ONTARIO SCIENCE, GRADE 10, ACADEMIC (SNC2D) · 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 **The process by which an unspecialized cell develops the structure and function of a particular cell type is called**

- A Fertilization
- B Differentiation
- C Regeneration
- D Mitosis

Understand It with Pulse | Flag a mistake

2 **In the word equation hydrogen + oxygen → water, the reactants are**

A Water only

B Hydrogen and oxygen

C Oxygen and water

D Hydrogen and water

Understand It with Pulse | Flag a mistake

3 **Which gas is the most abundant human caused greenhouse gas added to the atmosphere by burning fossil fuels?**

A Argon

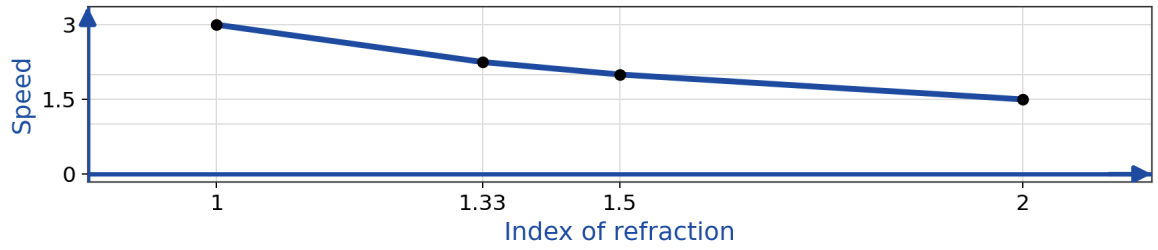
B Carbon dioxide

C Oxygen

D Nitrogen

Understand It with Pulse | Flag a mistake

4 **The graph shows measured speeds of light in materials with different indices of refraction. The speed in a material with index 1.33 , in units of 10^8 m/s, is**



ANSWER

Understand It with Pulse | Flag a mistake

5 **Which plant tissue transports sugars made in the leaves to other parts of the plant?**

A Epidermis

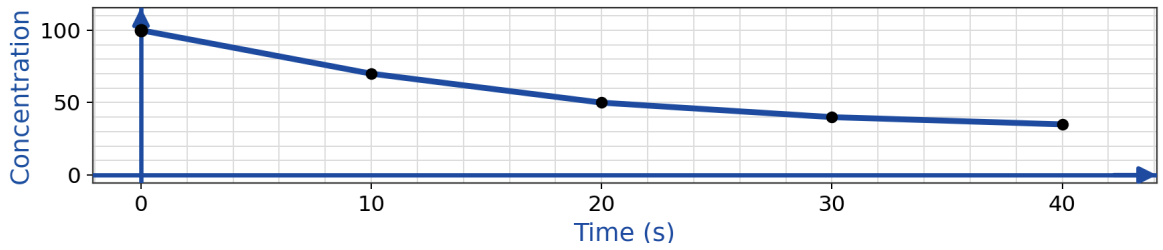
B Phloem

C Xylem

D Ground tissue

Understand It with Pulse | Flag a mistake

6 **The graph shows the measured concentration of a reactant during a reaction. The concentration after 20 seconds, in arbitrary units, is**



ANSWER

Understand It with Pulse | Flag a mistake

7 **Sea level rises as the climate warms mainly because ocean water expands as it warms and because**

A land ice melts and adds water to the oceans

B rainfall over land stops completely

C ocean water evaporates into space

D sea ice becomes thicker

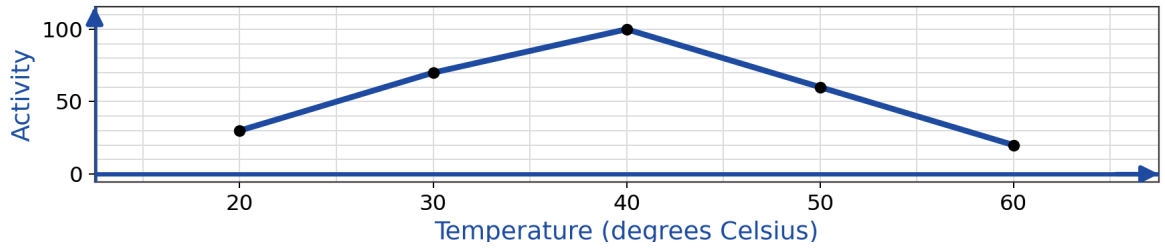
Understand It with Pulse | Flag a mistake

