**2010 ACF National Championship**

**Editor’s Round (Playoffs #4)**

1. A common way to implement one operation in them is named for a roulette wheel, and a proof that one of these can efficiently solve the Two-Armed Bandit problem relies on the Schema Theorem.  Goldberg outlined the "simple" varieties of them, which contrast with the steady state type by replacing a generation at each iteration.  Their optimality can sort of be explained with the much-maligned Building Block Hypothesis.  They were first proposed by John Holland, and usually incorporate crossover and a fitness function to solve problems.  For 10 points, name this type of algorithm that makes use of factors like mutation and inheritance to solve problems in a biologic fashion.

ANSWER: **Genetic** Algorithms (prompt on "GA")

2. One of these features a simple yo-yo like path of three descending notes and double stops preceded by what sounds, at first, like a flute and, subsequently, like a French horn. That work, which was later interpolated in the final movement of Mendelssohn’s *Italian Symphony*,was written in E major and nicknamed “The Hunt.” Another one of these, in B flat major, is nicknamed for a mocking, descending theme that mimics a demonic chuckle. Later provided with piano accompaniment in works by Fritz Kreisler and Mario Pilati, this group of works opens with a piece marked “Andante in E” and concludes with a set of eleven variations on a twelve bar theme in A minor, that make up the 24th and final one. For 10 points, identify this series of compositions for the solo violin, the masterwork of Niccolo Paganini.

ANSWER: Paganini’s ***Caprices*** or ***Capricii***

3. At one point, in this work, a character compares nature to an “assembly of blondes and brunettes,” before he is admonished to stop searching for comparisons and decides to leave his mistress behind. Another section describes the futility of the Russo-Turkish War, which is cited by the narrator as an example of man’s capacity to do evil despite his short life. Earlier, the protagonist laments that even with a thousand senses he sometimes feels a vague longing, a realization that is followed by a refutation of Father Castel’s *Treatise of Universal Gravitation* and the arrival of two travelers on the northern shore of the Baltic. Subtitled “A Philosophical Story,” this work in seven chapters opens with a description of a young man from Sirius who is 24,000 “geometrical paces” tall. For 10 points, identify this satire about a visit to Earth by the title giant, a work by Voltaire.

ANSWER: ***Micromegas***

4. Odean’s work demonstrating the failure of momentum strategies has lended support for it, while Lesmond et al find that relative strength strategies similarly fail. A key methodology in studying it is the “event study” which as a whole find no systemic over or underreaction biases. Grossman and Stiglitz argued that this idea was paradoxical on the grounds that it would imply that firms had no incentive to improve. Alternatives to this idea have been proposed by Andrew Lo centering around the idea of adaptation. First expressed by Louis Bachelier in his dissertation, “The Theory of Speculation”, its weak version states that prices should reflect all available information, while the strong form asserts that prices also reflect hidden information. For 10 points, identify this economic doctrine espoused by Eugene Fama which colloquially asserts that one cannot consistently beat the market.

ANSWER: **efficient markets** hypothesis

5. Under its rule, women had to acknowledge their husband, son, and father as their “three lords” and often kept a chastity dagger. Catholics living in this empire’s borders were often known as “potters” after having turned to pottery following the *Chesa* controversy and the resultant Catholic pogroms. Under its greatest ruler, its fleet of Turtle ships grew and the establishment of *hangul*, the national alphabet, took place. In its second half its power waned and it became known as the Hermit Kingdom, during which time its soldiers notably burned a U.S. ship at Keupsa Gate. Reaching its zenith under Sejong, it was founded by Taejo on the remnants of the Goryeo kingdom. For 10 points, name this dynasty in power from 1392 to 1910 on the Korean Peninsula.

ANSWER: **Joseon** or **Chosun** or **Yi** Dynasty

6. For de Sitter space it is finite, as shown by Gibbons and Hawking, due to the presence of a cosmological horizon. The entanglement version of it measures the amount of correlation between two different subsystems. The conditional version of it incorporates known information and is bounded above by the absolute one. For a classical ideal gas, it scales as the number of particles times the log of the volume, the precise statement of which is known as the Sackur-Tetrode equation. Given the assumption of molecular chaos one can prove the H-theorem of Boltzmann, showing that it increases, as demanded by the Second Law of Thermodynamics. For 10 points, what is this measure of the number of microstates in a system, which is usefully thought of as a measure of disorder?

