

1. This author discussed the fate of the wreckers in a chapter entitled "The History of Our Sewage Disposal System", which follows a chapter in which jurists dump out a child's corpse in order to inspect a coffin. Late in his career, this author was lambasted for anti-Semitism for his history of the Jews in his country, *Two Hundred Years Together*. He wrote a novel whose title character enjoys the company of the Latvian joker Kilgas and his benevolent (\*) overseer Tyurin and earns a share of the care packages of the favorably-treated Caesar. Many of his novels, including *Cancer Ward*, were circulated through *samizdat*. For 10 points, name this Russian author of *One Day in the Life of Ivan Denisovich* and *The Gulag Archipelago*.

ANSWER: Aleksandr Isayevich Solzhenitsyn

<Gupta>

2. Tell el-Daba in Egypt and Tel Kabri in Israel contain wall paintings done in the style of this civilization, which produced polychrome pottery often containing floral patterns called Kamares Ware. Luigi Pernier excavated a mysterious multi-symbol disc produced by this civilization. Its cities like Kato Zakros and Phaistos may have been ravaged by the (\*) Thera eruption. This civilization is generally organized chronologically into "palatial" divisions, and John Chadwick and Michael Ventris deciphered one of its major scripts. Linear A and B were used by this civilization, whose ruins were excavated by Arthur Evans. The palace at Knossos was part of, for 10 points, what ancient Greek civilization on Crete?

ANSWER: Minoan Civilization

<Bentley>

3. The Eberswalde Crater on Mars is largely one of these features, which can also be found in the Lunae Palus Quadrangle. They were first classified in a scale developed by Orton and Reading, who examined the influence of tides on them. Avulsion led to the formation of the Head of Passes one, an example of the "Bird's Foot" type of these structures. Types of them that carry gravel include the "braided" type. They consist of a (\*) topset bed, a foreset bed and bottomset bed. Alluvial fans are analogous to these structures when water exits onto land or carries coarse grain settlement. For 10 points, name these regions where a river flows into a lake or an ocean, whose name references their triangular shape.

ANSWER: river deltas

<Jose>

4. This composer witnessed a revival in the 20th century due to a week of concerts dedicated to his music, organized by Alfredo Casella in 1939. This composer's Opus 3 is a set of twelve concertos for one, two, or four violins. He wrote a set of concertos that are each prefaced by sonnets, describing their contents. One of those concertos by this composers of (\*) *L'estro armonico* depicts a thunderstorm and a goat-herd and his dog, and is followed by works that depict buzzing gnats, hunters chasing their quarry, and men slipping on the ice, respectively. For 10 points, name this Italian Baroque composer whose *The Contest Between Harmony and Invention* includes his *The Four Seasons*.

ANSWER: Antonio Vivaldi [or Antonio Lucio Vivaldi]

<Lawrence>

5. This process' namesake PDE has the Gaussian Kernel as a solution. The fractional anisotropy is calculated from the eigenvalues of a tensor named for this process. One quantity describing this process is equal to terminal drift velocity times Boltzmann's constant times temperature. The second derivative of  $\phi$  with respect to  $x$  is proportional to the first derivative of  $\phi$  with respect to time according to one law governing it. Another law governing this process says that (\*) flux is proportional to the negative grad of the concentration; those laws are named for Fick. This process occurs through a semipermeable membrane in osmosis. For 10 points, name this phenomenon in which a substance moves from an area of high concentration to low concentration.

ANSWER: diffusion [accept osmosis till mention]

<Mukherjee>

6. These objects' name also denotes sections of a larger work such as "The Birth of the Nine Diseases," "Otso the Honey-eater," and "Marjatta." The scholar Otto von Friesen reconstructed the "Gothic" type of these objects. The fifty sections of the *Kalevala* are referred to by this term, and a set of twenty-four of them divided into three groups of *aettir* is the "elder (\*) Futhark." A god used Gungnir to learn the secret of these objects by hanging for nine days off Yggdrasil. Also found on Bragi's tongue and the horse Sleipnir's teeth, these objects are found on at the Bryggen and Jelling sites inscribed on several stones. For 10 points, name these symbols of Norse alphabets.

