ARKANSAS 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

Which structure is found in both a bacterial cell and a human liver cell

Question 1

Which structure is found in both a bacterial cell and a human liver cell

A) Chloroplast

B) Large central vacuole

C) Ribosome

D) Golgi body with stacks

A Chloroplast

B Large central vacuole

C Ribosome

D Golgi body with stacks

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Flag a mistake

2 An allele is best described as

Question 2

An allele is best described as

A) One version of a gene

B) A whole chromosome pair

C) A type of ribosome

D) A cell membrane protein

- **A** One version of a gene
- **B** A whole chromosome pair
- **C** A type of ribosome
- **D** A cell membrane protein

Understand It with Pulse | Flag a mistake

3

Natural selection acts on the variation already present in a population, favouring individuals with traits that increase

Question 3

Natural selection acts on the variation already present in a population, favouring individuals with traits that increase

A) Body size only

B) Survival and reproduction

C) Speed only

D) Colour only

A Body size only

B Survival and reproduction

C Speed only

D Colour only

Understand It with Pulse

Flag a mistake

4

Abiotic factors in a pond include water temperature, dissolved oxygen, and

Question 4

Abiotic factors in a pond include water temperature, dissolved oxygen, and

A) Algae

B) Sunlight

C) Fish

D) Bacteria

A Algae

B Sunlight

C Fish

D Bacteria

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Flag a mistake

5 Most ATP in an animal cell is made in the

Question 5

Most ATP in an animal cell is made in the

A) Mitochondrion

B) Ribosome

C) Nucleus

D) Cell wall

A Mitochondrion

B Ribosome

C Nucleus

D Cell wall

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Flag a mistake

6 A genotype with two different alleles, such as Aa, is

Question 6

A genotype with two different alleles, such as Aa, is

A) Heterozygous

B) Homozygous dominant

C) Homozygous recessive

D) Haploid

A Heterozygous

B Homozygous dominant

C Homozygous recessive

D Haploid

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Flag a mistake

7

Analogous structures, such as wings of birds and wings of insects, are similar in function but not in ancestry, so they are evidence of

Question 7

Analogous structures, such as wings of birds and wings of insects, are similar in function but not in ancestry, so they are evidence of

A) Common ancestry

B) Convergent evolution

C) Homology

D) Vestigial loss

A Common ancestry

B Convergent evolution

C Homology

D Vestigial loss

Understand It with Pulse

Flag a mistake

8 A niche is the role of a species, including its food, habitat, and

Question 8

A niche is the role of a species, including its food, habitat, and

A) Population size only

B) Interactions with other species

C) Colour only

D) Body size only

A Population size only

B Interactions with other species

C Colour only

D Body size only

Understand It with Pulse

Flag a mistake

9 Rough endoplasmic reticulum is rough because its outer surface carries

Question 9

Rough endoplasmic reticulum is rough because its outer surface carries

A) Chlorophyll

B) DNA loops

C) Lysosomes

D) Ribosomes

A Chlorophyll

B DNA loops

C Lysosomes

D Ribosomes

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Flag a mistake

10

A pea plant with genotype Tt is crossed with tt, and half the offspring are expected to show the dominant trait because the cross is a

Question 10

A pea plant with genotype Tt is crossed with tt, and half the offspring are expected to show the dominant trait because the cross is a

A) Self cross of two dominants

B) Dihybrid cross only

C) Back cross with no recessive

D) Test cross with a recessive parent

A Self cross of two dominants

B Dihybrid cross only

C Back cross with no recessive

D Test cross with a recessive parent

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Flag a mistake

11

DNA sequence similarity between species is strong evidence for evolution because closely related species tend to share

Question 11

DNA sequence similarity between species is strong evidence for evolution because closely related species tend to share

