Round 10

First Half

(Tossup 1) **The winning commander of this battle declared "Never interrupt your enemy when he is making a mistake" and later commented "One sharp blow and the war is over" while ordering Marshal Soult to attack the (*)** Pratzen Heights. This battle led to the end of the War of the Third Coalition and the dissolution of the Holy Roman Empire. A combined Russian and Austrian army led by two emperors was defeated during, for ten points, what great 1805 victory for Napoleon?

ANSWER: Battle of **Austerlitz** (Accept Battle of the **Three Emperors**)

(Bonus 1) This man married the Sogdian princess Roxana. For ten points each,

[Part A] Name this Macedonian conqueror who destroyed the Persian Empire and is often called "The Great".

ANSWER: **Alexander** the Great (Accept **Alexander III**)

[Part B] After the death of Alexander, this group of people divided up his empire and fought each other in numerous wars. These people are named after the Greek word for "Successors".

ANSWER: **Diadochi**

[Part C] This Diadochi general eventually took control of Egypt, where he established a namesake dynasty that included Cleopatra.

ANSWER: **Ptolemy** Soter (Accept **Ptolemy** I)

(Tossup 2) **This Victorian author argued that "all truth and beauty are to be attained by a humble and faithful study of nature." One of this author's protagonists is a linen weaver whose hoarded gold is stolen by (*)** Dunstan Cass. Another novel by this author features a marriage between Reverend Edward Casaubon and the orphan Dorothea Brooke and is subtitled "A Study of Provincial Life". For ten points, name this author of Silas Marner and Middlemarch?

ANSWER: George **Eliot** (Accept Mary Ann **Evans**)

(Bonus 2) For ten points each, identify some characters from Shakespeare's longest play.

[Part A] This Prince utters the soliloquies, "O what a rogue and peasant slave am I?" and "To be or not to be."

ANSWER: **Hamlet**

[Part B] After this brother of Ophelia jumps into her grave, Hamlet leaps in after him.

ANSWER: **Laertes**

[Part C] At the end of the play, this young king of Norway seizes the throne of Denmark.

ANSWER: **Fortinbras**

(Tossup 3) **Good Luck Cave is located in this country and contains the largest cave chamber in the world, the Sarawak Chamber. A Tamil shrine is located at this country's Batu Caves. The highest mountain in this country, Mount Kinabalu, is located in its (*)** Sabah region. The Causeway and Tuas Second Link connects this country's state of Johor with Singapore. For ten points, the Petronas Twin Towers are located in what country's capital of Kuala Lumpur?

ANSWER: **Malaysia**

(Bonus 3) The Cyclades are located in this body of water. For ten points each,

[Part A] Name the sea located between Greece and Turkey home to a namesake group of islands that include Samos and Lesbos.

ANSWER: **Aegean** Sea

[Part B] This Greek island in the Aegean is the second largest Greek island and is separated from the mainland by the Euripus Strait.

ANSWER: **Euboea** (Accept **Evia**)

[Part C] This sea located off the western coast of Greece is where the islands of Samos and Lesbos are located. Calypso Deep is also located in this sea.

ANSWER: **Ionian** Sea

(Tossup 4) **The rate-limiting step of this pathway is catalyzed by the enzyme PFK-1. Hexokinase is the first enzyme involved in this pathway, which is followed by lactic acid fermentation in low-oxygen situations. This pathway is reversed in (*)** gluconeogenesis and is usually followed by the Krebs cycle. For ten points, breaking down a molecule of glucose into two molecules of pyruvate is the role of which first pathway of cellular respiration?

ANSWER: **glycolysis**

(Bonus 4) Inbreeding is dangerous because it increases the number of potentially harmful homozygous offspring and lowers the number of offspring with this genotypic property. For ten points each,

[Part A] Name this property of having two different alleles for a single gene.

ANSWER: **Heterozygous** (accept **heterozygote**; accept **heterozygosity**; prompt on "carrier")

[Part B] The genotype results of a cross between two heterozygotes can be visualized on one of these diagrams, which may use capital and lowercase letters to represent dominant and recessive alleles.

