1. A mode of analysis based on these entities was pioneered in a book subtitled for the "study of the history" of one of them, which uses the principles of continuity and plentitude to analyze a concept that was developed in an Alexander Pope poem; that book, which advocated for a "history" of these entities, is *The Great Chain of Being* by Arthur Lovejoy. Another philosopher contrasted these entities with spirits, claiming that, while spirits are active agents, these entities are produced and perceived by spirits; that philosopher argued in *Principles Concerning Human Knowledge* that objects perceived in the world are actually these entities in the mind. For 10 points, what abstract and immaterial entities lend their name to the "subjective" philosophical position of George Berkeley (BARK-lee)?
ANSWER: **idea**s [accept history of **idea**s or *The Great Chain of Being: A **Study of the History of an Idea*** or subjective **idealism** or subjective **idealist**s; do not accept or prompt on putative synonyms such as "perceptions"]

2. A study of this ethnicity's relationship to the "literary form" of a poet was written by Anthony Julius, who discusses the portrayal of a man of this ethnicity in the poem "A Cooking Egg." A man of this ethnicity "stares from the protozoic slime at a perspective of Canaletto" and has a "cigar" in a poem also titled for Burbank, who has a "Baedeker" (BAY-"decker"). A man of this ethnicity was "spawned in some estaminet (es-tah-mee-NAY) of Antwerp" and "squats on the windowsill" as the owner of a house where "an old man in a dry month" waits for rain. A woman of this ethnicity, who "tears at the grapes with murderous paws" in "Sweeney among the Nightingales," is named "Rachel *née* Rabinovitch." For 10 points, what ethnicity, in the fourth section of T. S. Eliot's *The Waste Land*, is contrasted with "Gentile"?
ANSWER: **Jew**s [or **Jew**ish people]

3. This state was the home of John Brinkley, a frequent gubernatorial candidate and quack doctor who claimed to cure impotence by sewing goat testicles on to his patients. In 1922, this state's governor, Henry Justin Allen, tried to oust the Ku Klux Klan from this state in the wake of a national railroad strike. Two years later, an independent candidacy for governor was launched by a progressive newspaper editor from this state nicknamed "The Sage of Emporia"; that man, William Allen White, inspired the title of a Thomas Frank book about this state's shift from left-wing populism to conservatism when he sarcastically asked "what's the matter" with this state. For 10 points, in what state did "Border Ruffians" and "Free-Staters" fight a "bleeding" conflict?
ANSWER: **Kansas** [accept ***What's the Matter with Kansas**?* or Bleeding **Kansas**]

4. Overproduction of this substance is caused by a tumor-secreted hormone in Zollinger-Ellison syndrome. Repeated exposure to this substance can turn stratified squamous epithelium into columnar epithelium. A protein named for this substance is synthesized in the antrum by G cells upon stimulation by bombesin (BOM-beh-sin). Antagonists of the H_2 (h two) histamine receptor block production of this substance. Its production by cells with invaginations called canaliculi (can-ah-LICK-yoo-"lie") that express a hydrogen-potassium-ATPase can be inhibited by the PPI lansoprazole (lan-SOH-prah-zole). Parietal cells secrete both intrinsic factor and this substance, which cleaves pepsinogen into active pepsin. Prevacid (PREV-ah-sid) inhibits production of, for 10 points, what substance that causes esophageal reflux when it passes the pyloric sphincter and that gives a digestive organ a low pH?
ANSWER: **gastric acid** [or **stomach acid**; accept **hydrochloric acid** or **HCl**; prompt on "acid"]

5. This thinker posited that people's ability to improve their lives depends on the resources available to them in his "life chances" hypothesis. George Ritzer expanded upon this thinker's work to coin a term that refers to the process through which a society becomes structured like a fast-food restaurant. The term "McDonaldization" is based on the work of this thinker, who argued that society was devaluing mysticism and going through a process of disenchantment, through which the bureaucracy imposed an "iron cage" of rationality. He claimed that the state had a monopoly on the legitimate use of violence in *Politics as a Vocation*. For 10 points, what thinker examined how Calvinism motivated economic growth in his *The Protestant Ethic and the Spirit of Capitalism*?
ANSWER: Max **Weber** (mahks VAY-bur)

6. The carrying of these objects into a place of worship was central to the pre-Reformation practice of the "churching of women," whose biblical basis was an event that is celebrated annually on a day that centers on a blessing of these objects. In Scandinavian celebrations of the feast of Santa Lucia, young girls wear a wreath bearing these objects on their heads. Crepes are served in France on a holiday centering on these objects that celebrates the presentation of Jesus at the Temple. The Catholic Holy Week service of Tenebrae (TEN-eh-brye) involves fifteen of these objects on a "hearse." The Epiphany period ends with a holiday that celebrates these objects, which are commonly left in Catholic churches as votive offerings. For 10 points, name these objects that in Christianity symbolize the light of God.
ANSWER: **candle**s [accept **Candlemas** or **taper**s]

