

## TOSSUPS

1. Mark the Deacon claims that the Antiochian missionary Julia bribed churches to follow this figure in Gaza. This figure returned each spring to judge his followers from a throne placed on a five-tiered platform. The *archegos* (“ar-KEE-gohss”) led devotees of this figure who placed three metaphorical “seals” on their mouth, heart, and hands. The *Bēma* (“BEE-mah”) festival commemorated this man’s execution by the official Kartir (“car-TEER”). This man illustrated his own doctrines in the *Arzhang* and described three creations by the “Father of Greatness.” This man’s followers were divided into “hearers,” who sinned by gathering food, and the celibate “elect.” His followers briefly included Saint Augustine. For 10 points, name this 3rd-century prophet whose namesake religion centered on a dualistic struggle between the World of Light and the World of Darkness.

ANSWER: **Mānī** [or **Manichaeus**, **Mānī** Hāyya, **Manes**, or **Móní**; accept **Manichaeism**, Āyīn-e **Mānī**, **Móníjiào**, or **Míngjiào**] (The word for the five-tiered platform, “Bēma,” is a cognate with the *bimah* found in synagogues.)  
<Religion>

2. A monologue in a play by this author tells of a spider kept out of Heaven in case he scared children. In that play by this author, Charles Dickens hosts a guest who calls him “Charles Darwin” and returns home to find two time-traveling Belgians who were shot with a machine gun hidden in a “haunted concertina.” This author created a character who writes a story about a girl who thinks she is Jesus’s second coming being buried alive, and another about a girl who kills her father by putting razor blades in his apples. A pygmy woman is forced to write stories for Hans Christian Andersen in this playwright’s *A Very Very Very Dark Matter*. In a play by this author, detectives Ariel and Tupolski question Katurian, whose stories mirror real-life child murders. For 10 points, what Irish author of *The Pillowman* wrote and directed the film *In Bruges* (“broozh”)?

ANSWER: Martin **McDonagh** (“mac-DON-uh”) [or Martin Faranan **McDonagh**]  
<British Literature>

3. *Formal name or nicknames acceptable.* A 1922 uprising named for this geographical feature presaged the 1946 AMWU strike and led the Pact government to extend the “color bar” for skilled jobs after bombers fired on Fordsburg Square. Managers on this feature [emphasize] *codified* the Fanakalo pidgin to instruct “tropical boys” whose *chibaro* labor inspired the song “Stimela.” Far-flung night trains brought the Native Labour Association’s recruits to this feature, whose namesake university educated Regina Twala and Helen Suzman. This feature’s competitive wages led maize farmers to raise a poll tax that sparked the Bambatha (“bam-BAH-tuh”) Rebellion. Lobengula apocryphally ruled a “second” basin like this scarp’s reserves in Gauteng (“HOW-tang”). From 1886, the second phase of the Mineral Revolution enriched this ridge’s namesake “Lords.” For 10 points, gold bullion coins are named for Paul Kruger and what ridge that names South Africa’s currency?

ANSWER: Witwaters**rand** [or the **Rand** or the **Reef**; accept South African **rand** or Krugerr**ands**; accept Witwaters**rand** Gold Rush, **Wits** University, University of the Witwaters**rand**, “Second **Rand**,” **Rand** Rebellion, or **Langlaagte** Mines; prompt on Highveld, Hoëveld; **Drakensberg**, **uKhahlamba**, **Maloti**, **Great Escarpment**, **Central Plateau**, or **South African Plateau**] (The AMWU was the African Mine Workers’ Union. Hugh Masekela wrote “Stimela.”)  
<World History>

4. This physicist names a gauge transformation based on the generating function “minus the position vector dotted with the vector potential at the origin.” A phenomenon predicted in this physicist’s PhD thesis, which was detected 30 years later in doped calcium fluoride, is measured in namesake units equal to “10-to-the-minus-50 centimeters-to-the-fourth seconds per photon.” This physicist first predicted two-photon absorption. In 1949, this physicist and J. Hans D. Jensen independently developed a model that incorporates the Woods–Saxon potential, predicts 2, 8, 20, and 28 to be the first few magic numbers, and considers distinct layers of protons and neutrons in analogy to the way electrons surround the nucleus. For 10 points, name this co-creator of the nuclear shell model, whose married surname provides the name of a unit abbreviated “GM.”

ANSWER: Maria Goeppert **Mayer** [or Maria **Goeppert** Mayer; accept Goeppert **Mayer** transformation or **Goeppert** Mayer transformation]

<Physics>

5. The word “*tibla*” insults this ethnicity over assimilationist policies whose criticism in the “Letter of 40” shaped a tough language mandate. Stateless “non-citizens” of mainly this [emphasize] *minority* ethnicity hold gray “alien’s passports” based on the Era of Silence’s 1938 Citizenship Act. The Harmony party represents this largest minority in the host country of the news site *Meduza*. In 2007, hackers of this ethnicity protested a relocated bronze soldier with cyberattacks that prefigured their “web brigades.” Five countries, including a “digital society” led by Kaja Kallas (“KAH-yah KAHL-lahss”), have barred IT workers of mainly this ethnicity with Schengen (“SHENG-un”) tourist visas. Since 2022, over 200,000 asylum seekers of this ethnicity have fled to countries like Kazakhstan and Georgia. For 10 points, Latvia and Estonia rejected what ethnicity’s exodus after the invasion of Ukraine?

ANSWER: **Russians** [or **rusскиye**, **venelane**, **venelased**, **krievs**, or **krievi**; accept Russians in specific former Soviet republics, such as **Russians** in Estonia; accept **Russification** or **Russianization** or **rusifikatsiya**; prompt on East **Slavs** or **vostochnyye slavyane**] (Estonia, Latvia, Lithuania, Poland, and Finland imposed the visa restriction.)