ANSWER: runes [or runo; prompt on futhark before it is read]

<Gupta>

7. This man's "second career," brought on by the death of Clotilde de Vaux, included his attempt to establish seven atheistic sacraments for the future. This man focused his study on "social dynamics," and hoped that the credo "live for others" would spread along with a "Religion of Humanity". This former secretary of utopian socialist Henri de Saint-Simon believed that human societies always moved from a (\*) theological era to a metaphysical era as part of his "law of three stages," and coined the term altruism while putting a new discipline atop his six-member hierarchy of sciences. For 10 points, name this thinker whose *Course of Positive Philosophy* pioneered positivism, the French founder of sociology.

ANSWER: Auguste Comte [or Isidore Auguste Marie François Xavier Comte]

<Jackson>

8. This event was planned four years in advance under the code name "True Blue" and the leadership of Malcolm Ross and Francis Maude. It included an address from Bishop Richard Chartres, and, during it, a brother and sister carried cushions with the symbols of the Order of the Garter and Order of Merit on them. The bells of Big Ben were silent during this event, which was designated not to have (\*) "state" status for cost reasons, but it cost over £3 million in security. Cristina Fernández de Kirchner was not invited to attend because of tensions over the Falklands. Queen Elizabeth's presence caused controversy because she had not attended a similar event for Clement Attlee. For 10 points, name this April 2013 event to mark the death of a former prime minister.

ANSWER: the funeral of Margaret Thatcher

<Weiner>

9. One character in this novel is compared to the walls of an unfinished hotel. Another character in this work analogizes human thought to the alphabet and laments that he has only gotten to Q; that character walks around reciting "The Charge of the Light Brigade". Another character's daughter Prue dies during childbirth in its second section, "Time Passes". The opium addict Augustus (\*) Carmichael appears in this novel. In its first section, "The Window", Charles Tansley insults the painting skills of Lily Briscoe. In its final section, Macalister's son fishes and Cam and James come to admire their father while on a boat near the Isle of Skye. For 10 points, name this novel in which the Ramsay family takes the title journey, written by Virginia Woolf.

ANSWER: To the Lighthouse

<Nutter>

10. This period saw the creation of literary works like *The Treasury of Loyal Retainers* and the beginning of "Dutch Learning". The HMS *Phaeton* and Nikolai Rezanov's *Nadezhda* visited the island of Dejima during this period. Inspectors called *metsuke* battled corruption during this period, during which local lords were forced to rotate residency between home and the capital in the (\*) *sankin-kotai* system. The Shimabara Rebellion triggered this period's policy of *sakoku*, or seclusion, which was ended by the Black Ships of Commodore Matthew Perry. Solidifying the earlier efforts of Oda Nobunaga and Toyotomi Hideyoshi, for 10 points, identify this Japanese shogunate founded by Ieyasu and ended in 1868 by the Meiji Restoration.

ANSWER: Tokugawa Shogunate [or Edo Period or Tokugawa Period]

<Bentley>

11. This poet composed a series of three never-sent letters to a figure called the Master, who may be the same figure as one who roams "in sovereign woods" and shares "Eider-Duck's Deep Pillow" with this poet in a poem whose speaker has "but the power to kill without the power to die". In another poem, this author told of signing away "what portions of me be Assignable" before a moment when she "could not (\*) see to see." This author of "My Life had stood a Loaded Gun" compared "the Stillness in the Room " to "the Stillness in the Air" in a poem whose title creature exhibits a "blue, uncertain, stumbling buzz". For 10 points, name this reclusive female poet of "I heard a Fly buzz when I died" and "Because I could not stop for Death".

ANSWER: Emily Elizabeth Dickinson

<Mehigan>

12. This man's school superintendent controversially addressed overcrowding with trailers called "Willis Wagons." His mixed support among whites was bolstered by William Dawson's delivery of the black vote, which helped bring this man into protracted conflict with Saul Alinsky. Mike Royko's biography of this man is structured around his exchanges with William Kunstler during a certain legal proceeding. This man ordered police to (\*) "shoot to kill" during the MLK riots, the same year his "Gestapo tactics" were condemned by Abraham Ribicoff. This ally of John Kennedy headed the powerful Cook County machine and cracked down on protesters at the 1968 Democratic Convention. For 10 points, name this Mayor of Chicago whose son held the same post until 2011.