7. C. B. Moore discovered roaming reactions in this compound's dissociation. Hexamine is synthesized by reacting ammonia with this compound as the carbon source. Sigma sells this compound only in a 37% aqueous solution. This compound reacts with a primary amine (AM-een) to form a mono·substituted iminium (ih-MIN-ee-um) in a route to beta-amino ketones. Under proton NMR, this compound has a 2-henry singlet at 9.6 ppm. It reacts with DNA in the first step of chromatin immunoprecipitation. Phenol and this compound co·polymerize to form Bakelite ("BAKE"-eh-"light") resins; its normal polymer is prefixed "para." This compound cross-links proteins and DNA, which is why it is used as a fixative in histology and microscopy. For 10 points, name this simplest aldehyde, which is also used as a preservative for cadavers.
ANSWER: **formaldehyde** [or **CH$_2$O**; or **methanal**; or **formalin**]

8. Graham Bader claimed that a painting titled for an animal of this type shows an animal of another kind engaged in a "narcissistic circuit" and staring at the artist's initials in a manner reminiscent of Caravaggio's *Narcissus*. A series of illustrations shows two creatures of this type, one of whom is named Hunca Munca, trying to eat Lucinda and Jane's plaster food. In *The Garden of Earthly Delights*, one of these animals walks on its front legs as if doing a handstand, and a man in a floating red fruit stares down the length of a glass cylinder at another one. Beatrix Potter illustrated a book about "two bad" examples of these creatures. A duck's claim to have "hooked a big one" amuses, for 10 points, what type of animal referenced in the title of Roy Lichtenstein's Disney-inspired painting *Look Mickey*?
ANSWER: **mouse** [or **mice**]

9. The stage directions for this play's longest speech prescribe that it be delivered with "a great deal of action" to cast a "hypnotic effect" over both the listening character and the audience. Upon refusing to move from a piece of furniture, a character in this play is asked "this iron and this wood, is this your honor?"; as that character in this play says that "naturally, every man wants a son," he is interrupted and told "that's the way the cookie crumbles." In this play, a resident of a rooming house that is home to a kimono-wearing "colored queen" tells a story about using a poisoned hamburger to try to kill the landlady's dog. Two strangers converse on a Central Park bench in, for 10 points, what one-act Edward Albee play that ends with Jerry impaling himself on a knife held by Peter?
ANSWER: The ***Zoo Story***

10. The villages of these people were known as *pagi* (pah-gee), which made up the *touto* (too-toh) communities and had elected officials called Meddix Tuticus (TOO-tik-us). A defeat for these people under Gellius Egnatius was preceded by a deer running toward the front lines of their Celtic allies while a wolf ran toward the front lines of the Romans; this non-Latin tribe lost that battle after the younger Publius Decius Mus (POO-blee-us DEK-ee-us MOOS) devoted himself by making a sacrificial charge. Before these Oscan speakers lost the Battle of Sentinum, they were led by Gaius Pontius ("GUY"-us PONT-ee-us) at a battle in which they trapped the Romans in a valley by barricading one end, after which they forced their captured enemy to pass under a yoke. For 10 points, name this Italic tribe that won the Battle of the Caudine Forks during three namesake wars against the Roman Republic.
ANSWER: **Samnite**s [accept **Samnium**]

11. Larry Charles told the "You Made It Weird" podcast that this man "tested" him by stealing his iced coffee while in discussions to make a film in which this man played Jack Fate, the president's son in a dystopian North American state. The film *Eat the Document* captured an incident at the Manchester Free Trade Hall when Keith Butler yelled "Judas" at this future star of the film *Masked and Anonymous*. D. A. Pennebaker's documentary *Dont Look Back* chronicles time this man spent in England, and his life was the basis for seven characters, played by actors including Christian Bale, Heath Ledger, and Cate Blanchett, in the film *I'm Not There*. Martin Scorsese's 2005 documentary *No Direction Home* is about, for 10 points, what songwriter who won the 2016 Nobel Prize in Literature?
ANSWER: Bob **Dylan** [or Robert Allen **Zimmerman**]

