ACADEMIC COMPETITION FEDERATION

ACF NATIONALS 2022

PACKET 16

Packet by

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TOSSUPS

1. In this country, protesters chanting the slogan "bread, education, liberty" named themselves after a poem titled "The Free Besieged." A student named Maria rallied sympathizers with pirate radio broadcasts during a protest in this country against the drafting of subversive youths. In the 1970s, BBC journalist Leslie Finer covered a series of three trials in this country, including ones named for "instigators" and "torturers." A left-wing terrorist group in this country, 17 November, was named for the date of a student uprising which was quashed after a tank crashed through the gates of its leading Polytechnic University. The last referendum abolishing this European country's monarchy was passed in 1974 after the invalidation of a similar act by this country's junta, the Regime of the Colonels. For 10 points, name this country whose last king was Constantine II ("the-second").
ANSWER: **Greece** [or Kingdom of **Greece**, or **Hellenic** Republic, or **Ellada**, or **Hellas**, or Vasilion tes **Elados**, or **Ellinikí** Dimokratía]
<European History>

2. An A. J. Ayer article titled for this principle posits an infinitely repeating set of four sounds. In the section "Amphiboly of the Concept of Reflection," Kant argues against this principle using raindrops. An article titled for this principle imagines a universe that consists entirely of spheres nicknamed Castor and Pollux. This principle is applied incorrectly in the "Masked Man" fallacy. In correspondence with Samuel Clarke, this principle's credited formulator claimed that if it were not true, there would be multiple possible worlds for God to choose from. First explicitly formulated in the *Discourse on Metaphysics*, this law was used by Descartes ("day-KART") to show that the mind and body must be distinct because they have different properties. For 10 points, name this law which states that if two objects have all the same properties, then they must be the same.
ANSWER: the **identity of indiscernibles** [or **Leibniz**'s law; accept the **indiscernibility of identicals**]
<Philosophy>

3. A film whose protagonist has this profession is interrupted by black-and-white footage from a 1924 documentary by Arnold Fanck, which uses intertitles with green lettering. That film about a woman in this profession shows the title meteorological phenomenon in a sequence set to Pachelbel's Canon, as a mass of mist known as the "Maloja Snake" winds through an alpine valley. Juliette Binoche ("bee-NOHSH") plays Maria Enders, a person with this job whose assistant suddenly disappears toward the end of Olivier Assayas's ("olive-YAY ah-sah-YASS's") *Clouds of Sils Maria*. In a silent film, one of these people prepares to shoot himself as a woman in this profession drives to his apartment, culminating in a title card that reads "BANG!" That Michel Hazanavicius ("ah-zah-nah-veess-YOOSS") film switches to diegetic sound as two people in this profession tap dance. For 10 points, name this profession of Jean Dujardin's character in *The Artist*.
ANSWER: **actor**s [or **actress**es; prompt on performers or artists]
<Other Fine Arts>

4. *Note to moderator: Read the whole answerline before judging an answer.* The Hoffman–Gelman "No-U-Turn" algorithm for this mathematical task adjusts a step size in a leapfrog process that tracks analogs of position and momentum. Naïve methods for this task convert the parameter space into the rows and columns of a Latin hypercube. A log-concave target envelope is iteratively shrunk in the adaptive rejection algorithm for this task. A class of algorithms for this basic task reject early outputs during a "burn-in" period, and include one that sequentially updates the components of its state vector, conditioning each value on previous components. Markov chain Monte Carlo methods such as Gibbs or Metropolis–Hastings may be used for this task if the high dimensionality of the outcome space renders random number generation infeasible. For 10 points, name this task of obtaining representative values from a probability distribution.
ANSWER: **sampling** from a probability distribution [or obtaining **sample**s; or random **sampling**; accept Gibbs **sampling**; prompt on generating <u>random</u> numbers; prompt on <u>integration</u> or taking <u>integral</u>s of a distribution; prompt on finding the <u>mean</u> or <u>average</u> of a distribution; prompt on (Markov chain) <u>Monte Carlo</u> simulations or <u>MC</u> or <u>MCMC</u> before "Monte Carlo" by asking "What mathematical task is that algorithm used for?"; prompt on <u>Metropolis</u>–Hastings algorithm before "Metropolis" by asking "What mathematical task is that algorithm used for?"]
<Misc. Science>

5. This author wrote "If sorrow is the consequence of pattern spoiled, then the bird was grieving" to begin an eleven-page sentence that takes up the entire third section of a novel. A former blaxploitation actor blackmails a councilman into helping him finance a new film in a novel by this author, in which an NFL player's superstore, Dogpile Thang, threatens to drive Brokeland Records out of business. A conspiracy to start a war by destroying the Dome of the Rock is uncovered in a novel by this author, which opens with a chess prodigy found dead next to a cardboard set. This author of *Telegraph Avenue* wrote a novel in which Berko Shemets partners with Meyer Landsman in Sitka, Alaska, which has become a temporary refuge for people escaping the Holocaust. For 10 points, name this Jewish author of *The Yiddish Policemen's Union*.
ANSWER: Michael **Chabon** ("SHAY-bahn")
<American Literature>