ANSWER: Richard Joseph Daley [just "Richard Daley" is fine, but do not accept "Richard M. Daley"]

<Bailey>

13. This author rejected R.S. Roberts's depiction of Reinhold Cassirer's death in the biography *No Cold Kitchen*. In one of this author's novels, Paul's thyroid cancer treatment causes him to separate from his wife Berenice due to fear of radioactively contaminating her. This author of *Get a Life* created a physiotherapist named Rosa who is shamed by her childhood friend Baasie, who mocks the (\*) activist efforts of her father Lionel. In another of her novels, a picture of Lydia carrying schoolbooks creates guilt for the protagonist; in that novel, civil unrest prompts the title black servant to lead Bam and Maureen Smales to his native village. For 10 points, name this South African author of *Burger's Daughter* and *July's People*.

ANSWER: Nadine Gordimer

<Mehigan>

14. This otherwise-illegal practice was aided by the Mantoku-ji and Tokei-ji temples in Edo-era Japan. In Malachi 2:16, God says that he "hates" this practice, which is impossible in Judaism for a person called an *agunah*. A three month waiting period called *iddah* is required before *khula* or another Islamic form which requires saying the word *talaq* (\*) three times. This procedure has the same effect as Pauline Privilege, and in Jewish communities it requires a written document called a *get* to be presented by the man. For 10 points, name this procedure forbidden in Catholicism, which instead declares a union null and void from the beginning through annulment.

ANSWER: divorce [accept dissolution of marriage or similar answers; do not accept "annulment"]

<Bentley>

15. In one painting, the left slipper of this woman has been removed and rests on an oriental shawl with a flower pattern. A man sits on a red couch not wearing his top hat in front of a version of this woman, who has just had a white sheet ripped off from her by a servant. A print of this figure can be seen hanging in the artist's portrait of Emile Zola. The model for this woman wears a red bow in her hair and was named (\*) Victorine Meurent. Paul Cezanne painted a "modern" version of this woman, who is brought a bouquet of flowers by a black servant and reclines naked on a white bed, looking straight at the viewer. For 10 points, name this subject of an 1863 painting by Edouard Manet.

ANSWER: Olympia [accept Victorine Meurent before mentioned]

<Bentley>

16. Melancton Smith criticized this collection, which provoked an article titled for "Three Bugbears" of society. One part of it notes that "removing the causes" or "controlling...effects" are two ways to stop a damaging problem. Many of its subsections are titled for "The Same Subject Continued." A group of men with "neither FORCE nor WILL" is the subject of its seventy-eighth part. It uses the example of fighting Roman consuls to argue for a unitary (\*) executive, notes that "if men were angels, no government would be necessary," and argues that a large republic is the best way to lower the influence of faction in its tenth article. For 10 points, name this set of 85 essays written under the pseudonym Publius to support the US Constitution.

ANSWER: the Federalist Papers

<Jackson>

17. **One character in this opera jumps out a window and another hides in a closet after singing the duet "Aprite, presto, aprite". One character in this opera sings about his love for his "beautiful godmother" in the aria "Non so piu cosa son." After being caught under a table with Barberina, that character is condemned to military service, an event mocked in the aria (\*) "Non più andrai."** The title character sings "Se vuol ballare" and gets a contract nulled after it is discovered that he is Marcellina's long-lost son. Cherubino is disguised to foil the plot of a nobleman who wishes to exercise his "droit du seigneur" [DWOT DOO say-NYUHR] in, for 10 points, what opera about the title husband of Susanna and servant of Count Almaviva, by Wolfgang Amadeus Mozart?

ANSWER: *The Marriage of Figaro* [or *Le Nozze di Figaro*]

<Berend>

18. **EATL is a type of T-cell lymphoma that affects this organ. Two cell types in this organ release the incretins GLP-1 and GIP . This organ's crypts are hyperplastic in patients who have antibodies to tissue transglutaminase. This organ's S cells secrete a hormone that increases the levels of bicarbonate in this organ's lumen; that hormone is secretin. This organ contains aggregates of (\*) lymphoid tissues known as Peyer's patches, and this organ's I cells secrete cholecystokinin in response to chyme. This organ is affected by celiac's disease, which blunts its villi. This organ contains the ileum, jejunum, and duodenum. For 10 points, name this section of the GI tract that connects the stomach with the colon.**