8 **A concave mirror is best described as a mirror that**

- **A** curves outward and diverges reflected light
- **B** is flat and reflects light unchanged
- **C** absorbs all light that strikes it
- **D** curves inward and converges reflected light

Understand It with Pulse | Flag a mistake

9 **The graph shows measured enzyme activity at different temperatures. The temperature at which enzyme activity is highest, in degrees Celsius, is**



ANSWER _____

Understand It with Pulse | Flag a mistake

10 **When calcium carbonate is heated, it decomposes into calcium oxide and**

- A Hydrogen
- B Nitrogen
- C Carbon dioxide
- D Oxygen

Understand It with Pulse | Flag a mistake

11 **A temperature record shows a steady rise from 14.0 degrees Celsius to 15.0 degrees Celsius over 100 years. The total rise, in degrees Celsius, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **A right triangle is drawn using the incident ray as the hypotenuse and the normal as one side. The angle between the ray and the normal is the angle of incidence. The angle of reflection, in degrees, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **A student studies how light level affects the growth of bean seedlings. The student changes only the light level. The light level is the**

A controlled variable

B qualitative observation

C dependent variable

D independent variable

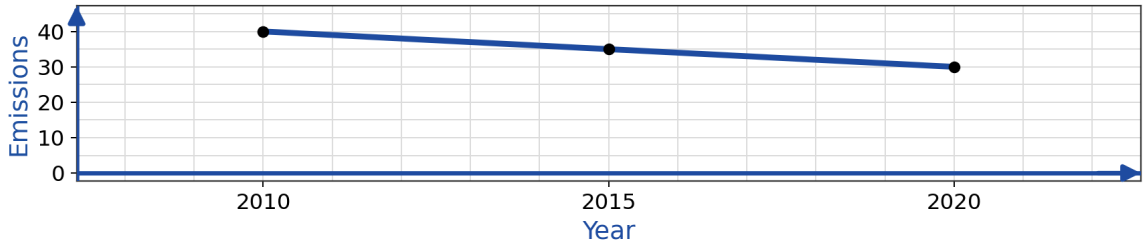
Understand It with Pulse | Flag a mistake

14 **In the balanced equation $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$, the coefficient in front of O_2 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

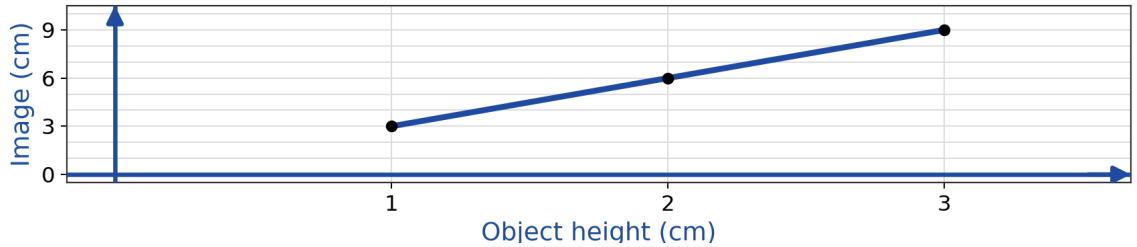
15 **The graph shows a city's measured carbon dioxide emissions over time. The emissions in 2015 , in units, are**