6. When applied naïvely, this theorem incorrectly predicts that techniques like electron cooling and stochastic cooling are impossible. In quantum mechanics, this theorem is modified to allow for flows to be compressible under the Moyal bracket. Lev Landau's ("LAN-dao's") proof of this theorem uses the fact that the Jacobian ("juh-KOHB-ian") of a canonical transformation is exactly one. A quantum analogue of this theorem, describing the time evolution of mixed states, is named for John von Neumann. This theorem states that the partial time derivative of rho equals the negative Poisson ("pwah-SAHN") bracket of rho with the Hamiltonian, or equivalently, that the total time derivative of the density of "system points" is zero. For 10 points, name this theorem from classical mechanics, by which the phase-space distribution function is carried unchanged along the trajectories of a dynamical system.
ANSWER: **Liouville**'s ("l'YOO-veel's") theorem [accept **Liouville** equation or **Liouville** flow]
<Physics>

7. This politician wrote a 2019 book about eight predecessors, including Hugo Black and George McGovern, whose names are carved in the drawer of Desk 88. This politician supported the USMCA as an improvement over the free trade programs that this politician criticized in the book *The Myths of Free Trade*. The name of this politician's effort to recruit and train future office-holders, the Canary Candidates Program, alludes to a characteristic yellow lapel pin. In early 2021, this politician led an investigation into Archegos ("ar-KAY-gohs") Capital as chair of the Senate Banking Committee. This husband of commentator Connie Schultz declined to run for president after urging General Motors not to close its Lordstown factory on his "Dignity of Work" speaking tour. This Senator's election in 2006 unseated current governor Mike DeWine. For 10 points, name this pro-labor Democratic senator from Ohio.
ANSWER: Sherrod **Brown**
<Current Events>

8. To help fight off invasions, this empire raised the *khums* tax on war booty to 80% and the *kharaj* ("kuh-RAJ") tax on peasant produce to a crushing 50%; it then used that revenue to build its royal water tank, the Hauz Khas ("hose kahss"). The historian Ziauddin ("zee-YAH-ood-DEEN") Barani describes how this empire's rulers built four of the so-called "seven older cities" of its capital, including the Siri Fort complex and the district of Firozabad. This empire's general Zafar Khan died at the Battle of Kili, at which it repulsed the last of a series of invasions by the great *tumens* of the Chagatai ("CHAG-uh-tye") Khanate. Its founder, a general who served the Ghurid dynasty, is honored by the Qutb ("KUT-tub") Minar. The Mongol-defeating Alauddin Khilji ("uh-LAH-ood-DEEN KEEL-jee") ruled this empire, which survived the sack of its capital by Timur ("tee-MOOR") in 1398. For 10 points, what empire was later ruled by the Lodi dynasty from its namesake city?
ANSWER: **Delhi** Sultanate [or Saltanat **Dêhlī**, or **Delhi** empire]
<World History>

9. *Description acceptable.* One of these objects was said to have been created by a Napoleonic soldier who was sheltered by an old man inside an Egyptian pyramid. That example of these objects was called the *Black Pullet*, referring to a hen that laid golden eggs. Many of these objects were attributed to the Beringos Fratres ("FRAH-truss"), a fictional Lyonese company located "at the sign of Agrippa." An object of this kind that Virgil discovered under the head of the centaur Chiron ("KYE-ron") may be the same one that Gervase of Tilbury claims was found with Virgil's own remains. Albertus Parvus Lucius names an object of this kind called the *Petit Albert* ("puh-TEE tal-BAIR") that explained how to create a Hand of Glory. These texts include one whose *Ars Goetia* ("GO-ay-TEE-uh") section includes a list of demons. Like *The Lesser Key of Solomon*, H. P. Lovecraft's fictional *Necronomicon* is a text of this kind. For 10 points, name these instructional books that explain how to conjure spirits or summon demons.
ANSWER: **grimoire**s [accept answers that mention **text**s about **magic**, **spell**s, **witchcraft**, **sorcery**, or equivalents; prompt on answers that refer to objects of the occult or mysticism generally, but reject answers that refer to specific types of objects that are not texts; prompt on books or manuals or equivalents; prompt on banned books; prompt on books of demons by asking "What is the more general subject of the books?"]
<Mythology/Legends>

10. A character in this play delivers the bizarre insult, "you were beaten in Italy for picking a kernel out of a pomegranate." When his dishonesty is proven, a character in this play declares that "Rust, sword, cool, blushes, and [himself] live / Safest in shame; being fool'd, by fool'ry thrive." A jester in this play tells the noblewoman he serves that all statements can be answered by saying, "O Lord, sir!" While pretending to search for his lost drum, a character in this play is captured by comrades pretending to be Russian soldiers. As reward for curing the fistula of the King of France, this play's female protagonist weds the friend of the braggart Parolles ("puh-ROLL-izz"). Like its author's earlier "problem play," *Measure for Measure*, it employs the device of the bed trick. For 10 points, name this Shakespeare play titled for the mending of the marriage of Bertram and Helena.
ANSWER: *__All's Well That Ends Well__*
<British Literature>

