BRITISH COLUMBIA SCIENCE 10 · 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 **Colour blindness is a sex-linked recessive trait carried on the X chromosome. A colour blind father and a mother with normal vision who is not a carrier have a daughter. What will the daughter be?**

- A colour blind
- B unable to inherit the allele
- C colour blind only as an adult
- D a carrier with normal vision

Understand It with Pulse | Flag a mistake

2 **Which equation is a balanced synthesis reaction**

- **A** $H_2 + O_2 \rightarrow H_2O$
- **B** $H_2 + O_2 \rightarrow 2H_2O$
- **C** $2H_2 + O_2 \rightarrow 2H_2O$
- **D** $2H_2 + 2O_2 \rightarrow 2H_2O$

Understand It with Pulse | Flag a mistake

3 **A 2 kg rock sits 5 m above the ground. Using g = 10 m per s squared, its gravitational potential energy, in joules, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **The graph shows recession speed against distance for four galaxies. The recession speed of the galaxy at distance 3 in the graph units, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **A mutation in a skin cell that does not change the protein made is best described as**

- **A** positive
- **B** negative
- **C** lethal
- **D** neutral

Understand It with Pulse | Flag a mistake

6 **Which equation is a balanced double replacement reaction**

- **A** $AgNO_3 + NaCl \rightarrow AgCl_2 + NaNO_3$
- **B** $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$
- **C** $AgNO_3 + NaCl \rightarrow Ag + NaNO_3 + Cl_2$
- **D** $AgNO_3 + 2NaCl \rightarrow AgCl + NaNO_3$

Understand It with Pulse | Flag a mistake

7 **An aluminium block with mass 1 kg is heated by 20 degrees. Using c = 900 J per kg per degree, the heat absorbed, in joules, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **Observations show that galaxies farther from Earth generally**

A move away faster

B move toward Earth faster

C do not move at all

D move away more slowly

Understand It with Pulse | Flag a mistake

9 **A red snapdragon (RR) is crossed with a white snapdragon (rr). With incomplete dominance, the offspring flowers are**

- **A** red
- **B** white
- **C** red and white spotted
- **D** pink

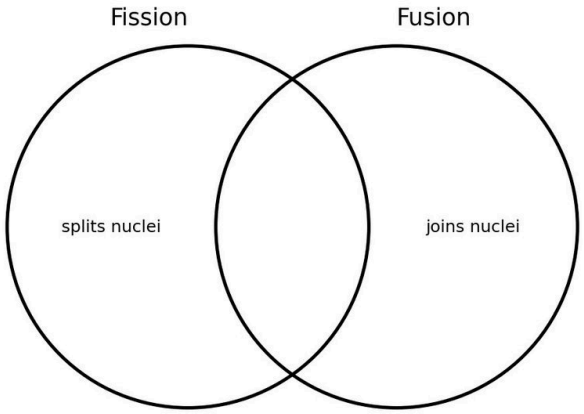
Understand It with Pulse | Flag a mistake

10 **Which equation is a balanced decomposition of hydrogen peroxide**

- **A** $H_2O_2 \rightarrow H_2O + O_2$
- **B** $H_2O_2 \rightarrow 2H_2O + O_2$
- **C** $H_2O_2 \rightarrow H_2 + O_2$
- **D** $2H_2O_2 \rightarrow 2H_2O + O_2$

Understand It with Pulse | Flag a mistake

11 **The diagram compares fission and fusion. The statement in the overlapping region is**



A splits nuclei

B releases energy

C joins nuclei

D uses coal

Understand It with Pulse | Flag a mistake

12 **A Mars rover helps scientists learn about Mars by**

A carrying astronauts to Mars

B changing the Martian climate

C melting the polar ice caps

D studying rocks and signs of past water

Understand It with Pulse | Flag a mistake

13 **An organism with genotype Aa has phenotype tall. This shows that the allele for tall is**