A) More similar DNA sequences

B) Identical habitats only

C) Identical diets only

D) Identical body sizes

A More similar DNA sequences

B Identical habitats only

C Identical diets only

D Identical body sizes

Understand It with Pulse

Flag a mistake

12 Producers capture energy, usually from sunlight, and make

Question 12

Producers capture energy, usually from sunlight, and make

A) Organic compounds from inorganic ones

B) ATP from animals

C) Nitrogen from predators

D) Water from consumers

A Organic compounds from inorganic ones

B ATP from animals

C Nitrogen from predators

D Water from consumers

Understand It with Pulse

Flag a mistake

13 A mature plant cell often has one very large vacuole that

Question 13

A mature plant cell often has one very large vacuole that

A) Makes ATP from glucose

B) Reads messenger RNA

C) Stores water and helps support the cell

D) Forms the cell wall

- **A** Makes ATP from glucose
- **B** Reads messenger RNA
- **C** Stores water and helps support the cell
- **D** Forms the cell wall

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14

A dihybrid cross of two heterozygotes AaBb by AaBb is expected to give a phenotype ratio of

Question 14

A dihybrid cross of two heterozygotes AaBb by AaBb is expected to give a phenotype ratio of

A) 3 to 1 only

B) 1 to 1 to 1 to 1

C) 9 to 3 to 3 to 1

D) 4 to 4 to 4 to 4

A 3 to 1 only

B 1 to 1 to 1 to 1

C 9 to 3 to 3 to 1

D 4 to 4 to 4 to 4

Understand It with Pulse

Flag a mistake

15

A bottleneck occurs when a population is greatly reduced in size, leaving survivors with

Question 15

A bottleneck occurs when a population is greatly reduced in size, leaving survivors with

A) More variation than before

B) No alleles at all

C) Only new mutations

D) Less genetic variation than before

A More variation than before

B No alleles at all

C Only new mutations

D Less genetic variation than before

Understand It with Pulse

Flag a mistake

16

Only about ten percent of energy moves from one trophic level to the next, mainly because much energy is lost as

Question 16

Only about ten percent of energy moves from one trophic level to the next, mainly because much energy is lost as

A) Light reflected by leaves

B) Water vapour only

C) Stored fat only

D) Heat through respiration

A Light reflected by leaves

B Water vapour only

C Stored fat only

D Heat through respiration

Understand It with Pulse

Flag a mistake

17

Ribosomes make a protein by linking amino acids in the sequence specified by

Question 17

Ribosomes make a protein by linking amino acids in the sequence specified by

A) A fatty acid chain

B) A glucose polymer

C) Messenger RNA

D) A water molecule

A A fatty acid chain

B A glucose polymer

C Messenger RNA

D A water molecule

Understand It with Pulse

Flag a mistake

18 Sister chromatids separate during

Question 18

Sister chromatids separate during

A) Anaphase I of meiosis

B) Anaphase II of meiosis

C) Prophase I only

D) Interphase only

A Anaphase I of meiosis

B Anaphase II of meiosis

C Prophase I only

D Interphase only

Understand It with Pulse

Flag a mistake

19

In a population, babies with very low and very high birth weights survive less well than babies of average weight. Which type of selection is acting?

Question 19

In a population, babies with very low and very high birth weights survive less well than babies of average weight. Which type of selection is acting?

A) stabilizing selection

B) directional selection

C) disruptive selection

D) artificial selection

A stabilizing selection

B directional selection

C disruptive selection

D artificial selection

Understand It with Pulse

Flag a mistake

20 In commensalism one species benefits while the other is

Question 20

In commensalism one species benefits while the other is

A) Harmed

B) Also benefited equally

C) Killed

D) Neither helped nor harmed

A Harmed

B Also benefited equally

C Killed

D Neither helped nor harmed

Understand It with Pulse

Flag a mistake

21

A plant cell in strong salt water loses water and its membrane pulls away from the

Question 21

A plant cell in strong salt water loses water and its membrane pulls away from the

A) Cell wall

B) Nucleus

C) Ribosome

D) Mitochondrion

A Cell wall

B Nucleus

C Ribosome

D Mitochondrion

Understand It with Pulse

Flag a mistake

22 Mitosis differs from meiosis because mitosis produces

Question 22

Mitosis differs from meiosis because mitosis produces

A) Two genetically identical diploid cells

B) Four genetically different haploid cells

C) Four identical diploid cells

D) Two different haploid cells

- **A** Two genetically identical diploid cells
- **B** Four genetically different haploid cells
- **C** Four identical diploid cells
- **D** Two different haploid cells