<Current Events>

6. Larger depictions of these things are made of smaller ones in a “junction” from the Luristan Bronzes, which mirror them around the central ring of finials. Jellinge-style brooches (“broaches”) elongate these things into a ribbon. The Northumbrian Ruthwell Cross depicts Christ “treading on” these things, which name a style of Migration Period art with precursors on Scythian ornaments. A Viking motif seen on the Oseberg ship features these things “gripping” borders. Two of these subjects are “confronted” flanking the tree of life in a Near Eastern motif similar to their “mistress,” or “master,” such as the *Seated Woman of Çatalhöyük* (“chuh-TALL-huh-YOOK”). These subjects, which adopt “attitudes” like passant or rampant in heraldry, are used to symbolize the qualities of Mark, Luke, and John in many illuminated manuscripts. For 10 points, what subjects are mimicked by zoomorphic art?

ANSWER: **animals** [or **beasts** or living **creature**s; accept specific animals like **lions**, **panthers**, **oxen**, **eagles**, or **stags**; accept **quadrupeds**, Master of **Animals**, Potnia **Theron**, Mistress of **Animals**, Lord of **Animals**, Lady of **Animals**, confronted **animals**, **animal** style, gripping **beast**, ribbon **beast**, or **animal** finials]

<Painting & Sculpture>

7. In a courtroom scene in this novel, a delusional man claims that his daughter, who used to sing “just like a little bird,” has been killed. This novel ends with the narrator clinging to shameful memories like a “gleaming obsidian shard” that she safeguards above all others. A two-week game of family Monopoly in this novel ends when a player angrily upends the board upon learning of her sister’s secret marriage. This novel’s narrator uses hemlock to poison jars of sausages meant for her sister. In this novel, an accident with a tractor’s ammonia tank blinds Harold Clark, whose son Jess seduces two married women. Ginny and Rose fall out with their sister Caroline in this novel over plans to incorporate the farm of their sexually abusive father, Larry Cook. For 10 points, name this retelling of *King Lear* set in Zebulon County, Iowa, by Jane Smiley.

ANSWER: *A **Thousand Acres***

<American Literature>

8. Finch and Crimmins argued that these groups exhibit “morbidity phenotypes” based on Swedish data from a Berkeley database. Norman Ryder proposed that these groups undergo “metabolism” and cause structural change. A 1997 typology sorts these groups into the archetypes of Prophet, Nomad, Hero, and Artist. Cross-sequential designs distinguish secular trends from effects named for these groups, which are controlled in typical prospective longitudinal studies and were possibly statistically isolated by Jean Twenge (“jeen TWENG-gay”). In *The Fourth Turning*, Strauss and Howe proposed a cycle of these groups, which name actuarial tables that do not assume them to be overlapping, as static life tables do. For 10 points, Margaret Mead analyzed “gaps” between what populations that successively retain the same size at replacement-level fertility?

ANSWER: **generations** [accept birth **cohorts**, age **cohorts**, graduation **cohorts**, or **generational** cohorts; accept **generation** gaps; accept overlapping **generations**; prompt on **populations** until read; prompt on specific generations like **millennials** or Baby **Boomers** by asking “what type of group is that?”] (The first line refers to the Human Mortality Database.)

<Social Science>

9. MF59 and AS03 are preparations of squalene (“SKWAH-leen”) that intensify variants of this product respectively developed by Novartis and GSK. COVID-19 removed the need for this product to address both the Yamagata and Victoria lineages. Deployment of an early iteration of this product coincided with a fourfold increase in Guillain–Barré (“ghee-LAN bah-RAY”) syndrome. Individuals with albumin allergies can use this product even though it is primarily produced in the allantoic cavity of fertilized chicken eggs. This product does not need a cold chain because it is the most prevalent product in the US to use thimerosal. This product is either trivalent or tetravalent to account for antigenic shift. For 10 points, name this product made available every winter to address endemic strains of H3N2 and H1N1.

ANSWER: seasonal **flu shot** [or **influenza vaccine**; or **flu vaccines**; accept **vaccines** against **swine flu** or **avian flu**; accept **vaccines** against **H1N1** or **H3N2** until “H3N2” is read; prompt on **vaccines** or **shots**] (Influenza B/Yamagata went extinct after 2020 quarantining.)

<Biology>

10. Scented pomanders inspired a locksmith from this city to design early portable watches, which sparked a fashion for this city’s namesake golden “eggs.” This city’s namesake “kitchens” were dollhouses crafted by its famed toymakers. Carl Jung (“yung”) cited an illustrated 1561 broadsheet from this cult center of Saint Sebaldus as early UFO literature. The goldsmith Anton Koberger printed woodcuts to illustrate a universal 1493 chronicle named for this city, where Martin Behaim created the world’s oldest extant globe, the Erdapfel. This city’s councils dominated the Franconian Circle. Printmakers dubbed the “Little Masters” worked in this free imperial city, which housed the workshop of Albrecht Dürer. For 10 points, name this German Renaissance city where Hans Sachs led a guild of Bavarian *Meistersingers* that inspired a Richard Wagner opera.

ANSWER: **Nuremberg** [or **Nürnberg**; or Free Imperial City of **Nuremberg** or Freie Reichstadt **Nürnberg**; accept *Die Meistersinger von Nürnberg* or *The Master-Singers of Nuremberg*; accept **Nuremberg Chronicle** or **Nürnberg Chronik**; accept “**Nuremberg** kitchens”; accept **Nuremberg** eggs or **Nürnberg** Ei] (The first line refers to Peter Henlein.)

<European History>

11. Two sinusoidal (“sye-noo-SOYD-al”) potentials are applied to a sample to non-destructively measure the rate of this process in electrochemical frequency modulation. The rate of this process, which is reported in mils per year, is obtained by plugging the polarization resistance into the Stern–Geary (“GEAR-ee”) equation. The US established National Bridge Inspection Standards after the Silver Bridge’s eyebars fractured due to high tensile stresses in combination with this process, which is known as “stress-[this process] cracking.” A localized form of this process called pitting occurs beyond a critical potential where passivating behavior breaks down and current density increases. The ability to resist this process is tested by immersing a sample in a salt water fog. For 10 points, steel is dipped in molten zinc to prevent what process in which oxidation degrades a metal?