11. This was the first protein studied by second-harmonic generation microscopy by Freund ("froynd") and Deutsch ("doytch"). De·hydrothermal treatment crosslinks this protein into a hydrogel. This protein comprises a beer-clarifying substance extracted from swim bladders, called isinglass ("EYE-zin-glass"). This protein is stained red by van Gieson's stain and blue by Masson's ("mah-SAWN's") tri·chrome. 3D cell cultures take advantage of this protein's GFOGER ("G-F-O-G-E-R") motif. A bovine version of this protein is used to coat culture flasks to improve adherence. After secretion, peptidases ("PEP-tid-aces") remove this protein's registration peptides. Within cells, fibrils of this protein form di·sulfide bonds with each other at their C-terminus, after their lysines ("LYE-seens") and prolines ("PROH-leens") are hydroxylated ("high-DROX-ilated"). Every third residue of this protein is glycine ("GLY-seen"). For 10 points, name this triple-helical extra·cellular matrix protein.
ANSWER: **collagen**
<Biology>

12. The first of two C-sharp-minor interruptions in this symphony's finale begins with the first violins holding the pitch A6 nearly five octaves above a melody for cellos and contrabassoon. A Grammy-winning 1979 performance of this symphony was the only collaboration between the Berlin Philharmonic and Leonard Bernstein, who had earlier included a performance of this symphony's finale after "The Twentieth Century Crisis," the penultimate lecture in his series *The Unanswered Question*. The "Lebewohl" ("LAY-buh-vole") theme from Beethoven's *Les Adieux* ("leh-zah-d'YOO") sonata appears in this symphony's first three movements, the last of which is a "Rondo-Burleske." The composer avoided numbering his previous work, *Das Lied von der Erde* ("das leet fon der AIR-duh"), in an attempt to dodge the "curse" he thought this symphony would bring. For 10 points, name this final completed symphony by the composer of the *Symphony of a Thousand*.
ANSWER: Gustav **Mahler**'s Symphony No. **9** in D major [or **Mahler 9**]
<Classical Music>

13. An author from this country began a poem with the lines "You might say / my job is not / to lose myself exactly / but to imagine / what loss might feel like." Another poet from this country imagined a "fierce man" who longs to "curb [the] sadness" of a child whose "laughter metamorphosed into howls." The authors of the poems "The Cartographer Tries to Map a Way to Zion" and "Little Boy Crying," Kei Miller and Mervyn Morris, are from this country, as was a folklorist nicknamed "Miss Lou." A poet who was born in this country concluded a sonnet with the image of men "Pressed to the wall, dying, but fighting back!" An author from this country fictionalized herself as Clare Savage in the novels *No Telephone to Heaven* and *Abeng*. For 10 points, name this country of origin of Michelle Cliff and the author of "If We Must Die," Claude McKay, who later re-settled in Harlem.
ANSWER: **Jamaica** ("Miss Lou" is Louise Bennett-Coverley.)
<World Literature>

14. These groups name a right-wing extremist Christian group whose leader Gordon Kahl was killed by federal agents in Arkansas in 1983. In 1981, Congress created the "drug exception" to an act named for these groups, allowing the DEA ("D-E-A") to procure Abrams tanks. In historic common law, the authority to create these groups also granted the authority of the "hue and cry." A law named for them was appended to an appropriations bill in the aftermath of the Great Railroad Strike and was partly intended to nullify the Ku Klux Klan Act of 1871. Rutherford B. Hayes signed that law named for these groups, which restricts the use of the U.S. military in law enforcement. Bat Masterson often assembled gamblers into these groups in Dodge City to preserve the peace. For 10 points, name these groups of armed citizens which sheriffs assemble to hunt down outlaws.
ANSWER: **posse**s [or **posse** comitatus; accept **Posse** Comitatus Act; prompt on gangs; reject "outlaw gangs"]
<American History>

15. Hjalti Skeggiason ("h'YAL-tee SKEGG-yuh-son") sparked controversy in Iceland by insulting this deity after quipping that "I don't wish to bark at the gods." Iceland's Grey Goose Laws explicitly forbid a type of devotional poetry of which this deity was the primary patron, called *mansǫngr* ("MAN-song-gur"). A frequent conflation with the figure who raised Zeeland from the sea is indicated by this deity's epithet of Gef. Contemporary veneration of this deity sometimes involves beekeeping, as this deity's tears were said to take the form of golden bees, or gold. Christian writers often emphasize this deity's role as the patron of *seiðr* ("SAY-thur"), a type of magic sometimes practiced by *vǫlvas* ("VAWL-vuzz"). Epithets of this deity include Mardoll and Syr ("s'YOOR"), the latter of which is reflected by her battle-boar Hildisvíni ("HIL-dis-VEE-nee"). For 10 points, name this Norse goddess cloaked in falcon feathers, whose hall at Folkvangr ("FOLK-vang-gur") welcomed half of the heroic dead.
ANSWER: **Freyja** ("FRAY-yuh") [or **Frea**, or **Frau**, or **Fraujo**; reject "Frigg" or "Frigga"]
<Religion>

