

B) Plants

C) Animals

D) Soil minerals

A Bacteria

B Plants

C Animals

D Soil minerals

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5

Ribosomes build proteins by joining amino acids together in the order coded by

Question 5

Ribosomes build proteins by joining amino acids together in the order coded by

A) Messenger RNA

B) Lipid molecules

C) Glucose molecules

D) Water molecules

A Messenger RNA

B Lipid molecules

C Glucose molecules

D Water molecules

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6

Two heterozygous tall pea plants are crossed, where T is tall and t is short The expected ratio of tall offspring to short offspring is

Question 6

Two heterozygous tall pea plants are crossed, where T is tall and t is short The expected ratio of tall offspring to short offspring is

A) 1 to 3

B) 3 to 1

C) 1 to 1

D) 2 to 1

A 1 to 3

B 3 to 1

C 1 to 1

D 2 to 1

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7

Lamarck proposed that traits acquired during an organism's lifetime could be inherited, an idea that is not supported because acquired traits do not change

Question 7

Lamarck proposed that traits acquired during an organism's lifetime could be inherited, an idea that is not supported because acquired traits do not change

A) Body size

B) Behavior

C) Habitat

D) DNA passed to offspring

A Body size

B Behavior

C Habitat

D DNA passed to offspring

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8

Decomposers, such as fungi and bacteria, break down dead organisms and return nutrients to the

Question 8

Decomposers, such as fungi and bacteria, break down dead organisms and return nutrients to the

A) Atmosphere only

B) Producers only

C) Food web

D) Soil

A Atmosphere only

B Producers only

C Food web

D Soil

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9

A plant cell is supported and protected by a rigid structure outside its plasma membrane called the

Question 9

A plant cell is supported and protected by a rigid structure outside its plasma membrane called the

A) Golgi body

B) Cell wall

C) Cytoskeleton

D) Nuclear envelope

A Golgi body

B Cell wall

C Cytoskeleton

D Nuclear envelope

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10

A test cross is used to find the genotype of an organism showing a dominant trait by crossing it with an organism that is

Question 10

A test cross is used to find the genotype of an organism showing a dominant trait by crossing it with an organism that is

A) Haploid

B) Homozygous recessive

C) Homozygous dominant

D) Heterozygous

A Haploid

B Homozygous recessive

C Homozygous dominant

D Heterozygous

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Flag a mistake

11

Analogous structures, such as the wings of birds and insects, have similar functions but evolved separately, which is evidence of

Question 11

Analogous structures, such as the wings of birds and insects, have similar functions but evolved separately, which is evidence of

A) Convergent evolution

B) Common ancestry

C) Artificial selection

D) Fossil formation

A Convergent evolution

B Common ancestry

C Artificial selection

D Fossil formation

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12

Energy is lost as heat at each step of a food chain, so there are usually fewer organisms at higher

Question 12

Energy is lost as heat at each step of a food chain, so there are usually fewer organisms at higher

A) Trophic levels

B) Populations

C) Biomes

D) Communities

A Trophic levels

B Populations

C Biomes

D Communities

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13

Oxygen enters a cell and carbon dioxide leaves mainly by the process of

Question 13

Oxygen enters a cell and carbon dioxide leaves mainly by the process of

A) Endocytosis

B) Exocytosis

C) Active transport

D) Simple diffusion

A Endocytosis

B Exocytosis

C Active transport

D Simple diffusion

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14

Human blood type is controlled by multiple alleles, and a person with genotype IAi has blood type

Question 14

Human blood type is controlled by multiple alleles, and a person with genotype IAi has blood type

A) AB

B) O

C) A

D) B

A AB

B O

C A

D B

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15

DNA and protein similarities between two species are strong evidence of how closely the species are

Question 15

DNA and protein similarities between two species are strong evidence of how closely the species are