12. Daniel Arasse argued that this event amounted to an inverted baptismal rite. A book by John Barrell discusses fantasies that this event may have provoked in England. The Mailhe (MAY-leh) Amendment proposed to delay this event after the lawyer Lamoignon-Malesherbes (lah-mwan-YON-mahl-ZERB) failed to prevent it. According to legend, a Freemason shouted "Jacques de Molay, thou art revenged!" after this event. Antoine Joseph Santerre ordered a drumroll to drown out the last words of this event's victim, whom Santerre had captured during the failed flight to Varennes. This event was preceded by a procession from the Temple prison to the Place de la Révolution, where a guillotine had been set up. For 10 points, name this 1793 event that ended the Ancien Régime (ahn-see-EN RAY-zheem) by extinguishing the life of the king of France.
ANSWER: **execution** of **Louis XVI** ("the 16th") [accept equivalents such as **killing** of **Louis XVI** or **guillotining of Louis XVI**; accept **Louis Capet** or **Louis-Auguste** in place of "Louis XVI"; prompt on "trial of Louis XVI" or answers mentioning "execution or killing of Louis" without his regnal number]

13. In one piece by this composer, the *adagio sostenuto* second movement opens with a figure borrowed from the composer's earlier *Romance*. In another piece by this composer, the *allegro ma non tanto* first movement offers the soloist the choice between an ossia cadenza and a lighter cadenza. In the first eight bars of another piece by this man, which features prominently in the film *Brief Encounter*, the soloist plays bell-like chords over low Fs. David Helfgott's efforts to tackle this composer's notoriously difficult third piano concerto are depicted in the film *Shine*. This man dedicated his second piano concerto to his hypnotherapist, Nikolai Dahl. Four piano concertos were composed by, for 10 points, what Russian composer who also wrote *Rhapsody on a Theme of Paganini*?
ANSWER: Sergei **Rachmaninoff** [or Sergei Vasilievich **Rachmaninoff**]

14. This language was used to write the novel *Memoirs of a Porcupine* and an essay addressed to James Baldwin titled *Letter to Jimmy*. The organization ADELF awards annual literary prizes for works in this language, which was used to write a semi-autobiographical 1981 novel that is couched as a series of letters from a woman named Ramatoulaye (rah-mah-TOO-"lie"-ay) to her American immigrant friend Aissatou ("eye"-SAH-too). *So Long a Letter* was written in this language, as was the essay "Black Orpheus," which introduced a volume of poetry in this language compiled by Léopold Senghor. Alain Mabanckou (mah-BAHN-koo), Mariama Ba, and Aimé Césaire (SAY-zair) primarily wrote in, for 10 points, what language used by the poets of the Négritude movement and other African authors in former colonies such as Senegal and Côte d'Ivoire?
ANSWER: **French** language [or langue **français** or le **français**]

15. The constant *k* for the von Mises criterion corresponds to a quantity *described* by this term. In statics, one often graphs the moment, represented M, across a 1D beam below a quantity described by this term, represented V. A quantity described by this term is plotted positive downward to correspond to physical space for the *y axis* of a Mohr's circle plot. Young's modulus can be defined as "one plus Poisson's ratio," all times twice the modulus denoted by this term, also called the modulus of rigidity. Viscosity is defined as this type of stress, often represented tau, divided by the rate described by either strain or this term. For 10 points, what type of stress is parallel to the plane of cross section of a material, as opposed to tensile and compressive stresses, which are a type of normal stress?
ANSWER: **shear** [accept **shear** stress; prompt on "stress" before "stress"]

16. At the funeral games of Patroclus, Achilles offered the winner of one of these events a silver Sidonian mixing bowl that had been acquired from Euneus (YOO-nee-us) as payment for the captured Trojan prince Lycaon ("lie"-KAY-on). In that event, Athena sabotaged the Locrian Ajax so the victory could go to Odysseus, who had earlier defeated Icarius in one of these contests to win the hand of Penelope. In the hall of Utgard-Loki, Hugi (HOO-gee) bested Thialfi (thee-AHL-fee) in three iterations of these contests before Hugi was revealed to be a personification of thought. Schoeneus (SKEE-nee-us) used these contests to test his daughter's suitors, invariably resulting in each suitor's death until one man won by distracting his opponent with three golden apples. For 10 points, what type of contest did Atalanta lose to her future husband, Hippomenes?
ANSWER: foot**race**s [do not accept or prompt on "chariot races"]

17. The centrality of these concepts in Europe began with a translation and commentary written "in the vulgar language" by Lodovico Castelvetro. A denunciation of these concepts concludes with a misquoted passage from Virgil that translates as "ye shall sing in alternate verses; alternate verses please the muses" in the *Preface to Cromwell*. A pamphlet war over these concepts pitted Jean Mairet and Georges de Scudéry (zhahn "my"-RAY and zhorzh de skoo-DAY-ree) against an author whose work was investigated by the French Academy at the personal request of Cardinal Richelieu. The French "pièce bien faite" (p'YES byahn fay) was based on these concepts, which Pierre Corneille's (cor-NAY's) *Le Cid* was denounced for ignoring. For 10 points, what concepts, consisting of action, time, and place, underlie the ideal dramatic structure outlined in Aristotle's *Poetics*?
ANSWER: dramatic **unities** [or three **unities**; or two **unities**; or Aristotle's **unities**; or Aristotelian **unities**; or poetic **unities**; or **unities** of action, time, and place (accept in any order); accept answers mentioning **unity** singular; prompt on "Aristotelian rules" or similar answers involving "Aristotle" and the idea of "rules" before "Aristotle"]

