

## TOSSUPS

1. A monopoly on this practice was the major factor in the Ajuran Sultanate's conquest of the Horn of Africa. The merchant Nabataean Kingdom received their Aramaic name from their mastery of this practice. Para-krama-bahu I, of the Sri Lankan Polon-naru-wa Kingdom, devoted his life to developing this practice in the form of *wevas*. Historian Karl Wittfogel argued that mastery over this technology was the key to the "oriental despotism" of civilizations like Peru and China. The Achaemenid Empire's *qanat* are still-in-use examples of this technology, and the Khmer Empire fell with a decline in their variant on this technology, the *baray*. In Ancient Egypt, this technology involved a lever attached to a fixed beam called the *shaduf*. During the Hellenistic Era, this technology was advanced by Archimedes' Screw. For 10 points, name this technology used by ancient civilizations to create wells and reservoirs.

ANSWER: **irrigation** [or **water distribution**; or **water management**]

2. A linguist studying these languages ridiculed non-universalist theories of their structure as the "cafeteria principle." Absence of inflectional affixation, lexical tone, and derivational non-compositionality are characteristics of these languages according to their "prototype hypothesis." These languages sometimes develop into a "continuum" visualized as a "ladder of lects" displaying the acrolect, mesolect, and basilect. Derek Bickerton's language bioprogram hypothesis provides a universalist theory of the origin of these languages that competes with the "substrate" and "superstrate" hypotheses. These languages have the "world's simplest grammars" according to a linguist specializing in them, John McWhorter. These languages are learned as first languages by children, unlike nonnative constructs such as Tok Pisin. For 10 points, name these natural languages formed from contact between two other languages, which are contrasted with pidgins.

ANSWER: **Creoles**

3. This compound is commonly attached to an initiator for copolymerization via NMP. This compound's 4-hydroxy derivative has been investigated for clinical use as a membrane-permeable SOD-mimetic agent. This compound catalyzes a class of oxidations that rely on B·A·I·B or sodium hypo-chlorite as secondary oxidants to convert this compound into an N-oxo-ammonium salt. Both this compound and its hydroxylated derivative are available at low cost, since they are formed from the easily produced precursor tri-acetone amine. Like PBN and D·M·P·O, derivatives of this compound are commonly used as spin traps or labels for ESR due to stability granted by the four methyl groups found near the hetero-atomic nitrogen in this compound, which is single bonded to a neutral oxygen atom. For 10 points, name this piperidine derivative, which – like trityl and DPPH – is a stable organic radical.

ANSWER: **TEMPO** [or **(2,2,6,6-Tetramethylpiperidin-1-yl)oxyl**]

4. After moving to America, this man mentored Romare (roh-MAH-ray) Bearden at the Art Students League and helped introduce him to collage. This artist drew a word bubble containing the letters "KV" above a doctor embracing a skeleton, and painted the characters "123HURRAH" entering the skull of a medalled mannequin. He and his friend John Heartfield coined the term "photomontage," and this artist collected his sketches in the books *Ecce Homo* and *The Face of the Ruling Class*. In one of his most famous paintings, the Grim Reaper swigs a wine bottle while parading through a fractured cityscape with a throng of syphilitics. The Nazi regime dubbed him "Cultural Bolshevik Number One" for his socially-critical art, including *Fit for Active Service* and *Republican Automaton*. In 1944, he painted a horde of tiny skeletons crawling up the leg of a dictator in an infernal landscape. For 10 points, name this German satirist who created *For Oskar Panizza* and *Hitler in Hell*.

ANSWER: George **Grosz** ("gross")

5. This character conceives of conversation as a “served dessert” of ripe fruits to be piled atop a silver plate signifying his wife’s mind. This man insults his daughter’s suitor by offering him two fingers of his left hand in greeting as he stands warming his boot soles at the fireplace. While escorting his confidante to her carriage, this character observes that his love interest has “too many ideas,” ominously adding, “Fortunately they’re very bad ones.” In an attempt to impress this character, a young man auctions off his valuable collection of bibelots (BIB-uh-“lows”), keeping only his prized enamels. This man warns of an irrevocable break that will occur if his wife returns to England to see her dying cousin who secretly secured her the fortune she inherited. This man tells Ned Rosier he is not rich enough to marry his illegitimate daughter Pansy. This character succeeds in marrying a woman who rejects both Lord Warburton and Caspar Goodwood. For 10 points, name this husband of Isabel Archer in *The Portrait of a Lady*.

