

Round 8

First Half

(Tossup 1) **Polyprotic solutions show a graph with multiple inflection points in this technique. A graph of volume versus pH is this technique's namesake curve, which shows the (*) equivalence point where the starting solution has been neutralized. This technique often ends when phenolphthalein turns light pink, meaning the solution has reached its endpoint. For ten points, name this lab technique in which a solution's concentration is found using a buret.**

ANSWER: Titration (accept volumetric analysis)

(Bonus 1) In a galvanic cell, this type of reaction occurs at the cathode. For ten points each,

[Part A] Name this type of reaction that lowers the oxidation state of the species involved. Hydrogen undergoes this type of reaction during the electrolysis of water.

ANSWER: reduction (prompt on redox)

[Part B] Reduction reactions are a type of this reaction, characterized by the transfer of electrons between chemical species

ANSWER: Redox

[Part C] In a galvanic cell, this thermodynamic quantity equals the number of moles of electrons transferred times Faraday's constant times the cell potential. It is symbolized G.

ANSWER: Gibbs free energy (prompt on partial answer)

(Tossup 2) **This author of the epic poem *Hermann and Dorothea* also wrote novels about the "Journeyman Years" and "Apprenticeship" of Wilhelm Meister. One work by this author features a character who is in love with (*) Charlotte and later commits suicide. In another work by this author, a character seduces Gretchen after making a deal with Mephistopheles. For ten points, name this author of *The Sorrows of Young Werther* and *Faust*.**

ANSWER: Johann Wolfgang von Goethe

(Bonus 2) This French playwright enjoyed the patronage of several well-connected members within Louis XIV's court. For ten points each,

[Part A] Name this author and actor who collapsed onstage during a performance of his play, *The Imaginary Invalid*, and died soon after.

ANSWER: Moliere

[Part B] This satirical Moliere work about hypocritical holiness was immediately censored by the king.

ANSWER: Tartuffe

[Part C] In this Moliere play, Alceste seems to hate everyone and everything but falls in love with the flirtatious Celimene.

ANSWER: The Misanthrope

(Tossup 3) **It's not the Seven Years War, but this war is sometimes called "World War Zero". One side in this war received false reports of torpedo boats which led to a mistaken attack on a squadron of fishing boats in the (*) North Sea.** Theodore Roosevelt mediated the peace treaty that ended this war, signed between Sergei Witte and Komura Jutaro. For ten points, name this early 20th-century war between a European power and rising Asian empire.

ANSWER: Russo-Japanese War (accept Nichiro War)

(Bonus 3) These people were governed by the Yassa law code. For ten points each,

[Part A] Name this group of nomadic people who founded an empire under the leadership of Genghis Khan.

ANSWER: Mongols

[Part B] The Mongols established this dynasty in China which replaced the Song Dynasty.

ANSWER: Yuan

[Part C] This Mongol leader established the Yuan Dynasty and launched two failed invasions of Japan.

ANSWER: Kublai Khan

(Tossup 4) **The IS-LM model is a mathematical representation of this man's theories, while his namesake cross diagram describes the relationship between aggregate expenditure and economic output. This man used the term (*) 'animal spirits' to describe how emotions affect consumer habits in his work, The General Theory of Employment, Interest and Money.** For ten points, name this British economist who supported deficit spending to reduce unemployment.

ANSWER: John Maynard Keynes

(Bonus 4) This thinker wrote the *Discourses on Livy*. For ten points each,

[Part A] Name this philosopher who also wrote *The Art of War*.

ANSWER: Niccolo Machiavelli

[Part B] This famous work by Machiavelli argued that "it is far safer to be feared than loved" and frequently utilizes Cesare Borgia as an example.

ANSWER: The Prince (Accept Il Principe)

[Part C] Niccolo Machiavelli was a native of this Italian city where he served as a government official after the execution of Girolamo Savonarola.