ANSWER: small intestine

<Mukherjee>

19. **One ruler of this name joined his future foe Cardinal Granvelle as part of the mission to negotiate the Peace of Cateau-Cambresis. Louise de Coligny and Charlotte of Bourbon were among the four wives of that ruler, who galvanized his countrymen after the execution of the Count of Egmond. The third ruler of this name flooded the Water Line built by Maurice of (\*) Nassau, thwarting the 1672 "Rampjaar" invasion by Louis XIV. The first ruler of this name backed the Sea Beggars, while the third won the Battle of the Boyne after taking another office. First held by a man called "the Silent," for 10 points, give this name of Dutch stadtholders from the House of Orange, the third of whom gained the English throne with his wife Mary in the Glorious Revolution.**

ANSWER: William of Orange [or Wilhelm]

<Bentley>

20. **The unitarity of the universe's transition matrix implies this law because this law is a property of doubly stochastic Markov chains. This law is apparently in conflict with the Poincare recurrence theorem. One consequence of this law is that the Onsager matrix is positive semi-definite, and this law's apparent violation of T-symmetry can be resolved using (\*) Boltzmann's H-theorem. One version of this law states that the line integral of dQ over T over a closed path is equal to or less than zero; that statement is Clausius' inequality. This statement limits the efficiency of the Carnot cycle and is apparently violated by Maxwell's demon. For 10 points, name this statement that says in a closed system the entropy must always increase.**

ANSWER: second law of thermodynamics [accept Clausius inequality before mention]

<Mukherjee>

21. In a short story by this man, Pepe directs Filbert to an antique shop where he buys a statue that comes to life after getting covered with damp moss and doesn't like being asked about its relationship to Tlaloc. In a novel by this man, a green-eyed girl transforms into the widow Consuelo as General Llorante's memoirs are being compiled by Felipe Montero. This author of "Chac-Mool" and (\*) *Aura* wrote a novel in which Harriet Winslow tutors the Miranda family at a hacienda where General Arroyo murders the title character, who is based on Ambrose Bierce. His most famous novel uses flashbacks to relate the life of the title corrupt Mexican tycoon. For 10 points, name this author of *The Old Gringo* and *The Death of Artemio Cruz*.

ANSWER: Carlos Fuentes Macias

<Mehigan>

22. One of these objects features a reclining figure holding an obelisk, while the opposite side contains a *decursio* scene in which funeral rites are bestowed on the namesake, who may have been a friend of Judah the Prince. The *Kiztasi*, one of these objects in Istanbul, is also named for Marcian. One of these objects depicts the Miracle Rain that saved the Thundering Legion from the Quadi and may have have been commissioned by (\*) Commodus. Sixtus V placed St. Peter where an eagle once rested one one of these objects, which was built between two libraries in a forum designed by Apollodorus of Damascus and commemorates the defeat of the Dacians. For 10 points, name these Roman monuments that include one built for Trajan that rises to over 100 feet.

ANSWER: Roman columns

<Bentley>

23. In one of his novels, *Death*, in the form of a young woman, writes to a state television station announcing that people will resume dying a week after receiving a letter from her. Another of his novels opens with 83% of citizens casting a blank ballot. One of this man's creations is apprenticed to a shepherd who attempts to convince him to have sex with sheep; that character discovers an ability to catch massive amounts of (\*) fish while crossing the Sea of Galilee. In his most famous novel, the King of Ward 3 is stabbed by the Doctor's Wife, who is never afflicted by the title epidemic. For 10 points, *Death With Interruptions* and *The Gospel According to Jesus Christ* were written by which Portuguese author of *Seeing* and *Blindness*?

ANSWER: Jose de Sousa Saramago

<Bentley>

24. These structures contain an FliG switch that allow them to change direction. The life cycle of *Naegleria fowleri* contains a stage named for these structures between a cyst and trophozoite stage. Those of *Selenomonas* are arranged into fascicles. *Aeromonas* and *Vibrio parahemolyticus* have both lateral and polar examples of these structures, and they are driven by the mot complex via a hydrogen ion gradient. These structures contain the (\*) L, P and MS rings on one side, and they evolved from the Type III secretory system. These structures are anchored by the basal body, and like cilia they contain a nine plus two set of microtubules. For 10 points, name these whiplike projections used by bacteria and spermatozoa for propulsion.

ANSWER: flagella [or flagellum]

<Mukherjee>

1. In this last chapter of the novel in which this object appears, it is stabbed with a knife, but the assault kills the attacker and leaves this object unharmed. For 10 points each:

[10] Name this object recognized by Lord Henry Wotton as Basil Hallward's masterpiece. It gradually grows more disfigured as it absorbs its owner's sins.

