1. A chance to capture a key city in this war was lost after a battle in which Armand de Saint-Arnaud’s forces combined with Lord Raglan’s. Another battle was fought when Osman Pasha refused to put up a white flag for his Turkish fleet. Besides the Battle of the Alma and Battle of Sinope, this war included the battle of Inkerman, where Prince Manshikov lost, and another where Lord Cardigan’s forces rode into what was known as the "valley of death," Balaklava. Ending after a siege of Sevastapol, for 10 points, name this war in the Ukraine between Russia, France, and Britain over a peninsula on the Black Sea.

**ANSWER:** Crimean War

**Bonus:** One of this empire’s rulers lost to the Bulgars at the battle of the Gates of Trajan. For 10 points each:

[10] Name this empire once led by Basil the Bulgar-Slayer, also ruled by the House of Palaiologos.

**ANSWER:** the Byzantine Empire [accept Eastern Roman Empire; prompt on Medieval Roman Empire; prompt on Romania]

[10] This Palaiologos ruler was the final Byzantine Empire, ruling until 1453.

**ANSWER:** Constantine XI Palaiologos [prompt on Constantine]

2. A poet named Prosdocimo searches for inspiration for an opera libretto in this composer’s opera The Turk in Italy. In one of this composer’s operas, Ninetta is accused of stealing a silver spoon before it is discovered that the crime was actually committed by a bird. Another of this man's works includes the aria "Largo al factotum" and sees the title character confound Bartolo. This composer also wrote a notable overture to his opera about a Swiss nationalist. For 10 points, name this Italian composer of operas such as William Tell and The Barber of Seville.

**ANSWER:** Gioachino Rossini

**Bonus:** Two uncles of the central character in this opera, The Bonze and Yakuside, were cast as bass. For 10 points each:

[10] Name this Puccini opera that ends with Cio-Cio San’s suicide, set in Japan and featuring the consul Sharpless and Lieutenant Pinkerton.

**ANSWER:** Madame Butterfly [or Madama Butterfly]

[10] In this other Puccini opera, the chief of police Baron Scarpia makes a move on the title character, who falls in love with Mario Cavaradossi and falls to her death from the Castel Sant' Angelo.

**ANSWER:** Tosca
3. Sommerfeld proposed that for an electron, both the magnitude and the direction of this vector were quantized. When coupling this quantity over multiple systems, the Clebsch-Gordan coefficients are often used. Conservation of this quantity can be derived from the principle of rotational invariance. This derivative of torque with respect to time is equal to the product of the moment of inertia and the angular velocity. For 10 points, name this property of a rotating object, equal to the cross-product of the radius and a similar concept, linear momentum.
ANSWER: angular momentum [do not accept or prompt on “linear momentum” or “momentum”]

Bonus: For 10 points each, name the following concepts from rotational mechanics.
[10] This theorem states that, given the namesake condition, the moment of inertia may be calculated by adding the product of mass and the square of the displacement.
ANSWER: parallel axis theorem
[10] This quantity is proportional to the product of the moment of inertia and the square of the angular velocity.
ANSWER: kinetic energy

4. This author wrote a dystopian novel about Ernest Everhard's resistance against a group of powerful capitalists. In addition to The Iron Heel, this author wrote about a seal-hunting captain who picks up Humphrey van Weyden onto his ship, the Ghost, in The Sea-Wolf. Another of his novels ends with a bunch of Yeehat Indians being killed in revenge for the murder of John Thornton, and focuses on the transformation of Buck in the Yukon. For 10 points, name this American author of "To Build a Fire" and The Call of the Wild.
ANSWER: Jack London

Bonus: The protagonist of this story plays ninepins with a bunch of ghosts in the Catskills. For 10 points each:
[10] Name this Washington Irving short story about a man who sleeps for twenty years, waking up after the American Revolution.
ANSWER: "Rip Van Winkle"
[10] "Rip Van Winkle" appears in this collection of essays and short stories by Irving, which also includes "The Specter Bridegroom" and "The Legend of Sleepy Hollow."
ANSWER: The Sketch Book of Geoffrey Crayon, Gent.