ANSWER: Florence

(Tossup 5) **The background of this painting includes two Peter Paul Rubens works and a rectangular mirror which reflects the images of two monarchs. The artist himself appears on the left side of this painting with a (*) large red cross on this chest. A kneeling woman offers a red cup to the central figure of this painting while a dwarf teases a mastiff with his foot. For ten points, name this painting of the Infanta Margarita by Diego Velasquez.**

ANSWER: Las Meninas (Accept The Ladies-in-waiting and The Maids of Honor)

(Bonus 5) This painter inspired the Barbizon School. For ten points each,

[Part A] Name this English painter of works such as *Wivenhoe Park* and *Dedham Vale*.

ANSWER: John Constable

[Part B] This famous John Constable painting depicts a rural scene on the River Stour and features three horses pulling an object across the river.

ANSWER: The Hay Wain

[Part C] John Constable also created a painting of this mysterious prehistoric structure on the Salisbury Plain.

ANSWER: Stonehenge

(Tossup 6) **This religion's first prophet experienced a vision of Vohu Manah, one of six "beneficent immortals" called amesha spenta. In this religion, the dead are often placed on Towers of Silence. The (*) Avesta is this religion's primary text, whose adherents worship in Agiaries, or fire temples, and believe in the eternal conflict between Ahriman and Ahura Mazda. For ten points, name this Persian religion founded by a namesake prophet known as Zarathustra.**

ANSWER: Zoroastrianism [accept Zarathustrianism; accept Mazdayasna]

(Bonus 6) There are many observances and practices in the Jewish faith. For ten points each, answer the following about customs or days of significance in the Jewish calendar.

[Part A] Name this Jewish text named after the Hebrew word for instruction, essentially the Hebrew Bible containing the 613 commandments.

ANSWER: Torah

[Part B] Name this coming of age ceremony for Jewish boys.

ANSWER: Bar Mitzvah

[Part C] Name this festival commemorating the deliverance of Jewish people from the Persian Haman, as told in the Book of Esther.

ANSWER: Purim

(Tossup 7) **Exocytotic vesicles arrive at the cell membrane from this organelle, which also excretes proteins tagged with mannose-6-phosphate. Retrograde transport from this organelle is marked by COPI which tags proteins to go to the (*) ER, and it is extensive in B-cells. This organelle is arranged in stacks known as cisternae, and it has a cis and trans face. Responsible for packaging and modifying proteins, for ten points, name this organelle identified by an Italian scientist.**

ANSWER: Golgi body, complex, or apparatus

(Bonus 7) Members of this phylum develop a dorsal neural tube, which later gives rise to the central nervous system. For ten points each,

[Part A] Name this phylum within the kingdom Animalia that includes all vertebrates.

ANSWER: Chordata (accept chordates)

[Part B] All chordates possess the bilateral form of this property, which means that their body plans can be split into two approximate mirror images.

ANSWER: Symmetry (accept bilateral symmetry)

[Part C] At some point in their development, chordates also develop pharyngeal slits, which in fish, may give rise to these organs that use a countercurrent exchange system to absorb dissolved oxygen from water.

ANSWER: Gills (accept branchiae)

(Tossup 8) **This author wrote about life in East End in his work *The People of the Abyss*. His experience as a gold prospector in Alaska inspired much of his fiction, including a short work about a lone man struggling to survive in the wilderness. This author of (*) *To Build a Fire* also wrote a work in which the protagonist is stolen from Judge Miller. Buck the dog appears in the work of, for ten points, what author who wrote *Call of the Wild*?**

ANSWER: Jack London

(Bonus 8) This writer delivered telegrams for Western Union before he hit it big. For ten points each,

[Part A] Name this author of the one-act play *The Zoo Story* which first appeared Off-Broadway in a twin bill with *Krapp's Last Tape*.

ANSWER: Edward Albee

[Part B] Albee's most famous work is this real-time drama about a professor and his wife inviting Nick and Honey to their home

ANSWER: Who's Afraid of Virginia Woolf?