ANSWER: **Punnett** squares

[Part C] Heterozygotes are represented by the term "2pq" in this principle of genetic "equilibrium," which models allele and genotype frequencies in a population with no evolutionary forces.

ANSWER: **Hardy-Weinberg** equilibrium (accept "law" or "principle" or "theorem" or "model" instead of "equilibrium")

(Tossup 5) **One museum in this city was expanded via the conversion of "The Tanks" and "The Switch House". *The Fighting Temeraire* and *Rain, Steam and Speed* are among the numerous (*)** J.M.W Turner works exhibited in this city. A famous modern art museum in this city is housed in the Bankside Power station while another is located in Trafalgar Square. For ten points, name this city where the National Gallery and Tate Modern are located.

ANSWER: **London**

(Bonus 5) This architect designed the Price Tower. For ten points each,

[Part A] Name this American architect who designed the Solomon R. Guggenheim Museum.

ANSWER: Frank Lloyd **Wright**

[Part B] Frank Lloyd Wright also designed this house in southwestern Pennsylvania. This house is partially located over a waterfall on the Bear Run stream.

ANSWER: **Fallingwater**

[Part C] Wright designed Fallingwater and many other structures at this studio near Spring Green, Wisconsin. A similarly named property designed by Wright is located in Arizona.

ANSWER: **Taliesin** (Accept **Taliesin East**, accept **Taliesin Spring Green**, accept **Taliesin North**)

(Tossup 6) **After an attempt to seduce him failed, this man was falsely accused of rape by Potiphar's wife. While in jail, this man interpreted the cupbearer's dream successfully. This man later became the (*)** Vizier of Egypt and was in charge of collecting and dispensing grain during seven years of famine. This man's jealous brothers, with the exception of Reuben and Benjamin, sold him into slavery. For ten points, name this son of Jacob and Rachel.

ANSWER: **Joseph**

(Bonus 6) These three people are usually identified as Melchior, Caspar, and Balthazar. For ten points each,

[Part A] Name this group of three individuals who came from the east to visit Jesus after his birth.

ANSWER: The Three **Magi** (Accept Three **Wise Men**, accept Three **Kings**)

[Part B] The three Magi traveled to this city, the birthplace of Jesus Christ.

ANSWER: **Bethlehem**

[Part C] The relics of the Magi are located in this German cathedral where the Shrine of the Three Kings is located.

ANSWER: **Cologne** Cathedral

(Tossup 7) **The equation y = 1 / x [y equals one over x] has both vertical and horizontal asymptotes at this value. An expression with this number as its exponent is always equal to 1, except for the special case where the base is also this number. Division by this number is (*)** undefined in algebra, and it is not considered prime because it has an infinite number of factors, given that any other number times this number is equal to this number. The additive identity is, for ten points, what number that is neither positive nor negative?

ANSWER: **zero**

(Bonus 7) The name for these functions translates to "many-named". For ten points each,

[Part A] Identify these functions consisting of a terms with a coefficient times a variable to a whole number power. An example of this type of function is "4 x cubed minus x plus 7."

ANSWER: **Polynomial**s (or **polynomial function**)

[Part B] The simplest type of polynomial function has this shape as its graph. Graphs of this shape usually have equation "y equals m x plus b", although the graph of "x equals 3" forms a vertical example of this shape.

ANSWER: **Line** (accept word forms like **linear**)

[Part C] The next-simplest type of polynomial graph is a parabola, which has a highest or lowest point with this name. The equation "y equals a times the quantity x minus h end quantity squared plus k" is named for this point, which is then located at "h comma k".

ANSWER: **Vertex**

(Tossup 8) **The contrasting personalities of three leaders in this country is often described using a singing cuckoo. One leader in this country successfully used palisades and firearms to defeat waves of enemy cavalry. It's not China, but this country's (*)** "Age of Warring States" saw the rise of three "Great Unifiers", the last of whom established a namesake military government. For ten points, name this country where warlords such as Oda Nobunaga and Tokugawa Ieyasu commanded armies of samurai.

ANSWER: **Japan**

(Bonus 8) This leader ordered Operation Blue Star. For ten points each,

[Part A] Name this first and only female Prime Minister of India who was assassinated in 1980 by her Sikh bodyguards.

