

1. A rare form of encephalitis caused by this virus is typically localized to the temporal lobes and, when untreated, is 70% fatal. Like VZV, this virus causes Cowdry type A inclusion bodies. This virus has glycoprotein C and glycoprotein D on its surface, which it uses to bind to entry receptors. Giant cells appearing on a Tzanck smear are characteristic of infection with it, which causes whitlows on the hands. This virus, whose genome codes for latency-associated transcript and whose replication is inhibited by valacyclovir and acyclovir, typically infects the sacral ganglion or the trigeminal ganglion, and typically lies dormant until periods of stress. For 10 points, name this virus responsible for oral and genital lesions commonly called cold sores.

ANSWER: herpes simplex virus [or HSV-1 or HSV-2]

2. This man went to Crete to celebrate the funeral of his grandfather Catreus, a descendant of Minos. One of his sons is named "great sorrow" because that son was born from his affair with a concubine. He kills Euphorbus while moving Patroclus' body off the battlefield, and also murders Deiphobus at Troy. Athena convinces Pandarus to wound this hero in Book IV of the *Iliad*, ending a truce. He wrestled with Proteus while in Egypt. Odysseus swore an oath of loyalty to this man before this man won his wife in a game of pulling straws. Tyndareus cedes the throne to this son of Atreus and brother of Agamemnon. Neoptolemus marries this man's daughter Hermione. For 10 points, name this king of Sparta, the original husband of Helen.

ANSWER: Menelaus

3. This man wrote a story in which the protagonist prepares rabbit for characters whose addresses she records. That story of his ends with the title woman setting fire to her own home in order to kill young men. In a story by this author, the protagonist tells the title character "I am not a woman, I am only a strumpet!" before killing him. This man wrote a story in which Rachel rings a church bell after stabbing an arrogant German captain with a cheese knife. Another of his stories ends with Mathilde discovering to her horror that the title object which she borrowed from Madame Forestier was only a cheap imitation. For 10 points, name this French author of "Mademoiselle Fifi" and "The Necklace."

ANSWER: Guy de Maupassant

4. The Guggenheim-Smith equation gives this quantity as proportional to the square root of the molar orientation polarizability. The direction of this vector quantity determines the kappa squared term in FRET. For a molecule, this quantity changes when it undergoes scissoring, wagging, or rocking. A selection rule for a quantum harmonic oscillator is that the integral of the operator for this quantity cannot be zero. The cross product of this quantity with electric field equals torque, and the dot product equals negative potential energy. The ratio of this quantity to the electric field has units volume and is called polarizability. A molecule is polar if this quantity is nonzero. For 10 points, name this quantity, measured in Debyes, that is the charge times the separation distance for two oppositely charged particles.

ANSWER: electric dipole moment [or transition dipole moment; do not accept "magnetic dipole moment"]

5. This American's best-known project featured Ebert Ludovicus Viele as the engineer-in-chief. Near the end of his life, this man was ironically committed to McLean Hospital in Waverly, Massachusetts, whose grounds he had designed. He described antebellum Southern poverty in his book *Journeys and Explorations in the Cotton Kingdom*. This man, who had no experience in design at the time, met his English-born partner thanks to his mentor Andrew Jackson Downing. With that partner, this architect used the Greensward Plan to create a location with such landmarks as Bethesda Fountain and the Sheep Meadow. He partnered with Calvert Vaux to create Prospect Park. For 10 points, name this American landscape architect who was a co-designer of Central Park.

ANSWER: Frederick Law **Olmsted**

6. A Jonathan Swift poem about one of these events jokes that the gods should "split" Stella's "beauty, size, and years, and wit." Walter Savage Landor wrote, "Nature I loved, and next to nature, art" in a poem about one of these events. Lord Byron's final poem, written in Sapphics, is titled for one of these events. During one of these events, Rachel Verinder acquires a cursed diamond called the Moonstone. Meg claims to have been the "belle of the ball" during one of these events that features a blackout during a game of blindman's bluff, after which Stanley attempts to rape Lulu. For 10 points, identify this type of special occasion for which Stanley receives a party in a Harold Pinter play.