ANSWER

Understand It with Pulse | Flag a mistake

16 **The graph shows measured image heights for objects of different heights. For an object 2 cm tall, the magnification is**



ANSWER

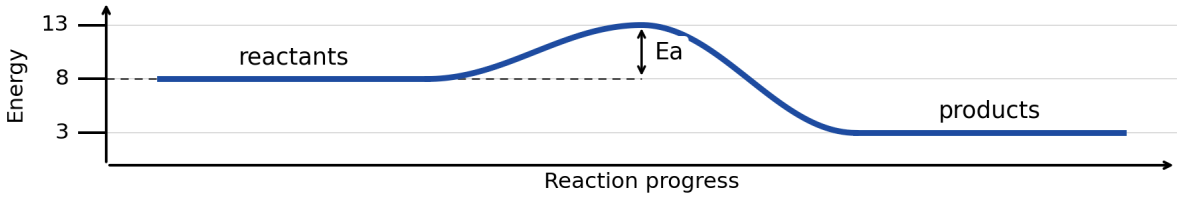
Understand It with Pulse | Flag a mistake

17 **Which medical technology takes over the filtering job of failing kidneys?**

- **A** Prosthetic limb
- **B** Pacemaker
- **C** Dialysis machine
- **D** Insulin pump

Understand It with Pulse | Flag a mistake

18 **The energy diagram shows reactants at an energy level of 8 , a peak at 13 , and products at 3 . The activation energy, in arbitrary units, is**



ANSWER

Understand It with Pulse | Flag a mistake

19 **Which human activity adds nitrous oxide, a greenhouse gas, to the atmosphere?**

A Planting trees in a city

B Riding a bicycle to school

C Insulating a house

D Using nitrogen fertilizers on farm fields

Understand It with Pulse | Flag a mistake

20 **Total internal reflection in an optical fibre occurs when light inside the fibre strikes the boundary at an angle**

A smaller than the critical angle

B equal to zero

C along the normal

D greater than the critical angle

Understand It with Pulse | Flag a mistake

21 **Which plant organ is the main site of photosynthesis in most plants?**

- A Leaf
- B Flower
- C Root
- D Stem

Understand It with Pulse | Flag a mistake

22 **In the balanced equation $N_2 + 3H_2 \rightarrow 2NH_3$, the coefficient in front of H_2 is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **Reforestation helps address climate change because growing trees**

A warm the atmosphere directly

B absorb carbon dioxide from the atmosphere

C release large amounts of methane

D block all rainfall

Understand It with Pulse | Flag a mistake

24 **An object is 8 cm tall. Its image is 4 cm tall. The magnification is**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **A doctor suggests a heart transplant for a patient whose heart can no longer pump enough blood. A societal issue raised by transplants is**

A how donor organs are allocated fairly among patients waiting

B the colour of the donor heart

C the mass of the donor heart

D whether the heart beats during surgery

Understand It with Pulse | Flag a mistake

26 **In the balanced equation $4Al + 3O_2 \rightarrow 2Al_2O_3$, the coefficient in front of Al is**

ANSWER _____

Understand It with Pulse | Flag a mistake

27 **Thawing permafrost can worsen warming because it releases**

A Methane and carbon dioxide

B Oxygen only

C Nitrogen gas only

D Water vapour only

Understand It with Pulse | Flag a mistake

28 **When light passes from glass into air, it speeds up and bends**

A Along the normal

B Toward the normal

C Away from the normal

D Back into the glass

Understand It with Pulse | Flag a mistake

29 **A researcher tests a new skin graft material on two groups of lab samples. One group gets the new material and the other gets the standard treatment. The standard treatment group is the**

A experimental group

B dependent variable

C independent variable

D control group

Understand It with Pulse | Flag a mistake

30 **Sulfuric acid reacts with potassium hydroxide. The two products are potassium sulfate and**

