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

Metabolic Processes — 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 **The main energy currency of the cell is**

- **A** ATP
- **B** Pyruvate
- **C** Glucose
- **D** NADH only

Understand It with Pulse | Flag a mistake

2 **ATP releases energy when its terminal phosphate bond is**

A Reduced to glucose

B Formed by condensation

C Oxidized to carbon dioxide

D Broken by hydrolysis

Understand It with Pulse | Flag a mistake

3 **Glycolysis takes place in the**

A Thylakoid membrane

B Cytoplasm

C Chloroplast stroma

D Mitochondrial matrix

Understand It with Pulse | Flag a mistake

4 **The net ATP gain from glycolysis per glucose molecule is**

A 2 ATP

B 4 ATP

C 36 ATP

D 6 ATP

Understand It with Pulse | Flag a mistake

5 **Pyruvate is converted to acetyl CoA in the**

A Nucleus

B Cytoplasm

C Chloroplast

D Mitochondrial matrix

Understand It with Pulse | Flag a mistake

6 **The Krebs cycle produces carbon dioxide, ATP, NADH, and**

- A Oxygen gas
- B Pyruvate
- C Glucose
- D $FADH_2$

Understand It with Pulse | Flag a mistake

7 **Most ATP in aerobic respiration is produced by**

- A Glycolysis
- B The electron transport chain
- C Fermentation
- D The Krebs cycle directly

Understand It with Pulse | Flag a mistake

8 **Oxygen is the final electron acceptor in**

A Fermentation

B Photolysis only

C The electron transport chain

D Glycolysis

Understand It with Pulse | Flag a mistake

9 **In the absence of oxygen, muscle cells produce**

A Acetyl CoA only

B Glucose

C Lactic acid

D Ethanol and carbon dioxide

Understand It with Pulse | Flag a mistake

10 **Yeast fermentation produces ethanol and**

- A Water only
- B Oxygen
- C Carbon dioxide
- D Lactic acid

Understand It with Pulse | Flag a mistake

11 **Which stage of photosynthesis splits water and releases oxygen**

- A Light dependent reactions
- B Krebs cycle
- C Calvin cycle
- D Glycolysis

Understand It with Pulse | Flag a mistake

12 **The light dependent reactions take place in the**

A Stroma

B Mitochondrial matrix

C Cytoplasm

D Thylakoid membranes

Understand It with Pulse | Flag a mistake

13 **The Calvin cycle takes place in the**

A Mitochondrial cristae

B Grana only

C Thylakoid membrane

D Stroma

Understand It with Pulse | Flag a mistake

14 **Carbon fixation in the Calvin cycle combines carbon dioxide with**

- **A** RuBP
- **B** Acetyl CoA
- **C** Glucose
- **D** Pyruvate

Understand It with Pulse | Flag a mistake

15 **The products of the light dependent reactions used in the Calvin cycle are ATP and**

- **A** Pyruvate
- **B** NADH only
- **C** $FADH_2$
- **D** NADPH

Understand It with Pulse | Flag a mistake

16 **A plant kept in green light alone photosynthesizes poorly because chlorophyll**

A Needs only red light

B Cannot use any light

C Absorbs green light best

D Reflects most green light

Understand It with Pulse | Flag a mistake

17 **Chemiosmosis in mitochondria uses a proton gradient across the**

A Outer membrane

B Cell wall

C Inner mitochondrial membrane

D Chloroplast envelope

Understand It with Pulse | Flag a mistake

18 **ATP synthase produces ATP as protons flow**

A Into the nucleus

B Against their gradient

C Down their gradient

D Through the Krebs cycle

Understand It with Pulse | Flag a mistake

19 **Which factor would increase the rate of photosynthesis up to a limit**

A Increasing carbon dioxide concentration

B Decreasing light intensity

C Lowering temperature to freezing

D Removing all water

Understand It with Pulse | Flag a mistake

20 **Photorespiration reduces photosynthetic efficiency mainly because rubisco can bind**

- A Oxygen instead of carbon dioxide
- B Water vapour
- C Glucose
- D Nitrogen gas

Understand It with Pulse | Flag a mistake

21 **C4 plants reduce photorespiration by initially fixing carbon dioxide into a**

- A Six carbon compound
- B Four carbon compound
- C Three carbon compound
- D Two carbon compound

Understand It with Pulse | Flag a mistake

22 **The total ATP yield from complete aerobic respiration of one glucose is about**

- **A** 36 ATP
- **B** 8 ATP
- **C** 18 ATP
- **D** 2 ATP

Understand It with Pulse | Flag a mistake

23 **Anaerobic respiration yields much less ATP than aerobic respiration because glucose is**

- **A** Stored as starch
- **B** Converted directly to ATP
- **C** Only partly broken down
- **D** Not broken down at all

Understand It with Pulse | Flag a mistake

24 **Which molecule is oxidized during glycolysis**

A Water

B Glucose

C Oxygen

D Carbon dioxide

Understand It with Pulse | Flag a mistake

25 **A cell produces 18 ATP from glycolysis of 9 glucose molecules at a net gain of 2 ATP each. The total net ATP, in ATP molecules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

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