

Replacements

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Tossups

(1) **In this novel, a locket with a portrait of Caroline Beaufort is used as evidence to convict Justine Moritz of William’s murder. A man in this novel is imprisoned in Ireland on suspicion of killing his friend Henry (*) Clerval, and mourns the death of his adopted sister, Elizabeth Lavenza, on her wedding night. The protagonist becomes a “Modern Prometheus” by animating non-living matter in, for ten points, what novel about a doctor who creates a humanoid monster, written by Mary Shelley?**

ANSWER: Frankenstein; or, The Modern Prometheus

(2) **A high level of JH blocks this process in insects, and unlike most chordates, sea squirts undergo this process to become sessile. Instars lead to imago in this process that includes nymph stages in the “incomplete” type. A (*) shift from bilateral to radial symmetry in starfish results from this process, which causes the disappearance of gills in tadpoles. For ten points, name this transformation process by which a juvenile caterpillar turns into an adult butterfly.**

ANSWER: metamorphosis

(3) **At the Battle of Monterrey, this man rode on the side of his horse to deliver orders while avoiding being shot. After this general ordered the assault on Fort Donelson, he demanded “unconditional and immediate (*) surrender,” earning a nickname. This general was given the Army of the Potomac in March 1864. For ten points, name this Union general who, at Appomattox Court House, received Robert E. Lee’s surrender and later became President.**

ANSWER: Ulysses S. Grant

(4) **In this novel, Major Imbu discusses the murder of Stilson while Bonzo’s body is being transported back to Spain. Two siblings in this novel adopt the screen names Demosthenes and Locke to gain political influence, and one of them becomes the (*) Hegemon of Earth. At the end of this novel, the title character meets Mazer Rackham and wins the Bug War. For ten points, name this novel about a young title military genius, written by Orson Scott Card.**

ANSWER: Ender’s Game

(5) **The smaller the color index of a star, the greater will be this quantity, which can also be determined from peak emission wavelength using Wien’s law. Either spectral class or this quantity is plotted on the horizontal axis of the (*) H-R diagram.** Sunspots appear dark because of a lower value for this than the surrounding surface. Axial tilt gives planets a seasonal change in this quantity, which averages just 2.7 kelvins in interstellar space. For ten points, identify this quantity that must reach 15 million degrees Celsius to begin fusion at a star’s core.

ANSWER: temperature (prompt on “heat”)

(6) **Priscus of Panium described how this ruler ate on a wooden plate at an otherwise lavish feast. This ruler launched an invasion of Gaul after Honoria sent him a ring, but it was put down on the Catalaunian Plains by Flavius Aetius. A year after this man lost the Battle of (*) Chalons [sha-lone], Pope Leo I convinced this man to spare his city. According to legend, this man died of a nosebleed. Rome was nearly sacked by, for ten points, what 5th century ruler of the Huns?**

ANSWER: Attila the Hun

(7) **This city built the World Peace Gate for the 1988 Summer Olympics, which was the second time they’d been hosted in Asia. This city’s Banpo Bridge is home to the Moonlight Rainbow fountain, which fires colorful water into the Han River. The Joseon Dynasty constructed Five Great Palaces in this city, including the massive (*) Gyeongbokgung. The extremely affluent Gangnam district is located in, for ten points, what headquarters of Samsung, the capital city of South Korea?**

ANSWER: Seoul

(8) **In 1958, this country’s army was deployed to Jordan, but instead stopped in the capital and deposed this country’s second king named Faisal. A “shock and awe” attack was used to begin a 2003 (*) invasion of this country that led to its dictator being pulled out of a “spider hole.” This country and Syria are the two named home countries of ISIS. For ten points, name this country that was occupied by the United States after the fall of Baghdad.**