[Part C] Albee won his third Pulitzer for this 1994 play featuring three different actresses, who play the same woman at the three different stages of her life.

ANSWER: Three Tall Women

Sixty-Second Rounds

The categories are ...

1. Latin American Authors
2. US National Parks
3. CONSTELLATIONS

LATIN AMERICAN AUTHORS

Name the...

(1) Country home to Alejo Carpentier and Heberto Padilla which was ruled by Fidel Castro.

ANSWER: Cuba

(2) Author who wrote *One Hundred Years of Solitude*.

ANSWER: Gabriel Garcia Marquez

(3) Peruvian author of *Aunt Julia and the Scripwriter* and *The Time of the Hero*.

ANSWER: Mario Vargas Llosa

(4) Mexican author of *The Death of Artemio Cruz* and *The Old Gringo*.

ANSWER: Carlos Fuentes

(5) Author of *City of the Beasts*, the relative of a former Chilean leader.

ANSWER: Isabel Allende

(6) Argentine author and founding member of the Latin American Boom who wrote *Hopscotch* and *Blow-Up and Other Stories*.

ANSWER: Julio Cortazar

US NATIONAL PARKS

Name the national park that...

(1) Has been ravaged by introduced Burmese pythons in South Florida.

ANSWER: Everglades

(2) Was the first US National Park, and is home to the Old Faithful.

ANSWER: Yellowstone

(3) Is where tourists can descend by mule from the South Rim down to the Colorado River

ANSWER: Grand Canyon

(4) Is where Alex Honnold free-climbed the massive rock face El Capitan

ANSWER: Yosemite

(5) Is alphabetically last among National Parks and is found in Utah

ANSWER: Zion

(6) Is the only national park found in Maine, covering much of Mount Desert Island

ANSWER: Arcadia

CONSTELLATIONS

Name the...

(1) “Hunter” constellation whose belt contains the stars Alnitak, Alnilam, and Mintaka.

ANSWER: **Orion**

(2) Constellation nicknamed “Little Bear” that contains the North Star Polaris.

ANSWER: **Ursa Minor**

(3) Constellation whose name is Latin for “weighing scales” and that lies between Virgo and Scorpio.

ANSWER: **Libra**

(4) Constellation whose two brightest stars are Castor and Pollux.

ANSWER: **Gemini**

(5) Swan-shaped constellation that contains the Northern Cross.

ANSWER: **Cygnus**

(6) “Serpent-bearer” constellation often considered the 13th sign of the zodiac.

ANSWER: **Ophiuchus**

Second Half

(Tossup 9) **A holiday named after this man was established by Benjamin Harrison on the one-year anniversary of a mass lynching of 11 Italians in New Orleans. Erik Larsen's *The Devil in the White City* revolves around H.H. Holmes' "Murder Hotel" at an 1893 (*) Chicago event named after this man. In a journal entry from this man, he wrote "they will make good servants" in reference to the Taino people of Hispaniola. For ten points, name this man who supposedly discovered the "New World" in 1492.**

ANSWER: Christopher Columbus (or Cristobal Colon)

(Bonus 9) This campaign was decisively ended at the Battle of the Monongahela. For ten points each, [Part A] Name this failed expedition to capture Fort Duquesne that ended with the death of its British commander at the hands of French forces and their Native American allies.

ANSWER: Braddock Expedition

[Part B] The Braddock Expedition occurred during this conflict, often considered the North American theatre of the Seven Years War.

ANSWER: French and Indian War

[Part C] This American Founding Father surrendered Fort Mifflin during the French and Indian War.

ANSWER: George Washington

(Tossup 10) **Quadrilaterals whose smallest angles have this degree measure are called lozenges. This value is the ninth triangular number. This is the total number of handshakes when everyone at a party of ten shakes hands with everyone else. The exterior angle of a regular (*) octagon has this degree measure, and it is the degree measure of the base angles in an isosceles right triangle. For ten points, give this number of degrees in half of a right angle.**

ANSWER: 45

(Bonus 10) These shapes are named for having a fractional dimension. For ten points each,

[Part A] Identify these mathematical shapes that display self-similarity, repeating themselves at smaller scales. Examples of these shapes include the Mandelbrot set, Sierpinski's Triangle, and the Menger Sponge.