16. This author wrote fondly of one lover's odor of bedbugs, which mixed with the smell of sandalwood on her skin. One of his protagonists first appears with her hair piled high and dyed with violet sand. In another of his works, the phrase "I am not a woman: I am a world!" is spoken by the Queen of Sheba, who says she dances "like a bee" in possible reference to a striptease he saw in which the dancer pretends a bee is chasing her. Edward Said ("sah-EED") slammed this man's claim that "The Oriental woman is a machine, and nothing more." This man took a lover whose nickname means "little lady" in Turkish, Kuchuk Hanem, while in Egypt. He wrote a novel in which a sacred veil called the zaimph is stolen by the mercenary Matho, who falls for a daughter of Hamilcar. For 10 points, name this French author of *The Temptation of St. Anthony* and *Salammbô*.
ANSWER: Gustave **Flaubert** ("flo-BAIR")
<European Literature>

17. An essay on this artist's work argues that it converts space into spacetime, and describes its "focused energy" as the "still point of the turning world." This sculptor's visit to Greece inspired several works made of guarea wood, from which this artist carved out interior spaces that were painted over in white. Stacked bronze blocks make up a series of nine works by this sculptor that includes *Young Girl* and *Parent II* ("two"). That series, *The Family of Man*, sits on a hill in the Yorkshire Sculpture Park in this artist's hometown of Wakefield. This artist of *Corinthos* and *Oval Sculpture (Delos)* was inspired by sea views from her home in St. Ives for the wave-like spiral of *Pelagos*. This wife of Ben Nicholson dedicated *Single Form*, which is at the UN Headquarters, to Dag Hammarskjöld. For 10 points, name this British sculptor whose works often feature holes and string.
ANSWER: Barbara **Hepworth** [or Dame Jocelyn Barbara **Hepworth**]
<Painting/Sculpture>

18. "Destabilization" of these things is explored using the CONSTRUCT model in a paper co-authored by David Krackhardt, who developed the Multiple Regression Quadratic Assignment Procedure to analyze them. "Local motifs" in these things can be detected by optimizing the modularity function, as proposed by Mark Newman. Distinguishing "structural" and "compositional" variables in these things is discussed in Katherine Faust and Stanley Wasserman's textbook on analyzing them. Structural holes in these things can be found using Burt's formula, which calculates their redundancy. They tend to evolve towards Georg Simmel's ("GAY-ork ZIM-ell's") principle of triadic closure, as discussed in Mark Granovetter's ("GRAN-oh-vetter's") paper "The Strength of Weak Ties." Influence within these things is quantified by the centrality of their nodes. For 10 points, name these graphs of connected agents.
ANSWER: **network**s [accept social **network**s or **network** modularity or **network** redundancy or **network** centrality; accept **community** or **communities**; prompt on ecosystems; prompt on weak ties before "Weak Ties" by asking "Within what structures?"; prompt on socio-matrix or socio-matrices or graphs by asking "What do those matrices/graphs represent?"]
<Social Science>

19. Traditionally, boys among this Native American people do not put their feet on earth until they leave their teepee carrying a gun and axe in the "walking-out" ceremony. Like the Cherokee, nearly all of these people were literate in the 19th century, thanks to a syllabary originally invented for them by James Evans which uses consonant orientation to indicate vowels. Their chiefs included Piapot ("pye-uh-POT") and Big Bear, who led them in conflicts with the Blackfeet in the 1870s. The Grand Council of the "East" group of these people organized resistance to the James Bay hydroelectric project in Quebec. More western groups of them allied with local Métis ("may-TEESS") and Assiniboine ("uh-SINNY-boyn") to form the fur-trading Iron Confederacy, which included these people's "Woods" and "Plains" subdivisions. For 10 points, name this most populous First Nations group in Canada.
ANSWER: **Cree** people [or **Nehiyaw**ak or **Nehinaw**; accept East **Cree** or Plains **Cree** or Woods **Cree**]
<Other History>

20. Garnet metal oxides and phosphido·aluminates are promising materials to boost this element's transference number from 0.34 to 1. In parasitic reactions, reactive oxygen species lead to the active loss of this metal. Ions of this element are inserted at vacancies between spinel tetra·hedra or cobalt oxide octa·hedra to preserve operating capacity. Since ethylene ("ETH-ill-een") carbonate and hexa·fluoro·phosphate salts catalyze the formation of dangerous dendrites of this metal, it is usually first inter·calated into graphite at the solid–electrolyte interface. Liquid polymers transport this element through a separator in a "swiss roll" design that earned John Goodenough ("goody-now") a Nobel Prize. That device uses this metal in the electrolyte, the anode, and the cathode, but frequently catches fire. For 10 points, name this alkali metal used in a common rechargeable battery.
ANSWER: **lithium** [or **Li**]
<Chemistry>

