Final Exam — Practice Test

Ontario Biology, Grade 12, University Preparation (SBI4U) • 50 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 **A monosaccharide with six carbon atoms is best classified as a**

- **A** Pentose
- **B** Hexose
- **C** Polysaccharide
- **D** Disaccharide

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 **Translation is the process of making**

A Protein from mRNA

B DNA from mRNA

C Lipid from protein

D RNA from DNA

Understand It with Pulse | Flag a mistake

4 **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

5 **A fatty acid with no double bonds between carbon atoms is described as**

A Unsaturated

B Saturated

C Polyunsaturated

D Hydrogenated only

Understand It with Pulse | Flag a mistake

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

A Nucleus

B Cytoplasm

C Chloroplast

D Mitochondrial matrix

Understand It with Pulse | Flag a mistake

7 **A stop codon signals the ribosome to**

A Unwind DNA

B Start transcription

C Add another amino acid

D Terminate translation

Understand It with Pulse | Flag a mistake

8 **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

9 **Which level of protein structure is the sequence of amino acids in a polypeptide chain**

A Quaternary structure

B Secondary structure

C Primary structure

D Tertiary structure

Understand It with Pulse | Flag a mistake

10 **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

11 **In eukaryotes, introns are removed from pre mRNA during**

A Splicing

B Translation

C Mutation

D Replication

Understand It with Pulse | Flag a mistake

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

A Bladder

B Glomerulus

C Renal artery

D Collecting duct

Understand It with Pulse | Flag a mistake

13 **Which element is present in proteins but is not present in carbohydrates or lipids**

A Hydrogen

B Nitrogen

C Oxygen

D Carbon

Understand It with Pulse | Flag a mistake

14 **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

15 **A nonsense mutation creates a**

A Longer protein always

B Premature stop codon

C New chromosome

D New start codon

Understand It with Pulse | Flag a mistake

16 **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

17 **The backbone of a DNA strand is made of alternating**

A Guanine and cytosine

B Amino acids

C Sugar and phosphate groups

D Adenine and thymine

Understand It with Pulse | Flag a mistake

18 **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

19 **Gel electrophoresis separates DNA fragments mainly by**

A Size

B Colour

C Temperature

D Charge only

Understand It with Pulse | Flag a mistake

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

A Limiting

B Seasonal only

C Absent

D Unlimited

Understand It with Pulse | Flag a mistake

21 **During DNA replication, helicase has the main job of**

A Adding new nucleotides

B Unwinding the double helix

C Joining fragments together

D Removing RNA primers

Understand It with Pulse | Flag a mistake

22 **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

23 **Recombinant DNA is DNA that contains**

A Only bacterial genes

B Only introns

C No promoter sequence

D Genes from different sources joined together

Understand It with Pulse | Flag a mistake

24 **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

25 **The bond formed between two amino acids during protein synthesis is called a**

A Glycosidic bond

B Ionic bond

C Peptide bond

D Hydrogen bond

Understand It with Pulse | Flag a mistake

26 **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

27 **Gene expression in a multicellular organism is regulated so that different cells**

A Have different genomes

B Stop transcribing all genes

C Lose unneeded chromosomes

D Express different sets of genes

Understand It with Pulse | Flag a mistake

28 **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

29 **Cellulose differs from starch mainly in the**

A Number of carbon atoms

B Presence of nitrogen

C Type of glycosidic linkage

D Colour of the molecule

Understand It with Pulse | Flag a mistake

30 **Which molecule is oxidized during glycolysis**

A Water

B Glucose

C Oxygen

D Carbon dioxide

Understand It with Pulse | Flag a mistake

31 **The template strand of DNA is read during transcription in which direction**

A Neither direction

B Both directions at once

C Three prime to five prime

D Five prime to three prime

Understand It with Pulse | Flag a mistake

32 **Positive feedback in childbirth involves oxytocin increasing contractions which increase**

A More oxytocin release

B Body temperature

C Insulin release

D Blood glucose

Understand It with Pulse | Flag a mistake

33 **An alpha helix and a beta pleated sheet are examples of which level of protein structure**

