CALIFORNIA 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 **A cell that lacks a nucleus and membrane bound organelles is classified as**

- A Photosynthetic
- B Eukaryotic
- C Multicellular
- D Prokaryotic

Understand It with Pulse | Flag a mistake

2 **In a food chain, energy flows from**

- A Producers to consumers
- B Decomposers to producers
- C Consumers to producers
- D Top predators to producers

Understand It with Pulse | Flag a mistake

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

A Homozygous dominant

B Heterozygous

C Homozygous recessive

D Haploid

Understand It with Pulse | Flag a mistake

4 **An adaptation is a trait that**

A Improves survival or reproduction in an environment

B An organism learns in its lifetime

C Appears only after extinction

D Is always visible

Understand It with Pulse | Flag a mistake

5 **The organelle that modifies, sorts, and packages proteins is the**

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

Understand It with Pulse | Flag a mistake

6 **Decomposers are important in an ecosystem because they**

- A Produce oxygen only
- B Remove all consumers
- C Return nutrients from dead matter to the soil
- D Eat only living plants

Understand It with Pulse | Flag a mistake

7 **A cross between two heterozygous parents for one gene gives genotypes in the expected ratio of**

A 9 to 3 to 3 to 1

B 1 to 2 to 1

C 1 to 1

D 3 to 1

Understand It with Pulse | Flag a mistake

8 **Similarities in early embryos of different vertebrates suggest**

A They eat the same food

B They are unrelated

C They live in the same habitat

D Common ancestry

Understand It with Pulse | Flag a mistake

9 **Starch is a polysaccharide made of many units of**

A Nucleotides

B Glucose

C Fatty acids

D Amino acids

Understand It with Pulse | Flag a mistake

10 **A population growing exponentially will increase**

A By the same number each year

B Until it reaches zero

C By a larger number each year as the population grows

D Only when predators arrive

Understand It with Pulse | Flag a mistake

11 **In incomplete dominance a cross between red flowered and white flowered snapdragons produces pink flowers because**

A The flowers mutate

B The alleles are on different chromosomes

C Both alleles are recessive

D Neither allele is fully dominant

Understand It with Pulse | Flag a mistake

12 **Geographic isolation can lead to speciation because separated populations**

A Become identical

B Stop reproducing

C Experience different selection and accumulate genetic differences

D Stop mutating

Understand It with Pulse | Flag a mistake

13 **An enzyme works best at a particular pH and temperature because extreme conditions can change its**

- A Mass
- B Shape
- C Location in the cell
- D Charge only

Understand It with Pulse | Flag a mistake

14 **A predator prey relationship in which the predator benefits and the prey is harmed is an example of**

- A Mutualism
- B Competition
- C Commensalism
- D Predation

Understand It with Pulse | Flag a mistake

15 **A person with blood type O has genotype ii and can receive blood from a donor with blood type**

A O only

B AB only

C A only

D B only

Understand It with Pulse | Flag a mistake

16 **Antibiotic resistance in bacteria spreads mainly because antibiotics**

A Change bacterial DNA directly in every cell

B Kill susceptible bacteria, leaving resistant ones to reproduce

C Cause mutations on demand

D Make bacteria stronger individually

Understand It with Pulse | Flag a mistake

17 **The organelle that produces most of the ATP in a eukaryotic cell is the**

A Mitochondrion

B Golgi body

C Nucleus

D Ribosome

Understand It with Pulse | Flag a mistake

18 **Biodiversity is a measure of the**

A Depth of soil

B Amount of sunlight

C Variety of species and genes in an area

D Number of individuals of one species

Understand It with Pulse | Flag a mistake

19 **A human body cell has 46 chromosomes After meiosis a human sex cell normally has**

ANSWER

Understand It with Pulse | Flag a mistake

20 **If the frequency of a recessive allele q is 0.2, the frequency of the dominant allele p is**

ANSWER

Understand It with Pulse | Flag a mistake

21 **Anaerobic respiration in muscle cells produces**

A Lactic acid

B Oxygen

C Carbon monoxide

D Glucose

Understand It with Pulse | Flag a mistake

22 **Eutrophication of a lake is often caused by excess nutrients, such as nitrates and phosphates, leading to algal blooms and then**

A More oxygen for fish

B Clearer water

C Oxygen depletion as algae decay

D Less plant growth

Understand It with Pulse | Flag a mistake

23 **A dihybrid cross between two heterozygous parents for two genes gives an expected phenotypic ratio of**

A 3 to 1

B 1 to 1

C 1 to 2 to 1

D 9 to 3 to 3 to 1

Understand It with Pulse | Flag a mistake

24 **An individual organism does not evolve during its lifetime, but a population evolves when**

A Allele frequencies change over generations

B One animal learns a skill

C An animal migrates

D The climate changes once

Understand It with Pulse | Flag a mistake

25 **A stem cell is different from a fully specialised cell because a stem cell**

