

TOSSUPS

1. During the 16th century, this city founded four conservatories training young boys that became the model for public music schools throughout Europe. At one of those conservatories in this city, the castrato Farinelli studied under the singing teacher Nicola Porpora. Alessandro Gagliano (gah-lee-AH-no) led a family who made violins in this city, where round-backed mandolins originated in the 18th century. A school of opera composers named for this city included Giovanni Battista Pergolesi and Alessandro Scarlatti. This city is the setting of Mozart's *Così fan tutte*. A competition held during the Festival of Piedigrotta (pee-ay-dee-GROH-tah) inspired many of this city's songs, which were popularized by its native son Enrico Caruso. One of those songs from this city was written to commemorate the first cable car on Mount Vesuvius, and is called "Funiculi, Funicula." For 10 points, name this city home to the San Carlo opera house, whose popular songs include "O Sole Mio."

ANSWER: **Naples** [or **Napoli**; accept **Neapolitan**]

2. In a book about "design heuristics," Arthur Riel suggested that engineers at most only use this technique "seven plus or minus two" times when constructing hierarchies. The software engineer Steve McConnell recommended only using this technique when the Liskov Substitution Principle is not violated. This technique is disfavored for "composition" according to the composition reuse principle. In general, this technique is often used to follow the "open-closed principle," which states that modules should be open for extension but closed for changes. "Protected" attributes can be accessed by objects created through this technique, but "private" ones cannot. Along with encapsulation and polymorphism, this technique is a key component of object-oriented programming. For 10 points, name this technique that allows computer programmers to create derived classes from base classes.

ANSWER: **inheritance** [or **inheriting**; accept word forms; accept creating a **derived** class or word forms until "derived" is read; prompt on object-oriented programming or OOP until "object-oriented" is read]

3. A piece in this medium includes a depiction of a woman whose hair is overlaid with the colors magenta, cyan, and yellow and was the last completed work of Andy Warhol. In a Salvador Dali piece in this medium, a butterfly-like figure atop a stick casts a shadow on a yellow monolithic rock. Alex Steinweiss is known as the father of this art form, which includes a Keith Haring depiction of two figures dancing in front of an orange background. Interactive works in this medium include a Robert Rauschenberg collage mash-up that changes as the viewer spins a color wheel and a Warhol work with a functioning zipper. One created by Robert Mapplethorpe depicts a dark-haired woman with a long black ribbon around her neck holding her jacket over her shoulder. Another of these works includes the text "Peel slowly and see." For 10 points, name this medium, works in which include an Andy Warhol painting of a bright yellow banana.

ANSWER: **album covers** [or **cover art**]

4. In an essay by this author, he recalled making and tearing up lists "of cavalry leaders and football players and cities...and of women I'd liked, and of the times I had let myself be snubbed." In that essay, he compared himself to a plate that "can never again be brought out for company, but it will do to hold crackers late at night." That essay of his proposes that "the test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function." In a novel by this author, the narrator recalls how he complimented a man he "disapproved of...from beginning to end" by shouting "They're a rotten crowd...You're worth the whole damn bunch put together." In that novel by this author of *The Crack-Up*, the title character is shot in his swimming pool after his yellow car is involved in a fatal hit-and-run in the Valley of Ashes. For 10 points, name this American author who created Nick Carraway in *The Great Gatsby*.

ANSWER: F. Scott **Fitzgerald** [or Francis Scott Key **Fitzgerald**]

5. Under the assumptions of uniformity, mutual variable independence, and pa-ra-met-er-ization redundancy, this system's spherically constrained Hamiltonian is equivalent to the loss function of a fully decoupled large-size neural network. A procedure originally developed to compute the ground states of this system relies on the mathematical formula that "the natural logarithm of a variable Z " equals "the limit as n goes to zero" of "minus one plus Z to the n ," all divided by " n ." Giorgio Parisi used that "replica trick" to solve this system under the mean field approximation. This system undergoes non-exponential decay of the re-ma-nent magnetization below its transition temperature after the removal of all external magnetic fields. For 10 points, name this system that exhibits quenched disorder leading to geometrical frustration, and can be represented as a lattice of randomly aligned magnetic dipoles.

