1. A poem in this collection describes a figure who "promenades the dewy stones" whose dreams of the title plants are a "mighty thought" by a "mighty man". Another of this book's poems asks "Of the two dreams, night and day, / what lover, what dreamer, would choose the one obscured by sleep?" and is addressed to a "dweller in the dark cabin". It contains a poem that begins a catalog of body parts with the line "here is an eye" and both begins and ends "Out of the tomb we bring the body of Badroulbadour". Its second poem brags that the soul "flies beyond the parks / and far beyond the discords of the wind" and mocks the "bland motions" bequeathed to the air by the title birds. "Hymn from a Watermelon Pavilion" and "The Worms at Heaven's Gate" are found in this collection, which opens with "Earthy Anecdote". For 10 points, name this collection that contains "Invective Against Swans" and "Thirteen Ways of Looking at a Blackbird", the first collection of Wallace Stevens.
ANSWER: ___Harmonium___

2. This thinker's work directly inspired the creation of an inverted U-shaped graph known as the Calmfors–Driffill hypothesis. One of his works argues that the transition from a "roving bandit" to a "stationary bandit" signals the transition from anarchy to civil society. This author of the article "Dictatorship, Democracy and Development" and the book *Power and Prosperity* argued that entities like cotton and steel producers inherently tend to pursue protectionist and anti-technological goals. This man, who wrote *The Rise and Decline of Nations*, founded the IRIS Center at the University of Maryland, where he taught economics. His formulation of the free-rider problem is his "law of large groups," which says that, as groups become larger, rational people are less likely to achieve common group objectives. For 10 points, identify this American economist who wrote *The Logic of Collective Action.*
ANSWER: Mancur Lloyd **Olson**, Jr

3. In the mass continuity equation "the partial time derivative of theta equals the negative of the partial derivative of z times q," this equation is plugged into q to derive the Richards equation. The Green-Ampt integral formula is often used instead of this one to predict values since it takes into account cumulative depth. This semi-empirical formula was found to overestimate its value when the substance in question is a gas, which can be rectified using the Klinkenberg correction. Often used to quantify infiltration, this equation can be simplified into a 2D form using the Dupuit assumption so that the vertical pressure gradient is only a function of the specific weight. In this equation, the viscosity, pressure head, and porosity all affects the discharge rate of the substance in question. For 10 points, name this formula, which is often used to model the flow of groundwater through a porous medium.
ANSWER: **Darcy**'s Law [or anything mentioning **Darcy**, such as **Darcy**'s formula, **Darcy**'s equation]

4. A philosopher currently at this university used a "finger exercise" involving "superluminal light transport" to explain Bell's theorem in his book *Quantum Non-Locality and Relativity*. Another philosopher currently at this university authored *Psychologism and Behaviorism*, which discusses a hypothetical computer that has been programmed with all possible sentences passing the Turing Test. Philosophers currently at this school include Tim Maudlin and Ned Block, as well as another author who in 2013 argued that "the materialist neo-Darwinian conception of nature is almost certainly false." That author of *Mind and Cosmos* once wrote a paper stating "Consciousness is what makes the mind-body problem really intractable." For 10 points, name this university with the world's number-one ranked philosophy department according to QS World University Rankings, whose faculty includes Thomas Nagel.
ANSWER: **New York** University [accept **NYU** do not accept "CUNY" or "City University of New York"]

5. During the last decade of his rule, this leader described his pro-imperial policies with the credo "proudly alone." Three years after taking power, he gave a speech promising that his motto would be "all for the nation, nothing against the nation." This politician issued "Circular 14," a directive denying safe haven to refugees—that decree was explicitly disobeyed by Aristides de Sousa Mendes. After suffering a brain hemorrhage in a bathtub, this leader served out his last two years as Prime Minister with effective power in the hands of a successor appointed by Américo Tomás. This leader ordered his country as a "pluricontinental" nation and fought against Operation Vijay, offering a reward for the capture of Sagat Singh. This leader, who presided over creation of the PIDE secret police and the loss of Goa, was succeeded by Marcelo Caetano. For 10 points, name this economist who served as Prime Minister during the Estado Novo of Portugal.
ANSWER: António de Oliveira **Salazar**