BONUSES

1. Answer the following about the musical education of Franz Liszt, for 10 points each.
[10m] Liszt's main piano teacher was this protégé of Beethoven, today best known for his etudes collected in *The School of Velocity* and for his variation sets, such as *La Ricordanza*.
ANSWER: Carl **Czerny** ("CHAIR-nee")
[10h] In 1822, while studying piano with Czerny, Liszt learned music theory from this pedagogue, perhaps the most sought-after theory and composition teacher in early 19ᵗʰ-century Vienna. He served as Schubert's main teacher from 1804 to 1817, and his other students included Beethoven, Hummel, and Meyerbeer.
ANSWER: Antonio **Salieri**
[10e] Liszt had to continue his composition studies privately with Anton Reicha ("RAY-kah") after Luigi Cherubini ("keh-roo-BEE-nee") refused to admit him to this city's conservatory, where Nadia Boulanger ("boo-lawn-ZHAY") studied.
ANSWER: **Paris** [accept **Paris** Conservatory or *Conservatoire de **Paris***]
<Classical Music>

2. In 1998, an urn at Melrose Abbey was confirmed to contain one of these objects belonging to Robert the Bruce. For 10 points each:
[10m] Identify these objects. One of them belonging to Richard I was kept inside a sarcophagus bearing the king's image in Rouen ("roo-AHN") Cathedral, far from the king's burial place in Chalus ("shah-L'YOO").
ANSWER: **heart**s [or **couer**s, or **cardium**, or **cardia**; accept **heart**s of royalty/kings/queens/etc; accept Robert the Bruce's **heart** or Richard the Lionheart's **heart**; accept The Actual Lion **Heart**; reject "corpse" or "body"]
[10e] Hundreds of hearts of members of this royal house are held in the appropriately-named *Herzgruft* ("HAIR'ts-gruft") in the Augustinian Church. Its members included Philip II of Spain.
ANSWER: House of **Habsburg** [or **Hapsburg**s]
[10h] A disputed tale claims that this person's heart was kept inside a heart-shaped casket at St. Mary's church in Suffolk until it was discovered in 1836, when it was buried beneath a church's organ.
ANSWER: Anne **Boleyn**
<European History>

3. Answer the following about single-cell RNA sequencing and its applications, for 10 points each.
[10e] ScRNA-seq ("S-C-R-N-A-seek") is commonly used in a subfield of molecular biology named for this process, in which RNA polymerase ("puh-LIM-er-ace") synthesizes RNA from DNA.
ANSWER: **transcription** [accept **transcriptomics**]
[10m] Reads are mapped to individual cells in scRNA-seq using these sequences within the primer, usually six to eight nucleotides long. These short sequences are used to demultiplex a sample.
ANSWER: **barcode**s [or **tag**s; or **hashtag**s; or **hash**es]
[10h] After clustering scRNA-seq data, algorithms like Wanderlust, Monocle, and Slingshot can be used for this analysis. This procedure arranges static snapshots of cells into a particular path, based on their stage of a given process like differentiation. Unlike lineage tracing, it doesn't require labeling the cells directly.
ANSWER: **trajectory** analysis [or **trajectory** inference; or **pseudotime ordering**; or **pseudotemporal ordering**]
<Biology>

4. Answer the following about philosophers' attempts to reckon with the Rwandan genocide, for 10 points each.
[10e] Michael Walzer has argued that a military intervention to stop the genocide would have been this type of war. Thomas Aquinas ("uh-KWYE-nuss") wrote that a war of this type must be proportional and undertaken as a last resort.
ANSWER: **just** war [or *bellum **iustum***]
[10m] Kyrsten Sinema's doctoral thesis applied this Italian man's concept of the "state of exception" to Rwanda. This thinker, who discussed "bare life" in *Homo sacer*, has since railed against COVID mitigation policies.
ANSWER: Giorgio **Agamben** ("uh-GAM-ben")
[10h] Cameroon-born thinker Achille Mbembe ("ah-SHEEL em-BEM-bay") invoked the display of Rwandan victims' skeletons as an instance of this concept, the "capacity to define who matters and who does not, who is disposable and who is not."
ANSWER: **necropolitics** [prompt on Foucauldian **biopower** or **biopolitics** by asking "What is Mbembe's extension of that concept called?"]
<Philsophy>

5. This character was born in a river, to a mother who later had dark-skinned children with a black stable worker called the Zayde. For 10 points each:
[10m] Name this literary narrator, who often goes hungry while in service to a series of stingy masters. He loses teeth when a wine jug is smashed in his face, to punish him for drilling a secret hole to drink from it.
ANSWER: **Lazarillo de Tormes** ("lah-sah-REE-yoh day TOR-mess") [accept either underlined part; accept **Lázaro** de Tormes]
[10e] In his namesake Spanish picaresque novel, Lazarillo's first master is an old man with this condition, which spreads and causes social breakdown in a namesake novel by José Saramago ("suh-ruh-MAH-goo").
ANSWER: **blind**ness [or **ciego** ("th'YAY-go"); accept *Ensaio sobre la **cegueira***]
[10h] Lazarillo feels pity for this unnamed character, who wears a fancy cloak but has no money. This man rants about honor after recounting his expulsion from Old Castile for refusing to doff his hat to a higher-ranked passerby.
ANSWER: the **squire** [or the **esquire**; or el **escudero**; or the low-born **noble**; or Lazarillo's **third master**; prompt on Lazarillo's **master**]
<European Literature>