Understand It with Pulse | **Flag a mistake**

23 Speciation requires reproductive isolation, so two groups no longer

Question 23

Speciation requires reproductive isolation, so two groups no longer

A) Share a habitat

B) Eat the same food

C) Interbreed to produce fertile offspring

D) Look similar

A Share a habitat

B Eat the same food

C Interbreed to produce fertile offspring

D Look similar

Understand It with Pulse

Flag a mistake

24 A density dependent limiting factor, such as disease, has a stronger effect when population density is

Question 24

A density dependent limiting factor, such as disease, has a stronger effect when population density is

A) Low

B) Zero

C) High

D) Constant

A Low

B Zero

C High

D Constant

Understand It with Pulse

Flag a mistake

25

An enzyme increases reaction rate without being consumed because it lowers the

Question 25

An enzyme increases reaction rate without being consumed because it lowers the

A) Activation energy

B) Number of reactants

C) Temperature of the surroundings

D) Amount of product formed

A Activation energy

B Number of reactants

C Temperature of the surroundings

D Amount of product formed

Understand It with Pulse

Flag a mistake

26

Sex linked traits carried on the X chromosome appear more often in males because males have

Question 26

Sex linked traits carried on the X chromosome appear more often in males because males have

A) Only one X chromosome

B) Two X chromosomes

C) No Y chromosome

D) Two copies of every X gene

A Only one X chromosome

B Two X chromosomes

C No Y chromosome

D Two copies of every X gene

Understand It with Pulse

Flag a mistake

27

Adaptive radiation is rapid diversification from one ancestor into many species adapted to

Question 27

Adaptive radiation is rapid diversification from one ancestor into many species adapted to

A) The same niche only

B) Different niches

C) One food only

D) No niches

A The same niche only

B Different niches

C One food only

D No niches

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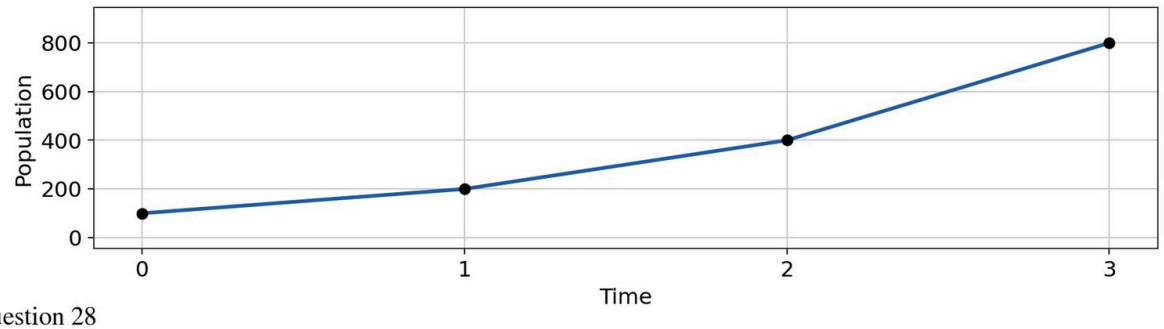
28

The graph shows a population over time. The population at time 3 is how many times the population at time 1 ?



Question 28

The graph shows a population over time. The population at time 3 is how many times the population at time 1 ?

A) 2

B) 3

C) 4

D) 8

A 2

B 3

C 4

D 8

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29

Heating an enzyme strongly changes its shape so it can no longer bind substrate, a change called

Question 29

Heating an enzyme strongly changes its shape so it can no longer bind substrate, a change called

A) Replication

B) Fermentation

C) Photosynthesis

D) Denaturation

A Replication

B Fermentation

C Photosynthesis

D Denaturation

Understand It with Pulse

Flag a mistake

30

Codominance is shown when both alleles are fully expressed, as in AB blood type where both A and B antigens appear on red cells, because

Question 30

Codominance is shown when both alleles are fully expressed, as in AB blood type where both A and B antigens appear on red cells, because