ANSWER: **entropy**

7. He argued that St. John of the Cross’ greatest gift was his ability to find joy in emptiness and liberty in suffering. He corresponded with Louis Massignon on the connections between non-violence and Sufism, while his interest in Buddhism led to a meeting with the Dalai Lama. He reiterated that Saint Thomas declared the contemplative life to be superior to the active life and championed the view of God as Being Itself, an idea he adapted from Etienne Gilson. His namesake collection which includes such religiously themed books of verse as *The Strange Island* and *Figures for an Apocalypse*, is housed at Bellarmine University. This student of Mark van Doren published a 1948 book that described his conversion and his subsequent life at a Cistercian Monastery at Gethsemani, in Kentucky. For 10 points, identify this Trappist monk and author of the spiritual autobiography, *Seven Storey Mountain*.

ANSWER: Thomas **Merton**

8. Towards the end of this novel the protagonist’s family is aided by the Cucuzzas and Mahwinneys in rescuing a childhood friend. Chapter 6 begins with a letter from Homer L. Kasson outlining the opportunities available to new “homesteaders” under the Office of American Absorption. One subplot follows the relationship of the narrator’s aunt Evelyn and the Rabbi Bengelsdorf, while a key moment occurs when the narrator’s parents discover his older brother Sandy’s drawings of Burton K. Wheeler’s running mate. Its Postscript, which follows a chapter entitled “Their Country,” describes the true lives of figures such as Walter Winchell and Henry Ford. Centering on a Newark based family whose lives are turned upside down by the 1940 election of Charles Lindbergh for President, for 10 points, identify this novel, an alternative history about an anti-Semitic United States, written by Philip Roth.

ANSWER: ***The Plot Against America***

9. A key relationship in the life of this figure mirrors that of Hadingus and Regnhild. This figure is present at Aegir’s feast and interjects during Heimdall’s argument to predict that another deity will soon be bound with the entrails of his son. The Norse analogue of Ull, according to some stories this deity lived at Manheim and fathered the ancestors of the Hladir Jarls with Odin. Numerous sources assert that it is this deity, who had earlier been made to laugh by an encounter with a goat, who provides the serpent that drips venom on Loki’s head. This figure, who is loath to leave her family abode, Thrymheim, and was often depicted wearing snow-shoes was the daughter of Thiazi. For 10 points, identify this Goddess who selected her husband on the basis of his beautiful feet and thus became the unwilling mistress of Noatun and the consort of Njord.

ANSWER: **Skadi** or **Shathi**

10. He was raised by his grandmother, from whose silver cup he would drink on festival days, and for a time he was so poor that he dealt in donkeys and was known as “the Muleteer.” He was widowed before coming to power and lived with a freed-slave mistress named Caenis [KYE-niss]. That power was bolstered by the oath of loyalty given by Tiberius Alexander as well as 40,000 archers from the Parthians. However, he owed that power chiefly to the political skills of Mucianus and the military victory at Cremona of Antonius Primus. His reign ended with him saying “Alas, I think I'm becoming a god” on his deathbed and began with the crushing of major revolts on the Rhine and in Judaea and saw the start of construction on the Forum of Peace and the Colosseum, the latter of which was finished by his son. For 10 points, name this father of Domitian and Titus and Roman emperor from AD 69-79.

ANSWER: Titus Flavius **Vespasian**us

11. Two years prior the sculptor of this work created a 27-inch model that allowed him to easily win approval for this larger work, which was made possible by a donation from the estate of Ebenezer Hubbard. It was based in part on sketches of the descendants of Isaac Davis as well as the artist’s viewing of the *Apollo Belvedere*. The figure depicted has thrown off his coat onto the structure on which his left hand rests and is seen with rolled up shirt sleeves. Two features distinguishing it from nearby copies are the subject’s hat and the plow to his left. On the front of this sculpture’s base is an inscription that begins “By the rude bridge that arched the flood.” For 10 points, name this sculpture that sits near the Old North Bridge, a work by Daniel Chester French commemorating soldiers of the Revolutionary War.