6. This effect leads to the creation of a plasma inside a Kerr-Newman or Reissner-Nordstrom black hole's dyadosphere, since the field strength is above the Schwinger limit. A Fabry-Perot interferometer and a series of over 2.5 Tesla magnets were used to try to observe this effect in the PVLAS experiment. This effect was first detected by the TRISTAN accelerator. One observable effect of this phenomenon is the addition of an "e to the fourth over 24 pi squared r times an integral" correction to the Coulomb potential. The Feynman diagram for this effect is two wavy lines on opposite sides of a circle. This effect gives a one-loop correction to the photon propagator, since it represents the self-energy of the photon. This effect partially screens electric charges due to the creation of virtual electron-positron pairs. For 10 points, name this effect which imparts a dielectric constant to empty space.
ANSWER: **vacuum polarization** [prompt on pair production; do not accept or prompt on polarization; do not accept or prompt on vacuum]

7. A novel titled for this character introduces a love interest named Herman, who is a SoHo rentboy, and centers on a video installation titled "Cathode Narcissus." The author of the poetry collection *Silverpoints* and the short story "The Person in Question" likely inspired this character, who expresses a desire for "the dead lovers of the world to hear our laughter and grow sad" after vowing "I want to make Romeo jealous." This protagonist of an "Imitation" by Will Self is reassured that "the books that the world calls immoral are the books that show the world its own shame" when he becomes concerned about the degree to which a novel about the exploits of a Frenchman is influencing him. During a meeting with Adrian Singleton at an opium den, a woman calls this character "Prince Charming," a nickname overheard by James Vane, the brother of his former love interest Sibyl. For 10 points, name this young man whose portrait is painted by Basil Hallward in a novel by Oscar Wilde.
ANSWER: **Dorian Gray** [accept either underlined portion]

8. After a governor under this emperor had a popular chariot racer arrested for allegedly raping a male cup-bearer, this emperor sent troops to deal with the murder of that governor, Buteric. This emperor defeated one usurper at Siscia and Poetovio, then beheaded that usurper at Aquileia after winning the Battle of the Save. During one battle, this emperor's opponents placed a statue of Jupiter on the edge of the battlefield, and he was aided by a divine wind of dust in that fight against Arbogast. He had an obelisk of Thutmose III moved to the Hippodrome, where it bears his name. Because he committed the Massacre of Thessalonica, he was excommunicated by St. Ambrose. This emperor, who defeated the puppet ruler Flavius Eugenius, was succeeded by his sons Arcadius and Honorius. His victory at the Battle of the Frigidus River was assisted by the half-Vandal general Stilicho. For 10 points, name this great Christian emperor, the final one to rule a unified Roman Empire.
ANSWER: **Theodosius I** [or **Theodosius the Great**; prompt on Theodosius]

9. This painting inspired the title of a painting set near Council Bluffs, Iowa which shows a deer crossing the tracks as the headlight of a train approaches the viewer—that painting is by Andrew Melrose. A pair of axemen can be seen chopping trees against the forested background on this painting's left, which is cut across by the outstretched arm of a man mounted on a horse with a rifle. A series of blue ribbons on this painting's decorative border display its title, which is taken from *Verse on the Prospect of Planting Arts and Learning in America* by George Berkeley. This painting is on display in the House Wing of the United States Capitol. A train of pioneers and covered wagons passes by as a man plants a flag on a rocky outcropping at this painting's center. For 10 points, identify this huge depiction of the realization of manifest destiny, painted by Emanuel Leutze.
ANSWER: *Westward the Course of Empire Takes Its Way* [or *Westward Ho*]

10. An opera by this non-Verdi composer represents friars and the common people with the chorus, which sings the a capella passage "Preghiam pei vegilar"—that opera features a libretto by Alessandro Ghislanzoni. The Imperial Ballet gave the St. Petersburg premiere of one of this composer's operas under the title *Aldona*, which refers to the sister of the main character Arnoldo. This composer of an opera based on the Adam Mickiewicz (MITZ-key-vich) poem *Konrad Wallenrod* also created an opera in which an old woman is accused of using witchcraft to influence a regatta, and the aria "Cielo e mar" is sung by Enzo as he awaits the arrival of his love Laura. That opera's third act is set in the Ca' d'Oro, where the characters watch a performance in which the times of day are depicted in dance. For 10 points, name this composer of *I Lituani* and *La Gioconda*, the latter of which contains the "Dance of the Hours."
ANSWER: Amilcare **Ponchielli**