ANSWER: Iraq

(9) **Along with the daughter of King Pastoria, this character is kidnapped by Queen Coo-ee-oh. This friend of Princess Ozma travels with Nick Chopper, a woodcutter cursed to hack off his own limbs and replace them with tin parts. This character’s (*) silver shoes are coveted by the Wicked Witch of the West, who tries to prevent this character from returning to Uncle Henry and Auntie Em with her dog, Toto. For ten points, name this young girl who is transported from Kansas to a magical land in L. Frank Baum’s *The Wonderful Wizard of Oz*.**

ANSWER: Dorothy Gale (accept either underlined name)

(10) **This property is strongly associated with coordination compounds of transition metals. Rhodium and chlorine are named for examples of this property, and helium was first recognized by a new (*) spectroscopic line with this property. The endpoint of a titration is usually marked by a change in this property that is used to distinguish elements in a flame test. Iron pyrite is often mistaken for gold because of, for ten points, what property that may appear as orange or purple?**

ANSWER: color

Bonuses

(1) The Warburg effect is a tenfold increase in this process in malignant cancer cells compared to normal cells. For ten points each,

Name this pathway, the first stage of cellular respiration, that converts glucose sugar to pyruvate in the cytoplasm. This process is usually followed by the Krebs cycle.

ANSWER: glycolysis

Glycolysis is an anaerobic pathway because it does not require this gas to proceed. This gas is exchanged for carbon dioxide in the lungs during breathing.

ANSWER: oxygen (accept O₂ [O-2])

Each of the ten steps of glycolysis requires a different one of these protein catalysts to speed up the reaction. The third of these proteins, phospho-fructo-kinase, controls the overall rate of the pathway.

ANSWER: enzymes

(2) While snowed in at a strange house, this character has a nightmare about the ghost of a girl named Catherine. For ten points each,

Name this character, who listens to Nelly Dean's story about Catherine and her adoptive brother, Heathcliff.

ANSWER: Mr Lockwood

In this novel, Mr Lockwood rents a manor house called Thrushcross Grange, which is rented to him by Heathcliff, the owner of the nearby title estate.

ANSWER: Wuthering Heights

Wuthering Heights was written by this author, the sister of fellow authors Charlotte and Anne.

ANSWER: Emily Brontë (both underlined portions required; accept Ellis Bell with both underlined portions required; prompt on "Brontë" or "Bell" alone)

(3) For ten points each, name the following Chinese rivers.

This longest river in Asia is dammed by the Three Gorges Dam, rises in the Kunlun Mountains, and passes through Nanking.

ANSWER: Yangtze River (accept Yangzi Jiang; accept Chang Jiang)

This second-longest Asian river is nicknamed "China's Sorrow" because of its frequent flooding. Its name is inspired by the color of the loess [less] it carries downstream.

ANSWER: Yellow River (accept Huang He)

Hong Kong and Macau lie on the delta of this third-longest river in China, which was formerly known as the Canton River and empties into the South China Sea.

ANSWER: Pearl River (accept Zhu Jiang)

(4) This kingdom was ruled by Cetshwayo [ket-sh'wi-oh], who built a new capital at Ulundi. For ten points each, Name this kingdom of 19th century southern Africa that was attacked by the British in 1879, winning an early victory at Isandlwana but ultimately losing in five months.

ANSWER: Zulu Kingdom

To fight the British, Cetshwayo re-introduced military reforms that had been implemented by this earlier Zulu leader, who invented a highly effective bullhorn formation.

ANSWER: Shaka Zulu (or Shaka kaSenzangakhona)

Shaka also invented a new form of this weapon called an *iklwa*, that was shorter and stabbier than the traditional thrown *assegai*.

ANSWER: spear

(5) Nearly all of the debris that makes up the Great Pacific Garbage Patch consists of this substance. For ten points each,

Name this class of synthetic polymers which are commonly used to manufacture shopping bags and soda bottles. Unlike wood or paper, this material is rarely biodegradable.