ANSWER: spin glasses [or Sherrington-Kirkpatrick model; prompt on glasses or Ising model]

6. In *The Old Curiosity Shop*, Nell and her grandfather are taken in by a man of this profession named Mr. Marton. Another of them disguises himself as Rogue Riderhood to try to drown Eugene Wrayburn, his rival for the love of Lizzie Hexam. Bradley Headstone in *Our Mutual Friend* shares this profession with a man who remains convinced of the faithfulness of his much younger wife Annie, despite the insinuations of Uriah Heep. Another character with this profession is a one-eyed Yorkshire man who is beaten by his employee Nicholas Nickleby after himself beating Smike. Another of them, who has children named Malthus and Adam Smith, realizes his extreme fact-based approach to this profession is flawed when his daughter Louisa confesses her unhappy marriage to Josiah Bounderby. For 10 points, name this profession shared by many Charles Dickens characters, including Dr. Strong from *David Copperfield*, Wackford Squeers from *Nicholas Nickleby*, and Thomas Gradgrind from *Hard Times*.

ANSWER: schoolmaster [or schoolteacher; or headmaster; or schoolboard superintendent; or tutor; or educator; prompt on scholar]

7. Jonathan Winkler's *Nexus* explains how the aftermath of this event led to unprecedented integration of private business and government research, while Nicholas Lambert argued that its protagonists were unwilling to threaten their own economic networks. It's not the Holocaust, but Arno Mayer (MY-ur) interpreted this event in light of what he called the "Primacy of Domestic Politics." A very stupid book by Max Hastings reaffirmed the "Fischer School" explanations for this event, which Niall (neel) Ferguson counterfactually imagined leading to an earlier emergence of continental union. Traditional explanations of the cause of this event were rejected in Christopher Clark's *The Sleepwalkers*. Literary culture lacked the ability to accurately reflect this event until the rise of Modernist irony according to Paul Fussell, who examined this event along with "modern memory." For 10 points, name this war whose causes are treated in Barbara Tuchman's *The Guns of August*.

ANSWER: World War I [accept equivalents such as WWI, The Great War, The War to End All Wars, etc.]

8. Terry Bouton argues that the rate of this action eclipsed fifty percent for many Pennsylvania counties in the decade after the Revolutionary War, pursuant to a deliberate state-building project. Congress introduced a 5-year waiting period as a prerequisite to certain instances of this action in the Frazier-Lemke Act. The story of a cancer nurse, a car dealership worker, and an insurance fraud specialist uncovering fraudulent instances of this action is told in a 2016 David Dayen book. Merle Hansen led an organization that resisted this action during the Great Depression by intimidating people during "penny auctions." Critics claim that organizations like MERS have facilitated this action on an industrial scale with the practice of "robo-signing." Residents evicted from the Umoja Village shantytown in Miami took advantage of Florida's crippling high rate for this action during a 2010 crisis, whose fallout forced Bank of America and others to put a freeze on many instances of this action. For 10 points, identify this action in which debt defaults lead to the seizure of one's farm or home.

ANSWER: foreclosure [or repossession; prompt on bankruptcy or loan-default]

9. In this novel, a man is told, “We’re widows...There’s little can be hidden from us now,” after a group of hags he refers to as “ladies” accost him for failing to do his duty as he rides his horse Horace. This novel’s final chapter is narrated by a boatman who can only ferry one person at a time to a mysterious island. In this novel, memories of a kind red-haired woman and the disappearance of the girl Marta are among the “puzzling episodes” that trouble an old man. Towards the end of this novel, a warrior vows to raise a boy as an instrument of racial vengeance after earlier saving him from an ogre attack on a village. In this novel, Sir Gawain is sworn to protect the dragon Querig because the mist of forgetfulness that Querig produces allows the Saxons and Britons to live together. For 10 points, name this 2015 fantasy novel in which the elderly couple Axl and Beatrice search for their long-lost son, written by Kazuo Ishiguro.

ANSWER: *The **Buried Giant***

10. Brian Loar’s critique of this argument opens by citing the Frenchman Pierre in Saul Kripke’s “A Puzzle About Belief.” In *The Conscious Mind*, David Chalmers replies directly to this argument by proposing a two-by-two matrix whose diagonal and top row encode primary and secondary intensions. This argument was modified by Tyler Burge, whose paper “Other Bodies” discusses a woman named Jane with arthritis in her thigh. The classic statement of this argument appears alongside a discussion of the difference between elms and beeches and states two Fregean (FRAY-gee-an) principles it finds fallacious. That statement of this argument takes place in the year 1750, before modern chemistry, and concludes that meaning “just ain’t in the head” because “water” means both H₂O and XYZ. For 10 points, name this thought experiment first proposed by Hilary Putnam which involves a planet superficially identical to our own.