ANSWER: Gilbert **Osmond** [or **Gilbert** Osmond]

6. Li Ying’s 2007 documentary about this site opens with footage of a 90-year-old swordsmith at work. A plan to raze this site and replace it with a dog-racing track was aborted thanks to a letter written by Vatican ambassador Bruno Vittel. On its grounds, a bronze statue of a homing pigeon atop a globe sits adjacent to a statue of a German shepherd. The most recent addition to this site was a memorial to Radhabinod Pal, the lone dissenter in a 1946 trial. In 1978, it was the site of a secret ceremony at which a head priest consecrated the memory of fourteen men given the designation “Class A” by the I·M·T·F·E. Every August 15, this site is mobbed by journalists eager to report on which politicians visit, as Junichiro Koizumi did annually during the early 2000s. For 10 points, name this Shinto shrine that is infamous for honoring Japanese war criminals.

ANSWER: **Yasukuni** Shrine

7. An early instance of polymeter appears in a rondo movement by this composer in which an oboist plays in 4/4 (“four-four”) time for thirteen bars against 6/8 (“six-eight”) time in the strings. That movement, which ends on a historically unprecedented high F for the oboe, concludes his Oboe Quartet, which he composed for the virtuoso Friedrich Ramm. In a later aria, he reused the opening phrase of the F major *Andante ma adagio* middle movement of his B-flat major Bassoon Concerto, the most popular piece in the bassoon repertoire. Brahms wrote his B minor Clarinet Quintet after requesting a private performance by Richard Mühlfeld (RIH-shart MYOOL-felt) of this composer’s A major piece in the same genre. This composer’s final completed instrumental work was an A major concerto which, like the aforementioned quintet, was written for the clarinetist Anton Stadler. For 10 points, name this composer who, upon his death at age 35, left behind an unfinished D minor Requiem.

ANSWER: Wolfgang Amadeus **Mozart** [or W. A. **Mozart**]

8. According to tradition, a fire in this city that fused metal statues together originated its namesake high-quality bronze. This city’s trade connections with Egypt led one of its tyrants to name his successor after Pharaoh Psamtik. This city’s Potter’s Quarter adapted Assyrian artifacts to produce perfume holders shaped like owls and invented the “black-figure” style that dominated Archaic trade. The saying “Not everyone can go to” this city reflected how sailors flocked to this city for the sacred prostitutes at its Temple of Aphrodite. Pausanias describes an ornate cedar chest given at Olympia by this city’s tyrant Cypselus. In 146 B.C., Roman soldiers under Lucius Mummius sacked this city and looted its statues. Under Periander, this “mother city” of Corcyra and Syracuse paved a 5-mile track called the *diolkos* to ease movement of goods. For 10 points, name this wealthy Greek city on an Isthmus joining the Peloponnese to Attica.

ANSWER: **Corinth**

9. In a poem from Michael Drayton's *Idea*, the speaker ridicules a "witless gallant" who begs him for one of these things. In a poem George Herbert sent to his mother, the speaker asks God, "Why are not [*these things*] made of thee?" A poem about these things says each one "is a coin: its face reveals the Soul—its converse, to what Power 'tis due." Another poem defends these things by observing how "bees that soar for bloom...murmur by the hour in foxglove bells" after noting that "nuns fret not at their convent's narrow room." These things are called "a moment's monument" in the opening poem of Dante Gabriel Rossetti's *The House of Life*. Wordsworth wrote that one should "scorn not" these things, which Mary Wroth arranged into a "crown." Keats wrote that the creators of these things must be "misers of sound and syllable," and wrote some examples of them including "On First Looking into Chapman's Homer." For 10 points, name this poetic form reflexively described by many 14-line poems.

ANSWER: **sonnets** [prompt on poems]

10. A "combinatorial" version of a theorem named for this man was first proved by James Cannon, who did so by decomposing actions on a certain object to actions that have undergone Mobius transformations. That theorem named for this mathematician can be extended to both one-sided and two-sided boundary arcs by making use of the Schwartz reflection principle, and is used to build analytic continuations. That theorem named for this mathematician was generalized to the "uniformization theorem" by Felix Klein, and states that there is a bi-holo-morphic mapping from a non-empty simply connected open subset of the complex plane to the open unit disk. A pair of differential equations named for this man and Cauchy gives necessary and sufficient conditions for functions to be complex differentiable. For 10 points, identify this German mathematician who names a "zeta" function.