ANSWER: **corrosion** [or **corroding** or **corrode**; accept **rusting**; accept **corrosion** current, pitting **corrosion**, stress **corrosion** cracking, or **corrosion** fatigue; accept **pitting** until read; prompt on **oxidation** or **oxidizing** or **oxidize** until “oxidation” is read] (Clues include the salt spray test, or salt fog test, and hot-dip galvanization.)

<Other Science>

12. For the 2013 Venice Biennale (“bee-en-NAH-lay”), Jeremy Deller designed a mural of this artist throwing one of Roman Abramovich’s yachts into the sea. This artist’s trip to Iceland was caricatured by a friend who he employed to create the tapestry *The Attainment*, which was later bought by Jimmy Page. According to Nikolaus Pevsner’s *Pioneers of Modern Design*, this artist’s work prefigured modernism and led to the work of Walter Gropius. Joel Chandler Harris inspired this artist’s *Brother Rabbit*, for which he developed the indigo discharge method he used for *Strawberry Thief*. Edward Burne-Jones illustrated this artist’s medievalist edition of Chaucer, which he published through his Kelmscott Press. He used block printing for his *Trellis* and *Blackthorn* wallpaper designs. For 10 points, name this socialist designer whose work inspired the Arts and Crafts movement.

ANSWER: William **Morris**

<Other Fine Arts>

13. Kornhauser and Sager’s paradox about a group of three of these people was generalized into Philip Pettit’s “discursive dilemma” for belief aggregation. The thesis that these people deal with a defeasible “open texture” was debated by a philosopher who analogized these people to authors of “chain novels.” A slogan of the ALR school defines a related concept as what this sort of person “had for breakfast.” They’re not filmmakers, but contrasting descriptive and normative theories of how social and personal factors influence these people are called realism and formalism. Against the “no right answer” thesis, a thinker imagined an ideal one of these people who would prefer an “integrity”-based theory and named him “Hercules.” For 10 points, a metaphorical “empire” titles a Ronald Dworkin book about what job held by the scholar Richard Posner?

ANSWER: **judges** [or **jurists**; or **justices**; accept **Judge** Hercules; prompt on **legal** scholars or **law** or **jurisprudence**; reject “lawmakers” or “lawyers” or equivalents of either] (The paradox is the doctrinal paradox. Ronald Dworkin opposed H. L. A. Hart’s theories of defeasibility and “open texture.” ALR is American Legal Realism.)

<Philosophy>

14. This ancient historical region, where alleged Judaizers (“JEW-day-izers”) called Athinganoi (“uh-THIN-guh-noy”) arose, was a metonym for Montanism. The Achaemenids (“uh-KEE-muh-nids”) distinguished the “greater” part of this region led from Celaenae (“suh-LEE-nee”) from a namesake minor satrapy that Pharnabazus ruled from Dascylium (“dass-SILL-ee-um”). This region, or a city south of its Sangarius River that the Abbasids sacked in 838, names Michael II’s Amorian dynasty. The “Matter of Troy” credited *De excidio* to this region’s priest Dares (“DAIR-eez”). This region’s eponymous Thracian tribe worshiped Sabazios and ruled Iconium before their kingdom was razed by the Cimmerians. This region south of Bithynia names a symbol of liberty worn by Marianne. In this Anatolian region, Hierapolis’s (“hye-RAP-uh-liss’s”) castrated Galli led the cult of Attis’s maternal consort Cybele (“SIB-uh-lee”). For 10 points, King Midas mythically ruled Gordium in what region that names a conical cap?

ANSWER: **Phrygia** (“FRIDGE-ee-uh”) [accept **Mushki**, **Lycaonia**, **Epictetus**, **Pacatiana**, **Salutaris**, **Phrygian** cap, **Phrygian** dynasty, Dares **Phrygius**, **Phrygians**, **Phryges**, **Phruges**, **Briges**, **Cataphrygians**, Hellespontine **Phrygia**, Lesser **Phrygia**, or Greater **Phrygia**; prompt on Anatolia or word forms until “Anatolian” is read; prompt on Asia Minor or Mikra Asia] (The Abbasids sacked Amorium. Iconium is the modern city of Konya.)  
<Other History>

15. A 1978 book states that this man’s “cautious” striving for power let him escape the “hundred-faced magma.” This man thinks of Simonides (“sy-MON-uh-deez”) and listens to *Aida* in interludes from a 2019 novel that describes many unseen war photographs. The narrator serves this man turkey-stuffed-antelope-stuffed-camel in Bohumil Hrabal’s *I Served the King of England*. Ghosh (“goash”) operates on this man’s bodyguard in the novel *Cutting for Stone*. Minim impersonates this leader to inspire Kidane’s (“kee-dah-nuh’s”) troops in the novel *The Shadow King*. Descriptions of servants like this leader’s pillow-bearer may be commentary on the Gierek (“gyeh-reck”) regime in a book by Ryszard Kapuściński (“RISH-ard kah-poosh-CHEEN-skee”). The 1976 song “War” quotes this leader’s 1963 speech at the UN; in 1936, he also appealed to the League of Nations. For 10 points, *The Emperor* profiles what ruler, whom *The Promised Key* identifies as the Rastafari messiah?

ANSWER: **Haile Selassie** (“HY-luh suh-LAH-say”) [or **Haile Selassie** I or Qādamawī **Hävlä Sellasé**; accept **Täfäri** Mäkonnän or Ras **Täfäri** or Ras **Teferi** until “Rastafari” is read; accept **Jan Hoy** or **Abatachin** Hoy; prompt on Haile or Selassie; prompt on Negus Negast or Negusa Nagast; prompt on Lion of Judah or Arveh Yehudah or Yehuda Anbessa] (Abraham Verghese wrote *Cutting for Stone*. Maaza Mengiste wrote *The Shadow King*.)  
<World Literature>

16. Amy Bentley’s book on the politics of these places discusses the masculine rhetoric in their “leader’s handbook.” These places were spearheaded by Charles Lathrop Pack’s 1917 commission, whose destructive effects delayed their revival under Claude R. Wickard. A cartoon depicts bombers helping Barney Bear create one of these places, which are called “munition plants” in a propaganda poster of a flag-clad woman. One of these places is preserved in the north end of the Back Bay Fens in Boston. Extension Service pamphlets dispatched advice about these places to complement Florence Hall’s larger-scale labor corps, which revived the Women’s Land Army. Eleanor Roosevelt showcased one of these places on the White House lawn. For 10 points, households on the “kitchen front” tended what domestic plots to supplement wartime produce (“PRO-duce”) rations?