5. This man names the International Society of Political Philosophy's award for Early Career Research, and his most famous contribution was modified by Bingham and Stryker. His studies of the Yurok and Lakota led to the work Childhood and Society, and he also wrote psychohistories such as Gandhi's Truth and Young Man Luther. He theorized that as individuals develop, they experience a series of crises, including the teenaged identity crisis. For 10 points, name this psychologist, who created eight stages of psychosocial development.
ANSWER: Erik Homburger Erikson
Bonus: Some theories claim that this disorder is caused by the inability to correct process sound. For 10 points each:

[10] Name this spectrum of disorders, characterized by stereotyped behavior, savant-like abilities, and failure to interact properly with others.
ANSWER: autism spectrum disorders [or autistic spectrum disorders; accept pervasive development disorders or PDDs]
[10] This mild form of autism is sometimes called “high-functioning autism;” it mainly differs from other forms of autism in that affected individuals develop language skills at a normal age.
ANSWER: Asperger’s Syndrome

6. The Peach Tree War began while this man was away, and it took him five years to finally sign a treaty ending it. Known as “Old Silver Nails” for the silver nails stuck in his wooden leg, this man initially ripped up Richard Nicolls’ letter demanding that he surrender his colony, but the colonists noted that the colony had no good defenses and implored him to reconsider. After surrendering in 1664, his colony became known as New York. For 10 points, name this last governor of New Amsterdam.
ANSWER: Peter Stuyvesant

Bonus: He oversaw the Quasi-War with France. For 10 points each:

[10] Name this staunch federalist and second US president.
ANSWER: John Adams [do not accept “John Quincy Adams”]
[10] Adams’ single term was marred by his passage of this series of four bills, including the Naturalization Act, which Republicans saw as specifically targeting them.
ANSWER: Alien and Sedition Acts

7. This organism developed the ability to metabolize citrate in one experiment, and it has been used in recombinant form to produce usable human insulin. Seymour Benzer used this organism with a T4 phage to investigate gene structure, and conjugation was first observed in it by Edward Tatum. In 2001, a complete genetic sequence was made of this organism’s O157:H7 strain. That type may cause bloody diarrhea and kidney failure if consumed. For 10 points, name this model organism, a bacterium sometimes found in the intestines.
ANSWER: Escherichia coli

Bonus: For 10 points each, name the following from bacteriology.

[10] This test distinguishes similar bacteria by the chemical composition of the cell wall; it turns blue for Streptococcus, but Salmonella does not retain its namesake stain.
ANSWER: Gram Staining
[10] This Gram-positive genus of spherical bacteria often occurs in grapelike structures; its aureus species is a major source of food poisoning.
ANSWER: Staphylococcus

8. Baba Rabba reorganized this religious group, which holds Mount Gerizim sacred, and at one point they were centered near Neapolis, or Shechem. One member of this religious group has had five husbands, but is not living with her husband, according to Jesus, who meets that woman at Jacob’s well. Another member of this religious group only appears in the Gospel of Luke, and is contrasted with a priest and a Levite. For 10 points, name this religious group with beliefs similar to Jews, a “Good” one of which helps an unknown traveler.
ANSWER: Samaritans
Bonus: Name these Jewish holidays, for 10 points each.
[10] This holiday commemorates a victory of Judas Maccabeus over the Seleucid king Antiochus IV. It begins on Kislev 25.
ANSWER: Hanukkah [or Chanukkah]
[10] This festival that begins on 15 Tishri starts five days after Yom Kippur. People erect huts and gather four kinds of plants.
ANSWER: Sukkot
These questions will not be licensed to any future tournament and may henceforth be used for practice purposes only. It is prohibited to use these questions for any purpose of financial gain or to remove the attribution of these questions to HSAPQ.
9. Use of the Schwartzian transform can improve the performance of these entities in Perl. Some obstacles in their use are called “rabbits” and “turtles;” the comb variety effectively deals with the latter. A gap sequence is used by the one named for Donald Shell, while least significant bits are key to the radix variety. Another of them, invented by Tony Hoare, utilizes a partition operation after selecting a pivot element. For 10 points, name these algorithms, examples of which include the bubble, merge, and quick varieties, which accomplish the goal of ordering the items in a list. 
ANSWER: **sorting algorithms** [or **sorts**]