ANSWER: **Twin Earth** thought experiment [or **semantic externalism** argument]

11. The Grant Allen essay “Seven-Year Sleepers” describes a snail that miraculously came back to life in this building. Alfred Hitchcock used a predecessor of bluescreen, the Schufftan process, to set parts of 1929’s *Blackmail* in this building. In 2015, it became the largest indoor space on Google Street View. The facade of this building was designed by Robert Smirke and was based on the temple of Athene Polias at Priene. A David Lodge novel about a single day in Adam Appleby’s life is titled for this building “Falling Down.” Enoch Soames trades his soul for an opportunity to spend an afternoon in this building, which houses the Lewis Chessmen and a series of reliefs depicting an Assyrian Lion Hunt. Its best-known artifact was discovered by Jean-François Champollion (shahm-poh-lee-ohn) and features text in Egyptian, Demotic and Ancient Greek. For 10 points, name this national museum home to the Rosetta Stone, located in London.

ANSWER: The **British Museum**

12. Richard Kohn’s article on “The Inside Story” of this event argues that it was largely stage-managed to bolster the case for central government. The genesis of this event lay in the organizing of men like Matthias Ogden and Alexander McDougall, who helped bring it about by sending a letter signed “Brutus.” Dissatisfied participants in this event may have organized a march two months later that caused a series of rapid relocations to Princeton, Annapolis, and Trenton. It followed the rejection of an impost amendment supported by its possible real organizers, Robert Morris and Alexander Hamilton. At the climax of this event, one man affected difficulty in putting on his spectacles as a reminder of his service. This event was preceded by a Lewis Nicola letter requesting that its recipient declare himself a monarch, and ended after a speech in an assembly tent to a group of men including John Armstrong and Horatio Gates. A short but powerful speech by George Washington mollified, for 10 points, what “conspiracy” by colonial officers angry over back pay?

ANSWER: The **Newburgh** Conspiracy

13. An enzyme in this pathway is also used in the last step of a fermentation process developed by Chaim Weizmann. That enzyme from this pathway has an active site lysine whose pKa ("p-K-a") is altered to be 4.5 units below its normal value. Activation of this pathway is the preferred treatment for pediatric epilepsy. Leucine and lysine are the only two amino acids that are exclusively metabolized via this pathway. Its products can be identified in urine by a pink color on nitro-prusside sticks. Kussmaul breathing is triggered by activation of this pathway in diabetics. When glucose is unavailable, neurons can use its products as energy sources; those products include beta hydroxy-butyrate, which lacks its namesake functional group. For 10 points, name this fasting pathway that converts fatty acids into molecules like acetone, activated by diets like the Atkins.

ANSWER: **ketogenesis** [accept **ketosis**, **ketoacidosis**, or **ketone body** synthesis or production]

14. The generation of ethylene gas from this molecule is used to assess nitrogenase activity in an ARA assay. Shirakawa, MacDiarmid and Heeger won the 2000 Nobel Prize in Chemistry for synthesizing a conducting polymer of this molecule. The classic example of a template reaction is this compound's cyclo-oligomerization to cyclo-octa-tetra-ene. Cyanogen can be produced when this molecule and nitrogen are reacted in the presence of a spark. A metallo cyclopentadiene intermediate occurs in a 2+2+2 ["two plus two plus two"] trimerization of this molecule to form benzene. Walter Reppe pioneered studies of its reactivity. Hydroboration-oxidation of this molecule results in acetaldehyde. It has two hydrogens with pKa's ["p-k-aze"] of 25. Arc welding has largely replaced welding that used this molecule as a fuel source. For 10 points, name this simplest alkyne.

ANSWER: **acetylene** [or **ethyne**; or **C₂H₂**]

15. In ancient art, many statues of a divinity whose head has been replaced with a pot of flowers will show honey flowing or lotuses blooming from one of these things. Five downward pointing triangles--and not the four-upward pointing ones--that comprise the *Sri Yantra* diagram represent the power of these things in Tantric systems. A fissure which has been filled with groundwater and represents one of them is the holiest part of the Kamakhya (kah-MAHK-yah) Temple in Assam. The name for the innermost sanctum of Hindu temples, *garbhagriha* (garb-hah-gree-hah), literally means the "house of" this thing. Depictions of the deities Lajja Gauri and Sakhambhari (lah-jah gow-ree and sahkh-hahm-bah-ree) often highlight these things, which are represented as the horizontal base on which *lingams*--their counterparts--are placed. For 10 points, name these organs called *yoni*, which are revered as the feminine source of life in Hinduism.