ANSWER: the **picture** of **Dorian Gray** [accept synonyms of picture, such as **portrait**, because we do not necessarily want the title of the novel; prompt on partial answers]

[10] *The Picture of Dorian Gray* was the only novel by this bisexual Irish author of *The Importance of Being Earnest*.

ANSWER: Oscar Fingal O'Flahertie Wills **Wilde**

[10] The journalist Robert Ross borrowed a phrase from Psalm 130 to title this lengthy epistle Wilde wrote to his lover Lord Alfred Douglas while imprisoned in Reading Gaol.

ANSWER: ***De Profundis*** [prompt on "from the depths" or other translations]

<Gupta>

2. The author of this work claims to have written it "not as an essay to win applause of the moment, but as a possession for all time." For 10 points each:

[10] Name this history by Thucydides about a war between Sparta and Athens and their allies.

ANSWER: ***History of the Peloponnesian War***

[10] The allies of Athens were members of this league. This league was created to fight the Persian Empire and was originally headquartered on its namesake island, which housed the treasury.

ANSWER: **Delian** League

[10] Thucydides relates how this island refused to join the Delian League, instead insisting on its natural right to neutrality in an eloquent dialogue with Athens. Athens then invaded anyway, massacred all its men, and enslaved its women and children.

ANSWER: **Melos** [accept "the **Melian** Dialogue"]

<Bailey>

3. Sergio Gomez and Alberto Fuguet edited a movement-founding anthology whose name parodies that of this city, which was the setting of the story "Leaf Storm". For 10 points each:

[10] Identify this fictional city, eventually destroyed by a hurricane long after its founding by Ursula and Jose Arcadio Buendia.

ANSWER: **Macondo** [the collection is called *McOndo*]

[10] Macondo is most famous as the setting of *One Hundred Years of Solitude*, a novel by this Colombian magical realist who also wrote *Chronicle of a Death Foretold*.

ANSWER: Gabriel **Garcia Marquez** [or Gabriel José de la Concordia **García Márquez**]

[10] This musician installs a pianola in the Buendia house in *One Hundred Years of Solitude*. Later, he kills himself after being rejected by Amaranta.

ANSWER: **Pietro Crespi** [accept either underlined name]

<Carson>

4. The final movement of this work is a fantasia on the Dargason interwoven with the melody of “Greensleeves.” For 10 points each:

[10] Name this four-movement work for strings, which opens with a lively Jig and was written for a girl’s school where the composer served as music director.

ANSWER: St. Paul’s Suite

[10] The *St. Paul’s Suite* is a work of this British composer, also known for *The Planets* suite.

ANSWER: Gustav Holst

[10] This movement of *The Planets* is played almost entirely *pianissimo* and calls for a female chorus but has no words. The chorus is placed in an adjoining room, whose door is closed to bring the piece to an end.

ANSWER: "Neptune, the Mystic"

<Rosenberg>

5. One thought experiment about these traits features an almond whose taste changes upon being crushed. For 10 points each:

[10] Name these traits such as color, simple ideas which do not inhere in objects themselves. They depend on an observer’s senses, and are not needed to explain the essence of an object.

ANSWER: secondary qualities

[10] This German polymath criticized John Locke’s distinction between primary and secondary qualities in *New Essays on Human Understanding*. He believed that God chose to make this world out of “monads.”

ANSWER: Gottfried Wilhelm Leibniz

[10] Locke advanced a theory known by this metaphor in his *Essay Concerning Human Understanding*. It is the theory that infants are born without any innate ideas at all.

ANSWER: blank slate theory [or tabula rasa theory; or blank tablet theory; or scraped tablet theory]

<Jackson>

6. For 10 points each, answer the following about people who influenced modern dance.

[10] This influential choreographer founded her namesake dance company in 1926 and choreographed such works as *Cave of the Heart* and *Appalachian Spring*.

ANSWER: Martha Graham

[10] Preceding Graham was the influential dancer Isadora Duncan, who was fond of dancing with these items, one of which ultimately caused her death in a car in 1927.

ANSWER: scarf or scarves

[10] This other American choreographer danced for several years in the Martha Graham Dance Company and was greatly influenced by the *I Ching*. Many of his pieces are set the music of John Cage, his life partner.