ANSWER: the *Concord* ***Minute Man*** (make sure that they say the singular; prompt on “Concord” monument or statue)

12. Minor characters in this work include the maid Katrina and as it opens a teacher arrives at her friend’s house for a surprise visit. However upon noticing that she isn’t prepared, she agrees to go back out to the car and pretends to arrive again. In another scene the two women discuss the progress made on an elaborate cement sculpture garden that was begun 15 years ago, after one of them became a widow. Later in this work one of the characters lights the candles spread throughout the setting, an oddly decorated home in New Bethesda, in the heart of the Karoo Desert. As in another play by its author, *A Lesson From Aloes*, it is the arrival of a third character, in this case, Pastor Byleveld, that catalyzes the action. Ultimately, Elsa Barlow, convinces her eccentric friend not to move to a home for the elderly. For 10 points, identify this work that takes its title from Miss Helen’s decision to blaze a creative path to a metaphorical Muslim holy site, a play by Athol Fugard.

ANSWER: ***The Road to Mecca***

13. The Kaposi’s sarcoma virus SOX protein causes overgrowth of this structure, and its formation is directed by a tripartite signal that includes efficiency and positioning elements. HEX, CPE, and Pumilio-binding elements participate in their formation, and the association of a namesake binding factor with these structures recruits eIF-4G. The transferrin receptor and several histone components use a stem-loop rather than this structure. In plant mitochondria, long ones are destabilizing, but more commonly, the lengthening of these structures enhances the stability of the molecules to which they are attached and promotes translation. For 10 points, name this structure found on the 3' (three prime) end of most mRNAs which consists of a long string of adenosines.   
ANSWER:  **poly-A tail**

14. An invasion of a Mansion by some weasels foretells both joy and sorrow for a former ruler; meanwhile the crash of a tree near the Hill Palace causes a character in this work to command his men to stand ever-ready to shoot the goblins thought to be responsible. Earlier in this work that same character’s cruelty causes the dancing girl Gio to shave her head and become a nun. Originally divided into twelve chapters, later versions included a secret text known as “The Initiates’ Chapter” which focuses on the “Matter of the Six Paths” and tells the story of an Empress’ exile. Other episodes include a Prince leading a fruitless revolt alongside the monks of Miiidera, as well as the execution of the child warrior Atsumori by Kumagae. Although the ruthless Kiyomori leads the title group to a series of victories in the early chapters, the defeat of Rokudai at the battle of Dan-no-Ura cements their demise. For 10 points, identify this work set during the Gempei Wars, a Japanese epic that traces the decline of the Taira clan.

ANSWER: ***Tale of the Heike*** or ***Heike Monogatari***

15. Its early negotiations were threatened by the attempted rebellion of a man who was exiled to the island of Madeira. Minister Banffy was an infrequent participant in those negotiations, which concluded successfully and twelve years later led to the establishment of an Economic Council, Permanent Council, and Secretariat via the terms of Pact of Reorganization signed by all of its members. This was done at Geneva, which was less important than both the Genoa conference the prior decade and the series of treaties signed with France by all of its members. Intended to suppress Habsburg resurgence as well as Hungarian advances, for 10 points, name this brainchild of Edvard Benes, an alliance between Czechoslovakia, Romania, and Yugoslavia formed in 1920 and 1921.

ANSWER: **Little Entente**

16. This work cites the Eleusinian Mysteries to illustrate the value of the “liberal arts” before moving on to consult the ideas of Pythagoras. Its author recalls a banquet at which one of his Hebrew teachers, Dactylus, agreed with the doctrine of the Trinity, while in another section he asserts that he has never sought any pay save the cultivation of his mind. Written in a series of numbered paragraphs, it opens by restating Abdala the Saracen’s response to the question: “what is most worthy of wonder?” In addition to positing the unity of truth, this work, went beyond such contemporary treatises as Ficino’s *Theologia Platonica* in arguing that the title concept emerges, not only from “universality,” but from an ability to live life based on free choice. Composed as an introduction to its author’s defense of his 900 Theses, for 10 points, identify this humanistic work of philosophy by Pico della Mirandola.