ANSWER: **victory gardens** [or **war gardens**, **liberty gardens**, **freedom gardens**, **victory farms**, or **defense gardens**; or paraphrases such as **gardens** for **victory**; accept National **War Garden** Commission or “Barney Bear’s **Victory Garden**” or **Victory Garden** *Leader’s Handbook*; prompt on vegetable **gardens**, community **plots**, **farms**, **parks**, **agricultural** areas, crop **fields**, **hotbeds**, **greenhouses**, or equivalents of any] (Bentley wrote *Eating for Victory*. Hall led the US Crop Corps.)  
<American History>

17. Pekka Pyykko, who has written many reviews using this theory, has used it to predict tetra-xenon (“tetra-zee-non”) compounds. *Ab initio* calculations with the ZORA Hamiltonian imply that distortions due to this theory account for the majority of the voltage of a lead–acid battery. This theory correctly predicts the high electron affinity of tungsten hexafluoride and the simple cubic unit cell of alpha-polonium. Iridium tetroxide exemplifies this theory’s prediction of high oxidation numbers in 5*d* metals. Platinum and palladium differ in electron configuration because this theory’s effects scale with *Z* over 137, all squared. This theory, which explains why mercury is liquid at STP, predicts that 6*s* electrons remain “inert.” For 10 points, name this theory that explains the color of gold as a consequence of the high velocity of its valence electrons.

ANSWER: special **relativity** [or **SR**; accept **relativistic** effects; accept scalar **relativistic**; reject “general relativity” or “GR”]

<Chemistry>

18. This composer’s piano sonata begins with the descending cryptogrammic motif “E, B, G” in quarter notes, and has an *Alla menuetto* third movement in its home key of E minor. A lengthy E-major passage in the piano’s higher register begins the “*alla Romanza*” slow movement of this composer’s C-minor Third Violin Sonata. The second movement of this composer’s cello sonata includes a theme taken from his earlier “Homage March.” Anton Seidl initially orchestrated a suite of four piano pieces by this composer, including “Shepherd Boy” and “March of the Dwarfs,” which this composer then revised. In 1885, this composer finished a string orchestration of his piano suite of five dances popular in the lifetime of the title writer, Ludvig Holberg. For 10 points, name this Romantic composer of two *Peer Gynt* suites.

ANSWER: Edvard **Grieg** [or Edvard Hagerup **Grieg**] (The notes “E, B, G” are read as “E, H, G” in German, spelling Grieg’s initials. “March of the Dwarfs” is otherwise known as “March of the Trolls.”)

<Classical Music>

19. At a test kitchen with this name, Freda DeKnight cooked for the column “A Date With a Dish,” which inspired a 2022 Aliko Dangote Hall exhibit curated by Jessica Harris. *Panacoco* is a “Brazilian” substitute for this material with higher Janka hardness. This material originally named a history museum co-founded by Margaret Taylor-Burroughs that is now called the DuSable. Lerone Bennett Jr. wrote popular history for a magazine named for this material, which competed with *Essence* and was published with *Jet* by Chicago’s John H. Johnson. A pure kind of this material from a Gabonese persimmon tree forms stiffer fretboards than rosewood. This wood, whose name comes from ancient Egyptian, partly titles a duet by Paul McCartney and Stevie Wonder about racial harmony. For 10 points, what dense wood is the traditional material of a piano’s black keys?

ANSWER: **ebony** [accept “**Ebony** and Ivory”; accept **Ebony** magazine or **Ebony** Test Kitchen; accept **Ebony** Museum of Negro History and Art; accept **hbny**, **hebni**, Gabon **ebony**, African **ebony**, Brazilian **ebony**, or other varieties; prompt on **hardwood** or **timber** or **logs** until “wood” is read; prompt on **Diospyros**] (The Africa Center’s exhibit was called “African/American.”)

<Other Academic>

20. The uproar caused by Charles Perrault's mockery of this passage is often cited as the start of the "Quarrel of the Ancients and Moderns." This passage describes two talents of gold lying between two lawyers debating whether a blood-price should be accepted for a murder victim. A description of a circle of young dancers in this passage leads into a simile about a potter testing the motion of a wheel. Crates ("KRAY-tees") of Mallos saw a cosmic allegory in this passage's description of the earth, stars, sky, and "all-encircling Ocean." In this passage, scenes of a vineyard, a plowed field, a city at peace, and a city at war are created in a workshop filled with robotic assistants, where a god toils to repay Thetis for nursing him to health on Lemnos. For 10 points, name this ekphrastic passage from the *Iliad* depicting Hephaestus's creation of a defensive implement.

ANSWER: the **shield** of **Achilles** [or **Aspis Achilleos**; or descriptions of the ekphrasis on **Achilles's shield** or **buckler** or **aspís**; prompt on **shield** or **aspis** scene; prompt on descriptions of Hephaestus forging the **armor** of Achilles; prompt on descriptions of **Thetis's** visit to Hephaestus or Thetis's visit to **Hephaestus**; prompt on the *Iliad* or *Iliad* Book 18]

<European Literature>

## BONUSES

1. In a fairy tale-like novel by Murray Bail, Ellen Holland's father promises her hand to any suitor who can name every species of this plant on his estate. For 10 points each:

[10m] What type of plant is addressed as a "fellow citizen" in an Oodgeroo Noonuccal poem? In an 1895 ballad, a man sitting under one of these plants cries "You'll never catch me alive!"