11. The NOD type of these organisms are used to study IDDM. The embryological development of these organisms was divided into 26 pre-natal and 2 post-natal stages by Karl Theiler. These organisms and various products used to study them can be bought at the UC Davis KOMP repository. Commonly used inbred strains of these organisms include BALB/cJ and C57BL/6J. A typical immunodeficient strain of these organisms lacks the ability to produce T-cells and is referred to as "nude." Capecchi, Evans, and Smithies won the 2007 Nobel Prize in Medicine for their studies of this organism, and for developing a procedure in which modified stem cells from one strain of this organism are injected into the embryo from another. This organism, whose name is *Mus musculus,* is commonly used in gene knockout experiments due to its genetic similarity to humans. For 10 points, name this common mammal used in genetic experiments.
ANSWER: house **mouse** [accept **knockout mouse** and answers with the plural **mice**, accept ***Mus* *musculus*** before mention]

12. A book by this author contains a map of The Weeping Forest and Mt. Snowdon on Desolation Island, and describes how Corporal Abrahams gave its features Welsh place names. That book by this writer includes a section in which the narrator tries to track down Dr. Muller after being reminded of a verbal tic when he reads the word "naptenate" in a letter. This author wrote a book in which the narrator recalls being told "there is no why here" after having an icicle confiscated from him; in that book, the narrator fails to quote "The Canto of Ulysses" to the "messenger boy" Jean. This author used the term "Lager" to describe the setting of a book in which the "Ka-Be" is an infirmary; that book contains chapters such as "The Work" and "The Drowned and the Saved." For 10 points, name this author of *The Periodic Table* and *If This is a Man*, the latter of which details his time in Auschwitz.
ANSWER: Primo **Levi** [or Primo Michele **Levi**]

13. This piece's composer rewrote it to feature a solo pianist, penning a new extensive cadenza for piano and timpani for its first movement. The premiere of this piece included an impromptu single-string sonata performed by its dedicatee Franz Clement, who was irritated at having to sight-read it. Quotations from later works in the same genre litter the controversial 1977 cadenzas written for this piece by Alfred Schnittke. Interest in this piece was revived with an 1844 performance conducted by Mendelssohn and led by a 13-year-old Joseph Joachim. The strings enter the first movement playing four D-sharps, quoting this piece's opening measure in which four beats are played on the timpani. Fritz Kreisler wrote the most commonly-used cadenzas for this piece, which ends with a folk song-inspired "Rondo, allegro." For 10 points, name this D major piece for a solo string instrument and orchestra, which debuted a year after its composer's *Eroica Symphony*.
ANSWER: Ludwig van **Beethoven**'s **Violin Concerto** in D-major [or Ludwig van **Beethoven**'s **Op**us **61**; or the **Op**us **61** **Violin Concerto**; prompt on partial answers throughout]

14. A palace in this city had a 120-foot high green dome topped by a weather vane shaped as a horseman who carried a lance that was supposed to point in the direction of rebels attacking this city. When that dome collapsed, this city was invaded. This city was home to the Zumurrud Khatun tomb, allegedly built by the mother of one ruler. Tughril Beg was hired to invade this city in order to oust the family of Ahmad ibn Buya, whose invasion of this city made it the capital of the Buyid dynasty. The lords who ruled from this city's Golden Gate Palace attempted to enforce Mu'tazili orthodoxy during a period of persecution known as the *mihna*. Due to an insurrection of Turkish troops, this city was abandoned for a time while the capital was moved to Samarra. This city contained a pluralistic center of learning called the House of Wisdom. For 10 points, name this longtime capital of the Abbasid Caliphate.
ANSWER: **Baghdad**

15. Transcending the "vice" associated with one of these concepts is presented in *Riding the Tiger*, written by Julius Evola. Descriptions of the second of these concepts include trees overflowing with honey more pure than bee honey. After each one of these concepts has occurred, ten *lokas* will be destroyed, while four will be preserved during *pralaya*. These entities are named after various results of rolling in an ancient dice game, which seems to explain why they are successively are comprised of four, three, two and one *charanas*. They correspond to the number of legs the dharma cow stands on. The Maha, Krita, and Treta are three of these concepts that correspond to gold, silver and bronze respectively, while the universe will be purified when the current one of these ends with the appearance of Kalki. For 10 points, name these periods of cosmic time in Hinduism, whose current one is named for "Kali."
ANSWER: **yuga**s [accept Kali **yuga** or more specific **yuga**s; prompt on time or ages or eras or epochs]

16. A hearing about this incident had to be postponed after Henry Gonzalez wrote an angry letter to Jim Leach referring to him as "obstinate" and "obdurate." A flashpoint during this incident was created by a large banner reading "Go Home, Idiots!", put up by John Lauramoore. A court case stemming from this incident found that the Fifth Amendment prevents compelled production of incriminating documents that can't be described with reasonable particularity, upholding the refusal of Webster Hubbell to comply with a subpoena. This affair was first investigated by L. Jean Lewis, who fainted while she was being cross-examined. David Hale's testimony exposed the role of Jim and Susan McDougal in this event, which led Jim Guy Tucker to be removed from office. For 10 points, identify this scandal investigated by Ken Starr, which revealed some shady real estate investments made in Arkansas by Bill and Hillary Clinton.
ANSWER: **Whitewater** scandal or investigation