A Oxygen gas

B Carbon dioxide

C Water

D Hydrogen gas

Understand It with Pulse | Flag a mistake

31 **Without any greenhouse effect, Earth would be**

- A much colder than it is now
- B much warmer than it is now
- C exactly the same temperature
- D without any atmosphere

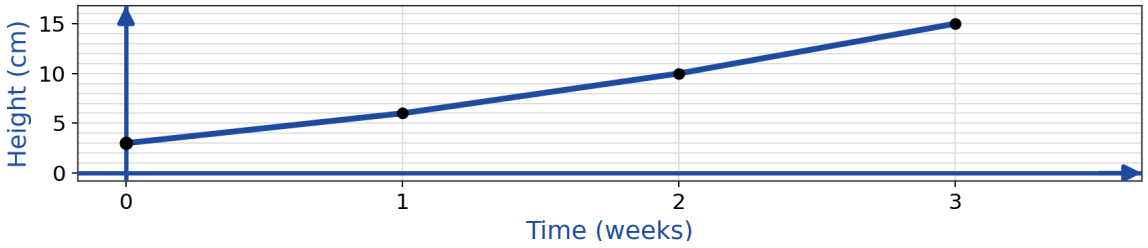
Understand It with Pulse | Flag a mistake

32 **Light travels in straight lines. This property explains why**

- A shadows have sharp edges in bright sunlight
- B light bends around every corner
- C mirrors absorb all light
- D lenses always diverge light

Understand It with Pulse | Flag a mistake

33 **The graph shows the measured height of a bean seedling over time. The height after 2 weeks, in centimetres, is**



ANSWER

Understand It with Pulse | Flag a mistake

34 **An antacid tablet relieves excess stomach acid because the antacid**

A stops digestion permanently

B is a base that neutralizes some stomach acid

C is an acid that adds to the stomach acid

D absorbs all water from the stomach

Understand It with Pulse | Flag a mistake

35 **Ocean currents influence climate because they**

A remove carbon dioxide from rocks

B create the seasons

C move warm and cold water around the planet

D stop all wind

Understand It with Pulse | Flag a mistake

36 **Which device uses total internal reflection to carry signals as light pulses over long distances?**

A Prism

B Magnifying glass

C Optical fibre

D Plane mirror

Understand It with Pulse | Flag a mistake

37 **A microscope has an eyepiece magnification of 10 and an objective magnification of 4 . The total magnification is**

ANSWER

Understand It with Pulse | Flag a mistake

38 **Nitric acid reacts with sodium hydroxide. The salt produced is**

A Sodium chloride

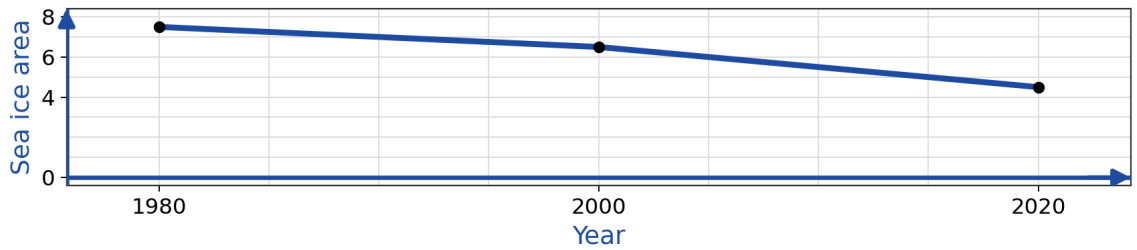
B Sodium sulfate

C Sodium carbonate

D Sodium nitrate

Understand It with Pulse | Flag a mistake

39 **The graph shows measured Arctic sea ice area over time. The sea ice area in 2000 , in million km², is**



ANSWER

Understand It with Pulse | Flag a mistake

40 **Refraction occurs because light changes**

A Speed when it enters a different medium

B Colour in a vacuum

C Mass in a lens

D Charge in a mirror

Understand It with Pulse | Flag a mistake

41 **Which technology helps a person whose heart beats too slowly by sending regular electrical signals to the heart?**