ANSWER: ***Oration on the Dignity of Man*** or ***On the Dignity of Man*** [accept **Mirandola’s *Oration*** before the end] or ***De hominis dignitate***

17. Silicon-substituted cyclic compounds have been used as “pumps” to generate this class of chemicals in the formation of block copolymers. Laser flash photolysis of ketoprofenate produces an example of this class of compounds that is unusually unreactive with water. In unimolecular elimination via the conjugate base, the intermediate is one of these compounds. Wittig-Horner and Horner-Emmons reactions use resonance-stabilized phosphonate examples of these in place of the phosphonium ylide, and in the first step of the malonic ester synthesis, diethyl malonate is treated with sodium to generate this type of reactive species. Less substituted examples of these are more stable, and they have the same electron structures as analogous amines, though they are stronger nucleophiles. For 10 points, name these compounds that contain a trivalent carbon atom with a negative charge.

ANSWER: **carbanion**s

18. As it ends a character describes how to ascend above the music of the spheres and confirms his return to the Gardens of Hesperus. In one section of this work a character asserts that he would follow his antagonist from Africa to India and “drag him by the curls to his foul death.” In another scene, the coming of a dark cloud covers the stars in the wood and forces another character to sing and beseech Echo for guidance. During the climactic encounter, two brothers follow the shepherd Thyrsis’ advice and attempt to break a glass and seize a “charming rod.” It ends with the summoning of the river nymph Sabrina who frees the protagonist, a virtuous young lady, from the title figure’s spell. First performed for the Earl of Bridgewater at Ludlow Castle, for 10 points, identify this masque about the son of Circe and Bacchus, a work by John Milton.

ANSWER: ***Comus***

19. Lord Leighton depicted one wearing the feathers of a peacock and conversing with a swan. They featured in a series of 1858 photographs by Roger Fenton, and the Louvre is home to James Pradier’s sculpture of a “Dancing” one.. Red, black, and white lines and bars characterize Dali’s “Cybernetic” one, and Robert Rauschenberg’s was a freestanding “combine” parodying the best-known painting of one of them. Ones with “Upraised Arms,” in a “Green Scarf,” and wearing “Red Trousers” are the most notable of several painted by Henri Matisse. The best-known is seen in a painting commissioned by Napoleon’s sister and drawn partly from Titian’s *Venus of Urbino*. For 10 points, name these figures also frequently painted by Boucher and Delacroix, female Turkish slaves of which a “Grande” one was painted by Ingres.

ANSWER: **Odalisques** (or **Odaliks**)

20. This son of the “Oracle of New Lebanon” was turned out of one of his earliest offices by James Harper and gained his fortune by managing the merger of the Galena & Chicago Union and Northwestern Railroads.  Although he received partial vindication through the Potter Committee, he was hurt by a series of telegrams obtained from Senator Oliver P. Morton that alleged his staff offered bribes for votes; those were the Cipher Dispatches.  He would later fail to directly challenge a body including Joseph Philo Bradley, who was appointed because the independent David Davis had resigned his position on the Supreme Court.  Earlier, his “Figures That Could Not Lie” report, combined with the efforts of William Wickham, helped bring down a certain “Grand Sachem.”  For 10 points, name this governor of New York who busted the Tweed Ring and went on to lose to Rutherford B. Hayes in 1876.

ANSWER: Samuel Jones **Tilden**

21. Art tourism in this city includes the Agial Art Gallery and the Sursock Museum, which houses a noted collection of Japanese wood engravings. To the north of this city is a massive cave system known as the Jeita Grotto, which acts as a source for the Dog River. Another natural formation associated with this city, the Pigeon Rocks, are located off of its western coast, and may be viewed from the Corniche in its Raouché district. Situated to the east of the city of Zahle, its governmental buildings include the Grand Serail and its recently-renovated international airport named after Rafik Hariri. For 10 points, name this port city west of the Bekaa Valley, which currently serves as the capital of Lebanon.

ANSWER: **Beirut**

22. Components of the tightly clustered subregion, but not outlying regions, of the ventrolateral preoptic area are thought to specifically promote this process. Low activity of both the cholinergic and monoaminergic systems is observed in this condition, which can be induced by stimulation of adenosine receptors in the basal forebrain. Early characteristics of this four-stage process include POSTS, spindles, and K-complexes, and the absence of saw-tooth waves is another characteristic EEG result for this condition. This condition is characterized by the relative absence of saccade-like movements and is when most incidences of bruxism and enuresis occur. For 10 points, name this physiological condition during which somnambulance occurs, which is characterized by the absence of vivid dreams and which is also called slow-wave or delta sleep.