A dominant

B recessive

C sex-linked

D mutated

Understand It with Pulse | Flag a mistake

14 **A solution with pH 3 is**

A neutral

B acidic

C basic

D pure water

Understand It with Pulse | Flag a mistake

15 **An alpha particle can be stopped by**

A a thick lead wall

B a sheet of paper

C several metres of concrete

D a magnetic field only

Understand It with Pulse | Flag a mistake

16 **Dextre is a two-armed robot on the space station used for**

A launching rockets

B housing the crew

C fine repair and maintenance tasks

D cooking meals

Understand It with Pulse | Flag a mistake

17 **Natural selection acts most directly on the**

A genotype of a species

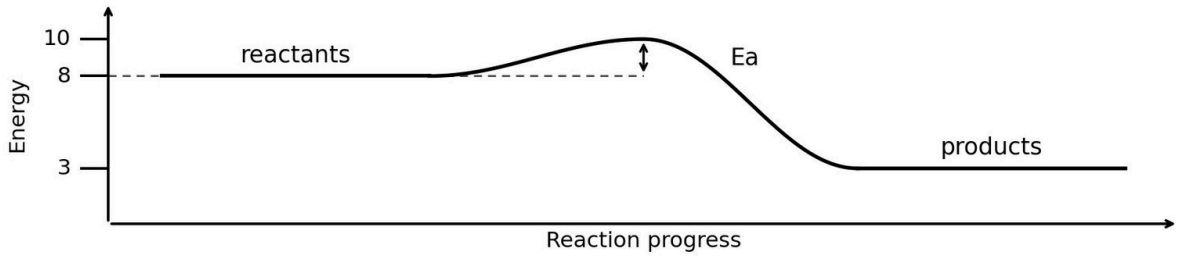
B climate of a region

C phenotype of an individual

D age of a fossil

Understand It with Pulse | Flag a mistake

18 **The diagram shows the energy profile for a reaction. Reactants are at 8, the peak is at 10, and products are at 3. The energy released, in the diagram units, is _____**



ANSWER _____

Understand It with Pulse | Flag a mistake

19 **A metal spoon left in a hot pot becomes hot at the handle. This heat transfer is mainly**

A radiation

B conduction

C evaporation

D condensation

Understand It with Pulse | Flag a mistake

20 **Hydrogen and helium, the lightest elements, formed mainly**

- A inside planets
- B in supernova explosions only
- C in the early universe
- D inside black holes

Understand It with Pulse | Flag a mistake

21 **A person with blood type AB has genotype IAIB. This is an example of**

- A co-dominance
- B complete dominance
- C incomplete dominance
- D sex linkage

Understand It with Pulse | Flag a mistake

22 **A hand warmer gives off heat as chemicals react inside it. It is an example of an**

A endothermic process

B neutralization only

C exothermic process

D decomposition only

Understand It with Pulse | Flag a mistake

23 **A long term challenge of nuclear power is**

A storing radioactive waste safely for many years

B finding enough sunlight

C keeping turbines cool with wind

D the fuel running out in days

Understand It with Pulse | Flag a mistake

24 **The Doppler shift of sound is heard when an ambulance passes because**

A the siren gets louder

B the sound waves are stretched or squeezed by motion

C the driver changes the siren tone

D sound travels faster than light

Understand It with Pulse | Flag a mistake

25 **A species becomes extinct when**

A its population drops for one season

B no living members of the species remain

C it moves to a new habitat

D a new predator arrives

Understand It with Pulse | Flag a mistake

26 **Vinegar mixed with baking soda fizzes because the reaction produces**

A oxygen gas

B hydrogen gas

C carbon dioxide gas

D nitrogen gas

Understand It with Pulse | Flag a mistake

27 **The graph shows the power output of a solar panel during a day. The output is highest at hour**

A 6

B 9

C 12

D 18

Understand It with Pulse | Flag a mistake

28 **Most astronomers agree that the universe is still**

A expanding

B shrinking to a point

C unchanging

D collapsing into Earth

Understand It with Pulse | Flag a mistake

29 **A clone of an animal is**

A genetically identical to the donor animal

B a mix of two different species

C always born as a twin

D identical in learned behaviour too

Understand It with Pulse | Flag a mistake

30 **An antacid tablet relieves excess stomach acid because it**

A adds more acid to the stomach

B neutralizes some of the stomach acid

C coats food so it cannot digest

D removes water from the stomach

Understand It with Pulse | Flag a mistake

31 **A 5 kg book sits 4 m above the floor. Using g = 10 m per s squared, its gravitational potential energy, in joules, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

32 **In the early universe, atoms formed only after it had cooled enough for**

- A stars to form
- B electrons to join nuclei
- C planets to form
- D black holes to appear

Understand It with Pulse | Flag a mistake

33 **Two organisms have the same phenotype but different genotypes. This is possible because**

- A the dominant allele hides the recessive allele in a heterozygote
- B phenotype is decided by the environment alone
- C genotype and phenotype mean the same thing
- D recessive alleles are never inherited