A) One allele is fully dominant

B) The trait is sex linked

C) The gene is on a plasmid

D) Neither allele is recessive to the other

A One allele is fully dominant

B The trait is sex linked

C The gene is on a plasmid

D Neither allele is recessive to the other

Understand It with Pulse

Flag a mistake

31

Biogeography supports evolution because species on isolated islands often resemble species on the nearest

Question 31

Biogeography supports evolution because species on isolated islands often resemble species on the nearest

A) Mainland

B) Distant continent

C) Ocean floor

D) Polar region

A Mainland

B Distant continent

C Ocean floor

D Polar region

Understand It with Pulse

Flag a mistake

32 The carbon cycle returns carbon dioxide to air when organisms

Question 32

The carbon cycle returns carbon dioxide to air when organisms

A) Respire and when organic matter burns or decays

B) Photosynthesize only

C) Fix nitrogen

D) Absorb sunlight

A Respire and when organic matter burns or decays

B Photosynthesize only

C Fix nitrogen

D Absorb sunlight

Understand It with Pulse

Flag a mistake

33 Lipids are useful for long term energy storage mainly because they store

Question 33

Lipids are useful for long term energy storage mainly because they store

A) Genetic instructions

B) More energy per gram than carbohydrates

C) Water for osmosis

D) Oxygen for respiration

A Genetic instructions

B More energy per gram than carbohydrates

C Water for osmosis

D Oxygen for respiration

Understand It with Pulse

Flag a mistake

34 In a pedigree, a shaded symbol normally means the person

Question 34

In a pedigree, a shaded symbol normally means the person

A) Is a carrier only

B) Expresses the trait being tracked

C) Is unaffected

D) Is not yet born

A Is a carrier only

B Expresses the trait being tracked

C Is unaffected

D Is not yet born

Understand It with Pulse

Flag a mistake

35

Coevolution occurs when two species influence each other evolution, such as a flower and its

Question 35

Coevolution occurs when two species influence each other evolution, such as a flower and its

A) Predator only

B) Rock habitat

C) Water source

D) Pollinator

A Predator only

B Rock habitat

C Water source

D Pollinator

Understand It with Pulse

Flag a mistake

36 Denitrifying bacteria return nitrogen to air by converting nitrates into

Question 36

Denitrifying bacteria return nitrogen to air by converting nitrates into

A) Ammonia only

B) Plant proteins

C) Oxygen

D) Nitrogen gas

A Ammonia only

B Plant proteins

C Oxygen

D Nitrogen gas

Understand It with Pulse

Flag a mistake

37

A DNA strand reads ACGT in order, and its complement pairs A with T and C with G The complement in the same order is

Question 37

A DNA strand reads ACGT in order, and its complement pairs A with T and C with G The complement in the same order is

A) TGCA

B) ACGT

C) UGCA

D) AGCT

A TGCA

B ACGT

C UGCA

D AGCT

Understand It with Pulse

Flag a mistake

38

A silent mutation changes a DNA base but does not change the amino acid, because the genetic code is

Question 38

A silent mutation changes a DNA base but does not change the amino acid, because the genetic code is

A) Redundant, with several codons per amino acid

B) Read only once

C) Without stop codons

D) Made of two bases only

A Redundant, with several codons per amino acid

B Read only once

C Without stop codons

D Made of two bases only

Understand It with Pulse

Flag a mistake

39

Sexual selection favours traits that increase mating success even if they reduce

Question 39

Sexual selection favours traits that increase mating success even if they reduce

A) Fertility always

B) Growth always

C) Survival in other ways

D) Migration

A Fertility always

B Growth always

C Survival in other ways

D Migration

Understand It with Pulse

Flag a mistake

40 Habitat loss is a major cause of extinction because it reduces the

Question 40

Habitat loss is a major cause of extinction because it reduces the

A) Number of fossils

B) Mutation rate

C) Space and resources a species needs

D) Predator numbers only

A Number of fossils

B Mutation rate

C Space and resources a species needs

D Predator numbers only

Understand It with Pulse

Flag a mistake

41 Translation builds a polypeptide at a ribosome by reading

Question 41

Translation builds a polypeptide at a ribosome by reading

A) DNA directly without RNA

B) Lipid chains

C) Starch granules

D) Messenger RNA codons

A DNA directly without RNA

B Lipid chains

C Starch granules

D Messenger RNA codons

Understand It with Pulse

Flag a mistake

42 A karyotype is a picture of an organism chromosomes arranged by size, used to detect

Question 42

A karyotype is a picture of an organism chromosomes arranged by size, used to detect