TOSSUP:  **non-REM** sleep (also accept **orthodox** sleep or **S-sleep**; accept **slow-wave** sleep or **delta** sleep before they are mentioned; REM sleep or just plain sleep are not acceptable or promptable at any point)

23. This man appointed Charles Henningsen as second-in-command, authorizing him to burn large portions of territory. He died after being betrayed by Norvell Salmon, the captain of the sloop *Icarus*, who falsely promised that his surrender would secure him safe transport home. Early in life, after the death of his deaf fiancée Ellen Martin, he left his career as editor of the *New Orleans Crescent* to travel to San Francisco. After that, he conspired with Edmund Randolph to reach a secret agreement with C.K. Garrison and Charles Morgan, aimed at the destruction of the Accessory Transit Company. That plan failed after this man’s puppet president Patricio Rivas withdrew. For 10 points, name this doctor who gained infamy as a filibuster in Nicaragua.

ANSWER: William **Walker**

**Editors Round 8Bonuses**:

1. Set during the Guelf-Ghibelline wars, this work wasn’t published until 1840 because its composition was interrupted by the completion of its author’s *Paracelsus*,for 10 points each:

[10] Identify this poem which traces the development of the title figure, a Mantua born troubadour who navigates the challenges of a wicked stepmother and an unattainable princess in his quest for self-discovery.

ANSWER: **“Sordello”**

[10] “Sordello” was written by this poet of *The Ring and the Book* and “My Last Duchess”

ANSWER:Robert **Browning**

[10] This was the title Browning gave to a series of dramatic poems and plays published between 1841 and 1846. Its name derives from Exodus is comprised of such works as *A Soul’s Tragedy* and *Pippa Passes*.

ANSWER: ***Bells and Pomegranates***

2. Name these things about an 1820s political faction, for 10 points each:

[10] Led by people like Silas Wright and Martin Van Buren, it was named for a city where Hamilton Fish later resided while serving as governor.  
ANSWER: **Albany Regency**

[10] Many of the early members of the Albany Regency were also members of this group of Democrats, given their name for the hats they wore at Tammany Hall.  The Federalists supported their 1820 candidate for governor, former vice president Daniel D. Tompkins.  
ANSWER: The **Bucktail**s [or **Bucktail** Democrats or **Bucktail** Party]

[10] The Bucktails didn't much like this governor.  He was able to retake the governorship in 1825 in part due to the outrage following his dismissal from the Erie Canal Commission.     
ANSWER: **DeWitt Clinton**

3. Autosomal types include one caused by a mutation of calpain-3, as well as Emery-Dreifuss syndrome. For 10 points each:    
[10] Name this type of disease, X-linked recessive forms of which are named for Becker and Duchenne.

ANSWER: **muscular dystrophy**  
[10] Sufferers of muscular dystrophy, or other muscle trauma such as heart attacks, have higher blood levels of this kinase that phosphorylates a muscle component. This kinase can also be used in ATP regeneration systems.

ANSWER: **creatine** **kinase** or **CK** or **phosphocreatine kinase** or **PCK**

[10] Dystrophin, the protein that is mutated in Duchenne muscular dystrophy, is a cytoskeletal component that cross-links actin filaments in muscle cells. This long CH-domain protein plays an analogous role in erythrocytes.

ANSWER: **spectrin**

4. In his recent book, *Experiments in Ethics*, this Princeton philosopher contends that modern psychology and neuroscience can inform the study of ethics, for 10 points each:

[10] Name this Ghanaian thinker who also critiqued Afrocentrism in such works as *The Ethics of Identity* and *In My Father’s House*.

ANSWER: Kwame Anthony **Appiah**

[10] Appiah devotes considerable attention to this philosophical thought experiment devised by Phillipa Foot and studied by Joshua Greene. In it, a person decides whether to sacrifice one life to save five that are at risk due to an approaching eponymous object.

ANSWER: the **trolley** problem

[10] Chapter 3 of Appiah’s *Experiments in Ethics* contains an extended discussion of the “veil of ignorance,” an idea advanced by this man in his *A Theory of Justice*.

