

ENERGY

1. ENERGY

Writer: Andrew Chen

Toss Up: Short Answer

Which compound in the atmosphere contributes the most to the greenhouse effect?

Bonus Answer: water

Bonus: Short Answer

What is China's largest renewable energy source?

Bonus Answer: Hydro

2. ENERGY

Writer: Nicholas Parker Ng

Toss Up: Multiple Choice

In a conventional light bulb, what is the ratio of light energy to the heat energy produced?

W) 1:9

X) 3:2

Y) 1:1

Z) 7:3

Toss Up Answer: W

Bonus: Multiple Choice

The arctic is estimated to hold what percent of the worlds what percent of the world's undiscovered oil and natural gas reserves?

W) 7%

X) 13%

Y) 22%

Z) 35%

Bonus Answer: Y

3. ENERGY

Writer: Nicholas Parker Ng

Toss Up: Multiple Choice

Which country generates the highest percentage of its energy from nuclear power?

W) France

X) China

Y) Britain

Z) Denmark

Toss Up Answer: W

Bonus: Short Answer

List the operating temperatures from lowest to highest of these types of fuel cells

PEMFC

PAFC

MCFC

SOFC

Bonus Answer: 1,2,3,4

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4. ENERGY

Writer: Nicholas Parker Ng

Toss Up: Multiple Choice

16) Which uranium oxide is most commonly used in light water reactors?

- W) uranium(IV) oxide
- X) uranium(V) oxide
- Y) uranium(VI) oxide
- Z) Yellowcake

Toss Up Answer: W

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Bonus: Multiple Choice

If a 1 kg mouse runs at 5 m/s, what is its approximate energy in electronvolts?

- W) 4.8×10^{-3}
- X) 2.9×10^{15}
- Y) 7.8×10^{19}
- Z) 4.4×10^{22}

Bonus Answer: Y

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5. ENERGY

Writer: Amrit Hingorani

Toss Up: Multiple Choice

A metal coin and a plastic coin are heated to the same temperature. The two coins have the same size and shape, are dropped into the same tub of cold water at the same time, and are left for 30 seconds. Which coin will have the lower temperature?

- W) Metal coin
- X) Plastic Coin
- Y) Both coins will have the same temperature
- Z) Cannot be determined

Toss Up Answer: W

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Bonus: Short Answer

What is the general name for material that is used to block the flow of heat?

Bonus Answer: Insulator

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6. ENERGY

Writer: Amrit Hingorani

Toss Up: Multiple Choice

Using current technologies, which of the following sources of energy is nonrenewable?

- W) Geothermal
- X) Wind
- Y) Nuclear
- Z) Solar

Toss Up Answer: Y

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Bonus: Multiple Choice

Which of the following is NOT a fossil fuel?

- W) Coal
- X) Petroleum
- Y) Natural gas
- Z) Uranium

Bonus Answer: Z

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7. ENERGY

Writer: Andrew Chen

Toss Up: Multiple Choice

What is one advantage to geothermal energy?

- W) Low cost
- X) Can be built anywhere
- Y) Doesn't produce any hazardous chemicals
- Z) Will never run out of steam

Toss Up Answer: W

Bonus: Short Answer

In an internal combustion engine, what is the name of the device that ignites the fuel?

Bonus Answer: Spark plug

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8. ENERGY

Writer: Nicholas Parker Ng

Toss Up: Short Answer

From what country does the US import the most coal?

Bonus Answer: Columbia

Bonus: Short Answer

Rank the coal production of these states from lowest to highest: Wyoming, West Virginia, Illinois, Pennsylvania.

Bonus Answer: Pennsylvania, Illinois, West Virginia, Wyoming.

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9. ENERGY

Writer: Nicholas Parker Ng

Toss Up: Multiple Choice

Oil, coal, and natural gas supply what percent of energy used in the US?

- W) 10
- X) 35
- Y) 55
- Z) 90

Toss Up Answer: Z

Bonus: Multiple Choice

A permeable rock that contains hydrocarbon fluids and gasses is called:

- W) An oil trap
- X) A source bed
- Y) An oil reservoir
- Z) An oil pocket

Bonus Answer: Y

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10. ENERGY

Writer: Nicholas Parker Ng

Toss Up: Multiple Choice

The world has the least amount of which of the following fuel types?

W) oil

X) coal

Y) uranium

Z) there are about the same amount of each of these

Toss Up Answer: W

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Bonus: Short Answer

What region of the world holds the majority of already discovered oil fields?

Bonus Answer: The Middle East

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11. ENERGY

Writer: Nicholas Parker Ng

Toss Up: Short Answer

What is the term for oil derived from oil shales or tar sands?

Bonus Answer: Syncrude

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Bonus: Multiple Choice

Burning of which of the following fuels produces the least amount of carbon dioxide per unit of energy?

W) coal

X) oil

Y) natural gas

Z) all of these produce the same amount of CO2

Bonus Answer: Y

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12. ENERGY

Writer: Shamaul Dilmohamed

Toss Up: Multiple Choice

Which of the following is closest to the percentage of US electricity generated from natural gas in 2014?

W) 5%

X) 15%

Y) 25%

Z) 40%

Toss Up Answer: Y

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Bonus: Multiple Choice

Which of these states contain the largest natural gas field in the US?

W) Pennsylvania

X) Texas

Y) Louisiana

Z) Colorado

Bonus Answer: W

13. ENERGY

Writer: Andrew Chen

Toss Up: Multiple Choice

What type of battery is the typical modern car battery?

W) nickel cadmium

X) lead acid

Y) lithium ion

Z) unreachgable

Toss Up Answer: X

Bonus: Short Answer

Name either of the two countries that are currently carbon neutral, having net zero carbon emissions.

Bonus Answer: bhutan, vatican city