ANSWER: fractal

[Part B] The Menger Sponge is formed from a cube by first slicing it into this number of cubes with one-third of the original side length. This number is equal to 3 to the third power.

ANSWER: 27

[Part C] The construction of the Menger Sponge removes this number of smaller cubes from the original, since this is the number of smaller cubes that do not touch an edge of the original cube.

ANSWER: 7

(Tossup 11) **A cliff known as World’s End is located in this country’s Horton Plains National Park. The Sigiriya rock fortress in this country is located near the Dambulla cave system, built during the Polonnaruwa and (*) Anuradhapura periods of this country. A battle was fought at this country’s city of Jaffna between its army and the LTTE. For the point, name this island nation with capital Colombo at the tip of the Indian subcontinent.**

ANSWER: Sri Lanka

(Bonus 11) The ancient city of Merv was located in this modern-day country. For ten points each,

[Part A] Name this central Asian country where the Darvaza gas crater has burnt continuously since 1971.

ANSWER: Turkmenistan

[Part B] This city is the capital and largest city of Turkmenistan.

ANSWER: Ashgabat

[Part C] Most of Turkmenistan is covered by one of these features named the Karakum, which translates as “Black Sand” in Turkic languages.

ANSWER: Deserts

(Tossup 12) **This man wrote a Pulitzer Prize-winning musical about a bizarre presidential election titled *Of Thee I Sing*. Another work by this man contains the song “Summertime” and was created in collaboration with his brother (*) Ira. This man also created a jazz concerto for piano that debuted in 1924 as part of a concert program titled “An Experiment in Modern Music.” For ten points, what American composer penned *Porgy and Bess* and *Rhapsody in Blue*?**

ANSWER: George Gershwin

(Bonus 12) This composer created the opera *Fierrabras*. For ten points each,

[Part A] Name this Austrian composer who wrote over 600 lieder in his short life, including Ave Maria and Der Erlkonig [[url-KUN-ig](#)]. He also wrote the song cycle *Winterreise*.

ANSWER: Franz Schubert

[Part B] Schubert took one of his short songs about an unlucky fish and turned it into this string quintet.

ANSWER: The Trout (or Die Forelle) Quintet

[Part C] One of Schubert’s best-known works is this late symphony, which has only two complete movements instead of the usual four.

ANSWER: “Unfinished” Symphony (or Symphony #8)

(Tossup 13) **Near this end of this work, a character moves himself to an air-lighthouse where he practices self-flagellation. Characters in this work are classified in five castes from Alpha to Epsilon. (*)** Lenina Crowne visits a Reservation in New Mexico with Bernard Marx in this work which features heavy use of the drug Soma by characters. John “the Savage” is a character in, for ten points, what dystopian novel by Aldous Huxley?

ANSWER: Brave New World

(Bonus 13) This poet wrote the collection *Men and Women*. For ten points each,

[Part A] Name this British poet whose works include *The Pied Piper of Hamelin* and *The Ring and the Book*.

ANSWER: Robert Browning (Prompt on Browning)

[Part B] This Robert Browning work describes a woman with a heart that was “too soon made glad”. The subject of this work is often considered to be Lucrezia de’ Medici, the wife of the Duke of Ferrara.

ANSWER: My Last Duchess

[Part C] Robert Browning was married to this woman, the author of *Sonnets from the Portuguese*.

ANSWER: Elizabeth Barrett Browning (Prompt on Browning)

(Tossup 14) **This substance is produced when terpenes are separated from copal, and the rare blue variety of it is only mined in the Dominican Republic. Found in large amounts along the shores of the Baltic Sea, it is now thought impossible to extract (*)** dinosaur DNA from this substance, though it has preserved Triassic Period specimens such as mites and flies. For the point, name this fossilized tree sap that may contain trapped plants and animals.