ANSWER: John **Rawls**

5. He entered into negotiations for a grant of land south of the Tugela region, for 10 points each:

[10] Identify this leader of a band of Voortrekkers who were massacred in February 1838 at Weenen.

ANSWER: Piet **Retief**

[10] This Zulu chief who would eventually be succeeded by his half-brother Mpande, killed Retief’s band of settlers, thus escalating the conflict with the Boer settlers.

ANSWER: **Dingane** or **Dingaan**

[10] Dingane’s forces were subsequently dealt a crushing blow at this battle that saw the Voortrekkers under Andries Pretorius form a laager with their wagons and repulse a series of Zulu attacks.

ANSWER: Battle of **Blood River** or **Ncome River**

6. It comprises three panels in total with the namesake one including personifications of Magnanimity, Temperance, Justice, Peace, Fortitude, and Prudence. For 10 points each—

[10] Name this fresco group completed around 1340 whose inclusion of the “Effects” of the title entity depicted the first panoramic city and country views since antiquity.

ANSWER: *Allegory of* ***Good Government*** or *Allegory and Effects of* ***Good Government*** (do not accept *Allegory of Bad Government*)

[10] Ambrogio Lorenzetti’s *Good Government* frescoes are in the Palazzo Pubblico of this Tuscan city, a medieval rival of Florence and also the hometown of Simone Martini and Duccio.

ANSWER: **Siena**

[10] The last major Sienese master was this man who became official painter of the city in the late 1520s. His major works include his *St. Catherine* series, two parts of which can be seen in the Getty museum, work on the façade of Siena’s Borghesi Palace, and his *Christ in Limbo*.

ANSWER: Domenico **Beccafumi** (or Giacomo **di Pace** or Domenico **di Pace**)

7. This book's chapter "The Sorrows of Misfortune" describes the author's grief at the death of his wife Chen Yün. For 10 points each:

[10] Name this autobiography written by the bureaucrat Shen Fu.

ANSWER: ***Six Records of a Floating Life*** [or ***Fu Shen Liu Ji***]

[10] *Six Records of a Floating Life* records the everyday life of this Chinese dynasty. Other works written during this dynasty include the *Strange Tales of Liaozhai* and the satirical novel *The Scholars*.

ANSWER: **Qing** dynasty

[10] The worship of Guan Yu became widespread in China because of this Ming dynasty novel, which details the rebellion of Guan Yu, Zhang Fei, and Liu Bei agains Cao Cao.

ANSWER: ***Romance of the Three Kingdoms*** [or ***Chronicle of the Three Kingdoms***; or ***Sānguó Yănyì***; or ***Sānguó zhi Yănyì***; or ***Sānguó Zhì***]

8. In Lower Egypt, this deity's wife was said to be the vulture Nekhbet, while elsewhere it was the water deity Mut. For ten points each:

[10] Often shown as a fat man with large breasts, name this Egyptian deity who personified the flooding of the Nile River

ANSWER: **Hapi** (or Hapy or Hepy)

[10] Hapi is sometimes said to have been born on the island of Bigehin under the auspices of this creator god who, according to the Elephantine creation myth, created the world on a potter's wheel.

ANSWER: **Khnum**

[10] Hapi was also the name of one of the four sons of Horus, whose heads typically decorate these containers used in ancient Egypt to preserve internal organs of the deceased. Hapi's one is meant to contain the lungs.

ANSWER: **canopic** jars

9. First performed on November 2, 1873, they were inspired by a set of six Divertimenti by a certain composer, for 10 points:

[10] Identify this set of works, occasionally named for a piece adapted in the second movement, the “Chorale St. Anthony.” They open with the primary melody played against a pizzicato background by cellos and double basses; eight interpretations of the melody then follow.

ANSWER: ***Variations on a Theme*** by ***Haydn*** for Orchestra in B Flat major, Opus 56(a) (be lenient, as long as they say ***Haydn*** and ***Variations***)

[10] The *Variations on a Theme by Haydn* were composed by this man whose other works include four symphonies and the *Academic Festival Overture*.

ANSWER: Johannes **Brahms**

[10] Brahms composed two of these works: the first, was revised after the death of Schumann, and was composed in D minor; the second, completed in 1881, contains extended passages for the featured solo instrument marked *dolce* and extended cello passages in the third movement.