10. This man wrote manuals such as *The Creation of Monsters* and *The Weakness of Inferiors*. While trying to murder Rahm Kota, he inadvertently killed his potential successor Galen Marek. He had earlier killed his teacher Plagueis the Wise in order to begin a plan that culminated in his issuing “Order 66.” He engineered the downfall of Chancellor Valorum in order to take power and later lured his enemies to Endor, where this master of Count Dooku was thrown into a reactor core and died. For 10 points, name this Sith Lord who appears in five *Star Wars* movies. 
ANSWER: Emperor/Senator/Chancellor **Palpatine** [or Darth **Sidious**; or **The Emperor**]

11. This author wrote of a "mighty chained king, robed in janitor's cloth" in "The King of Harlem," part of his review of a 1930 American visit, "Poet in New York." Sylvia is rejected by Boybeetle in his play *The Butterfly's Evil Spell*. This author of “Lament for the Death of a Bullfighter” described Leonardo Felix abducting his cousin in one play. Another play has an all-female cast and focuses on the time of mourning at the title structure. For 10 points, name this author, who was killed in the Spanish Civil War and wrote *Blood Wedding* and *The House of Bernarda Alba*. 
ANSWER: Federico Garcia **Lorca**

12. The fourth movement of this composer’s string quartet in G major opens with solo cello. This man, whose works are categorized by Lesure numbers, based one of his operas on a Maeterlinck play, *Pelleas and Melisande*. Another suite by this composer has movements like "Passepied" and "Menuet," *Suite Bergamasque*. This man also wrote a piece based on a poem by Mallarmé, *Prelude to the Afternoon of a Faun*. For 10 points, name this Impressionist composer of *Clair de Lune*. 
ANSWER: Claude **Debussy**

13. One cathedral in its capital is considered the largest Orthodox church in Western Europe, and that city also features several buildings designed by Carl Ludvig Engel. This country’s highest point is at Haltiatunturi, on a mountain whose peak is in a neighboring country. The smallest province of this country, the Aland Islands, is a small island chain at the entrance to the Gulf of Bothnia. Its largest lake is Lake Saimaa, the fifth largest in Europe. For 10 points, name this Scandinavian country with capital at Helsinki.
ANSWER: **Finland** [accept **Suomi**]
14. One of these people sent forged letters demanding that the prince commit suicide. Another pushed for war with the Oyrat, leading to the capture of the emperor. Those two, Zhao Gao and Wang Zhen, helped end the Qin (chin) dynasty and throw the Ming dynasty into chaos, respectively. Another of them was a Muslim known as the “three-jewel admiral,” whom Gavin Menzies claimed reached the Americas. For 10 points, Zheng He was one of what sort of Chinese court officials, who wielded great influence after being castrated?

ANSWER: Chinese 
\textbf{eunuchs}
Arts: A similar scene to this one was depicted in its artist's *The Joy of Life*. For 15 points, name this canvas that depicts five cavorting red figures, painted by Fauvist Henri Matisse.
ANSWER: *La Danse* [or *The Dance*]

Current Events: The current form of this document, introduced in 1999, added the word "Bolivarian" to the country's name. For 15 points, name this document that was amended by referendum in February 2009, eliminating the clause on presidential term limits.
ANSWER: the *Venezuelan constitution* [or *constitution of Venezuela* or other obvious equivalents]

Geography: It is alternately known as both Old Harry's Town and Tyngstown, and nearby cities include Goffstown, Hooksett, and Londonderry. For 15 points, name this site of the University of New Hampshire, the state's largest city.
ANSWER: *Manchester*

History: He defeated his rival André Rigaud in a 1799 civil war. For 15 points, name this leader who ended slavery following his revolt in Haiti.
ANSWER: François Dominique *Toussaint* L’Ouverture

Literature: This “Poet of the Caucasus” wrote poems such as *Fatherland*, but remains best known for a novel about Pechorin. For 15 points, name this Russian author of *A Hero of Our Time*.
ANSWER: Mikhail Yuryevich *Lermontov*

Math Calculation: For 15 points, find the parabola of the form $y = x^2 + ax + b$ that passes through both (-1, 6) and (1, 2).
ANSWER: $y = x^2 - 2x + 3$ [accept $a = -2$, $b = 3$]

Mythology: This man kills Prince Pallas and wears his belt as a trophy, but is later killed by Pallas’s Trojan friend. For 15 points, name this nemesis of Aeneas in the latter part of the Aeneid.
ANSWER: *Turnus*