17. The narrator of this book imagines that a woman killed herself because she worshipped her paramour as a "black pagan god," conflicting with her religion. A character in this work often compares himself to an Arab, "like Othello," and claims "I'll liberate Africa with my penis." This novel ends with the narrator floating down a river while resolving to assert his own identity. A character in this book kills his first wife by penetrating her with a knife during sex. The protagonist of this novel ends up caring for the two sons and wife of a man who had "sexual conquests" with Isabella Seymour. It largely follows a man who murdered his wife Jean Morris in England. Structured as a deliberate inversion of Conrad's *Heart of Darkness,* it is narrated by a man who meets his near doppelganger Mustafa Sa'eed in his native Sudan. For 10 points, name this novel written in Arabic by Tayeb Salih.
ANSWER: ***Season of Migration to the North*** [or ***Mawsim al-Higra ila ash-Shamal***]

18. This quantity approaches infinity while its product with the square of the molecular radius approaches a finite value in the Boltzmann-Grad limit. In the canonical ensemble, the magnitude of thermodynamic fluctuations of internal energy normalized by the total value of the internal energy are proportional to this quantity raised to the minus one-half power. This quantity can fluctuate in the grand canonical ensemble, but is fixed in the canonical ensemble. The distribution function is typically normalized such that its integral over position and momentum space equals this quantity. Both this quantity and volume are infinite in the thermodynamic limit. This extensive quantity is the thermodynamic conjugate of the chemical potential, which is the change in free energy when this quantity increases by 1. For 10 points, give this thermodynamic parameter typically represented as N.
ANSWER: particle **number** [accept any equivalent indicating **how many particles** there are; prompt on "N"]

19. The sixteenth month of the calendar was dedicated to this god and included a festival in which amaranth-dough statues of him were ceremonially killed with weaving sticks. Marigolds and their *Tagetes* relatives were sacred to this god, who was often pictured wearing a crown of heron feathers. A large area known as *apan* and a cave inhabited by dangerous women are found in the realm of this god, which also contains a boiling spring home to a giant worm. This god responded to incessant prayers that interrupted his grieving by burning away the entire earth, thus ending his term as the third sun. Blue-and-white-painted steps led to this god's temple on the northern side of the Templo Mayor, which he shared with a war god. This god married the jade-skirted Chalchiuhtlicue (chal-chee-WEET-lih- kway) after his first wife Xochiquetzal [(sho-chee-KET-zal) was stolen by Tezcatlipoca. Sacrificed children and those who died by water were governed by, for 10 points, what Aztec rain god?
ANSWER: **Tlaloc**

20. The verbs of the oldest written language in this family were classified into five categories by August Leskien. In this language family, the coronal sibilant /s/ is expressed as a velar fricative before semi-vowels like /r/ and velar consonants, rather than being palatalized, in an exception to the RUKI sound law. This family experienced three palatalizations, the last of which did not affect its now-extinct northern dialects, as seen on birch-bark documents. This highly conservative family didn't branch until the 1st millennium CE. It is divided into West, East, and South branches, and its common proto-language is thought to have been the *lingua franca* of the Avar empire. Languages in this family share many features with Baltic languages, with which it was once thought to form a larger family. For 10 points, name this group of Indo-European languages which encompasses Serbian, Czech, and Russian.
ANSWER: **Slavic** languages [accept South **Slavic** or West **Slavic** or East **Slavic** or even North **Slavic**; prompt on Balto-Slavic languages or Indo-European languages]

Tiebreaker: This author urged the addressee to "let me / behold that circum-mortal purity" in a poem about his desire to be "ravished in that fair *Via Lactea*". In another poem, he says that the title fruits grow in the plantations of a land where his beloved's "lips do smile." This poet of "Cherry-Ripe" enjoins the addressee of another poem to receive a set of "Orient pearls" while "the light / hangs on the dew-locks of the night". That poem by this man encourages the title woman to "sin no more, as we have done by staying". This poet claims to see "a wild civility" in a "careless shoestring" that "do more bewitch me, than when art / is too precise in every part" in a poem about the charms of messy women. This author of a series of poems about Julia encouraged the reader to "gather ye rosebuds while ye may" in his most famous poem. For 10 points, name this author of "Corinna's Going a-Maying", "Delight in Disorder", and "To the Virgins, to Make Much of Time".
ANSWER: Robert **Herrick**