ANSWER: **Piano Concerto**(s)

10. Questions about the large-scale circulation of the atmosphere, for 10 points each.

[10] This is an overturning circulation in the tropical atmosphere. It is thermally driven, with air rising at the equator and falling at higher latitudes, and results in easterly trade winds near the surface at low latitudes.

ANSWER: Hadley cell [or Hadley circulation]

[10] A front with a temperature difference in the lower troposphere leads to this strong wind in the upper troposphere, roughly parallel to the frontal surface. What is this narrow, typically westerly, air current?

ANSWER: jet stream

[10] This is a planetary wave that arises due to the variation of the Coriolis parameter with latitude. They drift to the west at speeds of a few meters per second and are observed in the jet stream.

ANSWER: Rossby wave

11. This concept, which privileges “reflexivity” and traces the impact of an *agent’s* actions, was outlined in a 1986 work called *The Constitution of Society*, for 10 points each:

[10] Identify this sociological approach that its creator offered to refer to the study of social practices ordered across space and time

ANSWER: theory of **structuration**

[10] This British sociologist originated the theory of “structuration.” His other works include *The Consequences of Modernity* and *Capitalism and Modern Social Theory*.

ANSWER: Anthony **Giddens**

[10] The 1997 work by Anthony Giddens, *New Rules of Sociological Method* is a reworking of this earlier sociologist’s *Rules of the Sociological Method*. That man may be better known for *The Division of Labor in Society.*

ANSWER: Emile **Durkheim**

12. Name these figures involved in the history of alchemy, for 10 points each:

[10] Born Theophrastus Bombastus von Hohenheim, this man pioneered the science of iatrochemistry and supposedly gave the element zinc its name.

ANSWER: **Paracelsus**

[10] The Habsburg Archdukes wrote up a formal complaint to this emperor claiming he was only interested in “wizards, alchemists, and the like.” His *Letter of Majesty*, issued three years before his 1612 death, was pivotal in the causing the Defenestration of Prague.

ANSWER: **Rudolph II** (or **Archduke Rudolph V** of Austria)

[10] Rudolph once granted an audience to this astrologer and advisor to Elizabeth I, who claimed to be able to conjure angels and coined the term “Britannia” to impress Elizabeth.

ANSWER: John **Dee**

13. She is mocked by the actress Camilla Perichole, but is so wrapped up in elaborate fantasies about her daughter, Clara, that she doesn’t notice, for 10 points each:

[10] Identify this Peruvian noblewoman who falls to her death, along with her young maid Pepita, when a certain structure collapses in a 1927 novel.

ANSWER: Dona **Maria** or the **Marquesa de Montemayor** (accept English equivalents for Marquesa)

[10] The life and death of the Marquesa de Montemayor, alongside such figures as Esteban and Uncle Pio, is the focus of this work by Thornton Wilder.

ANSWER: ***The Bridge of San Luis Rey***

[10] Wilder based his depiction of the Marquesa de Montemayor on this 17th Century French woman whose letters to her daughter, and such luminaries as Le Rochefoucauld, were widely copied and read by the public.

ANSWER: Marie de Rabutin-Chantal, **Mme. de Sevigne**, or the **Marquise de Sevigne**

14. This event produced the largest natural explosion in history in 1908, and some have intimately associated it with Nikola Tesla. For ten points each:

[10] Name this incident in which a sudden airburst resulted from the breakup of a large meteorite, felling roughly 90 million trees in the hills northwest of Lake Baikal.

ANSWER: **Tunguska** event/explosion

[10] The Tunguska River is a headwater of this Russian river, which forms in the Sayan Mountains in eastern Tuva and is joined by the Angara River.

ANSWER: **Yenisey** River

[10] The Yenisey River flows north into this Russian sea which is located between the Laptev Sea on the east and the Barents Sea on the west, from which it's separated by Novaya Zemlya.

ANSWER: **Kara** Sea

15. Name these things about more recent equestrian statues, for 10 points each:

[10] Produced for the Panama-Pacific International Exposition in San Francisco in 1915, this work by James Earle Fraser shows an exhausted Native American limply holding a spear.