A Primary structure

B Secondary structure

C Quaternary structure

D Tertiary structure

Understand It with Pulse | Flag a mistake

34 **The Krebs cycle begins when acetyl CoA joins with**

A Oxaloacetate

B Pyruvate

C Glucose

D RuBP

Understand It with Pulse | Flag a mistake

35 **A gene is best defined as a DNA sequence that**

A Is always expressed

B Never mutates

C Contains only exons

D Codes for a functional product

Understand It with Pulse | Flag a mistake

36 **Adrenaline prepares the body for stress by increasing**

A Kidney filtration only

B Sleep

C Heart rate and blood glucose

D Insulin release

Understand It with Pulse | Flag a mistake

37 **A nucleotide is composed of a sugar, a phosphate group, and a**

A Nitrogenous base

B Glycerol molecule

C Fatty acid

D Amino acid

Understand It with Pulse | Flag a mistake

38 **A compensation point in photosynthesis is the light intensity where photosynthesis equals**

- A Transpiration
- B Fermentation
- C Respiration
- D Glycolysis

Understand It with Pulse | Flag a mistake

39 **When lactose is present, the lac operon is switched**

- A Off permanently
- B Moved to another chromosome
- C On
- D Deleted

Understand It with Pulse | Flag a mistake

40 **Abiotic factors that affect a population include**

A Competitors

B Parasites

C Predators

D Temperature and rainfall

Understand It with Pulse | Flag a mistake

41 **Competitive inhibition of an enzyme occurs when an inhibitor**

A Changes the cell pH permanently

B Denatures the substrate

C Removes the enzyme from the cell

D Binds to the active site

Understand It with Pulse | Flag a mistake

42 **Decarboxylation during the Krebs cycle releases**

A Nitrogen gas

B Hydrogen gas

C Oxygen

D Carbon dioxide

Understand It with Pulse | Flag a mistake

43 **Epigenetic changes affect gene expression without changing the**

A DNA sequence

B Protein sequence

C RNA sequence

D Cell type

Understand It with Pulse | Flag a mistake

44 **Eutrophication of a lake is often caused by excess**

A Oxygen

B Carbon dioxide only

C Sand

D Nutrients such as nitrates

Understand It with Pulse | Flag a mistake

45 **Which process breaks a peptide bond by adding water**

A Hydrolysis

B Phosphorylation

C Condensation

D Denaturation

Understand It with Pulse | Flag a mistake

46 **If oxygen is unavailable, the electron transport chain stops because electrons have**

A Too much energy

B No final acceptor

C Too many protons

D No NADH to carry them

Understand It with Pulse | Flag a mistake

47 **Which enzyme seals nicks in the DNA backbone during cloning**

A DNA polymerase

B DNA ligase

C Primase

D Helicase

Understand It with Pulse | Flag a mistake

48 **A keystone species has an effect on its community that is**

- A Disproportionately large for its abundance
- B Only seen in winter
- C Limited to its own population
- D Small relative to its abundance

Understand It with Pulse | Flag a mistake

49 **Which molecule carries amino acids to the ribosome during translation**

- A Genomic DNA
- B Transfer RNA
- C Ribosomal DNA
- D Messenger RNA

Understand It with Pulse | Flag a mistake

50 **During exercise, muscle cells switch to lactic acid fermentation when oxygen supply is**

A Insufficient for demand

B Replaced by nitrogen

C Blocked by carbon dioxide

D Excessive

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. B
2. D
3. A
4. B
5. B
6. D
7. D
8. C
9. C
10. C
11. A
12. D
13. B
14. A
15. B
16. A
17. C
18. A
19. A
20. D
21. B
22. C
23. D
24. D
25. C
26. B
27. D
28. 200
29. C
30. B
31. C
32. A
33. B
34. A
35. D
36. C
37. A
38. C
39. C
40. D
41. D
42. D
43. A
44. D
45. A
46. B
47. B
48. A
49. B
50. A

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