18. The ring of the "formal" type of these things is denoted by an R followed by a double-square-bracketed x. Applying a method that adds a potentially non-integer component to these things yields an indicial equation as part of solving a differential equation with a regular singular point via the method of Frobenius. Substituting one of these things into a linear differential equation with variable coefficients allows one to find a recurrence relation to determine the solution. Taking the limit of their consecutive coefficients yields the radius of convergence. Using them to solve a differential equation involves shifting the index of summation and recognizing which function's Taylor series they correspond to. For 10 points, what constructs are the summation of sequences with exponentiated variables?
ANSWER: **power series** [prompt on "infinite series"]

19. In this colony, Andrés Novales declared himself emperor after its governor, Mariano Fernández de Folgueras, threatened to limit the number of local-born soldiers. Anticolonial activists in this territory venerated a trio of martyred priests collectively known as the GOMBURZA. In this colony, the nonviolent pro-independence groups La Solidaridad and La Liga gradually gave way to a more radical movement led by Andres Bonifacio. Galleons traveling from this colony to Acapulco fueled the worldwide silver trade. In this colony, involvement in the pro-independence Katipunan (kah-tee-POO-nahn) society led to the execution of the author of *El Filibusterismo* (fil-ih-boost-er-EEZ-moh). For 10 points, name this modern-day country where Spanish rule was opposed by Jose Rizal and Emilio Aguinaldo.
ANSWER: The **Philippines** [or Spanish **Philippines**; prompt on "Spanish East Indies" or "Indias Orientales Españolas"]

20. In this state, Michael Asher converted an art gallery into a pair of triangular rooms linked by a narrow corridor and removed the doors so that the space would always be open to the public. Pieces of glass, tile, seashells, and mirrors cover a complex of steel and concrete wire-mesh towers built by Simon Rodia in this state. Over 24 miles of nylon were installed in this state for Christo and Jeanne-Claude's *Running Fence* project. In this state, the photo series *Sallie Gardner at a Gallop*, which revealed the motion of a running horse, was produced by Eadweard Muybridge ("MY-bridge"). Dorothea Lange and Ansel Adams both documented Japanese internment at this state's site of Manzanar. For 10 points, name this American state where Adams photographed El Capitan in the Yosemite Valley.
ANSWER: **California**

TB. A group of loyalists in this city responded to the Declaration of Independence by writing and publishing a "Declaration of Dependence." Revelers dragged a miniature frigate on a cart through this city during its "Grand Federal Procession" celebrating the ratification of the Constitution. This city's Great Fire of 1776 may have been started by Continental Army sympathizers. During the American Revolution, most of the British prison ships were anchored in this city's harbor. British soldiers attempting to capture this city surprised a Continental garrison at Jamaica Pass. Nathan Hale was executed in this city, which was also the locus of a campaign that included the Battle of White Plains. For 10 points, name this city captured by the British after the Battle of Long Island.
ANSWER: **New York** City [or **NYC**]

1. A Wick rotation of a hyperbolic Feynman propagator allows one to consider elliptic operators, whose Green's functions can be expressed in terms of this solution. For 10 points each:
[10] The Minakshisundaram–Pleijel (min-AHK-shee-SOON-dah-rahm PLY-el) asymptotic expansion of what fundamental solution, often represented p or K, can be used to prove the Atiyah–Singer index theorem or compute perturbative expansions in quantum field theory and quantum gravity?
ANSWER: **heat kernel**
[10] Applying a linear partial differential operator to a fundamental solution, such as the heat kernel or a Green's function, yields this function, which is used to represent a point source in physics.
ANSWER: Dirac **delta** function
[10] For heat kernels on a Riemannian manifold, Alexander Grigor'yan developed a universal way of obtaining "upper bounds" named for this prolific German polymath because they involve an exponential similar to the normal distribution, which is often named for him.
ANSWER: Carl Friedrich **Gauss** [or Johann Carl Friedrich **Gauss**]