ANSWER: Merce Cunningham

<Berend>



7. According to the virial theorem, the average kinetic and potential energies of this system are identical. For 10 points each:

[10] Identify this class of systems that obey Hooke's law, examples of which include pendulums and springs.

ANSWER: simple **harmonic oscillator**s [or **SHOs**]

[10] At a particular frequency, a harmonic oscillator may exhibit this phenomenon of increased vibrational amplitude. Its mechanical form was the cause of the Tacoma Narrows Bridge collapse.

ANSWER: **resonance**

[10] The band of high-response frequencies around the resonant frequency is characterized by a factor known by this letter. Pulsed lasers use a form of "switching" named for it.

ANSWER: **Q**

<Eltinge>

8. "Falasha" is a now pejorative term for Jews from this country. For 10 points each:

[10] Name this country, whose isolated Jews were evacuated to Israel in the 1990's by Operation Solomon. Amharic-speaking Jews from this country call themselves "Beta Israel" and have Torah scrolls written in Ge'ez.

ANSWER: Federal Democratic Republic of **Ethiopia** [or ye-**Ityoppya** Federalawi Dimokrasiyawi Ripeblik]

[10] Tradition holds that this woman is an ancestor of the Ethiopian Jews through her son Menelik. This woman was brought from what's now Yemen to marry the Biblical king of Israel.

ANSWER: **Queen** of **Sheba** [or **Malkat Sheba**; or **Nigiste Saba**; or **Makeda**]

[10] Fifty days after this Jewish holiday, Ethiopian Jews celebrate Sigd. Western Jews recite the Ashamnu and Al Chet prayers during this holiday, which ends with the Ne'ilah service.

ANSWER: **Yom Kippur** [or **Astasreyo**]

<Wasserman>

9. Cape Morris Jesup is the extreme northern tip of this island. For 10 points each:

[10] Name this Danish territory, which is crossed by the Arctic Circle and which has its capital at Nuuk.

ANSWER: **Greenland** [or **Kalaallit Nunaat**]

[10] This Canadian island to Greenland's west is the site of Alert, the world's northernmost permanently inhabited town. This island is Canada's third largest island after Baffin and Victoria.

ANSWER: **Ellesmere** Island [or **Umingmak Nuna**]

[10] Ellesmere Island, along with the Sverdrup Islands and the Parry Islands, is part of this northernmost major Canadian archipelago, which received its current name in 1953.

ANSWER: **Queen Elizabeth** Islands

<Wasserman>

10. Identify the following about some ship disasters, for 10 points each:

[10] This ship, part of the White Star Line, was carrying passengers like John Jacob Astor IV when it sank in 1912, killing some 1,514 people.

ANSWER: RMS **Titanic**

[10] 844 passengers were killed when the *Eastland* capsized in this city's namesake river in 1915. Folklore holds that another incident in this city was started by Catherine O'Leary's livestock.

ANSWER: **Chicago**

[10] Shortly after the conclusion of the Civil War, this ship containing Union prisoners of war from Andersonville exploded on the Mississippi River, killing as many as 1,800 people.

ANSWER: SS **Sultana**

<Bentley>

11. These people briefly gained a namesake state in the Treaty of Sevres. For 10 points each:

[10] Identify these people who make up the PKK Party. Major historical figures of this ethnicity include Saladin.

ANSWER: **Kurds** [or **Kurdish People**]

[10] Kurds in northern Iraq were targeted with chemical weapons by this dictator's Anfal campaign in the late 1980s. He was found in an underground hideout near Tikrit in 2003.

ANSWER: Saddam **Hussein** Abd al-Majid al-Tikriti

[10] Iran withdrew its support from Kurdish rebels in Iraq after settling border disputes in a 1975 treaty signed in this country. This country blamed the Islamic Salvation Front for the still largely unexplained killing of President Mohamed Boudiaf 1992.

ANSWER: The People's Democratic Republic of **Algeria** [or **Algerie**]

<Bentley>

12. Homer claims that these goddesses guard the gate to Olympus, and their number varies between three and twelve. For 10 points each:

[10] Name these Greek goddesses of time and the seasons.

ANSWER: the **Horae**

[10] The Horae were the daughters of Zeus and this Titaness who presided over divine justice.