1. The Kuli stone, now found in a museum in this city, describes how a lord who ruled from here tried to force subjects to convert to Christianity. For 10 points each:
[10] Name this city founded in 997 by Olaf Tryggvason, the medieval capital of Norway.
ANSWER: **Trondheim** [or **Trondhjem**; prompt on **Kaupang**r]
[10] Most kings of the Fairhair Dynasty ruled from Trondheim, starting with the first king of this name. Other kings of this name had the epithets Greycloak, Bluetooth, and Hardrada.
ANSWER: **Harald** [accept answers mentioning **Harald** and other epithets]
[10] Harald Bluetooth was the son of this man, perhaps the first historical king of Denmark, who had the most ancient of the Jelling Stones made in honor of his wife Thyra. This man himself was named for being ancient.
ANSWER: **Gorm** the Old [or **Gorm** den Gamle; or **Gormr** gamli; or **Gormus** Vetus]

2. This artist depicted a road running up a hill in Montmartre in his *The Galette Windmill.* For 10 points each:
[10] Name this man who was fond of painting the trees of Ville-d'Avray. During a trip to Italy, he painted a view of the remnants of the Ponte d'Augusto that now hangs in the Louvre.
ANSWER: Camille **Corot** [or Jean-Baptiste-Camille **Corot**]
[10] This St. Thomas-born student of Corot was the only person to show works in all eight Impressionist exhibitions.
ANSWER: Camille **Pissarro** [or Jacob Abraham Camille **Pissarro**]
[10] Corot also taught Berthe Morisot, who Gustave Geffroy included with Marie Bracquemond and this other woman in his list of the three *grandes dames* of Impressionism. This woman's *The Bath* is one of her many depictions of mothers and children.
ANSWER: Mary **Cassatt** [or Mary Stevenson **Cassatt**]

3. A controversy surrounding this object led to a tearful apology that said that "both sides of the strait are one" and that the central figure of the controversy would "go through some serious reflection." For 10 points each,
[10] Name this object, also known as the "Blue Sky, White Sun, and a Wholly Red Earth" that was controversially held by the pop singer Chou Tzu-yu on the variety show "My Little Television."
ANSWER: **Flag of Taiwan** [accept **Flag of the Republic of China** from Chinese Nationalists]
[10] The Chou Tzu-yu incident was referenced in the first post-victory speech of this president-elect of Taiwan. This leader of the Democratic Progressive party is also the first Female President of Taiwan.
ANSWER: **Tsai** Ing-wen
[10] This "Third Force" party unaligned with either the Pan-Green alliance of the Democratic Progressives or the Pan-Blue Alliance of the Kuomintang gained the third most parliamentary seats in the 2016 election, narrowly beating the People First Party. It is led by Huan Kuo-chang.
ANSWER: **N**ew **P**ower **P**arty

4. Identify the following about animals in the poetry of W. B. Yeats, for 10 points each.
[10] The speaker meditates on the beauty of autumn and his own aging in a Yeats poem about seeing "nine-and-fifty" of these elegant birds swimming in a pond at Coole Park.
ANSWER: **swan**s [accept "The Wild **Swans** at Coole"]
[10] The speaker of Yeats's poem "Sailing to Byzantium" mentions that this object is "fastened to a dying animal" and asks for God to "consume it away" while pondering a golden mosaic.
ANSWER: the speaker's **heart**
[10] The title metaphorical creatures "were all on show" according to this poem, which opens "I sought a theme and sought for it in vain." Its second stanza begins by asking "What can I but enumerate old themes?"
ANSWER: "The **Circus Animals' Desertion**"

5. For non-linear cases, the Gauss-Newton algorithm is often used instead of this technique. For 10 points each:
[10] Name this statistical method which generates a linear model that best fits an over-determined system. It minimizes the overall magnitude of the differences between an observed value and a value taken from the model.
ANSWER: [ordinary] **least-squares** regression [or linear **least-squares** regression; or **OLS**]
[10] This is the term for the difference between the observed value and the fitted value from the model. The error is similar to this quantity, except that the error is the difference between the observed value and the actual value.
ANSWER: **residual**s [do not accept or prompt on residues]
[10] Weighted least-squares regression is often used when the residuals have this property, in which the variance for subgroups of the collection of residuals is different for each subgroup. The Gauss-Markov theorem assumes that the residuals do not have this property.
ANSWER: **heteroscedastic**ity