A) Enzyme rates

B) Blood type antigens

C) Membrane lipids

D) Extra or missing chromosomes

- **A** Enzyme rates
- **B** Blood type antigens
- **C** Membrane lipids
- **D** Extra or missing chromosomes

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43 In a population, allele A frequency is 0.7, what is the frequency of allele a if only two alleles exist

Question 43

In a population, allele A frequency is 0.7, what is the frequency of allele a if only two alleles exist

ANSWER

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44 Acid rain forms when sulfur and nitrogen oxides react with water in air, and it can harm

Question 44

Acid rain forms when sulfur and nitrogen oxides react with water in air, and it can harm

A) Only deserts

B) Only glaciers

C) Aquatic life and forests

D) Only oceans

A Only deserts

B Only glaciers

C Aquatic life and forests

D Only oceans

Understand It with Pulse

Flag a mistake

45 Aerobic respiration uses glucose and oxygen to produce carbon dioxide, water, and

Question 45

Aerobic respiration uses glucose and oxygen to produce carbon dioxide, water, and

A) Glucose again

B) Lactic acid only

C) ATP

D) Oxygen again

- A Glucose again
- B Lactic acid only
- C ATP
- D Oxygen again

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46 A dihybrid heterozygous cross gives 160 offspring, how many are expected to show both recessive traits

Question 46

A dihybrid heterozygous cross gives 160 offspring, how many are expected to show both recessive traits

ANSWER _____

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47

Gradualism proposes that evolution usually occurs through small changes accumulating

Question 47

Gradualism proposes that evolution usually occurs through small changes accumulating

A) In one generation

B) Over long periods

C) Without variation

D) Only by drift

A In one generation

B Over long periods

C Without variation

D Only by drift

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Flag a mistake

48

In an energy pyramid, primary consumers receive about ten percent of producer energy, so if producers have 5000 units, primary consumers receive about

Question 48

In an energy pyramid, primary consumers receive about ten percent of producer energy, so if producers have 5000 units, primary consumers receive about

A) 50 units

B) 500 units

C) 5000 units

D) 4500 units

A 50 units

B 500 units

C 5000 units

D 4500 units

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Flag a mistake

49 Small cells exchange materials faster than large cells because they have a larger

Question 49

Small cells exchange materials faster than large cells because they have a larger

A) Volume to surface area ratio

B) Surface area to volume ratio

C) Nucleus to cytoplasm ratio

D) Membrane to wall ratio

A Volume to surface area ratio

B Surface area to volume ratio

C Nucleus to cytoplasm ratio

D Membrane to wall ratio

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50

A test cross uses a recessive parent to reveal the genotype of an organism showing the dominant trait, because any recessive offspring prove the parent is

Question 50

A test cross uses a recessive parent to reveal the genotype of an organism showing the dominant trait, because any recessive offspring prove the parent is

A) Homozygous dominant

B) Heterozygous

C) Haploid

D) Mutant

A Homozygous dominant

B Heterozygous

C Haploid

D Mutant

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ANSWER KEY

1.	C	**18.**	B	**35.**	D
2.	A	**19.**	A	**36.**	D
3.	B	**20.**	D	**37.**	A
4.	B	**21.**	A	**38.**	A
5.	A	**22.**	A	**39.**	C
6.	A	**23.**	C	**40.**	C
7.	B	**24.**	C	**41.**	D
8.	B	**25.**	A	**42.**	D
9.	D	**26.**	A	**43.**	0.3
10.	D	**27.**	B	**44.**	C
11.	A	**28.**	C	**45.**	C
12.	A	**29.**	D	**46.**	10
13.	C	**30.**	D	**47.**	B
14.	C	**31.**	A	**48.**	B
15.	D	**32.**	A	**49.**	B
16.	D	**33.**	B	**50.**	B
17.	C	**34.**	B		

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