ANSWER: **Indira Gandhi** (Prompt on "Gandhi")

[Part B] Indira Gandhi was succeeded as Prime Minister of India by this man, her elder son. This man was assassinated in 1991 by a Tamil Tiger suicide bomber.

ANSWER: **Rajiv Gandhi** (Prompt on "Gandhi")

[Part C] Indira Gandhi was the daughter of this man, the first prime minister of India.

ANSWER: Jawaharlal **Nehru**

Sixty-Second Rounds

The categories are . . .

1. Southeast Asia in Literature

2. African Countries

3. Acids

Southeast Asia in Literature

Name the...

(1) War central to Tim O'Brien's most famous work that ended with the Fall of Saigon.

ANSWER: **Vietnam** War

(2) Island country home to author Pramoedya Ananta Toer. The novel Max *Havelaar* depicts its island of Java.

ANSWER: **Indonesia**

(3) Milan Kundera novel in which Franz participates in a protest march towards Cambodia to pressure it into opening its borders.

ANSWER: The **Unbearable Lightness of Being**

(4) English author who wrote about Vietnam in his *The Quiet American* and also wrote several Catholic novels.

ANSWER: Graham **Greene**

(5) Home country of Carlos Bulosan and national hero Jose Rizal who wrote *Noli Me Tangere*.

ANSWER: Republic of the **Philippines**

(6) Aforementioned Tim O'Brien work centering on Ted Lavender and Jimmy Cross.

ANSWER: The **Things They Carried**

Africann Countries

Name the country which...

(1) Is where the apartheid policy of segregation came to an end in the 1990's.

ANSWER: **South Africa**

(2) Named its capital after the fifth US president.

ANSWER: **Liberia**

(3) Is home to the exclave of Cabinda, which is separated from its main portion by the Democratic Republic of Congo.

ANSWER: **Angola**

(4) Was the site of the Mau Mau uprising.

ANSWER: **Kenya**

(5) Is the world's newest sovereign country.

ANSWER: **South Sudan**

(6) Is the site of the first Chinese overseas naval base.

ANSWER: **Djibouti**

Acids

Name the...

(1) Common acid often called HCL.

ANSWER: **Hydrochloric** acid (Accept **Muriatic** acid)

(2) Acid found in fruits such as lemon and lime.

ANSWER: **Citric** acid

(3) Acid that is the main component of vinegar.

ANSWER: **Acetic** acid (Accept **Ethanoic** acid)

(4) Type of acid named after an American chemist which forms a covalent bond with an electron pair.

ANSWER: **Lewis** acid

(5) Type of acid with an acidity greater than 100% Sulfuric acid.

ANSWER: **Superacid**

(6) Chemical sometimes known as prussic acid.

ANSWER: **Hydrogen cyanide**

Second Half

(Tossup 9) **In one work from this country, a character daydreams of Socrates pursuing Phaedrus and stays at the Hotel Des Bains. That work from this country features a protagonist dying of cholera who develops feelings for a (*)** Polish boy. Another work from this country features a boy whose voice can shatter glass and is titled *The Tin Drum*. For ten points, name this home country of Thomas Mann and Gunter Grass where the Danzig trilogy was set.

ANSWER: **Germany**

(Bonus 9) This author wrote numerous tragedies such as *Ajax*. For ten points each,

[Part A] Name this Greek playwright who wrote *Antigone*.

ANSWER: **Sophocles**

[Part B] Many works by Sophocles, including *Antigone* and *Oedipus Rex*, primarily feature characters from this Greek city.

ANSWER: **Thebes**

[Part C] This other work by Sophocles recounts the story of the daughter of Agamemnon who takes revenge against her mother Clytemnestra.

ANSWER: **Electra**

(Tossup 10) **This object contains several evenly spaced dark spots nicknamed the "Brass Knuckles". Sputnik Planitia is a craterless, high-albedo region of this object. A heart-shaped area of this object was photographed by the (*)** New Horizons spacecraft, which also visited its moon, Charon. For ten points, name this Kuiper Belt object discovered by Clyde Tombaugh that used to be the ninth planet, named for the Roman god of the underworld.