2. This article ends by ominously asking what will happen when "geological time catches up with our own." For 10 points each:
[10] Name this article published in the *New Yorker*'s July 2015 issue that won Kathryn Schulz a 2016 Pulitzer Prize for Feature Writing. It describes the hypothetical effects of a massive earthquake on the Pacific Northwest.
ANSWER: "The **Really Big One**"
[10] The earthquake described in "The Really Big One" would be caused by this subduction zone, which stretches from Vancouver Island to northern California. It shares its name with a hypothetical country formed by the secession of Oregon, Washington, and British Columbia.
ANSWER: **Cascadia** subduction zone
[10] A Cascadia subduction zone earthquake could totally destroy this Washington city, which built the Space Needle for the 1962 World's Fair.
ANSWER: **Seattle**

3. In a work of criticism titled for this character, William Empson argues that a poet's main defense of this tyrant is that this figure intends to abdicate, but only after the angels and mankind prove themselves. For 10 points each:
[10] Name this character whose Son defeats the rebel angels during the War in Heaven. *Paradise Lost* was written to "justify the ways of" this powerful being "to men."
ANSWER: **God** [accept *Milton's* **God**]
[10] This polemic by John Milton against the Licensing Order of 1643 argues that censorship runs counter to the fact that God endowed humans with reason, a faculty embodied by every "good Booke."
ANSWER: *Areopagitica* [AIR-ee-oh-pah-JIT-ik-a]
[10] In his *How Milton Works*, this literary critic explains that it is difficult to read Milton because the poet intends to reveal God's truth through a subjective inner vision. This man's *Surprised by Sin* also analyzes Milton.
ANSWER: Stanley **Fish** [or Stanley Eugene **Fish**]

4. Thomas Morton gave this man the nickname "Captain Shrimp." For 10 points each:
[10] Name this leader of the Plymouth Colony militia. His unsuccessful wooing of Priscilla Mullens was fictionalized in a Henry Wadsworth Longfellow poem titled for his "courtship."
ANSWER: Myles **Standish** [accept "The **Courtship of Miles Standish**"]
[10] Standish's Plymouth militia participated in this 1636-to-1638 war, fought between a colonist-Narragansett alliance and the namesake tribe. This war included the Mystic massacre and was ended by the Treaty of Hartford.
ANSWER: **Pequot** War
[10] Thomas Morton called Standish "Captain Shrimp" after Standish invaded Morton's colony in response to Morton constructing one of these objects, around which Morton hosted drunken parties for indentured servants and Native Americans.
ANSWER: **maypole**(s) [prompt on "**pole**s"]

5. A six-movement suite named for this composer includes a rigaudon [rig-oh-dohn], ends with a toccata, and was dedicated to the memory of some soldiers killed in World War I. For 10 points each:
[10] Name this French Baroque composer who was nicknamed "le Grand" and composed *The Mysterious Barricades*. He came from a prominent musical family that included his uncle Louie.
ANSWER: Francois **Couperin** (koo-per-AWN) [accept le Grand **Couperin** or *Le **tombeau de Couperin*** or *The **Tomb of Couperin***]
[10] Couperin composed many pieces for this Baroque keyboard instrument, whose strings are plucked rather than hammered, and wrote a treatise titled for the "art" of playing it.
ANSWER: **harpsichord** [or **clavecin**; accept *The **Art of Playing the Harpsichord*** or *L'**Art de toucher le clavecin***; do not accept or prompt on "clavichord"]
[10] Couperin wrote a piece entitled *Le Parnasse*, which was alternatively titled for the "apotheosis" of this other composer, who influenced Couperin with his use of the trio sonata from.
ANSWER: Arcangelo **Corelli** [accept *Le Parnasse, ou L'**Apothéose de Corelli*** or *Parnassus, or The **Apotheosis of Corelli***]

6. Answer the following about authors who inspired works by the Soviet director Andrei Tarkovsky, for 10 points each.
[10] Tarkovsky's *Solaris* was based on a novel by Stanislaw Lem (stah-NEES-waff LEM), an author from this country. Its Nobel laureates in literature include Henryk Sienkiewicz and Wislawa Szymborska (HEN-rik SHIN-kay-vitch and vis-WAH-vah shim-BOR-skah).
ANSWER: **Poland** [or Republic of **Poland**; or Rzeczpospolita **Polska**]
[10] Tarkovsky wrote a never-filmed screenplay based on the work of this German-language author, who was inspired by Matthew Lewis's *The Monk* to write *The Devil's Elixirs* and also wrote a novel about a cat named Murr.
ANSWER: E. T. A. **Hoffman** [or Ernst Theodor Amadeus **Hoffmann**; or Ernst Theodor Wilhelm **Hoffmann**]
[10] Tarkovsky's *Stalker* was based on the novel *Roadside Picnic*, written by two Soviet brothers who shared this surname. They set many of their stories in "The World of Noon."
ANSWER: **Strugatsky** brothers [or Arkady and Boris **Strugatsky**; accept **Strugatskys**]