ANSWER: plastics (accept polyethylene, PE, PET, or PETE)

Description acceptable. A number one or two inside of this symbol guarantees that a plastic item is recyclable in the United States. Glass bottles and aluminum cans are also marked with this symbol.

ANSWER: universal recycling symbol (accept any description of three arrows forming a triangle or loop; prompt on “triangle” or “loop” alone)

This type of plastic, marked with a number six, is almost never recycled in the US, leading some environmentalists to call for a ban on it. It is still often used to manufacture packing peanuts and coffee cups.

ANSWER: Styrofoam (accept expanded polystyrene, PS, or EPS)

(6) Answer the following about American novels about the sea, for ten points each.

In this novel by Herman Melville, Captain Ahab goes on a mad quest to get revenge on the title white whale.

ANSWER: Moby-Dick; or, The Whale

After a long dry spell in this short Hemingway novel, Santiago catches an enormous marlin, only for it to be eaten by sharks before he can return it to shore.

ANSWER: The Old Man and the Sea

This author wrote about Humphrey van Weyden's encounter with the vicious captain Wolf Larsen in *The Sea-Wolf*.

ANSWER: John “Jack” London

(7) Gonçalo Velho [gohn-sahl vel-yo] commanded the Azores for this country, which rejected Christopher Columbus' proposal to cross the Atlantic Ocean. For ten points each,

Name this European country that was ruled by the House of Aviz during its Age of Discovery

ANSWER: **Portugal** (or **Portuguese** Empire)

This prince, the son of King John I, spurred Portuguese interest in exploration by promoting the use of faster caravels and sponsoring explorers like Velho.

ANSWER: Prince **Henry the Navigator** (prompt on Henry)

In 1415, at Henry's urging, Portuguese troops captured this port city on the African shore of the Strait of Gibraltar; Henry was wounded in the battle. Two centuries later, when Portugal gained its independence from Spain, this city chose to remain a Spanish territory.

ANSWER: **Ceuta** ([thay-oo-ta] or [say-oo-ta], but be lenient)

(8) Contrary to popular belief, the element with symbol V is not vibranium. For ten points each,

V is actually the symbol for this element, number 23, that is used as a catalyst in the production of sulfuric acid.

ANSWER: **vanadium**

The letter V also appears in the ideal gas equation, $PV = nRT$, representing this quantity that can be measured in liters. This quantity is directly related to temperature by Charles' law.

ANSWER: **volume**

In the VSEPR [ves-per] theory of molecular geometry, the letter V stands for this term that refers to the outermost electron shell of an atom. Hydrogen can hold a maximum of two electrons in this shell while the other main group elements can hold eight.

ANSWER: **valence**

(9) The Confederate leader of this battle sought to defeat Grant's forces before the Army of the Ohio arrived. For ten points each,

Name this two-day Civil War battle in which P.G.T. Beauregard took over as general after the death of Albert Johnston. Nearly 4,000 men died in this battle, after which the Union Army was able to advance to Vicksburg.

ANSWER: Battle of **Shiloh** (accept Battle of **Pittsburg Landing**)

This state was the site of the Battle of Shiloh and the lesser-known Battle of Nashville.

ANSWER: **Tennessee**

After Shiloh, the Union army progressed to Vicksburg, whose surrender on July 4, 1863 opened this vital river to Union control.

ANSWER: **Mississippi** River

(10) Name some characters from Rudyard Kipling's *The Jungle Book*, for ten points each.

This young human is adopted and raised by a wolf pack in *The Jungle Book*, although Shere Khan, a tiger, thinks that this human "cub" is dangerous.

ANSWER: **Mowgli**

With the help of the panther Bagheera, this wise, sleepy, old bear teaches Mowgli and his wolf siblings the Law of the Jungle.

ANSWER: **Baloo**

This wise bull elephant teaches Mowgli the story of the creation god Tha, and explains why Shere Khan hunts humans for sport.

ANSWER: **Hathi**