ALASKA 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 organelle captures light energy in a plant cell**

- A Mitochondrion
- B Vacuole
- C Golgi body
- D Chloroplast

Understand It with Pulse | Flag a mistake

2 **An organism with two identical alleles for a gene is**

- A Homozygous
- B Heterozygous
- C Haploid
- D Hybrid only

Understand It with Pulse | Flag a mistake

3 **The ultimate source of new genetic variation in a population is**

A Migration

B Competition

C Predation

D Mutation

Understand It with Pulse | Flag a mistake

4 **Which of these is an abiotic factor in a forest**

A Trees

B Wolves

C Fungi

D Temperature

Understand It with Pulse | Flag a mistake

5 **The plasma membrane is best described as a phospholipid bilayer that is**

- A Fully open to all substances
- B Selectively permeable
- C Made only of protein
- D Found only in plant cells

Understand It with Pulse | Flag a mistake

6 **In snapdragons flower color shows incomplete dominance A red flowered plant crossed with a white flowered plant produces offspring with**

- A Pink flowers
- B Red flowers only
- C White flowers only
- D Yellow flowers

Understand It with Pulse | Flag a mistake

7 **The wing of an insect and the wing of a bird have similar functions but different origins They are**

A Analogous

B Homologous

C Vestigial

D Embryonic

Understand It with Pulse | Flag a mistake

8 **Decomposers such as fungi and bacteria are important because they**

A Eat only living plants

B Return nutrients to the soil

C Produce sunlight

D Stop all decay

Understand It with Pulse | Flag a mistake

9 **A white blood cell engulfs a bacterium by wrapping its membrane around it This process is**

- A Osmosis
- B Diffusion
- C Exocytosis
- D Endocytosis

Understand It with Pulse | Flag a mistake

10 **A recessive trait carried on the X chromosome appears more often in males mainly because males have**

- A Two X chromosomes
- B No X chromosome
- C Two Y chromosomes
- D Only one X chromosome

Understand It with Pulse | Flag a mistake

11 **Two species with very similar DNA sequences are most likely to be**

A Closely related

B Unrelated

C From different domains

D Extinct

Understand It with Pulse | Flag a mistake

12 **Grass is eaten by a hare which is eaten by a lynx In this chain the hare is a**

A Producer

B Decomposer

C Primary consumer

D Secondary consumer

Understand It with Pulse | Flag a mistake

13 **Which organelle releases energy from glucose for use by the cell**

A Chloroplast

B Mitochondrion

C Nucleus

D Ribosome

Understand It with Pulse | Flag a mistake

14 **Independent assortment means that genes on different chromosomes are inherited**

A Always together

B Only in females

C Independently of each other

D Only in males

Understand It with Pulse | Flag a mistake

15 **A population bottleneck occurs when**

A. A disaster sharply reduces population size

B. A population grows without limit

C. Many new species form at once

D. Two species merge

Understand It with Pulse | Flag a mistake

16 **Carrying capacity is the largest population an environment can support**

A. For one day

B. Without any food

C. In a laboratory only

D. Over a long time

Understand It with Pulse | Flag a mistake

17 **Which macromolecule provides quick energy and includes sugars and starches**

A Lipid

B Protein

C Nucleic acid

D Carbohydrate

Understand It with Pulse | Flag a mistake

18 **A point mutation that swaps one DNA base for another is called a**

A Frameshift mutation

B Deletion

C Substitution

D Duplication

Understand It with Pulse | Flag a mistake

19 **Finches on an island were studied in a dry year and a wet year In the dry year large hard seeds were common and finches with larger beaks survived better In the wet year small soft seeds were common Which claim is best supported**

A Beak size does not affect survival

B All finches have identical beaks

C Finches choose their beak size

D Selection pressures can change with conditions

Understand It with Pulse | Flag a mistake

20 **A bee pollinates a flower while collecting nectar Both species benefit This relationship is**

A Parasitism

B Commensalism

C Mutualism

D Competition

Understand It with Pulse | Flag a mistake

21 **Which list gives the phases of mitosis in the correct order**

- A Prophase metaphase anaphase telophase
- B Metaphase prophase telophase anaphase
- C Anaphase telophase prophase metaphase
- D Telophase anaphase metaphase prophase

Understand It with Pulse | Flag a mistake

22 **In a pedigree two unaffected parents have a child who shows a trait This pattern best fits inheritance that is**

- A Dominant
- B Recessive
- C Acquired
- D Linked to diet only

Understand It with Pulse | Flag a mistake

23 **In binomial nomenclature each species is given a name made of its**

A Genus and species

B Family and order

C Kingdom and phylum

D Class and order

Understand It with Pulse | Flag a mistake

24 **After a forest fire in Alaska new plants grow in soil that is already present This is an example of**

A Primary succession

B Extinction

C Secondary succession

D Speciation

Understand It with Pulse | Flag a mistake

25 **In photosynthesis a plant uses light energy water and carbon dioxide to make**

A Glucose and oxygen

B ATP and nitrogen

C Protein and water

D Lipid and salt

Understand It with Pulse | Flag a mistake

26 **To find the genotype of an organism showing a dominant trait it is crossed with an organism that is**