Social Science: For 15 points, name the situation in which the nominal interest rate is near-zero, but the economy is not stimulated by the decrease in interest rates. It happened in Japan in the 1980’s.
ANSWER: *liquidity trap*
15. Rossetti depicted this man executing a portrait of a friend in his [this man] *Painting the Portrait of Dante Alighieri*. This student of Cimabue surpassed his teacher in depicting facial expression and realistic draperies, such as in his late work *The Mourning of St. Francis*. The Uffizi currently holds a work by this man in which a black-robed Mary holds a red-clad Christ, the *Ognissanti Madonna*. This artist is best known for a fresco cycle including *The Marriage at Cana* and *The Kiss of Judas*. For 10 points, name this early Italian Renaissance painter who did a fresco cycle for Padua’s Arena Chapel.

ANSWER: Giotto di Bondone

Bonus: This style of novel was parodied in both Thomas Love Peacock’s *Nightmare Abbey* and Jane Austen’s *Northanger Abbey*. For 10 points each: [10] Name this genre of novel, which typically involves an isolated protagonist exploring a spooky castle.

ANSWER: Gothic novel
[10] This man wrote *The Castle of Otranto*, generally regarded as the first Gothic novel.

ANSWER: Horace Walpole
[10] This woman depicted Emily St. Aubert’s struggles to unite with Valancourt in the Gothic novel *The Mysteries of Udolpho*, and followed that up with another work in the genre, *The Italian*.

ANSWER: Ann Ward Radcliffe [accept either]

16. At one point in the work in which this character appears, Burdovsky claims to be the son of this character’s benefactor Pavlishchev and demands money, and this character’s lover Aglaya is ultimately abandoned by a Polish count. This character keeps a vigil with Rogozhin after Rogozhin murders Nastassya Filippovna, and this character gains his nickname from the Epanchin family, who are amused by this character’s naïveté. For 10 points, Prince Myshkin is the title character of what Fyodor Dostoevsky novel?

ANSWER: The *Idiot* [accept Myshkin until read]

Bonus: This party took its name from an empire that built the Angkor Wat. For 10 points each: [10] Name this regime that constructed pyramids of skulls out of its dissenters, a Cambodian Communist party in power in the late 1970s.

ANSWER: the Khmer Rouge [accept Red Khmer; accept Khmer Communist Party; prompt on Communist Party of Kampuchea; prompt on Party of Democratic Kampuchea; prompt on National Army of Democratic Kampuchea; prompt on CPK; prompt on PDK; prompt on NADK]
[10] This notorious leader of the Khmer Rouge served as Cambodia Prime Minister from 1976-1979.

ANSWER: Pol Pot [prompt on partial answer; accept Saloth Sar]
[10] This man served as King of Cambodia during the Khmer Rouge’s reign, a position he held until his abdication in 2004.

ANSWER: King Norodom Sihanouk
17. One attempt to overthrow this king was ended at the Battle of Sedgemoor, after which Judge Jeffreys exiled this king’s opponents to Barbados in the Bloody Assizes. In addition to the Duke of Monmouth’s Rebellion, attempts to unseat this king included the actual Rye House Plot and the fictitious Popish Plot. Ruling during the Great Fire of London, this ruler converted to Catholicism on his deathbed, leaving the throne to his brother James II. For 10 points, name this king who was invited back to England in 1660, signaling the Restoration of the monarchy.

ANSWER: Charles II [prompt on Charles]

Bonus: A dream about a snake with its tail in its mouth supposedly led Friedrich Kekulé to discover its structure. For 10 points each:
[10] Name this simple aromatic hydrocarbon.
ANSWER: benzene [prompt on C₆H₆]

[10] This highly explosive compound is formed through a three-step treatment of a certain benzene derivative.
ANSWER: TNT [or 2,4,6-trinitrotoluene]

[10] This compound consists of two fused benzene rings and is often used in mothballs.
ANSWER: naphthalene [prompt on C₈H₁₀]

18. An element in this group is combined with its potassium salt in Lugol's solution. One of these elements was the last naturally occurring element to be discovered, and two more of them are found in a certain class of ozone-destroying chemicals. These elements, which contain five electrons in the p subshell, often form negative one oxidation states. For 10 points, name this group that contains astatine, iodine, bromine, chlorine, and fluorine and is found one group to the left of the noble gases.