ANSWER: Bernhard **Riemann** [or Georg Friedrich Bernhard **Riemann**; or **Riemann** mapping theorem]

11. Peasants who did not belong to this group were forced to join it by guild-backed militias led by the "Hidden One" following a supposed prophecy by Elijah and Enoch. Practices of this group are known from writings of a mysterious author only called the "Young Man." This group, whose numbers swelled as a result of the Revolt of the Germanies, created a secret alphabet for disseminating stories like "The Handless Maiden" in the "language of the *ajami*." This silk trade-controlling group created the maritime Republic of Sale (*SAL-ay*), and unsuccessfully sought aid from the Huguenot stronghold of Bearn. *Monfi* mountain bandits supported a rebellion of these people under Farax Abenfarax that was crushed by Don John of Austria in 1571. The village of Hornachos was exempted from the general expulsion of this group, which was forced to prove its loyalty by keeping doors open on Fridays and visibly eating pork. For 10 points, name this ethno-religious group in 16th-century Spain consisting of Muslims who converted to Christianity.

ANSWER: **Moriscos** [or **crypto-Muslims**; prompt on Spanish Muslims or Moors; do not accept "Conversos"]

12. In this film, a telephoto lens produces an extremely flat image of one of the protagonists hitting a golf ball toward a horizon decked with trees and a single huge mountain. In this film, a shot of a woman sitting up in bed pulling her knees to her chest cuts to a reverse angle of her in the same pose on the ledge of a window overlooking a cityscape. As a photo is taken near the end of this film, the protagonist frowns and looks away from the off-screen photographer at the woman walking away from him and getting in an elevator. This film opens with a close-up of the bottom of a woman wearing pink underwear lying on her side. In this film, one of the insomniac protagonists is ignored by her inane photographer husband and befriends and sings karaoke with a famous actor staying at her hotel. For 10 points, name this Sofia Coppola film in which Bill Murray and Scarlett Johansson play a pair of existential crisis-stricken Americans in Tokyo.

ANSWER: **Lost in Translation**

13. A 1986 book argued that this character's repeated use of the word *exaiaphnes* (ex-ah-EEF-nace) makes his central image "the lightning bolt," which flashes like the sun in "later paintings of Turner." This character reports a saying that victims of a viper's bite only want to speak to others who have been bitten likewise. This character takes some fillets off of an ivy-and-violet wreath intended for a poet because that poet only won one contest two days before. This character compares a friend to the satyr Marsyas, as a haughty flute-player, and to sculptures of Silenus, which open to reveal images of gods inside. Martha Nussbaum's *The Fragility of Goodness* argues that the work in which he appears is redeemed by this character's speech, which marvels at another character's capacity to sleep under a blanket with him without making a romantic move. After another character relays the wisdom of Diotima of Mantinea, this character barges into Agathon's courtyard with a coterie of drunk friends. For 10 points, name this roguish Athenian general who complains of his love for Socrates in Plato's *Symposium*.

ANSWER: **Alcibiades**

14. This character asks a man if he pulls his legs up under him as he falls after telling him how she dreamt she was falling over a cliff. After this character says they've decorated the veranda with flowers and raised a flag for her deceased mother's birthday, an aspiring sculptor mistakenly gives flowers to this character's stepmother. This character is fascinated by the "thrilling" terminal illness suffered by the delusional shipwreck survivor Lyngstrand. She contemplates the excitement of being abducted and raped by Vikings while talking to a man she compares to a troll. This character demands a kingdom from a man she claims compared her to a princess and kissed her when he visited her town ten years earlier. This woman inspires an aging, vertigo-afflicted architect to hang a wreath from the tower of his new house. For 10 points, name this woman who appears as a girl in *The Lady from the Sea* and becomes the paramour of Halvard Solness in *The Master Builder*.

ANSWER: **Hilda** Wangel [prompt on Wangel]

15. This function may be computed for systems with spherical symmetry using the hypernetted-chain or Percus-Yevick equations. This function may be written solely in terms of integrals of motion for systems in equilibrium with regular orbits, according to the strong Jeans ("jeans") theorem. The time constant of Landau damping is proportional to the derivative of this function with respect to velocity. This function's time derivative equals the negative of its Poisson bracket with the Hamiltonian. This function is the ensemble average of the Klimontovich density. Decreasing the number of degrees of freedom by six and integrating the Liouville equation produces an equation for this function of  $s$  particles in terms of this function of " $s$  plus one" particles. For 10 points, name this function that gives the number of particles per unit volume in phase space and obeys Maxwell-Boltzmann statistics in the kinetic theory of gases.