ANSWER: **wombs** [or **vaginas**; accept **yoni** before "yoni"; accept **gharbha** before "garbhagriha"]

16. Anthony Caro painted steel this color for a sculpture he titled for the time it was finished, *Early One Morning*. White cables stretch out from a lightbulb in a room otherwise entirely this color in a pioneering color photograph by William Eggleston set in Mississippi. Kazimir Malevich represented a "peasant woman in two dimensions" with a painting of a non-black square of this color. A 2009 exhibit at the Royal Academy consisted of a cannon firing globs of waxy paint of this color; that exhibit's creator also designed a set of three steel hoops connected by a membrane of this color for Turbine Hall. At 140 Broadway, a tilted steel cube painted this color with a cylindrical hole through it was designed by Isamu Noguchi. Many sculptures by Anish Kapoor, such as *Marsyas*, use intense shades of this color, which also dominates a "stabile" outside Chicago's Willis Tower. For 10 points, name this color of Robert Indiana's *Love* sculpture and the cherry in Claes Oldenburg's *Spoonbridge and Cherry*.

ANSWER: **red** [or shades of red, such as **vermilion**]

17. After leaving four years of monastic life, this *historical* person annually made a grand feast with an older lover on the seventh day of the seventh lunar month. Legendarily, this person was thought to have fled to an eastern paradise at Penglai (pung-"lie") or to Japan, which may have inspired Japanese depictions of this person as Avalokitesvara (ah-vah-loh-kee-tesh-vah-rah). This person, whose story is told in "The Song of Everlasting Sorrow," is the title character of Kenji Mizoguchi's film *Yukihi*. This person was strangled to death in a temple courtyard after a scheme in which Tibetan diplomats plotted with this person's cousin Guozhong (gwo-jong) to take over the palace. An ability to easily flatter the emperor and this person was widely credited for the promotion of Geshu Han's main rival, a Sogdian general. For 10 points, name this "Precious Consort" of Emperor Xuanzong (shwan-zohng) of Tang, a member of the Four Beauties who was widely blamed for the An Lushan rebellion.

ANSWER: **Yang** Guifei [or **Yang** Yuhuan; or **Taizhen**; or Imperial Consort **Yang**; or **Yukihi** until it is read]

18. James and Jorndorf dispute Jansenist readings of this play, citing the lines "You are in love. We cannot change our destiny," as evidence of un-Christian fatalism. In this play's preface, its author justifies its genre, calling it "a school in which virtue was taught not less well than in the schools of the philosophers." A character in this play asserts that "the day is not purer than the depths of my heart" after his abandoned sword is used to accuse him of a crime. Another character in this play mourns her six dead brothers killed by her lover's father, who adopts her as his daughter in its final line. The first line in this play, "I am leaving," is spoken to Theramenes (thair-uh-MEE-nees) by a man who wants to escape Troezen ("treason") and is in love with Ismene's (iz-MEE-nee's) friend Aricia. In this play's final act, that man is killed by a half-bull, half-dragon creature sent by Neptune, and Oenone (ee-NOH-nee) drowns herself over the guilt of having falsely accused him of raping his stepmother, who admits his innocence as she dies by poison. For 10 points, name this French tragedy about the title character's love for Theseus's son Hippolytus, a work by Jean Racine.

ANSWER: **Phèdre** [or **Phaedra**]

19. The political psychology of Murray Edelman focuses on the role these entities play in politics. Paul Tillich characterized these entities as "double-edged" since they have both "transcendent" and "immanent" components. David Schneider's studies of American kinship originated the idea of "core" ones. The four-quadrant "grid-group" diagram was introduced in a book on "natural" ones by Mary Douglas. A distinction between "discursive" and "presentational" categories of these entities was made by Susanne Langer. Muchona the Hornet's testimony on the Mudyi tree provided material for an analysis of these entities among the Ndembu. Victor Turner wrote about the "forest" of these constructs, whose relation to "man" was documented in a book by Carl Jung. For 10 points, name these means of communication, which are signs that represent other concepts.

ANSWER: **symbols**

20. According to legend, this region's flag was created when Charles the Bald dipped his fingers in its count's blood and drew four lines on his shield. Irregular fighters called "little Michaels" resisted the Duke of Noailles' (noh-"eye"-yuh's) invading army in this region's theater of the Nine Years' War. It codified a class of unfree peasants named after the practice of *redemptio* under its medieval law, the "Usages." In response to the Union of Arms, peasants from this region murdered a royalist duke during Corpus Christi to start its first national uprising. Wilfred the Hairy is the traditional founder of this region, whose anthem tells the "defenders of the land" to "strike with [their] sickle" in memory of its "Reapers' War." The 1714 Nueva Planta decrees ordered the dissolution of its parliament, the Generalitat, and the replacement of its traditional language with Castilian. For 10 points, name this autonomous community of Spain with a powerful separatist movement.