Understand It with Pulse | Flag a mistake

34 **Soapy water feels slippery and has a pH above 7. Soapy water is**

A acidic

B neutral

C salt water

D basic

Understand It with Pulse | Flag a mistake

35 **As a ball falls toward the ground, its**

A potential energy rises and kinetic energy falls

B potential energy falls and kinetic energy rises

C potential and kinetic energy both rise

D potential and kinetic energy both fall

Understand It with Pulse | Flag a mistake

36

The strong force holds together

A electrons around a nucleus

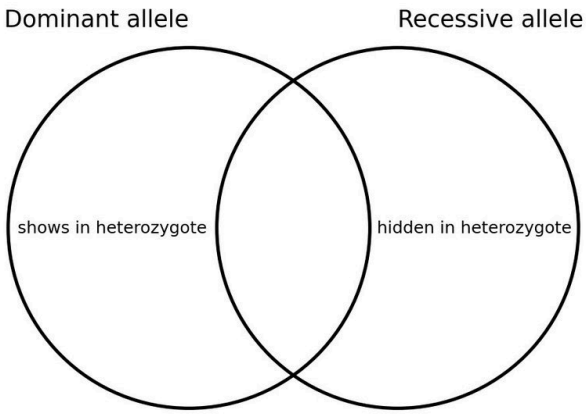
B planets around a star

C protons and neutrons in a nucleus

D galaxies in a cluster

Understand It with Pulse | Flag a mistake

37 **The diagram compares a dominant allele and a recessive allele. The statement in the overlapping region is**



- **A** they are found only in animals
- **B** they always show in the phenotype
- **C** they are different forms of the same gene
- **D** they are located on different chromosomes

Understand It with Pulse | Flag a mistake

38 **When 10 g of calcium carbonate breaks down, 5.6 g of calcium oxide is formed. The mass of carbon dioxide formed, in grams, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **The Sun warms Earth across empty space mainly by**

A conduction

B convection

C radiation

D friction

Understand It with Pulse | Flag a mistake

40 **Experiments on the space station can study how materials behave in**

A near weightlessness

B deep water

C on the Moon

D at very high pressure

Understand It with Pulse | Flag a mistake

41 **The graph shows zebra mussels counted in a lake over four years. Between year 1 and year 4, the count**

A fell from 90 to 10

B stayed near 50

C rose from 10 to 40

D rose from 10 to 90

Understand It with Pulse | Flag a mistake

42 **A sports cold pack is squeezed and the chemicals inside mix. The pack gets cold. This shows the reaction is**

A endothermic

B exothermic

C a neutralization

D a combustion

Understand It with Pulse | Flag a mistake

43 **Gamma rays are best blocked by**

A paper

B aluminium foil

C thick lead

D wood

Understand It with Pulse | Flag a mistake

44 **A galaxy showing a blueshift is**

A approaching Earth

B receding from Earth

C exploding

D cooling down

Understand It with Pulse | Flag a mistake

45 **Stem cells are valuable in medicine because they can**

A survive without nutrients

B replace DNA in every cell

C divide only once

D develop into many different cell types

Understand It with Pulse | Flag a mistake

46 **Opening a window while using a strong cleaner helps because fresh air**

A keeps heat inside the room

B makes the smell stronger

C dries the cleaner faster

D carries fumes away from the user

Understand It with Pulse | Flag a mistake

47 **A car engine changes energy mainly in the order**

A electrical to light

B nuclear to light

C chemical to heat to motion

D heat to chemical

Understand It with Pulse | Flag a mistake

48 **Many ground telescopes are built in dry high places because there is**

A warmer air

B less cloud and water vapour to block light

C less distance to the stars

D less gravity

Understand It with Pulse | Flag a mistake

49 **A family history shows a trait in every generation and in both sexes about equally. This pattern best fits**

- **A** a sex-linked recessive trait
- **B** an autosomal dominant trait
- **C** a mitochondrial trait only
- **D** a trait caused by diet alone

Understand It with Pulse | Flag a mistake

50 **A candle flame goes out when covered with a jar because the flame runs out of**

- **A** oxygen
- **B** nitrogen
- **C** carbon dioxide
- **D** water vapour

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. D
2. C
3. 100
4. 210
5. D
6. B
7. 18000
8. A
9. D
10. D
11. B
12. D
13. A
14. B
15. B
16. C
17. C
18. 5
19. B
20. C
21. A
22. C
23. D
24. B
25. B
26. C
27. C
28. A
29. A
30. B
31. 200
32. B
33. A
34. D
35. B
36. C
37. C
38. 4.4
39. C
40. A
41. D
42. A
43. C
44. A
45. D
46. D
47. C
48. B
49. B
50. A

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