ANSWER: **eucalyptus** trees [or **gum** trees; accept **coolibah** trees or **coolabah** trees; prompt on **trees**] (The poems are "Municipal Gum" and Banjo Paterson's "Waltzing Matilda.")

[10h] A poet with this surname wrote of peeling a eucalyptus's bark in "Scribbly Gum." Oblivia is rescued from a eucalyptus tree at the start of *The Swan Book*, a novel by a Waanyi author with this surname who wrote *Carpentaria*.

ANSWER: **Wright** [accept Alexis **Wright**; accept Judith **Wright** or Judith Arundell **Wright**]

[10e] This author portrayed a kitchen maid touching a gum tree for the first time during a bushfire in *The Tree of Man* and described the flora of the outback in *Voss*.

ANSWER: Patrick **White** [or Patrick Victor Martindale **White**]

<World Literature>

2. In a poem in this language, the earth, heaven, and purple seas go into labor, which causes a reed to give birth to Vahagn ("vuh-HAH-gun"). For 10 points each:

[10h] Name this language of an oral epic in which the lion-killer Mher ("muh-HAIR") becomes the father of David, who unwittingly fights his own son, also named Mher, and curses him to be childless.

ANSWER: **Armenian** [or **hayeren**] (The poem is the *History of Armenia*. The epic is the *Daredevils of Sassoun*.)

[10m] Vahagn's beard is made of this substance, which is called the "child of the sea" in an Old Norse kenning and a Vedic epithet. In a Roman myth, Scaevola ("SKY-voh-luh") uses this substance for a feat so impressive that the Etruscans set him free.

ANSWER: **fire** [or **flame** or equivalent]

[10e] A blinding fire sits in one of these structures guarded by the Irish god Nechtain ("NECK-tahn"). The English word *burn* is cognate of the Old Norse word for these structures, and Odin gives Mimir an eye at one of them under Yggdrasil.

ANSWER: **wells** [or **springs**; or **brunnr**; accept Mímis**brunnr**; prompt on **water** sources]

<Mythology>

3. A form of this technique that is now ubiquitous in condensed matter physics gained prominence around the turn of the millennium, partly due to Scienta's newly-released hemispherical electron analyzer. For 10 points each:

[10m] What technique's "angle-resolved" form is often used to determine band structures?

ANSWER: **photoemission spectroscopy** [or **PES** or **photoelectron spectroscopy**; accept **ARPES** ("AR-pezz") or angle-resolved **photoemission spectroscopy** or angle-resolved **photoelectron spectroscopy**; prompt on **spectroscopy**]

[10e] ARPES ("AR-pezz") is often applied to these solids, whose well-defined unit cells may form part of orthorhombic or cubic systems.

ANSWER: **crystals** [or **crystalline** solids or **crystal** systems]

[10h] In 2015, ARPES was used to identify crystalline tantalum arsenide as an example of this state of matter in which two bands intersect near the Fermi energy, giving rise to record rates of second harmonic generation.

ANSWER: **Weyl** ("vile") **semimetal** [prompt on **semimetal**]

<Physics>



4. This instrument has 13 finger positions called *huī* (“hway”), which can be lightly depressed to produce harmonics. For 10 points each:

[10m] Name this instrument plucked with the fingertips and nails, mastery of which was one of the four arts of ancient China. This instrument is considered a less accessible variant of the *gǔzhēng* (“goo-jung”).

ANSWER: **gǔqín** (“goo-cheen”) [or **qíxián qín** (“chee-shen cheen”); prompt on **qín** (“cheen”)]

[10e] The *gǔqín* (“goo-cheen”) belongs to this family of instruments characterized by a series of plucked strings against a flat body. In Western music, this kind of instrument features in the waltz “Tales from the Vienna Woods.”

ANSWER: **zither** [reject “cythara” or “kithára”]

[10h] Both this work for *gǔqín* and its companion piece *Gāoshān* were legendarily played by Bó Yá for his *zhīyīn* (“jurr-yeen”), a woodcutter friend. Guǎn Píng hǔ’s recording of this piece was included on the Voyager Golden Record.

ANSWER: “**Liúshuǐ**” (“lee-YOH-shway”) [or “**Falling Water**” or “**Flowing Water**” or “**Flowing Stream**”; accept equivalent translations describing **water in motion**]

<Other Fine Arts>

5. This country, which debated union with the Bahamas, tacitly endorsed a 2009 coup against Manuel Zelaya (“seh-LAH-yah”) to protect favorable Honduran mining laws. For 10 points each:

[10m] Name this country where Viola Desmond challenged segregation. This country’s West Indian Domestic Scheme populated enclaves like Little Jamaica and Little Burgundy, the home of jazz pianist Oscar Peterson.

ANSWER: **Canada** [accept Dominion of **Canada**] (Little Jamaica is in Toronto and Little Burgundy is in Montreal.)

[10h] *Specific word required.* The Haitian-Canadian governor-general Michaëlle Jean (“mee-kah-ELL ZHON”) gave a speech on “breaking down” these things. A 1945 Hugh MacLennan novel coined the metaphor that two of these things divide French and English Canada.

ANSWER: **solitudes** [accept *Two Solitudes* or *Deux solitudes*; accept “Briser Les **Solitudes**” or “Breaking Down **Solitudes**”]

[10e] This place names a Canadian railway company that recruited many Antiguans (“ann-TEE-guns”) and sent steamships to St. Kitts. It also names an 1872 scandal over John A. MacDonald’s rail contracts.

ANSWER: **Pacific** Ocean [or Océan **Pacifique**; accept **Pacific** scandal or Scandale du **Pacifique**; accept **Canadian Pacific** Railway, **CPR**, Chemin de fer Canadien **Pacifique**, or **CP Rail**]

<Other History>

6. Answer the following about Southeast Asian herbal supplements, for 10 points each.

[10e] In Vietnam, this franchise sells *gotu kola*, a nootropic juice said to lengthen elephants’ lives. This American convenience store offers many more items in Taiwan and Japan, where it competes with FamilyMart and Lawson’s.