6. A Homeric Hymn to this god tells of how he wove tamarisk and myrtle twigs into wicker sandals, which he cast into the river Alpheus after using them to hide his own tracks. For 10 points each:
[10e] Name this god who wore those sandals while stealing the cattle of Apollo. When Apollo accused him, this god offered his lyre in exchange for the cattle.
ANSWER: **Hermes**
[10h] Along with his *caduceus* ("kuh-DOO-shuss") and *petasus* hat, Hermes wore winged sandals made by Hephaestus that allowed him to fly. Give either the Greek or the Latin term for these sandals.
ANSWER: *pédila* or *tālāria* [accept *ptēnopédilos* or *pteróenta pédila*]
[10m] Pseudo-Hyginus states that when Hermes fell in love with this figure, an eagle sent by Zeus stole her sandal as she bathed in the Achelous ("ACK-uh-LOH-uss") and gave it to Hermes. Her son with Hermes later merged with the naiad Salmacis ("SAL-muh-SISS").
ANSWER: **Aphrodite** [accept **Venus**]
<Mythology/Legends>

7. A horrific noise that may come from a generator punctuates this play, in which the blogger Teresa rants about a view of generational churn advanced by her idol Steve Bannon. For 10 points each:
[10h] Name this 2019 play by Will Arbery, in which four alumni of the Catholic school Transfiguration College hash out their beliefs as they wait for Gina, the college's new president.
ANSWER: _Heroes of the Fourth Turning_
[10e] _Heroes of the Fourth Turning_ is set in this state. Matthew Shepard's murder in the title city in this state formed the basis of Moisés ("moy-SESS") Kaufman's play _The Laramie Project_.
ANSWER: **Wyoming**
[10m] In a Vox interview, Arbery identified this author as his chief model for story-telling. A 2014 book-length poem by this author includes scripts for "situation videos" about the deaths of Mark Duggan and Trayvon Martin.
ANSWER: Claudia **Rankine** (That poem is _Citizen: An American Lyric_.)
<American Literature>

8. This cleric's book _The Lawful and Prohibited in Islam_ became one of the standard textbooks for the Muslim Brotherhood for its practical interpretation of _shari'a_. For 10 points each,
[10h] Name this Egyptian-born cleric who founded IslamOnline. He has stirred conflict between Saudi Arabia and Qatar with religious opinions broadcast on his Al-Jazeera program, _Sharia and Life_.
ANSWER: Yusuf al-**Qaradawi** ("KAH-ruh-DAH-wee")
[10m] Qaradawi disputes the Wahhabi ("wuh-HAH-bee") and Salafi ("suh-LAH-fee") positions that the holiday of Mawlid ("MAO-lid") is a heretical example of these changes to Islamic doctrine, instead arguing that Mawlid is a good example of them in accordance with _sunnah_.
ANSWER: **bid'ah** [or **innovation**s]
[10e] On the other hand, Qaradawi agrees with the Wahhabis that this group engages in much _bid'ah_, so much that it is "more infidel" than the Jews. This secretive group, found mainly in Syria, includes Bashar al-Assad.
ANSWER: **Alawite**s ("AL-uh-wytes") [or **Alawi** ("ah-lah-WEE")]
<Religion>

9. A collective of Cambridge classicists spent three decades compiling a three-volume example of this approach to history covering the Late Roman Empire from the reigns of Gallienus to Heraclius. For 10 points each:
[10h] Name this approach to historiography with a Greek-derived name. It is sometimes described as "knowing who is who," as its approach consists of tracing the careers and connections of notable figures.
ANSWER: **prosopography** ("prah-suh-PAH-graphy") [or **prosopographia**; accept **Prosopography** of the Late Roman Empire]
[10m] The first major _Prosopographia Imperii_ ("im-PERRY-ee") _Romani_ was published in the late 1890s in Germany with contributions from this classicist, who won the 1902 Nobel in Literature for his monumental _History of Rome_.
ANSWER: Theodor **Mommsen** ("MOM-zen") [or Christian Matthias Theodor **Mommsen**]
[10e] Recent classical prosopograhies include Debra Nails's book on the "People of" this person, who founded a school called the Academy in 387 BCE.
ANSWER: **Plato** [or **Platon**; accept _The People of **Plato**_]
<Other History>

10. Just as a sailboat moves around a buoy ("BOO-ee"), this planet migrated towards the inner solar system and then back to its current location in the "grand tack" model. For 10 points each:
[10e] Name this Solar System planet, which shepherds the trojan asteroids and is the namesake of a class of "hot" gaseous exoplanets.
ANSWER: **Jupiter** [accept hot **Jupiter**s]
[10h] Hot Jupiters may form via this effect, in which the smallest of three gravitating bodies trades inclination for orbital eccentricity. This effect could drive the unusual alignment of Kuiper ("kye-per") belt objects via interactions with Neptune and a proposed Planet X.
ANSWER: **Kozai** ("KOH-zye") mechanism [or **Kozai**–Lidov mechanism; or Lidov–**Kozai** mechanism; accept synonyms for "mechanism" like "effect"; accept **Kozai** resonance]
[10m] The "GOT 'EM" ("got-em") survey identified object 1704b as a "failed hot Jupiter." 1704b was discovered by this satellite, whose search for exoplanets slowed after a second of its four reaction wheels failed in 2013.
ANSWER: **Kepler** space telescope [accept **Kepler** mission or **Kepler** satellite]
<Misc. Science>