ANSWER: **birthdays** [or **birthday** parties; or obvious equivalents]

7. One military commander in this conflict claimed "we shoot at everything that moves... even at things that don't move." The German Rolf Steiner and the Dutch Taffy Williams were mercenaries who fought in this conflict. During this conflict, the port city of Calabar was captured in Operation Tiger Claw. During this conflict, the Red Cross set up a base at Cotonou in a neighboring country to begin flying in food supplies in a massive airlift, which inspired Bernard Kouchner to found Doctors Without Borders. This conflict was precipitated by the formation of a state by Odumegwu Ojukwu (oh-du-MEG-woo oh-JOO-kwoo) for the Igbo people, but was brutally crushed by the federal government under Jack Gowon (GO-wan). For 10 points, identify this four year long conflict which was caused by the 1967 secession of the Republic of Biafra.

ANSWER: **Nigerian Civil** War [or **Biafran** War before mention]

8. A negative Biuret's test appears this color. It's not green, but a light of this color is used to illuminate SYBR green stained gels, and a fluorescent protein of this color serves as the donor protein in a commonly used FRET pair, with YFP. Proteins turn this color in the Bradford assay, which turns a dye named for Coomassie from brown to this color. Indium and arsenic give this color on a flame test, and due to electron solvation, solutions of alkali metals in ammonia have this color. A universal indicator takes on this color between pH 8 and 11, and particular bromophenol and bromothymol derivatives used as indicators turn this color at basic pH. Pigments of this color are often made from cobalt salts. For 10 points, name this color, which in ball-and-stick organic models is often assigned to nitrogen.

ANSWER: **blue** [or **cyan**; or **purple**; or **violet**]

9. This man anticipated Saul Kripke when he used "Dartmouth" as an example of names of purely denotative nature. He proposed inculcating democratic values among workers by making firms industrial cooperatives in his widely used textbook of political economy. This thinker defended a theory of ethics against claims it was a "doctrine worthy only of swine," arguing that humans were capable of more than base, physical happiness. In another book, this man claimed power could only be exercised against another's will if the purpose was to protect others. This creator of the harm principle wrote a book arguing for women's suffrage which he co-wrote with his wife, Harriet Taylor. For 10 points, name this author of *On Liberty*.

ANSWER: John Stuart Mill

10. The seventeenth century organist Andreas Werckmeister devised four methods, denoted Roman numeral I through IV, of performing this action. Slight differences known as "commas" may result from the "Pythagorean" approach to performing this activity. Performing this action in a way that gives ratios of small whole numbers results in II. The "well temperament" referred to in the title of Bach's famous composition refers to a style of performing this action. The practice of intentionally performing this action in a non-standard way is termed scordatura. Orchestras perform this action using the concert A played by the oboe as a reference. For 10 points, name this practice of adjusting the pitch of an instrument, commonly accomplished using a namesake fork.

ANSWER: tuning [or tune; or temperament until it is read]

11. Operation Flawed Eagle arrested a general of this ethnicity. Sarah Reyes introduced a bill urging her state to add information about this ethnic group's participation in the Secret War to public school curriculum. A family with this ethnicity whose daughter suffers from epilepsy is the subject of the medical anthropology book *The Spirit Catches You and You Fall Down*, which describes the shamanism prevalent among this ethnic group. The largest metro areas with people from this ethnic group are Fresno and the Minneapolis-St. Paul area. The film *Gran Torino* depicted Clint Eastwood's character interacting with neighbors of this ethnicity. For 10 points, name this Asian ethnic group, whose immigrants to the U.S. were mostly from Thailand and Laos.