ANSWER: halogen [accept halides; accept Group VIIA; accept Group 17]

Bonus: Ravel wrote a suite called the Tomb of this man, and he wrote apotheoses of fellow composers Lully and Corelli. For 10 points each:
[10] Name this French Baroque composer who had his Royal Concerts played before Louis XIV.
ANSWER: François Couperin “the Great”

[10] Couperin wrote an influential treatise called The Art of Playing this common Baroque keyboard instrument. Variants of it include the spinette and the virginal.
ANSWER: harpsichord [accept clavichord]

[10] François Couperin’s cousin Armand-Louis was known for playing harpsichord and this other keyboard instrument. Buxtehude wrote extensively for it, and it is often associated with church music.
ANSWER: organ

19. This poet declares that he is "every dead thing/In whom love wrought new alchemy" in his "A Nocturnal Upon S. Lucy's Day, Being the Shortest Day." He compared sex to a flea biting two lovers in one poem, and wrote a series of poems that included "Batter My Heart, Three Person'd God." In one poem, he described "dull, sublunary lovers" and compared himself and his lover to two legs of a compass. This poet of "A Valediction Forbidding Mourning" noted that "no man is an island." For 10 points, name this Metaphyiscal poet of "Death, be not proud."

ANSWER: John Donne
Bonus: This protein’s S variant is responsible for sickle cell anemia. For 10 points each:
[10] Name this protein that contains an iron atom within a porphyrin ring and is responsible for oxygen transport within red blood cells.
ANSWER: hemoglobin

[10] The pH of blood is regulated by this buffer system, in which carbonic anhydrase converts water and carbon dioxide into carbonic acid, which decomposes to the namesake ion.
ANSWER: bicarbonate buffer system [prompt on hydrogen carbonate system]

[10] Like hemoglobin, this other heme-containing protein stores oxygen within muscle cells.
ANSWER: myoglobin

20. Advocates for Galician autonomy from this state put forth the Linz Program. This state was established in the wake of the Seven Weeks’ War, by the signing of the Ausgleich. Its early foreign policy was governed by Gyula Andrassy, who negotiated its occupation of Bosnia at the Congress of Berlin. It came into existence in 1867 and was dissolved by the Treaty of St. Germain in 1919. For 10 points, name this empire, which recognized the equality of the two principal Hapsburg lands and was ruled for almost its entire existence by Franz Josef.
ANSWER: Austria-Hungary [or Austro-Hungarian Empire; or the Dual Monarchy; prompt on Austria; do not accept Holy Roman Empire]

Bonus: The layout and style of this book is “demonstrated in geometrical order.” For 10 points each:
[10] Name this book by Baruch Spinoza that analyzes “Human Bondage and the Strength of Emotions,” and analyzes the means to maximize the title idea in one’s life.
ANSWER: Ethics

[10] Ethics was addressed by this philosopher in a tome dedicated to his son Nichomachus. This student of Plato also authored works titled Poetics and Metaphysics.
ANSWER: Aristotle

[10] Ludwig Wittgenstein believed that this philosopher’s paradox was his greatest contribution, though some others may vouch for his discussion of the naturalistic fallacy or Principia Ethica.
ANSWER: George Edward Moore

21. A book subtitled “The Riddles of Culture” by Marvin Harris is titled after [These creatures], Pigs, Wars, and Witches. One belief system claims people become sanctified by bathing in a mixture of water and this creature’s poop, and another claims that one of these creatures licked Buri to life and fed Ymir. In addition to Audhumla, the “primordial” one, another of these creatures was pursued by a gadfly before Zeus changed Io back from this form. For 10 points, name this animal that is sacred in Hinduism.
ANSWER: cows [accept cattle or clear-knowledge equivalents; accept bulls until “Buri” but do not accept anything indicating a male afterwards]

Bonus: This man is unable to solve the mystery of Herbert Truczinsky’s scars, because Herbert is killed climbing a ship's figurehead. For 10 points each:
[10] Name this character, who is falsely imprisoned for killing Dorothea Köngetter after his father Alfred dies by swallowing a Nazi party pin.
ANSWER: Oscar Matzerath [accept either or both names]