ANSWER: particle **distribution** function [accept radial **distribution** function or pair **distribution** function or **pair correlation** function; prompt on probability **density** function or **PDF**; prompt on **correlation** function before "integrals of motion" but do not prompt thereafter; do not accept "cumulative distribution function" or "CDF"]

16. In a story titled for a man with this name, the narrator gives a brief outline of the plot, then gives the reader the option of meditating on it individually or reading the fuller account, trusting that there will be a moral "done up neatly, and condensed into the final sentence." That story of this title reflects on an influence that "lays its strong hand on every deed which we do, and weaves its consequences into an iron tissue of necessity" and concludes that "individuals are so nicely adjusted to a system...that, by stepping aside for a moment, a man exposes himself to a fearful risk of losing his place forever." In that story, a man with this name pranks his wife by taking a new lodging in the street next to his own and ends up staying away from home for twenty years. That story by Nathaniel Hawthorne shares this name with the title setting of a novel in which Squire Thornhill seduces Olivia, the daughter of Dr. Charles Primrose. For 10 points, give this name, the title setting of a sentimental novel by Oliver Goldsmith about its "Vicar."

ANSWER: **Wakefield**

17. The so-called “father” of this kind of firm was a French immigrant who earned the nickname “the General” for supervising R&D for the U.S. Army during World War II. That man, Georges Doriot, founded the ARDC. Paul Gompers has written extensively about how these companies became the primary beneficiaries of a liberalizing amendment to ERISA’s “prudent man” rule in 1979. They are referred to metonymically as “Sand Hill Road” after a mile-long stretch of road in Menlo Park where many of them are headquartered. These firms, which include Greylock Partners, Sequoia, and Kleiner Perkins, generally operate by making “offerings” in rounds dubbed Series A, Series B, and Series C. Individuals who use personal wealth to compete with these firms are dubbed “angels.” For 10 points, name this form of private equity company that provides startup funding to tech firms like Google and Facebook.

ANSWER: **venture capital** firm [prompt on private equity]

18. The core complex formed by these proteins consists of four alpha helices held together by the interaction of one glutamine with three arginines in a region known as the “zero ionic layer”. One of these proteins lacks a transmembrane domain, so its function is dependent on palmitoylation of cysteine residues in its D·H·H·C domain. A protein responsible for dissociating these proteins from one another, named for its inactivation by N-ethylmaleimide, is the ATPase (a-t-p-“ace”) NSF. For these proteins to act, complexin must first be displaced by the calcium sensor synaptotagmin. Members of the genus *Clostridium* cause botulism and tetanus by releasing toxins that lead to the cleavage of these proteins, which include syntaxin and synaptobrevin. For 10 points, name these proteins that mediate membrane fusion leading to vesicle exocytosis and neurotransmitter release.

ANSWER: **SNAREs** [or **SNAP** (Soluble NSF Attachment Protein) **Receptor**; accept **syntaxin** or **synaptobrevin** before each word is read]

19. British soldiers in World War I used this man’s name to refer to German 15-centimeter artillery shells. He opened the Club Deluxe, which struggled until the gangster Owney Madden purchased it from him and transformed it into the Cotton Club. A legend that this man was denied passage on the Titanic was popularized by a Leadbelly song. His relationship with Lucille Cameron led Georgia Congressman Seaborn Roddenbery to propose a constitutional amendment. In 1913, he skipped bail and fled to Paris after he was convicted for violating the recently enacted Mann Act. In 1910, over 20 people died in a series of race riots and lynchings that targeted nationwide celebrations of this man’s victory over James Jeffries, who was dubbed the “Great White Hope” for coming out of retirement to challenge him. For 10 points, name this outspoken athlete, the first black boxer to win the heavyweight championship.

ANSWER: Jack **Johnson** [or John Arthur **Johnson**]

20. This approach was used by Albrecht and Axell to develop a model that assumes two types of sellers with different reservation prices. First-generation models in this approach suffered from the Rothschild Paradox that homogenous goods cannot be sold at different prices under equilibrium conditions. A major model used in this approach was devised to challenge Lucas’ neutrality of money model, and exhibits several Pareto-ranked equilibria for output based on the “optimism” or “pessimism” of agents in the steady-state. Daron Acemoglu and Robert Shimer used this approach to prove that social insurance policies that reduce risk aversion can increase output. A major model used in this approach, which imagines an island where producers climb coconut trees they cannot consume before trading, won the 2010 Nobel Prize for Mortensen, Pissarides, and Diamond. For 10 points, name this framework often used to model the effect of frictions on the labor market by assuming costs for workers looking for jobs.