11. A watercolor landscape by this artist shows a group of broken tree trunks separated from a grove of living pines by a pond. For 10 points each:
[10h] Name this artist whose other watercolor landscapes include *The Water Drawing Mill*. This man painted several watercolors showing deserted courtyards in Innsbruck Castle while traveling to Italy.
ANSWER: Albrecht **Dürer**
[10m] This other German artist painted what is considered one of the earliest pure landscapes on oil. That work by this artist shows the titular footbridge between a gatehouse and a larch tree.
ANSWER: Albrecht **Altdorfer**
[10e] Altdorfer was part of a school of landscape painting named for one of these geographic features. An American movement named after one of these things included Thomas Cole.
ANSWER: **river**s [accept **Danube** School or **Hudson** River School]
<Painting/Sculpture>

12. Michael Cates coined the term "fragile matter" for systems in which this phenomenon can be destroyed by off-axis stresses. For 10 points each:
[10h] Name this physical process, in which a granular material like a sand pile ceases to flow at a sufficiently high packing fraction.
ANSWER: **jamming** [accept **jam**med; accept **jamming** transition; reject ostensible synonyms]
[10e] Andrea Liu and Sidney Nagel suggested that the dynamics of jammed materials resemble those of these amorphous solids, which form below a transition temperature that is always lower than the melting point.
ANSWER: **glass**es [accept **glass** transition temperature]
[10m] A zero-frequency mode known by this adjective can unjam a system. This adjective describes low-energy, easily-attenuated X-rays, as well as a field of condensed matter physics concerned with deformable and non-solid materials.
ANSWER: **soft** [accept **soft** modes or **soft** X-rays or **soft** matter or **soft** condensed matter]
<Physics>

13. This collection, whose most recent edition is from 1994 and contains two volumes added by John Press, begins with a short poem by Thomas Nashe celebrating "Spring, the sweet spring." For 10 points each:
[10h] Name this sweeping anthology of English poems first published in 1861. Its dedicatee, Alfred Lord Tennyson, helped produce a revised version.
ANSWER: *Palgrave's* **_Golden Treasury_** [or **_Golden Treasury_** *of English Songs and Lyrics*]
[10e] The compiler of the *Golden Treasury*, F. T. Palgrave, taught at this university. A mental patient named W. C. Minor contributed heavily to its namesake English dictionary.
ANSWER: **Oxford** University [accept **Oxford** English Dictionary]
[10m] A "memoir" of this man by Palgrave opens a collection of his poems. After this poet of "Say not the Struggle nought Availeth" died at age 42, Matthew Arnold wrote the poems "Thyrsis" ("THUR-sis") and *The Scholar-Gipsy* in his honor.
ANSWER: Arthur Hugh **Clough** ("kluff")
<British Literature>

14. This country's first president, an ex-farmer and leader of the African Agricultural Union, broke with his neighbors by pursuing economic liberalization. For 10 points each:
[10m] Name this African country whose economy tanked in 1978 when cacao and coffee prices collapsed. It built the world's largest Catholic church, the Basilica of Our Lady of Peace, in the 1980s.
ANSWER: The **Ivory Coast** [or **Côte d'Ivoire** ("coat dee-v'WARR")] (Its first president was Félix Houphouët-Boigny ("oof-WAY-bwan-YEE").)
[10e] The Ivory Coast is home to a regional development group called the Council of this word. This French word also names the alliance of Britain, France, and Russia during World War I.
ANSWER: *entente* ("ahn-TAHNT") [accept Conseil de l'**Entente** or Triple **Entente**]
[10h] This economist, who was Félix Houphouët-Boigny's ("oof-WAY-bwan-YEE's") right-hand man late in life, managed Ivorian development starting in the early 1990s. This economist has been the Ivory Coast's president since the end of military rule in 2010.
ANSWER: Alassane **Ouattara** ("wah-tah-RAH")
<World History>

15. This mountain range bounds northwesterly winds called *shamal* ("shuh-MAL"), which cause sandstorms in the summer. For 10 points each:
[10m] Name this mountain range visible from the city of Erbil ("er-BEEL"), whose peaks and surrounding forest steppe are largely covered by oak trees. In 2018, a passenger airplane crashed into its tallest peak, Mount Dena.
ANSWER: **Zagros** Mountains
[10e] The Zagros Mountains are a habitat for the rare striped species of these "laughing" carnivores. The spotted type has dominant females whose clitorises reach up to eight inches in length.
ANSWER: **hyena**s [or striped **hyena**s, or spotted **hyena**s, or **Hyaena** hyaena, or **Crocuta** crocuta]
[10h] The Zagros mountains are the source of this river, which is crossed by the ancient Band-e Kaisar bridge, later converted into a dam. This chief river of Khuzestan ("KOO-zuh-stan") is Iran's largest river by discharge.
ANSWER: **Karun** ("kuh-ROON") river
<Geography>