ANSWER: *The* ***End of the Trail***

[10] Among her equestrian statues are *Fighting Stallions*, *Andrew Jackson: Boy of Waxhaws*, and one of Joan of Arc commissioned by the city of New York and which currently rests at Riverside Drive and 93rd Street.

ANSWER: Anna Hyatt **Huntington**

[10] This bronze shows a frontier cowboy fighting to stay on a rearing horse with his left hand on the mane and the right hand extended outwards. It was completed in 1895 by Frederic Remington.

ANSWER: ***Broncho Buster***

16. In addition to its intended use, it is also a potent inhibitor of RNA polymerases, and it is inactivated by many buffers, including HEPES. For 10 points each:

[10] Name this chemical, which is added to water to inhibit RNases for experiments involving RNA.

ANSWER: **DEPC** or **diethylpyrocarbonate**

[10] DEPC abrogates the catalytic activity of RNases by covalently modifying the imidazole side chains of this amino acid.

ANSWER: **histidine**

[10] Inhibition by DEPC may be reversed by hydroxylamine, which can be produced from a primary amine via this reaction, in which heating an amine oxide produces an alkene and a hydroxylamine.

ANSWER: **Cope** elimination

(DEPC used to be used to carbonate soda!)

17. Thomas More attacked this man in his *A Dialogue Concerning Heresies*,for 10 points each:

[10] Identify this Protestant preacher whose work *The Practice of Prelates* criticized Henry VIII’s divorce, but who is probably better known for translating the Bible into English.

ANSWER: William **Tyndale**

[10] The story of Tyndale’s eventual execution near Brussels was included in this man’s 1563 work, *The Book of Martyrs*.

ANSWER: John **Foxe**

[10] Tyndale’s stint as Erasmus’ student led to his translation of this 1503 work that attempts to describe the nature of piety to the title warrior.

ANSWER: ***Enchiridion Militis******Christiani*** or ***Handbook*** *of a* ***Christian Soldier*** or ***Manual*** *of a* ***Christian Soldier*** [accept equivalents like ***Handbook for a Christian Knight*** or ***Handbook of a Militant Christian*** or ***Manual of a Christian Knight***]

18. First published in 1973, this book argues that the “significance” of a work can be found “ insofar as its [meaning] is sensually produced,” for 10 points each:

[10] Identify this work that explores how the consumption of literature can be compared to the feeling one has upon a vision of the pyramids and posits the creation of *jouissance* for the reader.

ANSWER: ***The Pleasure of the Text*** or ***Le Plaisir du Texte***

[10] *The Pleasure of the Text* was written by this literary critic and author of *Writing Degree Zero* and “The Death of the Author.”

ANSWER: Roland **Barthes**

[10] In *The Pleasure of the Text*, Barthes takes a moment to analyze the bliss a sentence from this Flaubert novel generates. Unfinished at Flaubert’s death, this satire focuses on the title characters, a pair of intellectually adventurous, but superficial, pair of clerks.

ANSWER: ***Bouvard and Pecuchet***

19. He was Governor of New Zealand until 1924, for 10 points:

[10] Identify this man who was chief of staff on an international expedition to relieve the legations in Peking during the Boxer Rebellion where he was severely wounded.

ANSWER: Sir John Rushworth **Jellicoe**, 1st Earl

[10] Admiral Jellicoe’s greatest triumph came at this May 31, 1916, naval engagement that saw the defeat of the German fleet under Reinhard Scheer.

ANSWER: **Jutland**

[10] Jellicoe was instrumental in reinforcing this site in the Orkneys, the main base of the British Grand Fleet, with concrete barriers and artillery.

ANSWER: **Scapa Flow**

20. Entanglement plays a key role in quantum physics. For 10 points each:

[10] This thought experiment, proposed in 1935, involved separating entangled quantum particles over spacelike distances, so that a measurement of one will collapse the state of the other.

ANSWER: **Einstein-Podolsky-Rosen** paradox [or **EPR** paradox]

[10] This Irish physicist proved an inequality on correlations to test the EPR prediction of quantum mechanics against theories with hidden variables. A version of his inequality was experimentally tested by Alain Aspect.

ANSWER: John S. **Bell**

[10] This effect, studied extensively by Wojciech Zurek, arises from interactions that entangle a quantum system and its environment, leading to the emergence of classical physics.

ANSWER: **decoherence**