A) Feeding

B) Related

C) Competing

D) Migrating

A Feeding

B Related

C Competing

D Migrating

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16

Mutualism is a symbiotic relationship in which both species

Question 16

Mutualism is a symbiotic relationship in which both species

A) Compete for food

B) Benefit

C) Are harmed

D) Are unaffected

A Compete for food

B Benefit

C Are harmed

D Are unaffected

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17

Active transport differs from diffusion because active transport moves substances against a gradient and uses

Question 17

Active transport differs from diffusion because active transport moves substances against a gradient and uses

A) Sunlight directly

B) Water pressure only

C) Gravity alone

D) Cell energy in the form of ATP

A Sunlight directly

B Water pressure only

C Gravity alone

D Cell energy in the form of ATP

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18

A pedigree chart uses squares for males, circles for females, and shading to show individuals who

Question 18

A pedigree chart uses squares for males, circles for females, and shading to show individuals who

A) Are married

B) Have no children

C) Are twins

D) Express the trait studied

A Are married

B Have no children

C Are twins

D Express the trait studied

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19

Artificial selection differs from natural selection because humans choose which organisms

Question 19

Artificial selection differs from natural selection because humans choose which organisms

A) Fossilize

B) Reproduce

C) Mutate

D) Migrate

A Fossilize

B Reproduce

C Mutate

D Migrate

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Flag a mistake

20

A limiting factor, such as a shortage of water in a desert, limits the size of a

Question 20

A limiting factor, such as a shortage of water in a desert, limits the size of a

A) Food web

B) Population

C) Biome

D) Species name

A Food web

B Population

C Biome

D Species name

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21

An enzyme and its substrate fit together at a specific region of the enzyme called the

Question 21

An enzyme and its substrate fit together at a specific region of the enzyme called the

A) Active site

B) Cell wall

C) Plasma membrane

D) Nuclear pore

A Active site

B Cell wall

C Plasma membrane

D Nuclear pore

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22

Crossing over during meiosis exchanges segments between homologous chromosomes and increases

Question 22

Crossing over during meiosis exchanges segments between homologous chromosomes and increases

A) Genetic variation in offspring

B) The chromosome number

C) The rate of mitosis

D) The size of the nucleus

A Genetic variation in offspring

B The chromosome number

C The rate of mitosis

D The size of the nucleus

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23

A cladogram shows evolutionary relationships, and species that share a more recent branching point share a more recent

Question 23

A cladogram shows evolutionary relationships, and species that share a more recent branching point share a more recent

A) Habitat

B) Diet

C) Common ancestor

D) Fossil

A Habitat

B Diet

C Common ancestor

D Fossil

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24

Logistic growth levels off as a population approaches carrying capacity and forms an

Question 24

Logistic growth levels off as a population approaches carrying capacity and forms an

A) Straight line

B) Circle

C) S shaped curve

D) J shaped curve

A Straight line

B Circle

C S shaped curve

D J shaped curve

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25 The main function of nucleic acids in a cell is to store and transmit

Question 25

The main function of nucleic acids in a cell is to store and transmit

A) Genetic information

B) Quick energy

C) Heat energy

D) Water

A Genetic information

B Quick energy

C Heat energy

D Water

Understand It with Pulse

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26 Down syndrome in humans is most often caused by an extra copy of chromosome

Question 26

Down syndrome in humans is most often caused by an extra copy of chromosome

A) 21

B) 23

C) 18

D) 13

- **A** 21
- **B** 23
- **C** 18
- **D** 13

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27 A population in which an allele makes up 40 out of 200 total alleles has an allele frequency of

Question 27

A population in which an allele makes up 40 out of 200 total alleles has an allele frequency of

ANSWER _____

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28

A keystone species has a large effect on its ecosystem relative to its abundance, so removing it can change the whole

Question 28

A keystone species has a large effect on its ecosystem relative to its abundance, so removing it can change the whole

A) Biome

B) Population size only

C) Food chain only

D) Community

A Biome

B Population size only

C Food chain only

D Community

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29

A messenger RNA codon table is given UGC codes for cysteine CAU codes for histidine The sequence AUGUGC codes for methionine followed by

Question 29

A messenger RNA codon table is given UGC codes for cysteine CAU codes for histidine The sequence AUGUGC codes for methionine followed by

A) Phenylalanine

B) Histidine

C) Cysteine

D) Methionine

A Phenylalanine

B Histidine

C Cysteine

D Methionine

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Flag a mistake

30

A mutation occurs in a sex cell rather than a body cell. What can happen to that mutation?