ANSWER: Hmong [prompt on Miao; prompt on Mong; prompt on Vietnamese; prompt on Chinese; prompt on Laotian; prompt on Thai]

12. Joshua Reynolds added Gothic architecture to this man's masterpiece in a parody. A student of this artist painted frescoes such as *Fall of the Giants from Mount Olympus* for the Palazzo de Te, and that student also designed the Palazzo itself. In his only major mythological scene, this artist depicted three putti training their bows on a nymph undergoing apotheosis. This teacher of Giulio Romano placed a tondo with the inscription "Seek Knowledge of Causes" above a painting that had an architectural background created by Bramante, who is represented as Euclid or Archimedes. He included two bored-looking cherubim at the bottom center of his *Sistine Madonna*. For 10 points, name this painter who included himself amongst classical luminaries in *The School of Athens*.

ANSWER: Raphael Sanzio da Urbino [or Raphael Sanzio; prompt on da Urbino]

13. This author wrote that, "without Love, the world isn't the world, and Rome can't be Rome" in an elegy whose speaker pleads, "Streets, say a word!" Hafiz influenced him to write the *West-Eastern Divan*. In a classic line, this author's began one poem, "Do you know the land where the lemon trees blossom?" One of this author's best-known poems opens by asking, "Who rides so late through the night and wind?" This author described a father who fails to prevent the death of his son on horseback at the hands of the title Elf-King. He also wrote a verse drama in two parts in which the title character is followed by a poodle that turns out to be Mephistopheles. For 10 points, name this German poet who wrote *Faust*.

ANSWER: Johann Wolfgang von Goethe

14. An uprising during person's reign saw rebels tear down fences and capture Norwich under Robert Kett. The Duke of Somerset won a decisive victory at Pinkie Cleugh as part of a conflict stemming from a proposed marriage alliance to this person. This king was heavily influenced by Thomas Cranmer, and his reign saw the introduction of the Book of Common Prayer. A "devise for the succession" written by this person was part of the Duke of Northumberland's attempt to enthrone Lady Jane Grey after this ruler died of tuberculosis at age fifteen. His pro-Protestant policies were reversed by his half-sister Mary I. For 10 points, name this short-lived successor to Henry VIII.

ANSWER: Edward VI

15. Lawson's conjecture states that one of these objects named for Clifford is the only one that is minimally embedded in S^3 . The rank of a compact Lie group is equal to the dimension of the maximal one of these entities in G . The n -dimensional one of these entities is defined by finding the product space of n circles. Seven colors are required to color the surface of one of these entities, and the volume of one of these entities is equal to 2π squared times outer radius times inner radius squared. For 10 points, name this surface that is famously homotopic to a coffee cup, since both have a single hole, a surface of revolution generated by rotating a circle through an axis not intersecting and co-planar with it.

ANSWER: torus [prompt on "donut"]

16. This city became the center of an empire in which the ivory-paneled Lorsch gospels were created, in part because of hot springs which once served the Roman baths of Aquae Granni. Pairs of one secular noble and one bishop, known as *missi dominici*, were sent out from this city, where spaces between Latin words became a standard part of a new miniscule script. Odo of Metz was the architect for this city's octagonal Palatine chapel. A court in this city included a scholar from York named Alcuin, as well as Einhard, who chronicled a ruler who settled here though he was crowned by Pope Leo III as "king of the Romans." For 10 points, name this site of Charlemagne's palace, where a later treaty ended the War of Austrian Succession.

ANSWER: Aachen [or Aix-la-Chapelle]

17. This character is compared to “Marius brooding among the ruins of Carthage.” This character uses an old bandanna handkerchief as a savings bank and under his desk he stores a newspaper containing a morsel of cheese. He seems to subsist entirely on the snacks provided him by a youthful coworker. The narrator says “Ah humanity!” shortly after the death of this man, whom he speculates derived existential angst from his previous job in a dead letter office. This colleague of Nippers and Turkey constantly tells people, including his employer, that he would “prefer not to” do tasks. For 10 points, name this title character, a “scrivener” in a Herman Melville story.