ANSWER: **7-Eleven** [or **SEI** or **7-Eleven**, Inc.; accept **Seven-Eleven** Japan or **SEJ** or Kabushiki gaisha **Sebun Irebun** Japan; accept **Seven & I** Holdings Co.] (The plant is also known as Asiatic pennywort and the juice is called nước rau má.)

[10m] In 2021, Thailand decriminalized this drug, which was banned by Phibun’s (“pee-BOON’s”) military dictatorship in 1943. Several states ban gas stations from selling this stimulant’s red, white, and green strains, which come from Bornean rainforests.

ANSWER: **kratom** (“KRAY-tum”) [or *Mitragyna speciosa*; prompt on *Mitragyna*]

[10h] This city’s *kedai kopi* shops brew both a signature margarine-roasted white coffee and *kopi jantan* with the alleged testosterone booster *tongkat ali*. Kinta Valley tin mining enlarged this capital of Perak near the Cameron Highlands.

ANSWER: **Ipoh** (“EE-poh”) [or **Ji Bou**, **Yíbǎo**, **Î-pó**, or **İppō**; accept **Ipoh** white coffee]

<Geography>

7. A vulgar poem by John Wilmot, Earl of Rochester, describes the “pains it costs” to this “poor, laborious” woman as she works to “raise the member she enjoys.” For 10 points each:

[10m] Name this actress who played Florimel in John Dryden’s *The Maiden Queen*, whose original cast included her lover Charles Hart. Rochester’s poem describes this woman’s role as the king’s mistress.

ANSWER: Nell **Gwyn** [or Eleanor **Gwyn**; prompt on **Nelly**]

[10e] Nell Gwyn was a mistress of this king, whose court of libertines included the Earl of Rochester. He ended the Puritan ban on public stage performances.

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

[10h] Gwyn appears with Isaac Newton in this playwright’s *In Good King Charles’s Golden Days*. Shakespeare falls for Elizabeth I and tries to get her to establish a National Theatre in his play *The Dark Lady of the Sonnets*.

ANSWER: George Bernard **Shaw**

<British Literature>

8. For M22 (“M-twenty-two”), the order of this type of corresponding group was first stated by Burgoyne and Fong to be 3, which they then corrected two years later, only for it to be corrected again in 1979. For 10 points each:

[10h] For a given group, Hopf’s formula states that what “multiplier” group is the second homology group with integer coefficients?

ANSWER: **Schur** (“shoor”) multiplier

[10e] The Schur multiplier of M22 actually has this order. There are this many elements in A4, which corresponds to precisely [emphasize] *half* the permutations that can act on four objects. You have 10 seconds.

ANSWER: **12** (= 1/2 \* 4!)

[10m] The erroneous correction led to an error in the title of the paper that introduced J4, which, like M22, is one of these 26 finite simple groups that do not fit any special pattern.

ANSWER: **sporadic** groups [or **sporadic** simple groups or **sporadic** finite groups]

<Other Science>

9. In the typical right-branching structure, this component of a syllable contains the nucleus and an optional coda, and heavy syllables have multiple moras in this component. For 10 points each:

[10e] Name this concluding part of a syllable. Its name is a homophone for a phenomenon central to a type of Cockney slang that uses phrases like “apples and pears.”

ANSWER: **rime** [or **rhyme**; accept Cockney **Rhyming Slang**] (“Apples and pears” is slang for stairs.)

[10m] The rime is contrasted with this component, which does not influence syllable weight. Intervocalic consonants always belong to this part of the second syllable, according to their principle of “maximization.”

ANSWER: **onset** [accept **onset** maximization or maximal **onset** principle; prompt on **Q**; reject “initial”]

[10h] The fact that English syllable onsets do not contain two labials reflects one of these phenomena, which may be “systematic” if compelled by a language’s rules or “accidental” if they are not.

ANSWER: linguistic **gaps** [or **lacunae**; or **holes**; prompt on phonological **constraints** or phonotactic **constraints**]

<Social Science>

10. Edwin Scrymgeour's ("SCRIM-ger's") single-issue Prohibition Party won their sole seat in this city, ousting Winston Churchill in the process. For 10 points each:

[10h] Name this city that was nicknamed "Juteopolis" ("joot-AH-polis") in the late 19th century due to its burgeoning jute industry in mills like the Verdant Works and the Camperdown Works.

ANSWER: **Dundee** [or **Dùn Dè** or **Dùn Dèagh**]

[10e] During that period, Dundee thrived under the "three J's": jute, jam, and this industry. Lord Beaverbrook's company in this industry was headquartered in Fleet Street.

ANSWER: **journalism** [or **journalists**; accept **press** or **newspaper industry** or **newsprint**; accept **media** industry or **periodicals**; prompt on **publishing**, **publication**, **printing**, or equivalents]

[10m] Dundee's industry declined after the Marwaris realigned the international jute trade around this city. Jute brokers supported the Armenian College in this city, where Warren Hastings led a colonial government.

ANSWER: **Kolkata** [or **Calcutta**]

<European History>

11. Like many contemporaries, this artist bemoaned Giorgio Vasari's ignorance in the marginalia of his copy of the *Lives*. For 10 points each:

[10e] Name this Mannerist. Trained as an icon painter, this artist is known for vividly colored works like *View of Toledo*.

ANSWER: El **Greco** [or Doménikos **Theotokópoulos**; prompt on "the **Greek**"]

[10h] In his copy, this Mannerist grumbled about Vasari praising Michelangelo more than Raphael. This artist finished Vasari's fresco for the Florence Cathedral's dome and followed El Greco in a series of failed commissions for Philip II's Escorial ("ess-kor-YAHL").

ANSWER: Federico **Zuccaro** [or Federico **Zuccari**]

[10m] A member of this Bolognese family called Vasari a "shitface" in the margin of his copy. Illusionistic *quadro riportato* was used by a member of this family in a ceiling fresco cycle on *The Loves of the Gods* for the Palazzo Farnese ("far-NAY-zay").

ANSWER: **Carracci** family [accept Annibale **Carracci**] (It is unclear which of the Carracci wrote the comment.)