6. This poem's lyric "its claws have struck through the clouds, / it rises up with great power" is used in an extended simile for how a sunrise causes the parting of two lovers. For 10 points each:
[10] Name this poem, whose title character, a son of Queen Herzeloyde, becomes a knight for King Arthur after he meets three knights. This poem's title character fails to ask Anfortas what ails him, thus failing to cure him.
ANSWER: *Parzival*
[10] *Parzival* is the only complete epic poem of this German poet, whose corpus has been translated into English by A.T. Hatto.
ANSWER: **Wolfram** von **Eschenbach** [accept either name]
[10] Wolfram von Eschenbach never finished this fragmentary poem, which is named for the first king to possess the Holy Grail. It is mostly a prequel to *Parzival* and follows the love of Tschionatulander (TZKEE-oh-NAH-tu-LAND-er) and Sigune.
ANSWER: *Titurel*

7. In the *Iliad*, this figure and his twin brother are given the task of returning Sarpedon to Lycia. For 10 points each:
[10] Name this *daemon* who loses a fight to Heracles in Euripides's *Alcestis*. In another myth, he is either chained up or put in a sack by a king of Corinth.
ANSWER: **Thanatos**
[10] The capture of Thanatos was only the first of this Corinthian king's attempts to cheat death, for which he was eventually punished by being forced to endlessly roll a boulder up a hill in Tartarus.
ANSWER: **Sisyphus**
[10] In addition to his twin brother Hypnos, Thanatos's other siblings include this group of spirits who represent violent or necessary death, and were shooed out of Athens at the end of the Anthesteria. They were the sisters of the Fates.
ANSWER: the **Keres** [accept **Ker**]

8. Answer the following about bacterial identification tests that are not the Gram stain, for 10 points each:
[10] Tests like the mannitol test use phenol red as an indicator to determine whether or not this biochemical pathway is occurring. This pathway rejuvenates two molecules of NAD+ for re-use in glycolysis.
ANSWER: **fermentation** [accept word forms]
[10] Bacteria in the genus *Proteus* turn phenol red bright pink in a test for an enzyme which breaks down this compound. Carbamoyl phosphate is an intermediate in a pathway which produces this compound.
ANSWER: **urea** [do not accept or prompt on "uric acid" or answers that are not urea.]
[10] Bacterial identification tests often are conducted in this type of test tube, which consists of a small test tube placed upside-down inside a large test tube. Gases that are produced will thus produce visible gas bubbles in the top of the small tube.
ANSWER: **Durham** tube

9. This policy enabled the creation of an army of nearly a million soldiers within a year. For 10 points each:
[10] Give the French name for the policy of conscription adopted by the Committee of Public Safety in 1793 in order to provide sufficient manpower to fight France's wars. It requisitioned all able-bodied unmarried men between 18 and 25,
ANSWER: *levée en masse* [prompt on mass levy or mass uprising; prompt on partial answer such as "levée"]
[10] Protests against conscription during the French Revolution grew into a massive revolt in this coastal region in France from 1793 to 1796, which was suppressed by the "infernal columns" with mass casualties.
ANSWER: the **Vendée**
[10] Reynald Secher wrote a history of the genocide during the Vendée, which was inspired by Emmanuel Le Roy Ladurie's classic microhistory of this Occitan village in Languedoc, which was examined from 1294 to 1324.
ANSWER: **Montaillou** [or **Montalhon**]

10. Lost texts from this tradition include *Wanderings Through Heaven and Hell,* though Moses Gaster found a story belonging to it in which Satan creates the cross used to kill Jesus. For 10 points each:
[10] Name this ascetic religious tradition that believed that god had two sons, Satanail and Michael. Its theology includes the belief that Satan created the world and thus all of the world was evil, leading it to forbid marriage.
ANSWER: **Bogomil**ism or **Bogomil**s
[10] Bogomilism is often described as having this kind of world system, since the "dark world" was separate from the "light of God." It is often used to describe the Manichaean system since good and evil are also opposed.
ANSWER: **dualist**ic heresy [or **dualism**]
[10] In the 15th century, Bogomilism absorbed this other dualistic heresy, founded in Armenia by Constantine of Mananalis. Although it rejected the sacrament of marriage, it did not specifically forbid marriage.
ANSWER: **Paulician**ism [or **Paulician**s]