ANSWER: **Bartleby**

18. According to an apocalyptic prophecy in the Book of Zechariah, God will stand on this place and split it in two. In the Old Testament, this location was known as Har HaMashchit because of the corruption and idol worship that took place there. This place lends its name to the last of the Five Discourses of Matthew, an apocalyptic narrative by Jesus. In real life, this place is the site of the oldest Jewish cemetery. The Latin term *Flevit super ilam* denotes Jesus's weeping at this place, where he later ascended to heaven. For 10 points, identify this elevated region from which Christ descended into Jerusalem, which was home to numerous groves of a namesake tree.

ANSWER: **Mount of Olives** [or Mount of **Olivet**; or **Har HaZeitim**; accept **Har HaMaschit** before mentioned]

19. An act passed as a direct result of this event was upheld in the case *Morrison v Olsen*. The person who ended this event claimed in a memoir that he was promised a Supreme Court seat in exchange for his cooperation. This event happened after its main target declined an offer to have a Democrat from Mississippi arbitrate on pieces of evidence. The target of this event was offered the Stennis Compromise by its instigator. During this event, William Ruckelshaus and Elliot Richardson resigned before Robert Bork finally fired the special prosecutor. For 10 points, name this event which began with the attempted firing of Archibald Cox by Richard Nixon, a notable part of the Watergate Scandal.

ANSWER: **Saturday Night Massacre** (Prompt on “Watergate” or anything similar)

20. Paul Baran and Paul Sweezy argued there would be a constantly increasing surplus in this type of capitalism. Paul Milgrom and John Roberts showed this condition could be maintained through limit pricing. In a market with durable goods, the Coase conjecture holds that prices under this condition will be identical to prices in very different circumstances. Markets in this condition have a Herfindahl-Hirschman Index measure of 10,000. Telecommunications and other utilities are often considered “natural” types of this condition because of the high fixed costs and barriers to entry. In this market structure, prices are generally set above marginal cost, leading to deadweight loss. For 10 points, name this condition where there is only one firm in a market.

ANSWER: **monopoly**

21. A set of conditions developed by this physicist for two matrices determines whether they are pseudoinverses. A notation of which this physicist is the second namesake simplifies Ricci's notation by using two-component spinors and was developed with Ezra Newman. His proposal that singularities except the Big Bang exist outside an event horizon is the cosmic censorship hypothesis. This physicist proved that an initial cosmological singularity exists even in an inhomogeneous universe, which was extended with another mathematician to show that some form of geodesic incompleteness occurs in all black holes. Those results are a set of singularity theorems developed with Stephen Hawking. For 10 points, name this British physicist who also developed a namesake aperiodic tiling.

ANSWER: Roger **Penrose**

22. This literary work's title character throws a cannon into the sea for being a dishonorable weapon. One character in this work is saved on the island of Ebuda, after which she gets an invisibility-granting ring. That woman in this 46-section work carves her name in a tree next to Medoro's name before they elope to India. This work follows up on an unfinished epic about the title character in love, by Matteo Boiardo. A home for lost objects is found on the moon in this work, which Astolfo reaches by flying Elijah's chariot there. In this poem, Ruggiero rides a hippogriff as he rescues Angelica, a woman who jilts the title knight. For 10 points, name this Italian epic about a paladin of Charlemagne gone mad, by Ludovico Ariosto.

ANSWER: **Orlando Furioso**

23. The proposals of Norris Brown were eventually incorporated into this legislation, which was upheld in *Brushaber v. Union Pacific*. *Eisner v. Macomber* ruled that it could not apply to pro rata stock dividends, and *Commissioner v. Glenshaw Glass Co* stated that it applies to punitive damages. A conspiracy theory states that this amendment and all laws passed pursuant to it are invalid because Ohio did not properly ratify it. It nullified *Pollock v Farmers Loan and Trust*. This amendment was originally proposed by Nelson Aldrich, and its ratification was immediately followed by the passage of the Revenue Act. For 10 points, name this Constitutional amendment which created the income tax.