ANSWER: **Catalonia** [or **Catalunya**]

TB. Changes to this system were compared to attempts to “clean the air on one side of a screen door” by Jean Anyon (jeen ann-yon), whose major book critiques those attempts for neglecting embeddedness. This system commissioned a controversial \$3 million algorithm designed by the Parthenon Group, and protesters against changes to this system circulated photographs of the “Enlightenment of Man” mural. Cami Anderson played a controversial role in administering this system, which has been under state rather than city control since 1995. A bloated bureaucracy where “even some clerks had clerks” was blamed for its profligate spending in Dale Roussakoff’s *The Prize*, which chronicled a reform effort announced on the *Oprah Winfrey Show*. Ras Baraka was elected mayor for opposing reforms to this program funded by a \$100 million gift by Mark Zuckerberg. For 10 points, name this school system that underwent controversial reforms championed by Mayor Cory Booker.

ANSWER: **Newark** Public **School** System [or anything mentioning **Newark Schools**, including **Newark** Charter **Schools**; prompt on answers mentioning New Jersey or United States Public Schools]

1. A character obtains this substance by calling Martin Heller and threatening to “ring up CBS and sing Mike Wallace a song” called “The Ballad of Adorable Ollie North and His Secret Contra Slush Fund.” For 10 points each:

[10] Name this substance, a bag of which Belize steals after asking Louis to say the Kaddish over it.

ANSWER: **AZT** [or **azidothymidine**; prompt on AIDs medicine, AIDs drugs, retroviral drugs, or similarly non-specific answers]

[10] Roy Cohn hoards a private stockpile of AZT in this two-part Tony Kushner play subtitled “A Gay Fantasia on National Themes.”

ANSWER: **Angels in America**: *A Gay Fantasia on National Themes*

[10] After stealing the AZT stash, Belize gives it to this man, who becomes a prophet and leads a new utopian community when his boyfriend Louis abandons him.

ANSWER: **Prior** Walter [or Prior **Walter**]

2. Answer the following about the life of Friedrich Nietzsche, for 10 points each.

[10] This sister of Nietzsche, who cofounded the Paraguayan colony of Nueva Germania with her anti-Semitic husband, distorted his works in editing to make them more fascistic.

ANSWER: Elisabeth **Förster-Nietzsche** (FUER-ster-NEE-chuh) [or **Elisabeth** Förster-Nietzsche]

[10] Nietzsche is said to have lost his mind after seeing one of these animals being cruelly whipped in Turin. Plato’s *Phaedrus* characterizes Reason as a driver trying to control two of these animals.

ANSWER: a **horse**

[10] In the preface to *The Gay Science*, Nietzsche claims that the following book is “merry-making” in response to this type of event. In *Ecce Homo*, Nietzsche credits this type of event for enabling him to overcome *ressentiment*.

ANSWER: an **illness** [or a **sickness**; or an onset of any specific type of **disease**, including **syphilis**; or **convalescence** or **recovery**]

3. This character sings a list of masculine Latin nouns beginning “amnis, axis, caulis, collis, clunis” and a strange *Benedicite* (ben-eh-DEE-kih-tay) laced with homosexual innuendos. For 10 points each:

[10] Name this opera character who also sings a rhyme beginning “Malo, malo, malo I would rather be, malo, malo in an apple tree.”

ANSWER: **Miles**

[10] Miles appears in *The Turn of the Screw*, a chamber opera by this 20th-century English composer, whose large-scale operas include *Billy Budd* and *Peter Grimes*.

ANSWER: Benjamin **Britten**

[10] The *Courtly Dances* are frequently extracted for performance from this Britten opera about the relationship between Elizabeth I and the Earl of Essex.

ANSWER: **Gloriana**

4. Performing this technique in “tapping mode” reduces lateral forces on the scanning tip. For 10 points each:

[10] Name this technique in which a very sharp tip is rastered across a sample to measure its topography at nanometer resolution.

ANSWER: **atomic force microscopy** [or **AFM**]

[10] The tip is usually driven by actuators made of materials with this property, where an applied electric field generates a deformation, or vice versa.

ANSWER: **piezoelectric** (pee-AY-zo-“electric”) [accept word forms]

[10] AFM and scanning tunnel microscopy were both invented by Gerd Binnig and Heinrich Rohrer while working at this company. In 1989, this company used 35 xenon atoms to spell out their name, and in 2013 they released a short film titled “A Boy and His Atom” created by moving around carbon monoxide molecules.

ANSWER: **IBM** [or **International Business Machines**]

5. These poets included the author of *The Testament of Cresseid* (kress-AID), Robert Henryson, who is grouped along with Gavin Douglas and William Dunbar as the most prominent examples. For 10 points each:

[10] Give this term for Scottish court poets of the 15th and 16th centuries. Heavily influenced by Chaucer, they wrote in a variety of poetic genres in Middle Scots.