7. A crown princess of this country was initiated into the Delta Zeta sorority while touring the U.S. and went on to become a close friend of Franklin and Eleanor Roosevelt. For 10 points each:
[10] Name this country that was ruled by the Labour Party after World War II until 1963, when a series of accidents involving the Kings Bay Coal Mining Company allowed the Conservative John Lyng to take power.
ANSWER: **Norway** [or Kingdom of **Norway**; or **Norge**; or **Noreg**]
[10] In 1973, the Moroccan waiter Ahmed Bouchiki was killed in this Norwegian city by Mossad agents who mistook him for a leader of Black September. This city also hosted the 1994 Winter Olympics.
ANSWER: **Lillehammer**
[10] Norway's economy rose from the 1960s onward following the discovery of this natural resource in the North Sea. The *Alexander L. Kielland,* a rig for drilling this resource, disastrously capsized in 1980 in the Ekofisk field.
ANSWER: crude **oil** [or **petroleum**]

8. A 1991 paper by J. L. Bowman, D. R. Smyth, and E. M. Meyerowitz proposed the current model for this process in *Arabidopsis thaliana* (ah-RAB-id-OP-sis TAHL-ee-ah-na). For 10 points each:
[10] Name this process that is regulated by homeotic (hoh-mee-OT-ik) genes like AGAMOUS and DEFICIENS, which have overlapping expression across four different whorls of the meristem, according to the ABC model of it.
ANSWER: **flower**ing [or **flower** development; accept equivalents mentioning **flower**s or word forms thereof]
[10] *Arabidopsis* was also used in the discovery of this protein-conjugated pigment, which undergoes a cis–trans isomerization under red light at 666 nanometers. It governs photo·periodism in most flowering plants.
ANSWER: **phytochrome** red [or **Pr**; do not accept or prompt on "phytochrome far red" or "Pfr," though]
[10] Phytochrome regulates this system in plants by detecting sunlight and darkness. This system keeps organisms on a roughly 24-hour biological clock and is regulated by melatonin in humans.
ANSWER: **circadian rhythm**s [or **circadian** clock]

9. This psychologist's work at the University of Pennsylvania inspired Martin Seligman's theories on learned helplessness. For 10 points each:
[10] Name this psychologist who, along with Albert Ellis, pioneered cognitive-behavioral therapy. He lends his name to a multiple-choice self-report test that Maria Kovacs later adapted for use on children.
ANSWER: Aaron **Beck** [accept **Beck** inventory]
[10] Beck names an inventory that measures the severity of this mental disorder, which can be treated with drugs like Zoloft or Prozac.
ANSWER: **depression** [or major **depressive** disorder; accept answers mentioning forms of the word **depress**; prompt on "MDD"]
[10] Beck was influenced by this psychologist's idea that people organize thoughts into categories called schemas. This psychologist fashioned himself to be a "genetic epistemologist."
ANSWER: Jean **Piaget**

10. For 10 points each, answer the following about choreographers who worked in Hollywood.
[10] This dancer and choreographer partnered with Ginger Rogers in many Hollywood musicals, including *The Gay Divorcée* and *Top Hat*.
ANSWER: Fred **Astaire** [or Frederick **Austerlitz**]
[10] Bob Fosse (FAH-see) choreographed and directed this 1979 film about Joe Gideon, a dancer coming to terms with his impending death. It takes its title from the song performed by Velma Kelly at the beginning of *Chicago*.
ANSWER: *All That Jazz*
[10] This Hollywood choreographer was known for creating excessive dance numbers, often featuring showgirls arranged in complicated geometric patterns. His choreography appeared in the films *42nd Street* and *The Gold Diggers of 1933* and was parodied at the end of Mel Brooks's *Blazing Saddles*.
ANSWER: Busby **Berkeley** [or Berkeley William **Enos**]

11. This poem's speaker reflects that, although "a year has gone, as the tortoise goes, / heavy and slow," still "the same rose blows, and the same sun glows, / and the same brook sings of a year ago." For 10 points each:
[10] Name this poem that reflects on recent changes in the speaker's life in the presence of the title creatures. At the end of this poem, the speaker reveals that he is unable to forget a girl singing "Mistress Mary is dead and gone!"
ANSWER: "**Telling the Bees**"
[10] In this poem, a "dear aunt" calls up "her girlhood memories" of "huskings and the apple-bees" while sitting by the fireplace with the rest of a family, whose members tell each other stories while waiting out a winter storm.
ANSWER: "**Snow-Bound**: A Winter Idyl"
[10] This American "Quaker poet" of "Telling the Bees" and "Snow-Bound" also wrote about Barbara Frietchie, a Marylander who tells Stonewall Jackson to "shoot, if you must, this old gray head, but spare your country's flag."
ANSWER: John Greenleaf **Whittier**