16. Most biodegradable polymers are made by this type of polymer·ization, rather than addition. For 10 points each:
[10e] Name this reaction, the reverse of hydrolysis ("hye-DRAH-luh-siss"), which links two molecules by removing water.
ANSWER: **condensation** [or **dehydration** synthesis; or **condensing** or **dehydrating**]
[10h] In 2016, Japanese scientists found a soil microbe that had astoundingly evolved an enzyme to hydro·lyze this normally non-biodegradable polymer widely used in textiles. Its repeat unit is a benzene·di·carboxylic acid.
ANSWER: **poly·ethylene tere·phthalate** ("poly-ETH-ill-een TER-iff-THAL-ate") [or **PET**]
[10m] Enzym·atic hydrolysis of PET makes tere·phthalic ("TER-iff-THAL-ick") acid and this a·cyclic compound. The hydro·philic, viscous polymer made of this monomer is a crowding agent that's often conjugated to drugs to improve their bio·availability.
ANSWER: **ethylene glycol** [or **EG**; or **ethane-1,2-diol**; or **polyethylene glycol**; prompt on PEG]
<Chemistry>

17. A 1973 article by Horst Rittel and Melvin Webber laid out ten criteria for problems labeled with this adjective, such as "no definitive formulation" and "no stopping rule." For 10 points each:
[10h] Give this adjective first used by C. West Churchman for social problems with ever-shifting contingencies, as distinguished from "tame" problems like math proofs.
ANSWER: **wicked** problems
[10m] Many papers in the wicked problem literature cite this political scientist. Her work on local communities that develop complex systems for "governing the commons" won her the 2009 Nobel Prize in Economics.
ANSWER: Elinor Claire **Ostrom** [or Lin **Ostrom**; or Elinor **Awan**]
[10e] Wicked problems are common among people engaged in this activity for businesses, whose "principles" are outlined in a book by Peter Drucker. Frederick Taylor pioneered its "scientific" form.
ANSWER: **management** [accept word forms of **manage**, such as **managing** or **managerial** activities; accept *Principles of **Management*** or scientific **management**]
<Social Science>

18. John Laurens died in a 1782 skirmish along this river, where a ferry-assisted raid by black Union soldiers freed hundreds of enslaved blacks in 1863. For 10 points each:
[10m] Name this river. Demita Frazier and Barbara Smith co-founded a Black feminist "Collective" in Boston named for this river, which issued a 1977 statement calling out "racism in the white women's movement."
ANSWER: **Combahee** ("kum-BEE") River [accept **Combahee** River Collective]
[10e] This woman, who was born a slave in Maryland and nicknamed "Moses," led the raid honored in the Combahee River Collective's name.
ANSWER: Harriet **Tubman** [or Araminta "Minty" **Ross**]
[10h] The Collective's statement cites an "intense form" of this discussion activity, often done by small groups of second-wave feminists. Kathie Sarachild popularized this term in an essay praising this "Radical Weapon."
ANSWER: **consciousness raising** groups [accept "**Consciousness Raising**: A Radical Weapon"; accept variant answers that include forms of the words **raise** and **consciousness**]
<American History>

19. Howard Keel and Tommy Rall play two of the title characters in this film, some of whom chop wood while singing the song "Lonesome Polecat." For 10 points each:
[10m] Name this 1954 musical film directed by Stanley Donen, which features an athletic barn-raising dance scene. Its plot is based on the legend of the Sabine women.
ANSWER: *Seven Brides for Seven Brothers*
[10h] The dance numbers in *Seven Brides for Seven Brothers* were choreographed by this man, who was the first person to win five Tony Awards for Best Choreography. He also choreographed the stage version of *Lil' Abner* and the stage and film versions of *Guys and Dolls*.
ANSWER: Michael **Kidd** [or Milton **Greenwald**]
[10e] The year before *Seven Brides for Seven Brothers*, Keel and Rall appeared in the film version of *Kiss Me Kate*, with music and lyrics by this songwriter, whose songs include "Anything Goes" and "Night and Day."
ANSWER: Cole (Albert) **Porter**
<Other Fine Arts>

20. In a short story by this author, the protagonist repeatedly hears the madman Meher Ali crying, "Keep away! Keep away! All is false." For 10 points each:
[10e] Name this Bengali author who wrote a poetry collection that opens with the lines, "Thou hast made me endless, such is thy pleasure."
ANSWER: Rabindranath **Tagore** ("ruh-BIN-druh-not tah-GORE") [or Robindronath **Thakur**; prompt on **Gurudev**]
[10h] The madman Meher Ali appears in this short story by Tagore, in which a tax collector stays at a palace in Barich, which is haunted by the ghost of a Persian slave girl and other degenerate former inhabitants.
ANSWER: "The **Hungry Stones**" [or "**Kshudhita Pashan**" or "**Khudito Pashan**"]
[10m] The sick child Amal fantasizes about being a member of this profession in a play by Tagore titled for their place of work. Mario Jiménez ("hee-MEN-ess") befriends Pablo Neruda while working as this kind of person in a novel by Antonio Skármeta.
ANSWER: **postman** [or **postal** worker; or **mail**man; or **mail** carrier; or **letter** carrier; accept *Il **Postino***]
<World Literature>