Question 30

A mutation occurs in a sex cell rather than a body cell. What can happen to that mutation?

A) Is always repaired

B) Can be passed to offspring

C) Always causes disease

D) Changes the whole genome

A Is always repaired

B Can be passed to offspring

C Always causes disease

D Changes the whole genome

Understand It with Pulse

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31

Variation within a population comes mainly from mutations, crossing over, and independent assortment during

Question 31

Variation within a population comes mainly from mutations, crossing over, and independent assortment during

A) Meiosis

B) Mitosis only

C) Photosynthesis

D) Fermentation

A Meiosis

B Mitosis only

C Photosynthesis

D Fermentation

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32 The biosphere includes all regions of Earth where organisms

Question 32

The biosphere includes all regions of Earth where organisms

A) Live

B) Fossilize

C) Migrate only

D) Compete only

A Live

B Fossilize

C Migrate only

D Compete only

Understand It with Pulse

Flag a mistake

33

The cytoskeleton is a network of fibers that gives a cell shape and helps move materials inside the

Question 33

The cytoskeleton is a network of fibers that gives a cell shape and helps move materials inside the

A) Cell

B) Cell wall

C) Chloroplast

D) Nucleus

A Cell

B Cell wall

C Chloroplast

D Nucleus

Understand It with Pulse

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34

The law of segregation states that the two alleles for a gene separate during the formation of

Question 34

The law of segregation states that the two alleles for a gene separate during the formation of

A) Zygotes only

B) Body cells

C) Proteins

D) Gametes

A Zygotes only

B Body cells

C Proteins

D Gametes

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35

Biogeography studies where species live, and the unique species found on isolated islands support the idea of evolution from a

Question 35

Biogeography studies where species live, and the unique species found on isolated islands support the idea of evolution from a

A) Single climate

B) Common ancestor

C) Recent migration only

D) Fossil bed

A Single climate

B Common ancestor

C Recent migration only

D Fossil bed

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36 Tundra is a cold biome with a layer of permanently frozen soil called

Question 36

Tundra is a cold biome with a layer of permanently frozen soil called

A) Clay

B) Permafrost

C) Topsoil

D) Bedrock

A Clay

B Permafrost

C Topsoil

D Bedrock

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37 A channel protein in a plasma membrane helps specific substances cross by

Question 37

A channel protein in a plasma membrane helps specific substances cross by

A) Facilitated diffusion

B) Endocytosis only

C) Active transport only

D) Osmosis of lipids

- **A** Facilitated diffusion
- **B** Endocytosis only
- **C** Active transport only
- **D** Osmosis of lipids

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38 A plant with genotype Rr is crossed with a plant with genotype rr, where R is round seeds The expected number of round seeded plants out of 200 offspring is

Question 38

A plant with genotype Rr is crossed with a plant with genotype rr, where R is round seeds The expected number of round seeded plants out of 200 offspring is

ANSWER _____

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39 Convergent evolution produces similar traits in unrelated species that live in similar

Question 39

Convergent evolution produces similar traits in unrelated species that live in similar

A) Time periods only

B) Kingdoms

C) Environments

D) Fossil layers

- **A** Time periods only
- **B** Kingdoms
- **C** Environments
- **D** Fossil layers

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40

Eutrophication occurs when excess nutrients enter a lake, algae grow rapidly, and oxygen levels fall when the algae

Question 40

Eutrophication occurs when excess nutrients enter a lake, algae grow rapidly, and oxygen levels fall when the algae

