ONTARIO BIOLOGY, GRADE 12, UNIVERSITY PREPARATION (SBI4U) · UNIT D

Homeostasis and Population Dynamics — Practice Test

Ontario Biology, Grade 12, University Preparation (SBI4U) • 25 questions

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 **Homeostasis is best defined as the maintenance of**

- **A** Stable internal conditions
- **B** A constant external environment
- **C** Population size
- **D** A constant body temperature only

Understand It with Pulse | Flag a mistake

2 **Negative feedback works by**

A Amplifying a change

B Reversing a change toward a set point

C Stopping all hormone release

D Ignoring a change

Understand It with Pulse | Flag a mistake

3 **When blood glucose rises, insulin is released and blood glucose falls. This is an example of**

A Negative feedback

B Positive feedback

C No feedback

D Feed forward control

Understand It with Pulse | Flag a mistake

4 **Which hormone lowers blood glucose by promoting glucose uptake by cells**

A Adrenaline

B Glucagon

C Insulin

D Thyroxine

Understand It with Pulse | Flag a mistake

5 **Glucagon raises blood glucose by stimulating the liver to**

A Take up insulin

B Break down glycogen to glucose

C Store glucose as glycogen

D Produce adrenaline

Understand It with Pulse | Flag a mistake

6 **Type 1 diabetes results mainly from**

A Excess glucagon only

B Overeating sugar once

C Lack of insulin production

D Insulin resistance in cells

Understand It with Pulse | Flag a mistake

7 **The main excretory organ that filters blood and forms urine is the**

A Kidney

B Skin

C Liver

D Lung

Understand It with Pulse | Flag a mistake

8 **Filtration in the kidney occurs in the**

- A Glomerulus
- B Collecting duct
- C Ureter
- D Loop of Henle

Understand It with Pulse | Flag a mistake

9 **Antidiuretic hormone increases water reabsorption in the**

- A Bladder
- B Glomerulus
- C Renal artery
- D Collecting duct

Understand It with Pulse | Flag a mistake

10 **When the body is dehydrated, ADH release increases and urine becomes**

A More dilute and larger in volume

B More concentrated and smaller in volume

C Alkaline only

D Unchanged

Understand It with Pulse | Flag a mistake

11 **The hypothalamus regulates body temperature by acting as a**

A Effector only

B Hormone target only

C Control centre

D Receptor in the skin only

Understand It with Pulse | Flag a mistake

12 **Shivering generates heat by increasing**

A Muscle activity

B Sweating

C Insulin release

D Blood flow to skin

Understand It with Pulse | Flag a mistake

13 **Vasodilation in the skin helps the body**

A Produce sweat glands

B Lose heat

C Raise blood pressure only

D Conserve heat

Understand It with Pulse | Flag a mistake

14 **A population is defined as all individuals of one species living in a**

A Whole biome

B Single habitat only

C Particular area at one time

D Food web

Understand It with Pulse | Flag a mistake

15 **Carrying capacity is the maximum population size an environment can**

A Support for one day only

B Produce in one year

C Count in a census

D Sustain over time

Understand It with Pulse | Flag a mistake

16 **Exponential population growth occurs when resources are**

A Limiting

B Seasonal only

C Absent

D Unlimited

Understand It with Pulse | Flag a mistake

17 **Logistic growth levels off as a population approaches its**

A Death rate only

B Carrying capacity

C Birth rate

D Immigration rate

Understand It with Pulse | Flag a mistake

18 **A density dependent factor that limits population growth is**

A Competition for food

B A drought caused by weather

C A wildfire

D A flood

Understand It with Pulse | Flag a mistake

19 **A density independent factor is best illustrated by**

A Territorial behaviour

B Predation

C Disease spread

D A severe storm

Understand It with Pulse | Flag a mistake

20 **In a predator prey cycle, a rise in prey numbers is usually followed by a rise in**

- A Predator numbers after a delay
- B Prey death rate only
- C Plant biomass only
- D Carrying capacity permanently

Understand It with Pulse | Flag a mistake

21 **The mark recapture method estimates population size using the proportion of**

- A Males to females
- B Young to old
- C Predators to prey
- D Marked animals recaptured

Understand It with Pulse | Flag a mistake

22 **In a mark recapture study, 40 animals are marked and released. Later 50 are captured and 10 are marked. The estimated population size is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **Primary succession begins on**

A Soil after a forest fire

B A cleared field

C Bare rock with no soil

D Abandoned farmland

Understand It with Pulse | Flag a mistake

24 **Which biome has permafrost and very low plant diversity**

- A Taiga
- B Tundra
- C Grassland
- D Temperate forest

Understand It with Pulse | Flag a mistake

25 **Human population growth is best slowed in the long term by improved**

- A Immigration controls only
- B Education and access to family planning
- C Food production only
- D Urban housing

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. A
2. B
3. A
4. C
5. B
6. C
7. A
8. A
9. D
10. B
11. C
12. A
13. B
14. C
15. D
16. D
17. B
18. A
19. D
20. A
21. D
22. 200
23. C
24. B
25. B

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