ANSWER: **Makars** [or **Makaris**; or **Makeris**]

[10] This later Scots poet of the Romantic era wrote such classic poems as “To a Mouse” and “Tam o’ Shanter.”

ANSWER: Robert **Burns**

[10] In “Tam o’ Shanter,” Tam narrowly escapes a group of witches on his mare Meg, who suffers this fate at the hands of the witch Nannie just as she and Tam reach the River Doon.

ANSWER: she **loses her tail** [or obvious equivalents to the effect that the horse’s **tail** gets pulled **off**]

6. In 2015, this church performed what is thought to be the largest canonization service in history when it made over 1.5 million people saints. For 10 points each:

[10] Name this oldest national church. Founded by Bartholomew and Thaddeus, it was first governed by a man who converted King Tiridates III.

ANSWER: **Armenian** Apostolic Church [accept **Armenian Orthodox** Church, prompt on Gregorian Church]

[10] This “Armenian Vatican,” the mother church of the Armenian Apostolic Church, is considered by some the oldest cathedral in the world. It is the seat of the faith’s spiritual leader, the Catholicos.

ANSWER: **Etchmiadzin** Cathedral (“edge”-MEE-ahd-zin) [accept Mother See of Holy **Etchmiadzin**]

[10] The Armenian Church is sometimes named for its patron saint of this name, who had the cognomen “the Illuminator.” A pope of this name devised the calendar that replaced the Julian.

ANSWER: **Gregory**

7. Answer the following about the wacky misadventures of Pope Innocent XI, for 10 points each:

[10] A few years into his papacy, Innocent negotiated the Holy League alliance that led to Jan III Sobieski’s massive cavalry charge in defense of this European capital, besieged by the Ottomans in 1683.

ANSWER: **Vienna** [or **Wien**]

[10] Louis XIV’s revocation of the Edict of Nantes could not salvage his relationship with Innocent, who vetoed Louis’s choice for the Electorate of this free city. Its Elector Gebhard Truchsess von Waldburg (GEB-hard TROOK-zess von VAHLD-burg) fought a namesake 1583 succession war that challenged the Peace of Augsburg.

ANSWER: **Cologne** [or **Köln**]

[10] After falling out with Innocent for good, Louis instituted this policy, which forcibly quartered the most ill-behaved French cavalymen with random Protestant households. It resulted in such prolific torture, raping, and pillaging that it had to be canceled by Louis for working too well and devastating local economies.

ANSWER: The **Dragonnades**

8. This system’s upper and lower surfaces are defined using a camber line and thickness function. For 10 points each:

[10] Name this type of 2-D system whose lift coefficient increases as the angle of attack increases until stall occurs.

ANSWER: air**foils** [or aero**foils**; or hydro**foils**]

[10] This doubly-eponymous theorem states that the lift per unit span of an airfoil in a uniform inviscid flow equals negative one times the product of the fluid density at infinity, the fluid velocity at infinity, and the fluid circulation.

ANSWER: **Kutta-Joukowski** theorem [or **Kutta-Zhukovsky** theorem; or **Kutta-Joukovsky** theorem]

[10] The power curve graph shows that as flight velocity increases, this quantity’s “lift-induced” value decreases and its “parasitic” value increases. A supercritical airfoil minimizes this quantity’s “wave” value in the transonic regime.

ANSWER: **drag** [accept lift-induced **drag** or parasitic **drag** or wave **drag**]

9. This location was partially discovered by Jacques Marsal, who initially claimed he had been looking for a dog named Robot. For ten points each:

[10] Name this location in Southwestern France which contains an “Accident Scene.” Four black aurochs (AW-rocks) are painted on the walls of its Hall of the Bulls.

ANSWER: **Lascaux** (lass-koh) Caves

[10] Spain’s Altamira cave paintings may be traceable to this extremely early human culture in Europe. It produced the oldest known piece of figurative art, the Venus of Hohle Fels (HOH-leh FELZ).

ANSWER: the **Aurignacian** (oh-rig-NAY-shun) Culture

[10] Evidence of the earliest human presence in North America, even before the Clovis, was found in this state’s Paisley Caves. The Old Man of the Lake is a notable tree stump found in this state.

ANSWER: **Oregon**

10. This group was organized at Aigion (“eye”-jee-on) under Aratus of Sicyon (SIS-ee-“on”) and was led by Philopoemen (fil-oh-POY-men) in the Laconian War against Nabis. For 10 points each:

[10] Name this panhellenic alliance whose defeat by Lucius Mummius was followed by a Roman sack of Corinth.

ANSWER: The **Achaean** League

[10] The War Against Nabis pitted the Achaean League against this city-state, which trained soldiers in the brutal *agoge* system.