ANSWER: **Sixteenth** Amendment to the United States Constitution [prompt on anything involving **income tax**]

1. Because her bluish, ghostly appearance shocked viewers, the portion of this painting depicting the English singer May Milton was cut out, though it was later re-attached. For 10 points each:
[10] Name this painting in which three men and two women sit around a table in a famous cabaret in Montmartre.

ANSWER: *At the Moulin Rouge*

[10] This French Post-Impressionist painted *At the Moulin Rouge* and created many posters of the establishment and its dancers. He was also very short.

ANSWER: Henri Marie Raymond de Toulouse-Lautrec-Monfa

[10] One such Toulouse-Lautrec poster, which incorporates many strange yellow blobs, depicts this dancer alongside her contorted male partner "Valentine the Boneless." This supposed creator of the can-can took an unflattering stage name meaning "the glutton."

ANSWER: La Goulue [or Louise Weber]

2. Several small roles in this play are assumed by a sporadic narrator called the Common Man. For 10 points each:

[10] Name this play by Robert Bolt, which shows the downfall and execution of Sir Thomas More during the reign of Henry VIII.

ANSWER: A *Man for All Seasons*

[10] In *A Man For All Seasons*, More says he would give even this figure the benefit of law, rather than "cut down every law in England" to defeat him. Blake said that Milton was "of [this figure's] party without knowing it" while writing *Paradise Lost*.

ANSWER: the Devil [or Satan; or Lucifer]

[10] This Booker-winning 2009 historical novel by Hilary Mantel, titled for the Seymour family estate, ends with Thomas More's beheading. Its 2012 sequel, *Bring Up the Bodies*, also won a Booker.

ANSWER: *Wolf Hall*

3. Organophosphate pesticides inhibit this enzyme, which can be re-activated by pralidoxime. For 10 points each:

[10] Name this protein found in a post-synaptic membrane that is responsible for cleaving a neurotransmitter in the neuromuscular junction. This enzyme is notably inhibited by several different chemical weapons.

ANSWER: acetylcholinesterase [or AchE; do not accept "ACh" or "acetylcholine"]

[10] Acetylcholinesterase inhibitors are often used to treat this autoimmune disease which targets acetylcholine receptors in the neuromuscular junction.

ANSWER: myasthenia gravis

[10] A disease similar to myasthenia gravis, called Lambert-Eaton syndrome, targets voltage-gated channels that conduct this element. The plus-two ion of this element is stored in the sarcoplasmic reticulum and is responsible for activating protein kinase C.

ANSWER: calcium

4. In the Treaty of Onate, this emperor gave Philip III undisputed control of Habsburg holdings along the Spanish Road. For 10 points each:

[10] Name this Holy Roman Emperor who succeeded Matthias.

ANSWER: **Ferdinand II** [prompt on **Ferdinand**]

[10] Speculation abounds that Ferdinand II himself ordered the hit on this favored general of his, who alternated head command duty with Tilly and got smashed at the Battle of Lutzen.

ANSWER: Albrecht Wenzel Eusebius von **Wallenstein** [or von **Waldstein**]

[10] This 1629 decree of Ferdinand attempted to roll back the first decade of the Thirty Years War by restoring the Peace of Augsburg, infuriating Protestants who would have lost territory.

ANSWER: **Edict of Restitution**

5. This thinker argued that an interconnected society brings about specialization in jobs in his *The Division of Labor in Society*. For 10 points each:

[10] Name this French sociologist.

ANSWER: Emile **Durkheim**

[10] This other Durkheim book examines the origins of totemism, including among Australian aborigines.

ANSWER: *The **Elementary Forms of Religious Life***

[10] Slaves and others subject to "excessive regulation" and "pervasive oppression" may engage in this form of suicide identifies in Durkheim's study of the phenomenon.