ANSWER: **search** and matching theory

TB. Using a perturbative expansion in this quantity to perform a canonical change of variables on the Lagrangian of light-cone Yang-Mills theory reproduces the CSW selection rules. The Parke-Taylor formula gives the “maximally helicity violating” form of this quantity. The inner product of the on-shell four-momentum with this quantity is zero, according to the Ward identity. Klein-Gordon operators are used to isolate the poles of time-ordered correlation functions in order to compute this quantity via the LSZ reduction formula. This quantity is proportional to the Fourier transform of potential energy under the Born approximation. The wavefunction and this quantity are expressed as weighted sums of spherical harmonics in the partial wave expansion method. For 10 points, name this quantity whose magnitude squared gives the differential cross section of a scattering process.

ANSWER: scattering **amplitudes** [or probability **amplitudes**; or **S-matrix elements**]

1. For 10 points each, answer the following about the work of literary critic Jerome McGann.

[10] McGann is the world's leading scholar on this poet, having edited a seven-volume critical edition of this poet's complete works and a one-volume collection of his "major works" for the Oxford World's Classics series. A notable passage urging the reader to "close" this author and "open thy Goethe" appears in *Sartor Resartus*.

ANSWER: Lord **Byron** [or George **Gordon**]

[10] McGann has been an influential scholar in this field since its inception, exemplified by his creation of an online archive of the complete works of Dante Gabriel Rossetti. This field's more zealous advocates like to draw farfetched conclusions from boring quantitative analyses of texts.

ANSWER: **digital humanities** [or **humanities computing**]

[10] McGann also edited an edition of this decadent Victorian poet of *Atalanta in Calydon* whose collection *Poems and Ballads* included "The Triumph of Time" and "Hymn to Proserpine."

ANSWER: Algernon Charles **Swinburne**

2. This thinker argued that neoliberal policies like privatization and financialization amounted to "accumulation by dispossession," and wrote *A Brief History of Neoliberalism*. For 10 points each:

[10] Name this author of *Social Justice and the City*, a Marxist geographer who defended Henri Lefebvre's concept of the "right to the city."

ANSWER: David **Harvey**

[10] Harvey Molotch borrowed from David Harvey to formulate this two-word redefinition of the city. Molotch's article "The City as" this two-word phrase argues that urban governance is driven by real-estate investors looking to maximize "special exchange values."

ANSWER: a "**growth machine**"

[10] David Harvey's compatriot Sharon Zukin heavily criticized this earlier urban theorist for neglecting political economy in her critique of urban planning, *The Death and Life of Great American Cities*.

ANSWER: Jane **Jacobs**

3. The originator of this concept refined it by imagining a kingdom where every person is treated as their own end. For 10 points each:

[10] Name this principle from Immanuel Kant's *Groundwork for the Metaphysics of Morals*, which urges that one only act "according to that maxim by which you can at the same time will that it should become a universal law."

ANSWER: **categorical imperative** [or **kategorischer imperativ**]

[10] This 19th-century British philosopher synthesized Kant's categorical imperative with John Stuart Mill's utilitarianism in his major work, *Methods of Ethics*, which proposes a "universalistic hedonism."

ANSWER: Henry **Sidgwick**

[10] This contemporary Harvard philosopher proposed a "reasonable rejectability" standard for moral laws in a book espousing contractualist ethics, *What We Owe To Each Other*.

ANSWER: Thomas Michael **Scanlon**

4. One of these passages in French from Regnard's (ren-YARD's) *Le Legataire Universel* (leh leg-ah-TAIR oo-ni-vair-"SELL") foreshadows a will-reading scene in which all but one of the heirs are first given, then stripped of their inheritances. For 10 points each:

[10] Name these short passages, many of which are unattributed and were written by the author of the novel they appear in. The first of them, taken from *The Maid's Tragedy*, reads, "Since I can do no good because a woman, reach constantly at something that is near it."

ANSWER: chapter **epigraphs** in *Middlemarch* [prompt on **epigraphs**]

[10] *Middlemarch's* several protagonists include this pure-minded woman. She marries the withdrawn scholar Mr. Casaubon (KA-zuh-bon), who becomes jealous of her friendly relations with his young dependent cousin, Will Ladislaw.

ANSWER: **Dorothea** Brooke [prompt on **Brooke**]

[10] Another of *Middlemarch's* protagonists is Tertius Lydgate, who works for no salary and promotes innovative practices at one of these institutions backed by the rich banker Mr. Bulstrode.