<Painting & Sculpture>

12. Pope Francis created a "World Day of" these people in 2017, four years before he beatified José Gregorio Hernández, the so-called "doctor of" these people. For 10 points each:

[10m] Jon Sobrino wrote that there is "no salvation outside of" what people? Juan Luis Segundo and Gustavo Gutiérrez advocated a "preferential option" named for these people.

ANSWER: the **poor** [or **impoverished**, **destitute**, **indigent**, **poverty-stricken**, **pobres**, or equivalents; prompt on **disadvantaged** or **needy** or equivalents; reject "homeless" or "indigenous" or equivalents of either] (The option is a tenet of liberation theology.)

[10h] Many Peruvian parishes hold these events to honor the "father of the poor," Martín de Porres. Panama's "Pollera ("poh-YAY-ruh") Queen" exemplifies the folkloric influence on these events, which occur weekly in Puerto Rico.

ANSWER: **fiestas patronales** [or **patronal festivals**, **festivales patronales**, **ferias patronales**, **titular days**, or **patronal days**; prompt on **patronal** holidays; prompt on **fiestas** or **festivals** or **ferias**; reject "patron saints" or "Fiestas Patrias"]

[10e] Managua's *fiesta patronal* for "Minguito" ("min-GHEE-toh") is similar to Las Posadas, which recounts the lead-up to this biblical event that is often depicted in namesake "scenes" like crèches ("KRESH-iz").

ANSWER: **Nativity** of Jesus [or **Navidad** de Jesus, or **Nativitas**, **birth** of **Jesus** Christ, **nacimiento** de **Jesús**, **nacimiento** de **Jesucristo**, Nacimiento **Navideño**, or equivalents; accept Posadas **Navideñas**; prompt on **births** or **nacimientos**; prompt on **Adoration** of the Magi or **Adoration** of the Shepherds by asking "what event inspires their adoration?"; reject "Christmas"] ("Minguito" is a nickname for Saint Dominic.)

<Religion>

13. In two endings, a man is eaten by lions or buried by a sandstorm after this figure tells him that the world is a “perpetual cycle of production and destruction.” For 10 points each:

[10h] Name this figure who appears as a colossal woman sitting on a mountain in a dialogue from the *Operette Morali* (“oh-pair-ETT-tay moh-RAH-lee”) in which she mocks an Icelandic man for fleeing from her.

ANSWER: **Nature** [or **Natura**; accept “Dialogue Between **Nature** and an Icelander” and “Dialogo della **Natura** e di un Islandese”]

[10m] This 19th-century poet presented a pessimistic vision of Nature in his “Dialogue Between Nature and an Icelander” and asked Nature “why / do you so deceive your children?” in the poem “To Silvia.”

ANSWER: Giacomo **Leopardi** [or Giacomo Taldegardo Francesco di Sales Saverio Pietro **Leopardi**]

[10e] Leopardi used this event to illustrate how Nature cares no more for humans than ants in his poem “The Broom Tree.” The author of *Naturalis Historia* exclaimed “fortune favors the bold” before dying in this event.

ANSWER: eruption of **Vesuvius** [or destruction of **Pompeii** or equivalents; or Vesuvius **eruption** of **79** CE; accept **Vesuvio** in place of “Vesuvius”; prompt on volcanic **eruption**, natural **disaster**, **cataclysm**, or equivalents of any] (Pliny the Elder wrote *Naturalis Historia*.)

<European Literature>

14. Frederick Douglass described this institution as “the Black man’s cow but the White man’s milk” when he was unable to prevent its collapse in 1873. For 10 points each:

[10h] Name this institution that provided familial records that Anne C. Bailey used to write *The Weeping Time*. It was run into the ground by Jay Cooke’s brother Henry.

ANSWER: **Freedman’s Bank** [or **Freedman’s Savings Bank**; reject “Freedmen’s Bureau”]

[10e] *The Weeping Time* is centered around one of these events held by Pierce Butler’s estate. Georgetown offered reparations to descendants of 272 people central to one of these events held in 1838 to pay off the school’s debts.

ANSWER: **slave auction** [or **slave sale** or **slave market** or equivalents; prompt on **auctions**, **sales**, **markets**, or equivalents of any]

[10m] Savannah’s “Weeping Time” was the largest known slave auction until Lauren Davila found records of an even larger one held in this city, where military cadets later shelled the steamship *Star of the West*.

ANSWER: **Charleston** (The cadets attended The Citadel.)

<American History>

15. Answer the following about the year 1957 in analytical chemistry, for 10 points each.

[10h] The flame ionization detector overshadowed this scientist’s 1957 electron capture detector, which made the first observation of atmospheric CFCs. In 1955, this scientist used an early tabletop microwave to thaw rats.

ANSWER: James **Lovelock** [or James Ephraim **Lovelock**]

[10e] The newly-minted van Deemter (“DAYM-ter”) equation described how packing a column affects the ability of this process to proceed turbulently via eddies. This process’s namesake coefficient relates flux to the concentration gradient.

ANSWER: **diffusion** [or word forms of **diffuses** or **diffusing**; accept **diffusion** coefficient; accept eddy **diffusion**]

[10m] In gas chromatography, Marcel Golay provided an alternative means of finding the height equivalent to these entities. These entities quantify the efficiency of a separation process and correspond to real objects in distillation.

ANSWER: **theoretical plates** [or **theoretical trays**; accept height equivalent to a **theoretical plate**; accept **equilibrium stage**; prompt on **plates** or **trays** or HETP]

<Chemistry>

16. Buddhist woodblocks from this clan's print shops may bear influence from frontispieces in the Tangut canon. For 10 points each:

[10h] Name this Hàn clan that married into the Northern Zhōu's ("joh's") Xiānbēi ("shee-EN-bay") nobility. An "invincible" general of this family inspired legends of its heroines Mù Guīyīng ("moo gway-yeeng") and Shé Sàihuā ("shuh sigh-hwah") fighting the Tanguts and Liáo ("lee-ow").