ANSWER: **fatalistic** suicide

6. Answer the following about black historians, for 10 points each.

[10] This black historian and professor, who died in 2009, helped write the brief for *Brown v. Board of Education*. He continually updated his history book, *From Slavery to Freedom*.

ANSWER: John Hope **Franklin**

[10] Franklin and W.E.B. DuBois criticized this once-dominant school of Reconstruction historiography, which blamed black politicians for the failure of the period.

ANSWER: **Dunning** school

[10] Reconstruction was far less severe than it would have been if this bill, pocket vetoed by Abraham Lincoln, had passed. This plan required an "Ironclad Oath" from the majority of a state's population.

ANSWER: **Wade-Davis** Bill

7. Name some things relating to groups with eight members, for 10 points each.

[10] The bases of this extension of the complex numbers can be treated as a group. This system adds j and k to i as square roots of negative one and is non-commutative.

ANSWER: **quaternion** group

[10] Another group with eight members is the set of symmetries of the square. Symmetries of n -gons are these types of groups, usually written D -sub- n or D -sub-two- n .

ANSWER: **dihedral** groups

[10] The quaternion and dihedral group possess this property, as do all groups by definition. In objects with this property, parentheses may be moved without affecting the outcome of the operations.

ANSWER: **associative** property

8. After this man's death, Lord Byron wrote the lines "stop, traveler, and piss," about his grave. For 10 points each:

[10] Name this British politician who once fought a duel with George Canning in 1809. The Foreign Secretary who represented Britain at the Congress of Vienna, he killed himself in 1822.

ANSWER: Robert Stewart, Viscount **Castlereagh** [or Robert **Stewart**]

[10] Castlereagh is mentioned in Percy Shelley's poem "The Masque of Anarchy," which is mostly about this 1819 massacre of protesters in Manchester. Its name references a Napoleonic battle.

ANSWER: **Peterloo** Massacre

[10] This one-time Prime Minister pushed through the repressive Six Acts in the wake of the Peterloo Massacre. The Treaty of Amiens was passed during his time as Prime Minister.

ANSWER: Henry Addington, Viscount **Sidmouth** [or Henry **Addington**]

9. Answer the following about the rollout of the Affordable Care Act, for 10 points each.

[10] This former Secretary of Health and Human Services directed the implementation of the Affordable Care Act and presided over the ACA website's disastrous rollout.

ANSWER: Kathleen **Sebelius**

[10] In June 2013, Sebelius declared that this number of enrollees would constitute a success for the ACA, a number which was in fact slightly exceeded.

ANSWER: **7 million**

[10] President Obama has nominated Sylvia Burwell, who formerly headed this office, to replace Sebelius as the new Secretary of Health and Human Services.

ANSWER: **Office of Management and Budget** [or **OMB**]

10. For 10 points each, answer these questions about encounters which Willy Loman has in Arthur Miller's *Death of a Salesman*:

[10] This character, Willy's oldest son, calls him a "fake" and turns down his football scholarship to UVA after he sees Willy's adulterous affair with a stocking-obsessed woman.

ANSWER: **Biff** Loman

[10] This older brother appears in Willy's hallucinations, where he gloats about his business successes. He wound up in Africa trying to reach Alaska.

ANSWER: Uncle **Ben** Loman

[10] A recording of Howard's son reciting this information plays in the background as Willy speaks to Howard at the sales agency to try and regain his job.

ANSWER: the **capital** cities of each **state** in alphabetical order [or **state capitals**; prompt on **capital** cities]

11. A February 2014 cover story in *The Economist* explained this country's "century of decline," since it was one of the fastest-growing states in the world in 1914. For 10 points each:

[10] Name this second-largest Latin American country.

ANSWER: Argentina

[10] Argentina's cuisine notoriously features a large amount of this type of meat, in no small part due to its gaucho heritage. It recently lost the title of world's largest per capita consumer of this foodstuff to Uruguay.