ANSWER: **Sparta**

[10] This religious confederacy may have been organized around the worship of Dionysus Heliconius during the Panionium. It formed after absorbing Caria in the Meliac War and is considered the oldest Greek confederation.

ANSWER: **Ionian** League

11. For 10 points each, answer the following about Japanese poetry.

[10] *Haiku* usually contain one of these words, with a name meaning “cutting word.” They serve purposes analogous to punctuation and function differently depending on their position in a poem.

ANSWER: **kireji**

[10] The *haiku* derives from the *hokku*, the opening stanza of this collaborative verse form. Its derivatives include *renku* and *rengshi*.

ANSWER: **renga**

[10] The most canonical master of *haiku* and *renga* is this author of *The Seashell Game* and *The Narrow Road to the Deep North*.

ANSWER: Matsuo **Basho**

12. Book 17 of the *Iliad* consists of a lengthy battle between the Greeks and Trojans over this object. For 10 points each:

[10] Identify this object that is preserved by Thetis with nectar and ambrosia, then covered in locks of hair, including one pledged as a gift to the river god Spercheus, and surrounded by the corpses of twelve Trojans and many animals.

ANSWER: the body of **Patroclus**

[10] This Trojan stabs Patroclus in the back after Apollo knocks off his helmet and breastplate, retreats to let Hector finish the kill, then becomes the first to die in the ensuing battle. An epic simile likens this character’s own dead body to an olive tree.

ANSWER: **Euphorbus** (you-FOR-bus)

[10] This red-haired king of Sparta kills Euphorbus, which begins his *aristeia* as he tries to retrieve Patroclus’ body. He duels with Paris in Book 3 of the *Iliad* and kills Deiphobus (day-FOH-bus) during the sack of Troy, but decides not to kill Helen.

ANSWER: **Menelaus** (meh-neh-LAY-us)

13. This not-so-subtle anti-Semite is often credited with the Khazar theory of the origin of Ashkenazi Jews. For 10 points each:

[10] Name this author of an *Antichrist*, which Nietzsche named his own book after. Nietzsche's book especially criticizes this thinker's depiction of Jesus as a "genius" and "hero" in his *Life of Jesus*, collected in his *Origins of Christianity*.

ANSWER: (Joseph) Ernest **Renan**

[10] Renan is more famous for defining this type of construct as "a soul[and] a spiritual principle." In a lecture asking "What is" one of them, Renan argues that its prerequisites are hatred and historical forgetting.

ANSWER: a **nation**

[10] Renan includes this nation as an example of nations created by choice, though it has "two religions, three or four races" and "three languages," including French and Romansh.

ANSWER: **Switzerland** [or the **Swiss Confederation**]

14. Do-pa-min-er-gic neurons from the tu-ber-o-in-fun-dib-u-lar pathway directly suppress secretion of this hormone. For 10 points each:

[10] Name this hormone secreted by the pituitary gland. The most common adenomas (ad-eh-NO-mahs) overproduce this hormone, whose hyper-secretion can result in amenorrhea or galactorrhea.

ANSWER: **prolactin** [accept **PRL**]

[10] Another hormone involved in breastfeeding is this posterior pituitary hormone, which mediates the let-down reflex and causes milk to travel to the nipple in response to suckling.

ANSWER: **oxytocin**

[10] Oxytocin and vasopressin have been studied for their importance in pair bonding and monogamy in the prairie and montane varieties of this small animal. In 2013, Mohamed Kabbaj's group showed that mating causes permanent epigenetic changes that alter partner preference in these animals.

ANSWER: **voles**

15. According to Vasari, this painter and a few friends once prevented some belligerent asshole's house from collapsing and killing a bunch of people by secretly building a column and installing it under the cover of night. For 10 points each:

[10] Identify this architect and sculptor who created the early Renaissance Church of San Marco, best known for designing the Palazzo Medici for Cosimo in Florence.

ANSWER: **Michelozzo** di Bartolomeo Michelozzi

[10] The convent of San Marco includes Fra Angelico's painting of this scene, in which the angel Gabriel tells Mary that she will be the mother of Jesus.

ANSWER: **Annunciation** [accept the **Annunciation** to the Blessed Virgin Mary, the **Annunciation** of Our Lady, or the **Annunciation** of the Lord]

[10] Michelozzo and Donatello collaborated on this project in Florence's Baptistry, the last of its kind found outside a certain city. This large complex includes shell niches of the three virtues and a bier supported by Florentine lions.