11. Answer the following about some 20th-century female composers, for 10 points each.
[10] This composer of *Allons Voir sur le Lac d'Argent* is best-known as the teacher of many American composers, including Philip Glass, Virgil Thomson, and Aaron Copland. Her sister was the first female Prix de Rome winner.
ANSWER: **N**adia **Boulanger** [prompt on partial answer; accept **J**uliette Nadia **Boulanger**; do not accept "Lili Boulanger"]
[10] This composer of *Millennium Fantasy* and an *American Concerto* for trumpet and orchestra was the first woman to win the Pulitzer Prize for Music, doing so for her *Three Movements for Orchestra (Symphony No. 1).*
ANSWER: Ellen Taaffe **Zwilich**
[10] Sofia Gubaidulina composed her *Offertorium* for this string instrument and orchestra. Sarah Chang, Anne-Sophie Mutter, and Hilary Hahn all play this instrument.
ANSWER: **violin**

12. Answer the following about public choice theory, for 10 points each.
[10] George Stigler formulated a theory of this process, which is a key part of public choice theory. This form of political corruption happens when an agency created to serve the public interest ends up creating negative externalities by serving special interest groups.
ANSWER: **regulatory capture** [prompt on capture]
[10] A key focus of public choice analysis is groups that are "seeking" these benefits from zero or negative-sum transactions, thereby enriching themselves without creating new wealth.
ANSWER: **rent**s
[10] Besides advancing public choice analysis, this economist examined criminology in his 1968 paper cited by the Nobel committee, "Crime and punishment: an economic approach." He also devised the "rotten kid theorem" in family economics.
ANSWER: Gary [Stanley] **Becker**

13. Solly Two Kings and Citizen Barlow arrive in this place in *Gem of the Ocean*, and Harmond Wilkes seeks to prevent its illegal demolition as part of the Bedford Hills Redevelopment Project in *Radio Golf*. For 10 points each:
[10] Identify this Hill District location whose address was inspired by the year in which the Amistad Revolt took place.
ANSWER: **1839 Wylie** Avenue [accept, but DO NOT REVEAL, Aunt **Ester**'s **house** (or synonyms for "house")]
[10] *Gem of the Ocean* and *Radio Golf* are, respectively and chronologically, the first and last plays in this American playwright's *Pittsburgh Cycle*, which also includes *Fences*.
ANSWER: August **Wilson** [or (Frederick) August **Kittel**]
[10] 1839 Wylie is initially owned by this "washer of souls," a recurring character in the cycle who claims to be 285 years old in *Gem of the Ocean*. She dies at age 322 in *Two Trains Running*.
ANSWER: Aunt **Ester**

14. GHZ states and Bell states have this property, which implies that local measurement of some property of A is completely random and yet still correlated with that same property for B. For 10 points each:
[10] Name this property, which is possessed by a pure state psi-sub-a-comma-b located in the Hilbert space formed by the tensor product of two Hilbert spaces H-sub-a and H-sub-b if the pure state *cannot* be decomposed into the product of two states psi-sub-a and psi-sub-b belonging to the Hilbert spaces H-sub-a and H-sub-b.
ANSWER: **maximally entangled** state [prompt on "entangled"]
[10] Entangled states demonstrate that quantum mechanics does not possess this property. Bell's theorem states that no hidden variable theory with this property is compatible with quantum mechanics.
ANSWER: **local**ity
[10] In a thought experiment, this scientist, Podolsky, and Rosen showed that entangled quantum states violate locality.
ANSWER: Albert **Einstein**

15. This was one of the many British traditions which Mary Wollstonecraft pointed out that Mr. Burke would protect. For 10 points each,
[10] Name this practice, which caused riots in Halifax in 1805 and was the focus of the Chesapeake-Leopard affair. This practice of forcing men into one's own navy caused US-British tension prior to the War of 1812.
ANSWER: **impress**ment [or just **press**ing]
[10] Members of these British militia regiments were immune from impressment. They were raised to oppose invasions during the Seven Years War, and had "river" and "sea" varieties, consisting of civilian boats used in emergencies. A regiment of these was stationed in Nova Scotia in 1803.
ANSWER: **Fencibles**
[10] The "War Hawk" faction that railed against impressment in the run-up to the War of 1812 included this Kentucky politician, who was credited with personally slaying Tecumseh after being wounded four times at the Battle of Thames.
ANSWER: Richard Mentor **Johnson**