ANSWER: beef [or asado]

[10] This popular drink in Argentina and other South American countries is made from caffeine-rich leaves of a plant in the *Yerba* genus. Drunk from a gourd, this beverage is called tereré when served cold.

ANSWER: mate [or Yerba mate]

12. This man's protagonists include Saleem Sinai, who uses his large nose to telepathically connect to hundreds of people who were born with special powers on the eve of India's independence. For 10 points each:

[10] Name this author of *Midnight's Children*, who took the pseudonym Joseph Anton to escape a *fatwa* put on him by the ayatollah of Iran.

ANSWER: Salman Rushdie

[10] This London-based voice-actor of Indian descent becomes an analogue of the devil in Rushdie's novel *The Satanic Verses*.

ANSWER: Saladin Chamcha [or Saladin Chamcha; or Salahuddin Chamchawala]

[10] In this other Rushdie novel, the rock musician Ormus Cana and the half-Indian singer Vina Apsara become 20th-century analogues of Orpheus and Eurydice, though she also revives him twice.

ANSWER: *The Ground Beneath Her Feet*

13. Like the Warsaw Pact, this organization's alternate name of Manila Pact reflected its founding in Manila. For 10 points each:

[10] Identify this organization aimed at combating communist influence in South Vietnam, Laos, Cambodia, the Philippines, Australia and New Zealand, whose main architect was John Foster Dulles.

ANSWER: SEATO [or Southeast Asia Treaty Organization]

[10] Thailand joined SEATO after learning of the creation of the "Thai Autonomous Region" in this province of China, although it does not even border it. Mao Zedong first studied politics in its capital of Chansha, which was later entirely burned to the ground after Chiang Kai-Shek thought it was about to fall to the Japanese.

ANSWER: Hunnan Province

[10] SEATO did not have a mutual defense clause in case of attack, unlike this other organization between the United States and most countries in Western Europe, on the opposite side of the Warsaw Pact.

ANSWER: NATO [or North Atlantic Treaty Organization]

14. The existence of galaxies other than this one was the subject of the Shapley-Curtis debate, and its existence creates the Zone of Avoidance. For 10 points each:

[10] Name this spiral galaxy, which is also the subject of the Oort constants. The Orion Arm of this galaxy contains our Solar system.

ANSWER: **Milky Way**

[10] The bulge in the center of the Milky Way is bracketed by one of these structures. Spiral galaxies that contain these structures are on the bottom part of the fork of the Hubble tuning fork.

ANSWER: **bar**

[10] The DIRBE instrument on this satellite is the namesake of one of the Milky Way's bars. This satellite found that the CMB had a near-perfect blackbody curve.

ANSWER: **COBE** [or **Cosmic Microwave Background Explorer**]

15. Many staples of this ballet company's repertoire had their mime sequences cut and happy endings attached by the on-and-off director Konstantin Sergeyev. For 10 points each:

[10] Name this ballet company, long served by the ballet master Marius Petipa, that today is still internationally known by the name of an assassinated Bolshevik.

ANSWER: **Kirov Ballet** [or **Mariinsky Ballet**; or **Imperial Russian Ballet**]

[10] In Sergeyev's 1950 revision of this ballet, the sorcerer von Rothbart dies a painful death, allowing Siegfried to be together with the no-longer-avian Odette on Earth.

ANSWER: **Swan Lake** [or **Lebedinoye Ozero**]

[10] The Kirov ballet lost two of its greatest stars, Rudolf Nureyev in 1961 and Mikhail Baryshnikov in 1974, when they performed this action.

ANSWER: **defecting** to the West [or equivalent answers such as **leaving the Soviet Union**; or **moving to France** and **moving to Canada**]

16. Uzume's dancing made this goddess curious enough to peek out of the cave she was hiding in and see her reflection in a mirror. For 10 points each:

[10] Name this Shinto goddess of the sun and weaving.