ANSWER: **Pluto**

(Bonus 10) The Galapagos ridge is an example of this feature. For ten points each,

[Part A] Name this feature that exists between two tectonic plates that are moving away from each other.

ANSWER: **Divergent boundary** (Accept **divergent plate boundary**, accept **constructive boundary**, accept **extensional boundary**)

[Part B] Another example of a divergent boundary is this ridge which runs across much of the Atlantic Ocean. Iceland is situated on this ridge.

ANSWER: **Mid-Atlantic** Ridge (Prompt on Reykjanes Ridge)

[Part C] Plate tectonics was pioneered by this German researcher who developed a namesake theory of continental drift.

ANSWER: Alfred **Wegener**

(Tossup 11) **In Rambo's integrative model of this action, there are 7 stages starting with Context and ending with Consequences. In India, hundreds of thousands of Dalits emulated B.R. Ambedkar by performing this action. French King (*)** Henry IV performed this action to retain his throne. Bob Dylan alienated many of his fans by performing this action vis-a-vis Christianity. For ten points, name this action that involves changing one's religious affiliation.

ANSWER: Religious **conversion** (or **converting**; accept descriptive answers like changing religions or joining a different religion; prompt on "joining a religion" or equivalents; do not accept or prompt on "apostasy" or "leaving a religion")

(Bonus 11) In September 2018, this man was stabbed while campaigning in the city of Juiz de Fora. For ten points each,

[Part A] Name this South American leader who assumed office in 2019, succeeding Michel Temer. He has been dubbed the "Trump of the Tropics".

ANSWER: Jair **Bolsonaro**

[Part B] Jair Bolsonaro is the President of this country where he represented Rio de Janeiro in the Chamber of Deputies.

ANSWER: **Brazil**

[Part C] This former Brazilian president was impeached in 2016. She was the first woman to hold the presidency.

ANSWER: Dilma **Rousseff**

(Tossup 12) **This composer's one-act ballets include *The Wooden Prince* and another work based on a Melchior Lengyel story. That work by this composer features three tramps, a girl, and a wealthy (*)** Chinese man. In this man's only opera, seven locked doors are opened at the insistence of a young bride named Judith who discovers the title character's three former wives. For ten points, name this Hungarian composer of *The Miraculous Mandarin* and *Bluebeard's Castile*?

ANSWER: Bela **Bartok**

(Bonus 12) For ten points each, answer some questions about Italian Operas:

[Part A] The operas of Bellini and Rossini belong to a graceful style known by this two-word term for "beautiful singing."

ANSWER: **Bel Canto**

[Part B] The most well-known tunes in opera often come from these vocal solos. "La Donne e mobile" and "Un Bel Di" are famous examples.

ANSWER: **Aria**s

[Part C] Singers in an opera sometimes declaim, or semi-speak, to the accompaniment of a harpsichord in this style.

ANSWER: **Recitative** (Accept **Recitiativo**)

(Tossup 13) **During a war with these creatures, one deity ordered that all the pharmakon plant be harvested. Two of these creatures were clubbed to death by the Moirai. These creatures were born from the blood of Uranus and are considered the offspring of (*)** Gaia. One of these creatures named Alcyoneus was immortal within his native land and they could only be defeated with the help of a mortal. Porphyrion was the king of, for ten points, what race of immensely strong beings who battled the gods?

ANSWER: **Giants** (Accept **Gigantes**)

(Bonus 13) The huntress Atalanta agreed to marry any man who could beat her in a footrace, while those who failed were executed. For ten points each,

[Part A] Name this young man who, with the aid of Aphrodite, was able to defeat Atalanta in the race and marry her.

ANSWER: **Hippomenes**

[Part B] Aphrodite gave Hippomenes these objects to throw in front of Atalanta which she could not resist slowing down to pick up. Hercules retrieved some of these golden fruits for his eleventh labor.

ANSWER: **Golden Apples**

[Part C] The Golden Apples came from this location, which was guarded by the "Daughters of the evening" and the dragon Ladon.