12. The typical plot in cyclic voltammetry has this quantity on the y-axis and electric potential on the x-axis. For 10 points each:
[10] Name this quantity that, when multiplied by time, gives the amount of charge added during a coulometric titration. This quantity is directly measured in amperometry.
ANSWER: electric **current** [or **I**]
[10] To determine the mass of metal electroplated in an electrolytic cell, you would multiply the current by time, then multiply by the equivalent weight of the product, and divide the result by this constant.
ANSWER: **Faraday**'s constant [or **F**]
[10] According to this principle, the electric current decreases when a circuit placed in electrolyte solution is interrupted by a particle of fixed volume that displaces the electrolyte. It's the basis for a namesake cell counter.
ANSWER: **Coulter** principle [or **Coulter** counter]

13. Assisted by the preacher Fulk of Neuilly (noo-YEE), a count of this region named Theobald III gathered together a large number of knights and leaders at Écry-sur-Aisne (AY-cree soor EN), where they pledged to join the Fourth Crusade. For 10 points each:
[10] Name this French region that was also the site of, and gives its name to, a set of six annual mercantile gatherings where goods from all over Europe, such as Flemish cloth, were traded.
ANSWER: **Champagne** [accept **Champagne** fairs]
[10] After Theobald IV inherited the kingdom of Navarre through his mother, the counts of Champagne ruled it until a woman with this name married Philip IV. Another woman with this name was known as the "Maid of Orléans."
ANSWER: **Joan** [accept **Joan** I of Navarre or **Joan** of Arc or **Jeanne** d'Arc]
[10] This was the type of event at which Theobald III organized the launch of the Fourth Crusade. Henry II of France died after suffering a wound and subsequent infection at one of these events.
ANSWER: **tournament**s [or **tourney**s; accept **joust**ing tournaments or other answers mentioning **joust**ing]

14. This philosopher had a penchant for constantly revising his definitions in light of counterexamples, which humorously led to his name becoming a verb for making repeated small changes to a definition. For 10 points each:
[10] Name this philosopher who questioned whether moral responsibility was compatible with determinism or indeterminism in *Freedom and Action*. He also outlined a metaphysics of persons in his work *Person and Object*.
ANSWER: Roderick **Chisholm**
[10] Chisholm's *Person and Object* parodies this philosopher's *Word and Object*. This philosopher attacked the synthetic–analytic distinction in a critique of positivism titled *Two Dogmas of Empiricism*.
ANSWER: W. V. O. **Quine** [or Willard Van Orman **Quine**]
[10] In "Human Freedom and the Self," Chisholm largely rejects this philosophical position, which argues that humans can have free will even in a deterministic universe.
ANSWER: **compatibilism** [accept word forms such as **compatibilist**]

15. Answer the following about religious "third ways," for 10 points each.
[10] For much of the latter half of the 20th century, this country's official religious policy was defined by the "Third Universal Theory," which was outlined in Muammar Gaddafi's *Green Book*.
ANSWER: **Libya**
[10] This theologian claimed that Anglicanism could take a "via media," or "middle way," between Catholicism and Protestantism, as one of the main Tractarians of the Oxford movement. He later converted to Catholicism.
ANSWER: John Henry **Newman** [or Cardinal **Newman**]
[10] This thinker expanded on the Buddha's idea of a "middle path" between permanent existence and permanent nonexistence in his *Fundamental Verses on the Middle Way*. He was the founder of the Madhyamaka (mahd-HYAH-mah-kah) school.
ANSWER: **Nagarjuna** (nah-GAR-joo-nuh)

16. This character, who skims an unexpurgated edition of *The Arabian Nights* for the lewd passages, is fascinated with the black teeth of his father-in-law's mistress. For 10 points each:
[10] Name this character who spends the later chapters of the novel in which he appears sleeping with a half-Korean, half-Russian prostitute named Louise.
ANSWER: **Kaname** [kah-nah-may]
[10] Kaname is the protagonist of *Some Prefer Nettles*, a novel by this Japanese author of *The Makioka Sisters*.
ANSWER: Junichiro **Tanizaki** [accept names in reverse order]
[10] Kaname sees traditional *bunraku* plays at Awaji Island and in this nearby city, which is where *bunraku* was invented. Chikamatsu Monzaemon moved from Kyoto to this city in the Kansai region to write plays.
ANSWER: **Osaka** [or **Osaka**-shi]