ANSWER: **Themis**

[10] Themis may also have been the mother of these three goddesses named Clotho, Lachesis, and Atropos, who spun, measured, and cut the thread of life for mortals.

ANSWER: the **Fates** [or the **Moirai**]

<Silverman>

13. The per and cry genes help mediate these processes in humans. For 10 points each:

[10] Name these 24-hour biological cycles that include sleeping and waking. They are regulated by signals called entrainers.

ANSWER: **circadian** rhythms

[10] Circadian rhythms are partly controlled by the release of melatonin from this small gland in the brain. Hagfish notably lack them.

ANSWER: **pineal** gland

[10] This nucleus, located in the anterior hypothalamus, is the master regulator of circadian rhythms. It's named for its position right above the crossing of the optic nerves.

ANSWER: **suprachiasmatic** nucleus [or **SCN**]

<Morlan>

14. Identify these things related to the study of the upper class in social science, for 10 points each.

[10] This economist described the "conspicuous consumption" of those who show off their wealth in *The Theory of the Leisure Class*. Goods whose demand rises with price are named for this man.

ANSWER: Thorstein **Veblen**

[10] This pioneering American sociologist described the control of 1950s America by interlocking military, corporate, and political leaders in *The Power Elite*.

ANSWER: Charles Wright **Mills**

[10] This conservative scholar described the New Upper Class of white Americans, who live away from the New Lower Class, in his 2012 book *Coming Apart*. He helped write *The Bell Curve*.

ANSWER: Charles Alan **Murray**

<Jackson>

15. This institution was based on ideas of the economist Friedrich List. For 10 points each:

[10] Identify organization established in 1834 that economically unified many of the independent German states.

ANSWER: **Zollverein** [or **Customs Union**]

[10] A later European trade union unified the coal industry with this other industry in countries like France and West Germany. Andrew Carnegie made his fortune in this industry.

ANSWER: **Steel** Industry

[10] In between the founding of the Zollverein and the European Coal and Steel Community, this polity was founded after the Seven Weeks' War. It formed the basis for the unified German empire created four years later, and its president was the Prussian king.

ANSWER: **North German Confederation** [or **Norddeutscher Bund**]

<Bentley>

16. Light passing through one of these substances will be scattered in the Tyndall effect. For 10 points each:

[10] Name this type of mixture in which large particles of one substance are uniformly distributed throughout another substance, forming dispersed and continuous phases. Examples include foams and aerosols.

ANSWER: **colloids**

[10] These colloids contain one liquid dispersed within another. Milk is the classical example of one of these substances.

ANSWER: **emulsions**

[10] In a colloid, one of these structures will form at every interface. The zeta potential is the potential difference across it, and in capillary electrophoresis, electroosmotic flow occurs due to the formation of one of these structures.

ANSWER: electric **double layer** [prompt on "diffuse layer"]

<Busse>

17. Her existence was affirmed in a letter to Giacomo Colonna collected in the *Epistolae Familiares*, and she was first encountered on Good Friday, 1327 in the church of Sainte-Claire d'Avignon. For 10 points each:

[10] Identify this woman who "bore Love's emblems in her aspect" according to a poem in *Il Canonziere*, or the *Book of Songs*, which was dedicated to her.

ANSWER: **Laura** de Noves

[10] Laura was the object of obsession for, and thus the dedicatee of much of the poetry of, this Italian Renaissance poet. His namesake sonnet form is divided into an octave and a sestet.

ANSWER: **Petrarch** [or Francesco **Petrarca**; or Francesco **Petracco**]

[10] Petrarch personally discovered the *Epistulae ad Atticum*, a previously unknown collection of letters by this Classical author, whose other influential works include the dialogues *De re Publica* and *De Legibus*.

ANSWER: Marcus Tullius **Cicero** [or **Tully**]

<Carson>

18. Examples of these entities include the Koch snowflake, the Sierpinski Triangle and the Menger sponge. For 10 points each:

[10] Name these mathematically self-similar objects that are often recursively defined. Benoit Mandelbrot introduced their study by considering the coastline of Great Britain.

ANSWER: **fractals**

[10] This fractal, named for an insane German mathematician, consists of starting with the unit interval, removing the middle third, and recursively repeating on the remaining two thirds. The remaining space is uncountable.