A Heterozygous

B Homozygous recessive

C Homozygous dominant

D Unrelated

Understand It with Pulse | Flag a mistake

27 **A phylogenetic tree shows**

A How many individuals live today

B The evolutionary relationships among species

C The food web of an ecosystem

D The age of every rock

Understand It with Pulse | Flag a mistake

28 **Hare and lynx numbers in northern Canada were recorded over many years When hare numbers rose lynx numbers rose a short time later When hare numbers fell lynx numbers fell a short time later What relationship best explains this pattern**

A Predator and prey

B Mutualism

C Competition

D Commensalism

Understand It with Pulse | Flag a mistake

29 **Yeast cells were kept at four temperatures and gas bubbles were counted for five minutes At 20 degrees Celsius 12 bubbles were counted At 30 degrees Celsius 28 bubbles were counted At 40 degrees Celsius 45 bubbles were counted At 50 degrees Celsius 18 bubbles were counted At which temperature was the respiration rate highest**

A 20 degrees Celsius

B 30 degrees Celsius

C 40 degrees Celsius

D 50 degrees Celsius

Understand It with Pulse | Flag a mistake

30 **Pea plants were crossed and the offspring were counted Tall plants numbered 602 Short plants numbered 201 Which conclusion best fits these results**

A Tall is dominant with about a 3 to 1 ratio

B Short is dominant with about a 3 to 1 ratio

C Tall and short are codominant

D Height is not inherited

Understand It with Pulse | Flag a mistake

31 **Lamarck proposed that traits acquired during a lifetime could be inherited Modern genetics does not support this because acquired traits usually do not change**

A DNA in gametes

B Body size

C Behavior

D Diet

Understand It with Pulse | Flag a mistake

32 **From smallest to largest the correct order of ecological levels is**

A Organism population community ecosystem biome

B Biome ecosystem community population organism

C Population organism biome ecosystem community

D Community organism population biome ecosystem

Understand It with Pulse | Flag a mistake

33 **The organelle that modifies and sorts proteins before they are shipped to their destination is the**

A Ribosome

B Golgi body

C Mitochondrion

D Nucleus

Understand It with Pulse | Flag a mistake

34 **In a Punnett square the symbols placed along the top edge and the left edge stand for**

A Offspring phenotypes

B Parent gametes

C Enzyme names

D Chromosome numbers

Understand It with Pulse | Flag a mistake

35 **Two populations that can no longer interbreed and produce fertile offspring are considered to be**

A The same species

B The same genus only

C The same population

D Different species

Understand It with Pulse | Flag a mistake

36 **A keystone species has a large effect on its ecosystem relative to its**

A Size

B Age

C Color

D Abundance

Understand It with Pulse | Flag a mistake

37 **The cytoskeleton of a cell is best described as a network of fibers that gives the cell**

- A Shape and helps move materials
- B Genetic information
- C Light energy
- D Water storage

Understand It with Pulse | Flag a mistake

38 **A mutation in a gamete can be passed to offspring while a mutation in most body cells cannot because only gametes**

- A Contribute DNA to the next generation
- B Divide by mitosis
- C Contain proteins
- D Contain mitochondria

Understand It with Pulse | Flag a mistake

39 **Mass extinction is best described as the loss of a large number of species in a relatively**

A Small area only

B Single generation

C Short period of geologic time

D Single habitat only

Understand It with Pulse | Flag a mistake

40 **Thawing permafrost in Alaska can release greenhouse gases and damage**

A Only ocean fish

B Only desert plants

C Roads and buildings

D Only birds

Understand It with Pulse | Flag a mistake

41 **A cell releases a hormone by fusing a vesicle with its plasma membrane This process is**

- A Diffusion
- B Osmosis
- C Endocytosis
- D Exocytosis

Understand It with Pulse | Flag a mistake

42 **A male human normally has which pair of sex chromosomes**

- A XX
- B YY
- C XO
- D XY

Understand It with Pulse | Flag a mistake

43 **Reproductive isolation can result from differences in mating season This type of isolation is**

A Geographic

B Behavioral

C Temporal

D Anatomical

Understand It with Pulse | Flag a mistake

44 **Biodiversity is highest where there are**

A Few species

B One species only

C Many different species

D No species

Understand It with Pulse | Flag a mistake

45 **The folds of the inner mitochondrial membrane increase the area available for**

A Storing DNA

B Storing water

C Making ATP

D Breaking down light

Understand It with Pulse | Flag a mistake

46 **Genetic engineering can produce human insulin by placing the insulin gene into**

A Rock

B Water

C Bacteria

D Sunlight

Understand It with Pulse | Flag a mistake

47 **A transitional fossil shows traits of two groups It provides evidence for**

A No change over time

B Evolutionary change between groups

C Extinction only

D Artificial selection

Understand It with Pulse | Flag a mistake

48 **Burning fossil fuels adds carbon dioxide to the atmosphere This can contribute to**

A Cooling only

B Climate warming

C Ozone creation

D Less plant growth

Understand It with Pulse | Flag a mistake

49 **A bacterial cell has no nucleus and no membrane bound organelles It is therefore classified as**

A Eukaryotic

B Prokaryotic

C Multicellular

D Photosynthetic only

Understand It with Pulse | Flag a mistake

50 **Two heterozygous parents are crossed The offspring genotypes are expected in the ratio**

A 3 to 1

B 1 to 2 to 1

C 9 to 3 to 3 to 1

D 1 to 1

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

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