16. Name some heavily mythologized historical figures with significance in 20th century China, for 10 points each.
[10] The life of this five-foot-tall soldier, who allegedly died at the age of 22 when struck by a falling telephone pole hit by a truck he was directing, become the subject of a massive 1963 propaganda campaign encouraging people to follow his example.
ANSWER: **Lei** Feng
[10] This heavily mythologized adviser and brother of King Wu, who belonged to an ancient dynasty, became a third target of a campaign that urged people to criticize Lin Biao and Confucius. Confucius himself idolized this man.
ANSWER: **Duke** of **Zhou** [or **Zhou Gong**; prompt on **Dan** since that's his real name]
[10] One of the biggest myths to become widely believed in China is that this woman planned the majority of the Cultural Revolution and that her husband, Mao Zedong, wasn't really responsible. She was an actress in her youth and modeled herself on Empress Wu Zetian.
ANSWER: **Jiang** Qing

17. The basis sets used to calculate these constructs can be calculated via irreducible representations of the molecule's stretching modes, or by using the projection operator to transform the stretching vectors according to the relevant symmetry operations. For 10 points each:
[10] Name these constructs used to calculate molecular orbitals via character tables.
ANSWER: **SALC**s [or **symmetry-adapted linear combination**s of atomic orbitals, do not accept or prompt on partial answers]
[10] Which character table should be used for a given molecule is determined by which one of these constructs the molecule belongs to. These constructs are a collection of symmetry operations that describe a molecule.
ANSWER: **point group**s [do not accept or prompt on "groups"]
[10] This simple molecule belongs to the point group C2v. It is characterized by a "bent" geometry in which the angle between its two hydrogen-oxygen bonds is around 104 degrees.
ANSWER: **water** [or **H_2O**, prompt on "dihydrogen monoxide"]

18. For 10 points each, answer the following about Ancient Egyptian statues.
[10] Lots of small Egyptian statuettes devoted to protector deities were made out of this material, which was also used for the statues of birds found at Great Zimbabwe.
ANSWER: **soapstone** [or **soaprock**; or **steatite**]
[10] One of the most iconic pieces of Egyptian art is the sculptor Thutmose's bust of this queen, who probably commissioned other statues with her husband while they ruled from Amarna.
ANSWER: **Nefertiti**
[10] Before the creation of the Bronze Horseman, the largest stones known to be moved by man were these two gigantic statues of Amenhotep III found near the Theban necropolis. Legends about the cry of one of these statues led Greeks to name them for a mighty warrior.
ANSWER: **Colossi** of **Memnon** [or **el-Colossat and es-Salamat** in either order]

19. In its tenth and final act, a woman thought to be strangled appears just in time to prevent her lover from being executed and her lover's wife from throwing herself on a funeral pyre. For 10 points each:

[10] Name this play centering around the love story between the impoverished Charudatta and Vasantasena. Its title object is owned by Charudatta's son, which Vasantasena fills with jewelry so that the boy can feel rich.

ANSWER: The **Little Clay Cart** [or **Mrcchakatika**]

[10] *The Little Clay Cart* is one of the most widely-performed plays written in this classical Indian language, which flourished as a literary tongue under the Gupta empire. Kalidasa also wrote in this language.

ANSWER: **Sanskrit** [or **Samskrt**a]

[10] This language was often used for medieval Indian *dastaans*, or epics, including the *Dastan-i-Amir Hamza,* a work of prose whose length at 46,000 pages makes it the longest work of literature in the world. Poems in this language were often written in the form of *nazms* or the Persian-derived *ghazal*.

ANSWER: **Urdu** language

20. This man argued that "humanity's greatest moral triumph" was the invention of the "work hammer" which, turned "destructive tendencies" into a "creative power" in the chapter "The Dynamic Lyricism of the Blacksmith." For 10 points each:

[10] Name this philosopher who included that chapter in his "An Essay on the Imagination of Matter" called *Earth and Reveries of Will*. He also introduced the concept of the "epistemological break" in *The Formation of the Scientific Mind*.

ANSWER: Gaston **Bachelard**

[10] Bachelard wrote that the "moral tendency of humankind is, like its physical tendency, to fall continuously" in the last chapter of *Earth and Reveries of Will*, which is called "The Psychology of" this concept. The article at the center of the Sokal Affair offered a "transformative hermeneutics" for understanding this concept.

ANSWER: **gravity** [accept The **Psychology of Gravity** or Transgressing the Boundaries: Towards a Transformative Hermeneutics of Quantum **Gravity**]

[10] *Earth and Reveries of Will* uses the dialectical method presented in this book by Hegel to examine the movement of hard and soft images in literature.

ANSWER: The **Phenomenology of Spirit** [or The **Phenomenology of Spirit** or The **Phenomenology of Mind** or **Phänomenologie des Geistes**]