A) Migrate away

B) Freeze

C) Die and decompose

D) Photosynthesize

A Migrate away

B Freeze

C Die and decompose

D Photosynthesize

Understand It with Pulse

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41

As a cell grows larger, its volume grows faster than its surface area, so its surface area to volume ratio

Question 41

As a cell grows larger, its volume grows faster than its surface area, so its surface area to volume ratio

A) Doubles each hour

B) Increases

C) Decreases

D) Stays the same

A Doubles each hour

B Increases

C Decreases

D Stays the same

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42

A karyotype is a picture of all the chromosomes in a cell arranged by size and shape, and it can reveal

Question 42

A karyotype is a picture of all the chromosomes in a cell arranged by size and shape, and it can reveal

A) Protein sequences

B) Extra or missing chromosomes

C) Blood type

D) Eye color genes

A Protein sequences

B Extra or missing chromosomes

C Blood type

D Eye color genes

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43 Classification groups organisms by shared characteristics, from the broadest group, domain, down to the most specific group,

Question 43

Classification groups organisms by shared characteristics, from the broadest group, domain, down to the most specific group,

A) Genus

B) Family

C) Species

D) Kingdom

A Genus

B Family

C Species

D Kingdom

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44

In a predator-prey cycle, the predator population increases after the prey population increases because

Question 44

In a predator – prey cycle, the predator population increases after the prey population increases because

A) more prey supports more predators

B) predators eat producers

C) prey eat predators

D) producers stop growing

A more prey supports more predators

B predators eat producers

C prey eat predators

D producers stop growing

Understand It with Pulse

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45

Photosynthesis takes place in chloroplasts and produces glucose and oxygen from carbon dioxide, water, and

Question 45

Photosynthesis takes place in chloroplasts and produces glucose and oxygen from carbon dioxide, water, and

A) ATP only

B) Soil minerals

C) Light energy

D) Nitrogen gas

A ATP only

B Soil minerals

C Light energy

D Nitrogen gas

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46

A DNA fingerprint is useful for identification because the pattern of DNA fragments differs between

Question 46

A DNA fingerprint is useful for identification because the pattern of DNA fragments differs between

A) All members of a species

B) Parents and children only

C) Unrelated individuals

D) Identical twins only

A All members of a species

B Parents and children only

C Unrelated individuals

D Identical twins only

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47 Extinction occurs when the last member of a species dies and the species no longer

Question 47

Extinction occurs when the last member of a species dies and the species no longer

A) Mutates

B) Migrates

C) Competes

D) Exists

A Mutates

B Migrates

C Competes

D Exists

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48 If producers store 5000 kilocalories and about 10 percent transfers at each level, the energy reaching secondary consumers is about

Question 48

If producers store 5000 kilocalories and about 10 percent transfers at each level, the energy reaching secondary consumers is about

ANSWER

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49 Uncontrolled cell division can form a mass of cells called a

Question 49

Uncontrolled cell division can form a mass of cells called a

A) Vacuole

B) Chromosome

C) Organelle

D) Tumor

A Vacuole

B Chromosome

C Organelle

D Tumor

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50

Cloning produces genetically identical copies of an organism from a single

Question 50

Cloning produces genetically identical copies of an organism from a single

A) Mutated gene

B) Fertilized egg only

C) Bacterial plasmid only

D) Donor cell

A Mutated gene

B Fertilized egg only

C Bacterial plasmid only

D Donor cell

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ANSWER KEY

1. C
2. B
3. D
4. D
5. A
6. B
7. D
8. D
9. B
10. B
11. A
12. A
13. D
14. C
15. B
16. B
17. D
18. D
19. B
20. B
21. A
22. A
23. C
24. C
25. A
26. A
27. 0.2
28. D
29. C
30. B
31. A
32. A
33. A
34. D
35. B
36. B
37. A
38. 100
39. C
40. C
41. C
42. B
43. C
44. A
45. C
46. C
47. D
48. 50
49. D
50. D

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