ANSWER: a **hospital**

5. A major politician from this family, named after the Aztec emperor Cuauhtemoc (k'wow-TAY-mock), became the first elected mayor of Mexico City. For 10 points each:

[10] Name this family of Mexican politicians. Its most famous member was a Governor of Michoacan who carried out agrarian reforms and nationalized the oil industry.

ANSWER: **Cardenas** [or Lazaro **Cardenas**]

[10] Lazaro Cardenas's son Cuauhtemoc served as a witness in negotiating the 1995 San Andres Accords with this masked university professor, who emerged from the jungle on horseback with conch-blowing bodyguards.

ANSWER: Subcomandante **Marcos** [or Rafael Guillén **Vicente**; or Delegate **Zero**]

[10] Cuauhtemoc Cardenas split with the PRI to run for president in 1988, but this type of event marred the election proceedings. Cardenas supporters claimed that "the system failed" in reference to this event, which allowed the PRI candidate to defeat Cardenas.

ANSWER: an IBM **computer crash** during the voting tabulation [or equivalent]

6. In the first chapter of *Le Morte d'Arthur*, Ulfius asks for Merlin's help sneaking into this place. For 10 points each:

[10] Name this castle in Cornwall where Uther Pendragon has sex with Igraine in the guise of her husband Gorlois.

ANSWER: **Tintagel**

[10] This woman twice pretends to be Guinevere so Lancelot will have sex with her. The first time this woman uses the bed trick, she conceives Galahad; the second time, Lancelot jumps out of a window when Guinevere finds them.

ANSWER: **Elaine** of Corbenic

[10] Elaine's father is Pelles the Fisher King, who is the guardian of this object that Galahad succeeds in obtaining.

ANSWER: the Holy **Grail** [or **Sangreal**]

7. The biosynthesis of niacin begins with the oxidation of this molecule into kyn-ure-nine. For 10 points each:

[10] Name this amino acid, whose side chain is an indole group. This amino acid's wavelength of maximum absorption can be used to track protein folding and unfolding.

ANSWER: **tryptophan** [or **Trp** or **W**]

[10] Kyn-ure-nine is the starting point for the biosynthesis of this cyclic lipo-peptide antibiotic, which functions by inserting into the cell membrane and forming aggregates, altering membrane curvature leading to rapid depolarization of the cell.

ANSWER: **daptomycin** [or **cubicin**]

[10] Dap-to-mycin, along with two-thirds of all other clinically used antibiotics, is produced by this genus of soil-dwelling actin-o-bacteria whose members include *coelicolor*, *griseus*, and *hygroscopicus*.

ANSWER: **Streptomyces**

8. This organization rated films an A for morally unobjectionable, B for morally objectionable in part, and C for condemned. For 10 points each:

[10] Name this organization that was founded by Catholic bishops in 1934 and which used the threat of mass Catholic boycotts to control the content of films.

ANSWER: **Legion of Decency**

[10] One sign of the decline of the Legion's power was the box office success of this B-rated 1959 Billy Wilder movie that starred Tony Curtis and Jack Lemmon as musicians who dress in drag to escape gangsters.

ANSWER: **Some Like It Hot**

[10] Seven years before *Some Like It Hot*, the Supreme Court case *Joseph Burstyn, Inc. v. Wilson* held that state bans on film violated the First Amendment prohibition against this kind of censorship, which happens before the censored expression takes place.

ANSWER: **prior restraint**

9. In the "Crisis of Confidence" speech, Jimmy Carter used this four-word phrase to describe the activities required from the American public to combat the energy crisis. For 10 points each:

[10] Give this phrase. In his final public speech, William James coined this phrase, proposing conscription into public projects to approximate the experience of armed service.

ANSWER: the "**moral equivalent of war**" [or **MEOW**]

[10] Franklin Delano Roosevelt, who was in the audience for the "Moral Equivalent of War" speech, partly enacted it with this New Deal agency. Robert Fechner headed this agency, which employed unskilled young laborers in environment-friendly public works.

ANSWER: the **Civilian Conservation Corps** [or the **CCC**]

[10] This member of the Johnson administration used James' "moral equivalent of war" as the basis for Johnson's "Job Corps" program and "War on Poverty." He replaced Thomas Eagleton on the Democratic ticket in a presidential election.

ANSWER: Sargent **Shriver** [or Robert Sargent **Shriver**, Jr.]

10. Answer the following about intaglio printmaking, for 10 points each.

[10] In this intaglio technique, an acid-resistant etching ground is combined with granular resin to create subtle gradations of tone in the print. This technique is responsible for the shaded, textured background in *The Sleep of Reason Produces Monsters*.