[10] Oscar Matzerath, who stops growing at age three, is the protagonist of this novel, which is part of the Danzig trilogy.
ANSWER: The Tin Drum [or Die Blechtrommel]

[10] This author of Only Ten Minutes to Buffalo and The Flounder wrote The Tin Drum.
ANSWER: Gunter Grass
22. Tracks within this structure are known as funiculi, and the tract of Lissauer is found at the end of this structure’s dorsal horn. Its floor plate secretes the glycoprotein Sonic hedgehog, and its dorsal horn contains Golgi type I motor neurons. This structure contains the only synapse in many reflex arcs, such as the knee jerk reflex. For 10 points, name this portion of the central nervous system that is contiguous with the medulla oblongata and surrounded by the vertebral column.

ANSWER: spinal cord

Bonus: When a holder of this position died, a *suffectus* one was elected to serve out his term. For 10 points each:

[10] Name this yearly-elected position, the highest elected position in the Roman Republic. Two of them served at a time.

ANSWER: *Consul* [do not accept “Proconsul”]

[10] One attempt to overthrow the Roman Republic was made during this man’s namesake conspiracy, which saw him collude with Longinus and Sura.

ANSWER: *Catiline* [accept Lucius Sergius *Catilina*]

[10] Catiline was the target of a particularly vicious set of oratory attacks by this Roman orator, who also delivered a series of speeches against Mark Antony inspired by Demosthenes’s *Philippics*.

ANSWER: Marcus Tullius *Cicero*
1. In one work by this man, Thibault's soul is saved when he prays to give his life in exchange for Agnelette's. In addition to *The Wolf-Leader*, this man wrote about the necromancer Balsamo, who plots to overthow de Choiseul in exchange for Madame du Barry in *Memoirs of a Physician*. This author also wrote a novel about a man who seeks revenge against Fernand Mondego, the plotter who married Mercedes, after escaping from the Chateau d'If. For 10 points, name this author of *The Three Musketeers* and *The Count of Monte Cristo*.

ANSWER: Alexander Dumas, pere

2. Lord Kelvin constructed numerous balance apparatuses named for this man, who invented the astatic needle. One law named for this man describes the work done in moving a monopole around a closed path, and another relating magnetic field strength to distance and electric current is a special case of the Biot-Savart Law. A flow of one coulomb per second is equal to his namesake unit, which measures a quantity often symbolized by a capital I. For 10 points, name this French physicist whose namesake unit measures current.

ANSWER: André Marie Ampère

3. The figures in this work stand in the foreground of a triple-barreled vault, and sculptures of Athena and Apollo appear in the background. A man in blue robes sprawls on the steps at the center of this painting, and Heraclitus rests his chin in one hand on the left. The artist appears in this work as Apelles, and the figure of Euclid holding a slate may represent Bramante. One central figure in red points upward, and the other wears blue and reaches toward the viewer; those men are Plato and Aristotle, respectively. For 10 points, name this painting depicting a bunch of philosophers, a work of Raphael.

ANSWER: *The School of Athens* [or *Scuola di Atene*]

Extra 20-point Bonus:
For 10 points each, name these devices that might be found in a high school science classroom.
[10] The “bomb” type of this device operates at constant volume, but chemistry teachers usually make the constant-pressure type of this device, used to measure heat capacity, out of Styrofoam cups.

ANSWER: calorimeter
[10] This device named after a German scientist produces a smokeless flame, and is thus often used in a flame test.

ANSWER: Bunsen burner
Extra 30-point Bonus:
For 10 points each, name these Popes.
[10] This Pope made some overtures towards including Russia in a crusade against the Turks, but may be better known for authorizing the Spanish Inquisition.
ANSWER: Sixtus IV [or Francesco della Rovere]
[10] This nephew of Sixtus IV, sometimes called the “Warrior Pope,” was the first to use the Swiss Guard. Michelangelo designed a tomb for this man.
ANSWER: Julius II [or Giuliano della Rovere]
[10] This member of the Borgia family fixed the demarcation line of the Treaty of Tordesillas, but may be better known for fathering the illegitimate children Lucrezia and Cesare while Pope.
ANSWER: Alexander VI [or Rodrigo Borgia]