A Artificial joint

B Dialysis machine

C Pacemaker

D Insulin pump

Understand It with Pulse | Flag a mistake

42 **Acid rain can damage buildings made of limestone because the acid**

- A makes the limestone stronger
- B reacts with the limestone and wears it away
- C freezes the limestone
- D paints the limestone a new colour

Understand It with Pulse | Flag a mistake

43 **Which farming practice can reduce greenhouse gas emissions?**

- A Clearing forest for more fields
- B Burning crop waste every year
- C Using more nitrogen fertilizer than needed
- D Using cover crops and reducing tillage to keep carbon in soil

Understand It with Pulse | Flag a mistake

44 **A ray strikes a mirror along the normal. The angle of incidence, in degrees, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

45 **A skin cell and a nerve cell in the same person have the same DNA, but different structures. This is best explained by**

A different genes being switched on in each cell type

B nerve cells having no chromosomes

C skin cells dividing by meiosis

D each cell type having different DNA

Understand It with Pulse | Flag a mistake

46 **Which gas is released when an acid reacts with a carbonate?**

A Oxygen

B Nitrogen

C Hydrogen

D Carbon dioxide

Understand It with Pulse | Flag a mistake

47 **Which choice best describes adaptation to climate change?**

A Cutting down a forest

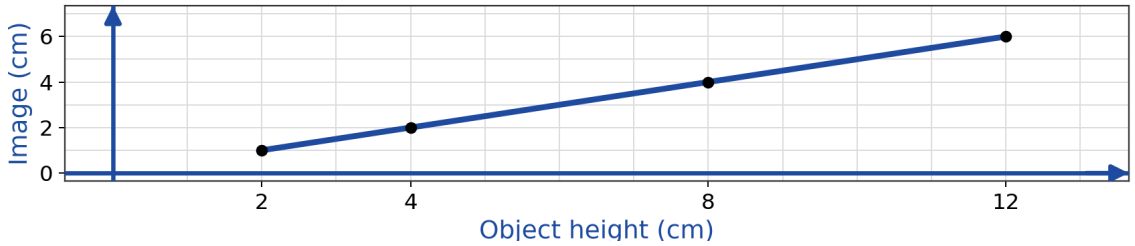
B Ignoring sea level rise

C Building flood defences for a coastal town

D Burning more fossil fuels

Understand It with Pulse | Flag a mistake

48 **The graph shows measured image heights for objects of different heights. For an object 12 cm tall, the magnification is**



ANSWER

Understand It with Pulse | Flag a mistake

49 **A student predicts that seedlings given more water will grow taller. This prediction is best described as a**

A Qualitative observation

B Conclusion

C Controlled variable

D Hypothesis

Understand It with Pulse | Flag a mistake

50

Mining waste that contains acids and dissolved metals can harm nearby waterways by

A making the water warmer only

B lowering the pH and poisoning aquatic life

C raising the pH to neutral

D removing all oxygen from the air

Understand It with Pulse

Flag a mistake

ANSWER KEY

1.	B	**18.**	5	**35.**	C
2.	B	**19.**	D	**36.**	C
3.	B	**20.**	D	**37.**	40
4.	2.25	**21.**	A	**38.**	D
5.	B	**22.**	3	**39.**	6.5
6.	50	**23.**	B	**40.**	A
7.	A	**24.**	0.5	**41.**	C
8.	D	**25.**	A	**42.**	B
9.	40	**26.**	4	**43.**	D
10.	C	**27.**	A	**44.**	0
11.	1	**28.**	C	**45.**	A
12.	45	**29.**	D	**46.**	D
13.	D	**30.**	C	**47.**	C
14.	2	**31.**	A	**48.**	0.5
15.	35	**32.**	A	**49.**	D
16.	3	**33.**	10	**50.**	B
17.	C	**34.**	B		

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