ANSWER: **aquatint** [prompt on **mezzotint**]

[10] Intaglio techniques are contrasted with this family of techniques used to create woodcuts and metalcuts. It shares its name with a form of sculpture in which the field of a flat surface is chiselled away, leaving the sculpted elements raised.

ANSWER: **relief** printing [or **relief** sculpture]

[10] This master of intaglio techniques pioneered the use of iterated mordants to refine his etchings, which include *The Hangman's Tree* and other illustrations of the 30 Years' War in his *Miseries and Misfortunes of War*.

ANSWER: Jacques **Callot** (kah-loh)

11. This approximation underlies the augmented plane wave and Korringa-Kohn-Rostoker methods. For 10 points each:

[10] Name this approximation in which the potential is assumed to be spherically symmetric around each scattering center within a given radius and constant outside that radius.

ANSWER: **muffin-tin** approximation

[10] The muffin-tin approximation is a computational tool for mapping these regions of allowed energies in solids.

ANSWER: energy **bands**

[10] Because band theory does not account for electron-electron interactions, it cannot describe this type of material. Bose-Einstein condensates in optical lattices can undergo a phase transition between a superfluid state and this state.

ANSWER: **Mott insulators** [prompt on partial answer]

12. One of these factions was exemplified by the pure modernism of Peter Eisenman and Richard Meier, while the other was led by Robert Venturi and Denise Scott Brown, who championed postmodernist ornamentation. For 10 points each:

[10] Name both of these architectural factions which had their colorful names popularized by Robert Stern.

ANSWER: **Whites** and **Grays**

[10] This designer and architect of the Portland Building and the Denver Public Library was an original member of the New York Five, but defected to the Grays and became a leading postmodernist.

ANSWER: Michael **Graves**

[10] The highest profile defection from the Whites to the Grays was this Glass House architect, whose design for the AT&T Building included a decidedly postmodernist ornamental top.

ANSWER: Philip **Johnson**

13. This song lent its name to a faction of Greek nationalists on Samos who rebelled against their Ottoman-favoring Kallikantzaroi landlords. For 10 points each:

[10] Name this song that boasts that “Madame Veto” failed “to cut everyone’s throat in Paris” and to “drop us all on our asses.” This savagely popular French revolutionary tune was named after the Piedmontese jacket of the *sans-culottes*.

ANSWER: “La **Carmagnole**” (la “car”-mahn-YOLE)

[10] “Madame Veto” in the “Carmagnole” is a reference to this Austrian woman, who was the subject of a staggering amount of popular smut depicting the Affair of the Necklace.

ANSWER: **Marie Antoinette** [or **Maria Antonia** Josepha Johanna]

[10] “La Carmagnole” gloats that the Swiss Guard tried and failed to kill the French Revolutionaries when they stormed this palace in Paris, where the royal family was kept after they were forced to leave Versailles.

ANSWER: **Tuileries** Palace

14. This B-flat major piece is the sixth of its composer’s Opus 36 *Eight Characteristic Pieces*. For 10 points each:

[10] Name this short solo piano showpiece by Moritz Moszkowski (moash-KAHV-skee). A favorite encore of Vladimir Horowitz, it features extensive staccato melodies and rapid scale passages traded between hands.

ANSWER: **Etincelles** [or **Sparks**]

[10] Moszkowski composed many piano pieces in this genre usually intended to hone a particular skill. Chopin’s most popular works in this genre include ones nicknamed “Black Key” and “Revolutionary.”

ANSWER: **etudes**

[10] Both Chopin’s Opus 10 and Opus 25 collections of twelve etudes conclude with pieces in this key, one of which is the “Revolutionary” etude. This key is the relative minor of E-flat major.

ANSWER: **C** minor [do not accept “C major”]

15. *Two answers required.* The feud between these two authors began when one of them wrote a review savaging the other’s book *The Prisoner of Sex* and comparing him to Charles Manson. For 10 points each:

[10] Name these two authors whose feud culminated in an iconic appearance on *The Dick Cavett Show*, prior to which one of them headbutted the other backstage. During that appearance, Cavett was goaded into telling one of them to take his question sheet and “fold it five ways and put it where the moon don’t shine.”

ANSWER: Gore **Vidal** and Norman **Mailer** [or Eugene Louis **Vidal** and Norman Kingsley **Mailer**]

[10] *The Prisoner of Sex* was Mailer’s book-length response to second-wave feminists including this author of the landmark *Sexual Politics*, which singled out Mailer for extensive criticism among contemporary authors.