ANSWER: Amber

(Bonus 14) For ten points each, answer some questions about moons.

[Part A] This Jovian satellite is the largest moon in the solar system. It’s also the only one that has its own magnetic field.

ANSWER: Ganymede

[Part B] This largest moon of Saturn is the only moon in the solar system that has its own atmosphere. This moon also has methane oceans.

ANSWER: Titan

[Part C] Scientists think that this moon of Neptune may have been captured from the Kuiper belt because it is the only moon known to orbit in retrograde to the spin of its planet.

ANSWER: Triton

(Tossup 15) **A series of conflicts named after this country included the Ten-Day War. Operation Noble Anvil was a NATO bombing campaign on this country, where one man was charged with war crimes by its ICTY. That man, (*) Slobodan Milosevic, was overthrown during the Bulldozer Revolution in this country's capital of Belgrade. For ten points, name this former country that comprised most of the modern-day Balkan States and was once led by Josip Broz Tito?**

ANSWER: Yugoslavia

(Bonus 15) This woman declared 1992 to be an "Annus Horribilis". For ten points each,

[Part A] Name this current Queen of the United Kingdom.

ANSWER: Queen Elizabeth II

[Part B] Queen Elizabeth II often hosts foreign visitors and makes public appearances at this palace in London. This palace is the administrative headquarters of the British monarch.

ANSWER: Buckingham Palace

[Part C] Queen Elizabeth II is a member of this Royal House, which is named after a castle in the county of Berkshire.

ANSWER: Windsor Castle

(Tossup 16) **In Greek myth, Zeus unleashed this event to punish the Bronze race of humans for their constant warring. The Chinese version of this myth occurred during the reign of Emperor Yao. In the Hindu version of this myth, Vishnu turns into his first avatar - the (*) fish Matsya. This myth is present in the Book of Genesis, in which Noah is instructed by God to build an ark. For ten points, name this myth in which a great deluge kills numerous organisms.**

ANSWER: Flood Myth (accept Deluge Myth; accept Deucalion Flood; accept Gun-Yu; accept Pralaya; accept Great Flood; accept Great Deluge; accept Genesis Flood before Genesis is read)

(Bonus 16) These creatures had hair made of living snakes. For ten points each,

[Part A] Name these creatures which included Stheno and Euryale.

ANSWER: Gorgons

[Part B] Like her sisters, this Gorgon possessed the power to turn those who saw her into stone. This Gorgon was slain by the hero Perseus.

ANSWER: Medusa

[Part C] Medusa's head was legendarily placed on this shield. This shield was commonly carried by Zeus or Athena and could cause fear among men.

ANSWER: Aegis

Tiebreakers

(Tossup 17) **During one election, this man published a book titled *Why Not the Best?*. Before embarking on his political career, this Annapolis graduate was a submarine officer. As a governor, this man shocked segregationist supporters by declaring that (*) “the time of racial discrimination is over.” This president brokered a historic peace agreement at Camp David between Menachem Begin and Anwar Sadat. For ten points, name this American President who was succeeded by Ronald Reagan.**

ANSWER: Jimmy Carter (Accept James Earl Carter Jr.)

(Bonus 17) Charles O’Hara surrendered his sword at the end of this battle. For ten points each,

[Part A] Name this decisive 1781 battle in Virginia that ended the American Revolutionary War. This battle ended with the surrender of over 7000 British soldiers.

ANSWER: Battle of Yorktown

[Part B] This British general commanded the forces at Yorktown but refused to attend the surrender ceremony, sending his deputy Charles O’Hara instead.

ANSWER: Lord Charles Cornwallis

[Part C] This young French aristocrat fought at Yorktown. This “Hero of Two Worlds” was earlier wounded at the Battle of Brandywine.

ANSWER: Gilbert du Motier, Marquis de Lafayette