A Has no membrane

B Can divide and give rise to specialised cell types

C Has no DNA

D Cannot divide

Understand It with Pulse | Flag a mistake

26 **In a pyramid of biomass, the producer level normally has**

A The least biomass

B No biomass

C The greatest biomass

D The same biomass as top predators

Understand It with Pulse | Flag a mistake

27 **A mutation that changes one DNA base to a different base is called a**

A Duplication

B Deletion

C Translocation

D Substitution

Understand It with Pulse | Flag a mistake

28 **Extinction occurs when**

A A species changes colour

B The last member of a species dies and no members remain

C A species moves

D A population grows

Understand It with Pulse | Flag a mistake

29 **During mitosis, the chromosome number of the daughter cells compared with the parent cell is**

A Zero

B The same

C Double

D Half

Understand It with Pulse | Flag a mistake

30 **The water cycle includes evaporation, condensation, and**

A Precipitation

B Photosynthesis

C Decomposition

D Nitrogen fixation

Understand It with Pulse | Flag a mistake

31 **During DNA replication each original strand serves as a template, so each new DNA molecule contains**

A No original strand

B Two new strands only

C Two original strands

D One original strand and one new strand

Understand It with Pulse | Flag a mistake

32 **Charles Darwin observed that finches on different Galapagos islands had different beak shapes suited to different foods, which supported the idea of**

A No change over time

B Inheritance of acquired traits only

C Special creation of each island type

D Natural selection and adaptation

Understand It with Pulse | Flag a mistake

33 **A lysosome contains enzymes that**

A Break down waste and worn out parts

B Copy DNA

C Make chlorophyll

D Build ribosomes

Understand It with Pulse | Flag a mistake

34 **A detritivore feeds mainly on**

A Sunlight

B Other detritivores only

C Dead organic matter

D Living prey

Understand It with Pulse | Flag a mistake

35 **In RNA, uracil pairs with**

A Guanine

B Thymine

C Adenine

D Cytosine

Understand It with Pulse | Flag a mistake

36 **A transitional fossil shows features of two groups, such as a fossil with both reptile and bird features, supporting**

A Extinction only

B Sudden creation only

C No evolution

D Common ancestry and gradual change

Understand It with Pulse | Flag a mistake

37 **A red blood cell placed in a hypertonic solution will**

A Swell

B Divide

C Stay unchanged

D Shrivel

Understand It with Pulse | Flag a mistake

38 **Density dependent factors, such as disease and competition, have a greater effect when a population is**

A Small

B Migrating

C Large and crowded

D Extinct

Understand It with Pulse | Flag a mistake

39 **A sex linked recessive trait carried by a mother who is a carrier has a chance of appearing in each son of**

A 100 percent

B 0 percent

C 50 percent

D 25 percent

Understand It with Pulse | Flag a mistake

40 **Directional selection shifts a population toward**

A No change

B One extreme phenotype

C Extinction always

D Both extremes

Understand It with Pulse | Flag a mistake

41 **In DNA, adenine pairs with**

A Thymine

B Cytosine

C Uracil

D Guanine

Understand It with Pulse | Flag a mistake

42 **In commensalism, one species benefits and the other is**

A Harmed

B Neither helped nor harmed

C Eaten

D Also harmed

Understand It with Pulse | Flag a mistake

43 **Sickle cell disease is caused by a mutation in the gene for**

A Insulin

B Haemoglobin

C Collagen

D Keratin

Understand It with Pulse | Flag a mistake

44 **If $q^2 = 0.04$ in a population , the frequency of the recessive phenotype is**

A 0.96

B 0.4

C 0.04

D 0.2

Understand It with Pulse | Flag a mistake

45 **A codon is a sequence of**

A 3 bases

B 2 bases

C 4 amino acids

D 20 bases

Understand It with Pulse | Flag a mistake

46 **Two species cannot occupy exactly the same niche in the same place for long because of**

A Succession

B Competitive exclusion

C Mutualism

D Photosynthesis

Understand It with Pulse | Flag a mistake

47 **A plant with genotype Rr is crossed with a plant with genotype rr, where R is round and r is wrinkled The expected fraction of wrinkled offspring is**

ANSWER

Understand It with Pulse | Flag a mistake

48 **Adaptive radiation occurs when one ancestral species gives rise to many species adapted to**

- A The same niche
- B No habitat
- C Different niches
- D One habitat only

Understand It with Pulse | Flag a mistake

49 **The main function of the cell membrane is to**

- A Make proteins
- B Produce glucose
- C Store genetic information
- D Control what enters and leaves the cell

Understand It with Pulse | Flag a mistake

50

A food web in a pond loses its top predator The most likely immediate effect on herbivores is that their numbers

A Fall

B Stay exactly the same

C Rise

D Become zero

Understand It with Pulse

Flag a mistake

ANSWER KEY

1.	D	**18.**	C	**35.**	C
2.	A	**19.**	23	**36.**	D
3.	B	**20.**	0.8	**37.**	D
4.	A	**21.**	A	**38.**	C
5.	A	**22.**	C	**39.**	C
6.	C	**23.**	D	**40.**	B
7.	B	**24.**	A	**41.**	A
8.	D	**25.**	B	**42.**	B
9.	B	**26.**	C	**43.**	B
10.	C	**27.**	D	**44.**	C
11.	D	**28.**	B	**45.**	A
12.	C	**29.**	B	**46.**	B
13.	B	**30.**	A	**47.**	0.5
14.	D	**31.**	D	**48.**	C
15.	A	**32.**	D	**49.**	D
16.	B	**33.**	A	**50.**	C
17.	A	**34.**	C		

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