ANSWER: Kate **Millett** [or Katherine Murray **Millett**]

[10] Millett’s book begins with analyses of sexual encounters in novels by Mailer and this other American author of *Tropic of Cancer*.

ANSWER: Henry **Miller** [or Henry Valentine **Miller**]

16. Answer the following about a crisis in classical archaeology, for 10 points each.

[10] Andrew Wallace-Hadrill and Mary Beard are calling attention to the deterioration of this Roman resort town, arguing that “Man is wreaking a damage far greater than Vesuvius.” It was preserved with Stabiae and Herculaneum.

ANSWER: **Pompeii**

[10] Light exposure in the years since excavation has dulled the colors of frescoes in this villa on the edge of Pompeii. Ten frescoes in its *triclinium* illustrate a woman’s initiation into a Dionysiac rite.

ANSWER: **Villa of the Mysteries**

[10] This scholar of Pompeii has called for halt on further excavation to re-examine the already-uncovered sections of Pompeii. He analyzed the development of the Roman imperial cult in *The Power of Images in the Age of Augustus*.

ANSWER: Paul **Zanker**

17. Edmund Spenser inverted the traditional associations of this topos in the Bower of Bliss sequence in *The Faerie Queene*. For 10 points each:

[10] Give this Latin literary term for idyllic safe spaces, frequently gardens, common in pastoral and narrative poetry going back to ancient Greek and Latin writers.

ANSWER: **locus amoenus**

[10] A *locus amoenus* features prominently in an allegorical medieval French poem called the *Roman* (roh-MAHN) of one of these things. A “sick” one of these things is destroyed by an “invisible worm” in a William Blake lyric.

ANSWER: **roses**

[10] The *Roman de la Rose* was begun by one poet and then continued at much greater length by another. Name either.

ANSWER: **Guillaume de Lorris** and **Jean de Meung** [accept either answer; accept Jean **Clopinel**; accept Jean **Chopinell**; prompt on **Guillaume**; prompt on **Jean**; prompt on de **Lorris**; prompt on de **Meung**]

18. These data structures are often used to compactly store language dictionaries since each of their edges can be thought of as representing a letter of a word. For 10 points each:

[10] Name these special trees, whose common name was coined by Edward Fredkin. They are used to implement burtsort, an improvement of radixsort.

ANSWER: **tries** (“tries”) [Note: Tries are often pronounced like the plural of “try”, “tries”; so accept that. However, the answer is a homophone for “trees”, so prompt on **trees**. Do accept **prefix trees** or **digital trees**, though.]

[10] Tries (“tries”) are often used to store dictionaries that hold this kind of variable, which is often used to store text.

ANSWER: **strings**

[10] The burtsort algorithm, which makes use of tries, is an example of an algorithm that is “conscious” of the size of this entity, giving it an empirically faster run time. The Cooley-Tukey algorithm is an example of an algorithm that is “oblivious” to this thing’s parameters.

ANSWER: **cache** [accept **cache**-oblivious or **cache**-conscious algorithms]

19. Lewis Miller, inventor of the first successful combine machine, pioneered the “Akron Plan” as a way to increase the number of these institutions in the United States. For 10 points each:

[10] Name these institutions, which were created in England by Robert Raikes.

ANSWER: **Sunday Schools** [prompt on “churches”]

[10] Robert Raikes, the father of the Sunday School movement, was member of this protestant denomination that still uses a version of the Book of Common Prayer.

ANSWER: **Church of England** [or **Anglican**; do not accept “Episcopalian”]

[10] This institution in Upstate New York was founded by Lewis Miller and John Heyl Vincent as a teaching camp for Sunday school teachers. It included Palestine Park, a scale model of the Holy Land.

ANSWER: **Chautauqua** Institution

20. In this region, although the value of  $\Delta G$  is very negative and greater in magnitude than the reorganization energy, the  $\Delta G$  of the transition state paradoxically increases. For 10 points each:

[10] Name this construct hypothesized in a theory of electron transfer which holds that as reactions become increasingly exergonic, their rates actually end up decreasing.

ANSWER: **Marcus inverted** region

[10] As the rate of a reaction slows in the Marcus inverted region, this quantity, which represents the minimum energy to reach a reaction's transition state, increases.

ANSWER: **activation energy** [or **E<sub>a</sub>**; or **E-sub-a**]

[10] The two parabolas representing the product and reactant states in Marcus theory are plotted with this variable on the  $x$ -axis. Commonly used measures of this of this variable include bond angle and bond order.

ANSWER: reaction **coordinate**