ANSWER: **Cantor** set

[10] These other bizarre mathematical entities are curves that visit every point in a unit cell in  $n$  dimensions, which means that they have an integer Hausdorff dimension, unlike most fractals. The most notable one in two dimensions is named after Peano.

ANSWER: **space-filling** curves

<Jose>

19. The Continental Op investigates a diamond theft involving this city's Leggett family in *The Dain Curse*, while Nobusuke Tagomi fights Nazi occupiers in this city in Philip K. Dick's *The Man in the High Castle*. For 10 points each:

[10] Identify this city, also the setting of Richard Brautigan's *Willard and His Bowling Trophies* and Armistead Maupin's *Tales of the City* series.

ANSWER: **San Francisco**, California [or **San Fran**; prompt on **S.F.** or **'Frisco**]

[10] The gold-obsessed Trina Sieppe marries the title character of this Frank Norris novel, which is set primarily in San Francisco. It ends with its title dentist in Death Valley, handcuffed to the corpse of Marcus Schouler.

ANSWER: **McTeague**: *A Story of San Francisco*

[10] Phileas Fogg, accompanied by his valet Passepartout, the detective Fix, and Aouda, take a steamer from Yokohama to San Francisco as part of the title endeavor of this Jules Verne novel.

ANSWER: **Around the World in 80 Days** [or **Le Tour du Monde en Quatre-Vingts Jours**]

<Carson>

20. It is unclear if the woman with her back to the viewer in this painting is a mirror image of the central woman. For 10 points each:

[10] Identify this 1882 painting in which a blonde woman named Suzon looks at the viewer, standing behind a bowl of oranges and several bottles of alcohol. Suzon also stands in front of a large mirror that reflects a trapeze artist in the top right.

ANSWER: A **Bar at the Folies-Bergere** [or **Un Bar Aux Folies Bergère**]

[10] A *Bar at the Folies-Bergere* was painted by this French artist of *Luncheon on the Grass*.

ANSWER: Edouard **Manet** [do not accept or prompt on "Claude Monet"]

[10] Manet controversially exhibited *Luncheon on the Grass* at this famous 1863 exhibition, which helped bring notice to avant-garde paintings like *The White Girl* that had been denied a place at the Paris Salon.

ANSWER: The **Salon des Refuses** [prompt on the **Exhibition of Rejects**]

<Bentley>

21. The protagonist of this novel was born in Apex City and was named by her parents Leota and Abner for the French word for crimping. For 10 points each:

[10] Identify this novel centering on the social ambitions of Undine Spragg.

ANSWER: *The Custom of the Country*

[10] *The Custom of the Country* was written by this American author of *The Buccaneers*, *The Age of Innocence*, and *Ethan Frome*.

ANSWER: Edith Wharton [or Edith Newbold Jones]

[10] A scandal fabricated by Bertha Dorset causes the social ostracism of bridge addict Lily Bart in this Wharton novel. Lily's various love interests in it include Simon Rosedale and Lawrence Selden.

ANSWER: *The House of Mirth*

<Bentley>

22. This man purchased large tracts of undeveloped land in Manhattan and for a time tried to get involved in the opium trade in China. For 10 points each:

[10] Identify this founder of the American Fur Company.

ANSWER: John Jacob Astor [or Johann Jakob Astor]

[10] The Pacific Fur Company established a trading post named for Astor in this modern day state. A trail named for this state began in Independence, Missouri

ANSWER: Oregon

[10] One of the first Europeans to explore the Oregon coast may have been this man, who sailed for Philip II of Spain. Fur trader Charles Barkley named a strait south of Vancouver Island for this Greek-born navigator.

ANSWER: Juan de Fuca [or Ioánnis Fokás]

<Bentley>

23. Alan Guth modified this theory with the theory of cosmic inflation, which posits a faster-than-light expansion phase. For 10 points each:

[10] Name this theory which replaced the steady-state theory. It states that the universe began with a namesake cataclysmic event.

ANSWER: big bang theory

[10] Inflation explains the structure of this phenomena, first observed by Arno Penzias and Robert Wilson. This phenomena causes the observable universe to have a temperature of 2.7 K.

ANSWER: Cosmic Microwave Background Radiation [or CMBR, prompt on partial answer]

[10] Sometime in the early universe, but before nucleosynthesis, this process occurred, creating more matter than antimatter. Andrei Sakharov proposed three conditions which must hold for it to occur.

ANSWER: baryogenesis

<Nutter>