ANSWER: **Amaterasu** [or **Omikami** or **Tensho Daijan**]

[10] In one story, Amaterasu refused to share the sky with this moon deity after this god killed Uke Mochi, the disgusting god of food.

ANSWER: **Tsukuyomi**

[10] In another story, Amaterasu and Susano'o get into a contest to birth more children with an object taken from the other. Name both the objects they give each other and destroy to create new gods.

ANSWER: Susano'o's **sword** and Amaterasu's **necklace** [or equivalents]

17. In the first part of this trilogy, "The Two Poets," the protagonist carries on an affair with Madame de Bargaton, who promptly leaves him when they get to Paris because he doesn't have a nice suit. For 10 points each:

[10] Name this set of three novels about Lucien Chardon, an aspiring poet who gets his dreams smashed.

ANSWER: *Lost Illusions* [or *Illusions perdues*]

[10] The title character of this 1833 novel schemes to marry her cousin Charles after her stingy father rejects proposals made by two wealthy businessmen. Like *Lost Illusions*, it's a part of *The Human Comedy*.

ANSWER: *Eugénie Grandet*

[10] This French novelist wrote *The Human Comedy*.

ANSWER: Honoré de Balzac

18. An expansion of this construct, fiqh, has four different schools, or madhabs, which each rely on forming an ijma, or consensus, in order to pass down rulings. For 10 points each:

[10] Identify this term that refers to the body of Islamic law.

ANSWER: sharia

[10] The two main sources of sharia are the Qu'ran and this other thing, which is the sum total of the example set forth by the prophet Muhammad; it includes the hadith.

ANSWER: Sunnah

[10] According to the Shia, Sunnah not only includes the actions of Muhammad, but also of the Twelve Imams and this other person, who was the wife of Ali and mother of Hussein.

ANSWER: Fatima

19. The damping of one of these systems is represented by a term that is proportional to the first derivative of the position. For 10 points each:

[10] Name these physical systems whose motion is sinusoidal in time.

ANSWER: simple harmonic oscillators [or SHO]

[10] The conditions for different types of damping in harmonic oscillators occur based on the number and types of roots for the oscillator's characteristic equation. What type of damping occurs when there are two repeated real roots, corresponding to a damping ratio of one?

ANSWER: critical damping

[10] In a quantum harmonic oscillator, these operators are used to increase or decrease the eigenvalue by one. They are also called "annihilation" and "creation" operators.

ANSWER: ladder operators

20. This composition is far better known than the composer's three other forays into the genre, *Let Thy Hand Be Strengthened*, *The King Shall Rejoice*, and *My Heart is Inditing*. For 10 points each:

[10] Name this piece that takes its text from the Biblical account of the anointing of Solomon.

ANSWER: **Zadok the Priest** [or **HWV 258**]

[10] This composer wrote both *Zadok the Priest* and *Music for the Royal Fireworks* for George II, and he composed *Water Music* for the monarch's father George I.

ANSWER: George Frideric **Handel** [or Georg Friedrich **Haendel**]

[10] The text for *My Heart is Inditing* was written by this earlier composer for the coronation of James II. This student of John Blow is better known for composing the aria "When I am laid in earth."

ANSWER: Henry **Purcell**

21. This man wrote a novella in which Julia Yañez's dad tries to sell her to pay off debt, entitled *Nothing Less Than a Man*. For 10 points each:

[10] Name this Spanish author who told of the love affair between Augusto and Eugenia in *Niebla*, a novel whose title can be translated as *Mist*.

ANSWER: Miguel de **Unamuno**

[10] Unamuno was part of this group of Spanish writers, who wrote morose books in reaction to their country's recent loss to America in war.

ANSWER: **Generation** of 18**98** [or la **Generación de noventa y ocho**]

[10] In a 1917 novel, Unamuno updated the Biblical story of these two people to a doctor and a painter from the Sanchez family. Their dynamic is also echoed by Caleb and Aron Trask in Steinbeck's *East of Eden*.

ANSWER: **Cain** and **Abel**