ANSWER: **Garden of the Hesperides**

(Tossup 14) **The losing candidate in this election was targeted by Swift Boat Veterans for Truth which spread discredited claims about his Vietnam service. That candidate later served as Barack Obama's second (*)** Secretary of State and was named John Kerry. Dick Cheney stayed on as Vice President after this election, which occurred against the backdrop of the wars in Afghanistan and Iraq. For ten points, name this election which saw the re-election of George W. Bush.

ANSWER: **2004** US Presidential Election

(Bonus 14) This group was led by a former sergeant named Walter W. Waters. For ten points each,

[Part A] Name this massive group of WW1 Veterans who marched on Washington D.C. in 1932 to demand the immediate cash payment of the certificates awarded to them as part of the World War Adjusted Compensation Act.

ANSWER: **Bonus Army**

[Part B] This US President refused to give in to the demands of the Bonus Army.

ANSWER: Herbert **Hoover**

[Part C] This American officer commanded six tanks during the army's intervention against the Bonus Army. This distinguished officer died in a car crash shortly after the end of World War II.

ANSWER: George **Patton**

(Tossup 15) **One work by this man features Harvey Birch and a summer home known as "the locusts". This author of *The Spy* was criticized by Mark Twain in a satirical essay. This author's most famous works include *The Deerslayer* and (*)** *The Pathfinder*, all of which follow the scout and frontiersman Natty Bumppo. For ten points, name this American author of *The Leatherstocking Tales* and *The Last of the Mohicans*.

ANSWER: James Fenimore **Cooper**

(Bonus 15) For ten points each, name these classic science fiction works:

[Part A] In this dystopian work by Ray Bradbury, fireman Guy Montag secretly reads some of the books he is supposed to burn.

ANSWER: **Fahrenheit-451**

[Part B] This Arthur C. Clarke novel was published after the release of a film with the same name. In this novel, an alien monolith is discovered on the moon, prompting humans to send a manned mission to Saturn's moon Iapetus.

ANSWER: **2001: A Space Odyssey**

[Part C] In this Isaac Asimov trilogy, psycho-historian Hari Seldon calculates the future of the galaxy based on the mathematically predictable behavior of large populations.

ANSWER: The **Foundation** series

(Tossup 16) **One of this man's most famous theorems can be generalised with the Robertson-Schrodinger equation. Together with Max Born and Pascual Jordan, this man elaborated on matrix formulation of (*)** quantum mechanics. This man's most famous theory implies a limit for the precision which the position and momentum of a particle can be found. For ten points, name this German scientist famed for his namesake Uncertainty Principle.

ANSWER: Werner **Heisenberg**

(Bonus 16) The linear portion of a material's stress-strain curve directly reflects this law. For ten points each,

[Part A] Name this law denoted "F equals negative k x" which describes the restoring force on an elastic simple harmonic oscillator.

ANSWER: **Hooke**'s law

[Part B] Hooke's law describes these elastic objects, which are often coiled pieces of metal that can be stretched or compressed.

ANSWER: **Spring**s

[Part C] Integrating Hooke's law gives a formula for the elastic form of this quantity. Stretching a spring stores this quantity, which is converted to kinetic energy when the spring is released.

ANSWER: **potential energy** (accept **U**)

Tiebreakers

(Tossup 17) **The 2015 discovery of polarity shifts in this location by a University of Illinois team suggests it may consist of three layers, rather than the two initially shown by Inge Lehmann. The Bullen discontinuity is a boundary within this region, through which (*)** P-waves but not S-waves can travel. By the geodynamo theory, the movement of this region's liquid portion generates the Earth's magnetic field. Consisting mainly of iron and nickel, for ten points, identify this region of Earth found below the mantle.

ANSWER: Earth's **core** (accept **inner core** until "S-waves")

(Bonus 17) For ten points each, answer the following about astronauts.

[Part A] This Soviet Cosmonaut was the first man in space.

ANSWER: Yuri **Gagarin**

[Part B] This American high school teacher and astronaut was killed during the Challenger disaster.

ANSWER: Christa **McAuliffe**

[Part C] This American astronaut the first to hold a religious ceremony on the moon and the second man to set foot on the moon.

ANSWER: Buzz **Aldrin**