17. *Note: do not read alternate answers out loud.* Answer the following about the 1634 painting *Flora*, for 10 points each.
[10] It is alternately titled for this Dutch woman "as Flora"; she is also depicted along with a self-portrait of her husband in the 1635 painting *The Prodigal Son in the Tavern*.
ANSWER: **Saskia** van **Uylenburgh** [accept either underlined portion; accept, but <u>do not reveal</u>, "**Rembrandt's wife**" or similar answers]
[10] Saskia was depicted as Flora by this man, her husband, who also painted *The Night Watch*.
ANSWER: **Rembrandt** [or Rembrandt Harmenszoon van **Rijn**]
[10] Chemical analysis by Herrmann Kühn revealed that Rembrandt achieved the yellowish tint in *Flora* with the use of ochre and this other yellow pigment, which was introduced to Europe around 1600. It comes from tree resin found in India, Sri Lanka, Thailand, and Cambodia, the last of which gives it its name.
ANSWER: **gamboge** (gam-BOHZH)

18. Léon Teisserenc de Bort (LAY-awn TAY-sehr-"ankh" de BORT) pioneered the use of these objects, which he used to discover the tropopause. For 10 points each:
[10] Name these unmanned objects that are "released" and then used to track atmospheric variables such as temperature, humidity, and wind speed. They're used at lower altitudes than sounding rockets or satellites.
ANSWER: weather **balloon**s [or sounding **balloon**s; or high-altitude **balloon**s]
[10] This term denotes the small expendable instrument package suspended below a weather balloon.
ANSWER: **radio·sonde**s [or **rawinsonde**s (RAY-win-sonds)]
[10] This space scientist developed "rock·oons," which are sounding rockets that are carried into the upper atmosphere by balloons before being ignited. He names the radiation belts of magnetically trapped, highly energetic charged particles that protect the Earth's atmosphere from utter destruction by the solar wind.
ANSWER: James **Van Allen** [or James Alfred **Van Allen**; accept **Van Allen** (radiation) belt(s)]

19. For 10 points each, answer the following about Swahili-speaking sultanates.
[10] A Swahili-speaking sultanate based on this archipelago capitulated in a war against Britain after a mere 38 minutes of bombardment. In 1964, it was merged with Tanganyika to form the United Republic of Tanzania.
ANSWER: **Zanzibar**
[10] Before the British arrived, Zanzibar was frequently bullied by this European empire, which extracted tribute from most of the Swahili coast cities. This empire also converted the Kongo Kingdom to Christianity.
ANSWER: **Portugal** [or **Portuguese** Empire or Império **Português**; accept Kingdom of **Portugal** or Reino de **Portugal**]
[10] This medieval sultanate in modern-day Tanzania was founded by exiled Persian royals. The capital of this sultanate, called its namesake "Kisiwani," was the nexus of a trade route linking the Indian Ocean with inland cities like Great Zimbabwe.
ANSWER: **Kilwa** Sultanate

20. In a ballad titled for a "lytell geste" ("little jest") of this figure, he and his companions shelter at the castle of Sir Richard at the Lee and later rescue Richard when he is captured while hunting. For 10 points each:
[10] Name this legendary English archer whose outlaw followers included Much the Miller's Son and Will Scarlet. In the "lyttell geste," he antagonizes and kills the sheriff of Nottingham before entering the service of the king.
ANSWER: **Robin Hood** [or **Robin of Locksley**; or **Robin Hode**; prompt on "Robin" or "Hood" or "Locksley"]
[10] At the end of the Geste, Robin dies in this manner at the hands of his cousin, a prioress who is conspiring with her lover, Roger of Doncaster. In the Grail legends, Sir Percival's sister Dindrane dies in this manner.
ANSWER: **blood loss** [accept equivalents such as being **bled** to death or **bleed**ing to death]
[10] Robin Hood's lover, Maid Marian, is often linked to this spring holiday, possibly through the "Mad Morion" dance associated with it. *The Golden Bough* discusses the "Queen" of this holiday as evidence of tree worship.
ANSWER: **May Day** [prompt on "May"]

Extra. Both Robert Wald's *General Relativity* and Charles Misner, Kip Thorne, and John Wheeler's *Gravitation* use this convention for the metric signature. For 10 points each:
[10] Identify this metric signature associated with the Clifford algebra three comma one, an unpopular choice but the one that makes the most physical sense.
ANSWER: **minus, plus, plus, plus** [do not accept or prompt on "plus, minus, minus, minus"]
[10] For the Clifford algebra "three comma one," the gamma matrices have this property, as opposed to being complex.
ANSWER: **real**
[10] The Clifford algebra one comma three, on the other hand, uses the algebra of two-by-two matrices with these numbers for components. These numbers are the normed division algebra over the reals for four dimensions.
ANSWER: **quaternion**s