ANSWER: **Yáng** clan [or **Joeng** or **Yeung**; accept *The Generals of the Yang Family*, **Yáng Jiā Jiàng**, **Yang Chia Chang**, or **Joeng Gaa Zoeng**; accept **Yáng Yè**, **Yang Yeh**, **Joeng Jip**, **Yáng Jiyè**, **Yang Chi-yeh**, or **Joeng Gai-jip**; prompt on **Suí** dynasty or **Ceoi** by asking "what was its ruling family?"]

[10m] This scion ("SY-on") of Wèi's ("way's") Xiānbēi royalty deposed the Suí's ("sway's") Yáng clan with his father and sister Princess Píngyáng. This Lǐ ("lee") clan prince allied with the related Yenisei Kyrgyz ("kirr-GUZZ") khagan after his fratricidal coup at the Xuánwǔ ("shwen-woo") Gate.

ANSWER: **Tàizōng** of Táng [or Lǐ **Shìmín** or Li **Shih-min**; or T'ang **T'ai-tsung** or Tong **Taai-zung**; prompt on **Táng**, **T'ang**, **Lǐ**, King of **Qín**, or **Qín Wáng**] (Like Táng's Lǐ family, the Yenisei Kyrgyz and traced their lineage from Lǐ Guǎng, in their case via the Xiōngnú defector Lǐ Líng.)

[10e] Tàizōng's rebellion was reportedly aided by warriors from this monastery, whose trainer Bodhidharma is only attested by Yáng Xuānzhī ("shwen-jurr"). The "Yáng family spear" rivaled this temple's style of kung fu.

ANSWER: **Shǎolín** Temple [or **Shǎolín** Monastery or **Shǎolín** sì or **Siu-lam** zi; accept **Shǎolín** kung fu, **Shǎolín** gōngfū, **Shǎolín** wǔshù, or **Shǎolín** quán]

<World History>

17. An essay claims that this concept allowed the author of *Discourse on Voluntary Servitude* to achieve more than the "power and the fame to which he had aspired." For 10 points each:

[10m] Name this concept that Michel de Montaigne imagined encountering while planting cabbages in an essay titled for a maxim that equates philosophizing with learning about this concept.

ANSWER: **death** [or word forms like **dying** or to **die**; or la **mort**; accept paraphrases of "That to philosophize is to learn to **die**"]

[10e] Montaigne reflected on the death of Étienne de La Boétie ("bo-ay-SEE") in an essay titled for this relationship. Aristotle referred to the affection in this type of relationship as *philia*.

ANSWER: **friendship** [or **amitié**; or **brotherly love**; prompt on **love**]

[10h] Paralleling his own cultivation of La Boétie's legacy, Montaigne was promoted posthumously by this adopted daughter of his. She published several editions of the *Essays* and wrote *The Equality of Men and Women*.

ANSWER: Marie de **Gournay**

<Philosophy>

18. *Two answers required.* A poem set between these two cities calls Minerva a "miscarriage of the brain" and reflects on how each of the title mountains is like a "fire-branded socket of the Cyclops's eye." For 10 points each:

[10h] Name these two cities. Robert Lowell's *Life Studies* opens with a poem about a train ride between these cities, one of which is described as "our black classic, breaking up / like killer kings on an Etruscan cup."

ANSWER: **Paris** AND **Rome** [accept answers in either order; accept **Roma** in place of "Rome"] (The poem is "Beyond the Alps.")

[10m] This Sylvia Plath poem calls the title city a "morgue between Paris and Rome." This poem opens by stating, "Perfection is terrible, it cannot have children."

ANSWER: "The **Munich Mannequins**"

[10e] This author described a person "walking in Paris alone inside a crowd" and "in Rome beneath a Japanese tree" in his poem "Zone." This French proto-Surrealist wrote the collection *Alcools* ("al-KOHLs").

ANSWER: Guillaume **Apollinaire** ("ah-poh-lee-NAIR") [or Wilhelm-Albert-Włodzimierz-Aleksander-Apolinary **Kostrowicki**]

<American Literature>

19. Few insects can handle the osmotic consequences of feeding on this liquid due to its high sugar content. For 10 points each:

[10e] Give this name for the fluid in a plant's xylem and phloem.

ANSWER: **sap** [accept xylem **sap** or phloem **sap**; reject "syrup"]

[10m] This sugar-rich substance is extruded by sap-eating bugs like aphids. Many nectar feeders opportunistically consume this waste substance, which is otherwise flung away to avoid drowning during feeding.

ANSWER: **honeydew**

[10h] Wasps are used to control aphids and the invasive "brown marmorated" species of these insects, which were followed across the Pacific by the samurai wasp. These pests in the family Pentatomidae, which can damage crops while feeding, produce aldehydes like 2-decenal and 2-hexenal.

ANSWER: **stink bugs** [or **shield bugs**; accept brown marmorated **stink bug**]

<Biology>

20. This piece begins with the left hand playing a descending chain of octave A's alternating with octave E-flats. For 10 points each:

[10h] Name this one-movement piece often excerpted from the second book of *Years of Pilgrimage*. Its subtitle of "*Fantasia quasi Sonata*" is a reference to the *Moonlight Sonata*'s subtitle of "*quasi una fantasia*."

ANSWER: **Dante Sonata** [or **Après une lecture du Dante: Fantasia quasi Sonata**; prompt on **Dante**; reject "*Dante Symphony*"]

[10e] The *Dante Sonata* and *Dante Symphony* were written by this progressive composer, who introduced the term "symphonic poem" to describe pieces like his *Les préludes* ("lay pray-LEWD").

ANSWER: Franz **Liszt** [or **Liszt** Ferenc or **Liszt** Ferencz]

[10m] The *Dante Sonata*'s development is largely in this ethereal major key, whose scale includes the note E-sharp, but also B-natural. The fast section of *Hungarian Rhapsody* No. 2 is mostly in this key.

ANSWER: **F-sharp** major [reject "F-sharp minor" or "F" or "G-flat"]

<Classical Music>