ANSWER: the **tomb of John XXIII** [or the **tomb of Baldassarre Cossa**; prompt on a **papal tomb**; prompt on an **antipapal tomb**]

16. Thomas More's *Utopia* inspired Jesuits under Francisco Quiroga (key-ROH-gah) to champion the establishment of hospital-towns in this country. For 10 points each:

[10] Name this modern-day country where the Catholic Church later became embroiled in the Cristero War during the Maximato rule of Plutarco Calles.

ANSWER: **Mexico** [or **United Mexican States**; or **Estados Unidos Mexicanos**]

[10] This large conflict between Spanish colonists and natives far eclipsed the earlier Mixton and Tiguex wars. The Spanish championed a "Fire and Blood" strategy in this war until it became apparent that it was mainly *them* being bled and lit on fire, after which they chose instead to pay off members of the namesake ethnic group.

ANSWER: **Chichimeca** War

[10] This over 50-year conflict began after Santa Anna tried to break up a Mayan confederacy organized by Santiago Iman. It saw Mayans vying to be the dominant social group in the Yucatan under such memorably-named commanders as Crescencio Poot.

ANSWER: (Yucatan or Mayan) **Caste** Wars

17. An aureole is the area around an intrusion where the "contact" form of this process has occurred. For 10 points each:

[10] Name this process whose "prograde" form may produce rocks with repetitive layering, also known as foliation.

ANSWER: **metamorphism** [accept contact **metamorphism** or prograde **metamorphism**]

[10] This rock's namesake kind of foliation has a grain size larger than phyllite but smaller than gneiss ("nice"). This rock's "green" type forms under the lowest range of temperatures and pressures seen in dynamic metamorphism, while its "blue" type is characterized by the presence of minerals such as glaucophane and lawsonite.

ANSWER: **schist** [accept **schistosity** or greens**schist** or blues**schist**]

[10] This other metamorphic rock is known for being very hard due to its namesake texture consisting of fine grains with no preferred orientation, which makes it difficult to identify this rock's constituent minerals with the naked eye.

ANSWER: **hornfels** [accept **hornfelsic** texture]

18. During the London Blitz, this reporter opened his radio broadcasts with the phrase "This is London" before going on to describe the progress of the war. For 10 points each:

[10] Name this icon of American culture who proclaimed "We must not confuse dissent with disloyalty" in a later famous event.

ANSWER: Edward Roscoe **Murrow**

[10] Murrow was denouncing the tactics of this Wisconsin senator, a former tail-gunner who claimed to have a list of 205 communists in the State Department.

ANSWER: Joseph Raymond **McCarthy**

[10] Aired the day after Thanksgiving in 1960, this Murrow-produced documentary, his final significant project, exposed the brutal conditions of migrant farmworkers in Florida and California.

ANSWER: **Harvest of Shame**

19. Works with this name include Scriabin's Opus 45, No. 1 and the seventh piece in the first book of Grieg's *Lyric Pieces*. For 10 points each:

[10] Identify this name shared by a number of light piano pieces. It originally referred to a short piece composed for a friend in order to be inserted into the title type of book instead of being published.

ANSWER: **album leaf** [or **feuille d'album**; or **Albumblatt**]

[10] This A minor bagatelle by Beethoven is sometimes called an album leaf, in part because it may be named for one of his students. It iconically opens with the right hand alternating between E and D sharp.

ANSWER: **Für Elise** [or **WoO 59**]

[10] This other German composer's works for clarinet and piano include an album leaf, a tarantella, and three sonatas. He is better known for his *Variations and Fugue on a Theme by Mozart*.

ANSWER: Max **Reger** [or Johann Baptist Joseph Maximilian **Reger**]

20. The first novel written in this country's language is a didactic and picaresque 1776 novel influenced by *Gulliver's Travels* titled *The Adventures of Mr. Nicholas Wisdom*. For 10 points each:

[10] Name this country. Another early novelist from this country created a soldier who records fantastical stories told to him over the course of 66 days, many involving the gypsy chief Avadoro, in *The Manuscript Found in Saragossa*.

ANSWER: **Poland** [or Republic of **Poland**; or Rzeczpospolita **Polska**]

[10] The creator of Nicholas Wisdom, Ignacy Krasicki (eeg-NAHT-sih krah-SHEET-skee), composed the *Myszeida* (mis-ZAY-dah) and the *Monachomachia*, two poems in this genre. Classical examples of this genre include the *Batrachomyomachia* (BAH-trah-koh-MY-oh-MAH-kee-uh), attributed to Homer.

ANSWER: **mock-epic** [or **mock-heroic**; prompt on parody; prompt on satire; do not accept "epic"]

[10] Krasicki wrote a collection of parables and works in this brief genre in emulation of earlier creators of these works such as Jean de La Fontaine and a famous Greek slave from Samos.

ANSWER: **fables**