

TOSSUPS

1. Philosophical views named for this property often draw on a book that compares “truths” with this property to the use of tree stumps as props in a child’s game about bears. Charles’s “quasi-fear” of green slime illustrates Kendall Walton’s solution to a paradox named for this property that concerns “emotional response.” A sentence about a man with this property is analyzed with an “in such-and-such” operator in a paper titled for “Truth in” it by David Lewis. Positions named for this property, like Hartry Field’s one for math, take their subjects to be “useful” entities with this property. This is the second of three title concepts of a book that uses a predicate that co-applies with greenness until time *t* to create a “New Riddle of Induction.” For 10 points, the title of a Nelson Goodman book groups what concept with “fact” and “forecast”?

ANSWER: **fictional** [accept being **make-believe**; accept **fictionalism** or word forms; accept *Fact*, **Fiction**, and *Forecast*, useful **fictions**, **fictional** truths, “Truth in **Fiction**,” paradox of **fiction**, or “Fearing **Fictions**”; prompt on **non-existence**, being **pretend**, or equivalents] (The book in the first line is Walton’s *Mimesis as Make-Believe: On the Foundations of the Representational Arts*.)

<Philosophy>

2. In an elegy from this empire, a woman who dies in childbirth is “cast adrift like a boat in midstream.” The dedicatee of this empire’s *Coronation Hymn* may be the prince who wakes in terror in its *Underworld Vision*. This empire’s chancellor evades execution over forged letters from his deceitful nephew, who explodes, in the *Story of Aḥiqar*. This empire’s year eponyms mark the colophons of royal epics about its living “great kings,” who recorded boasts like “3,000 captives I burned with fire.” This empire is ruled by Onnes’s (“ON-eez’s”) widow, who covets Ara the Fair, marries Ninus, and invades India. In a story from Diodorus, a decadent, crossdressing king of this empire burns himself and his harem. Legendary rulers of this empire include Semiramis (“suh-MEER-uh-miss”) and Sardanapalus (“sar-duh-NAP-uh-luss”). For 10 points, what empire preserved the *Epic of Gilgamesh* at its library of Ashurbanipal?

ANSWER: **Assyrian** Empire [or **Assyria** or **Ashur** or māṭ **Aššur**; accept Neo-**Assyrian** Empire, Middle **Assyrian** Empire, **Sargonid** dynasty, or liblibbi **Šarru-kīn**; accept “Underworld Vision of an **Assyrian** Prince” or “**Assyrian** Elegy”; reject “Akkadian Empire” or “Sargon of Akkad”] (The coronation hymn is dedicated to Ashurbanipal, who likely inspired Sardanapalus. Aḥiqar serves Sennacherib. The boast is from a royal inscription of Ashurnasirpal II.)

<World Literature>

3. Trumpeting angels top a small golden fortress in a sculpture commissioned by this patron in which enamel, gemstones, and crystal surround a holy thorn. This patron commissioned a work known for its seven picture-book cycles with minimal text, which include the story of Saint Bruno. A gold inscription reading “*approche, approche* (“uh-PROASH, uh-PROASH”)” appears next to a portrait of this patron in blue robes along with a boat-shaped salt cellar during a New Year banquet scene. The Musée Condé (“mew-ZAY kawm-DAY”) houses an artwork created for this patron that was finished by the Master of the Shadows and Jean de Colombe. This patron commissioned depictions of a deep blue sky and zodiacal lunettes above the Labors of the Months in the Calendar Cycle pages of a Book of Hours. For 10 points, what French duke commissioned the Limbourg brothers to create the *Très Riches Heures* (“treh reesh yurrz”)?

ANSWER: Duke of **Berry** [or Duc de **Berry**; or John, Duke of **Berry**; or Jean, duc de **Berry**; accept **John of France** or **Jean de France**; accept the *Très Riches Heures du Duc de Berry* or the *Very Rich Hours of the Duke of Berry*; prompt on **John** or **Jean**] (The second line refers to the *Belles Heures of Jean de Berry*.)

<Painting & Sculpture>

4. These devices are tested in a method that outputs a trace with a “dead zone” on the left and may include non-chromatography “ghost” peaks called OTDR. After applying APC or UPC polishing to flat parts of these devices, two of them may be linked with “matching gel.” These devices can be produced using meters-high draw towers. Splices can increase the attenuation coefficients of these devices, which are usually quoted in decibels per kilometer. Step index examples of the single-mode type of these devices have a typical value around 0.1 (“zero-point-one”) for the sine of the acceptance angle, which equals their numerical aperture. Commercial examples of these devices typically achieve a bandwidth of a few gigabits per second. For 10 points, light in the core totally internally reflects off the cladding in what long, thin communication devices?

ANSWER: **fiber optics** [or **optical fibers**; prompt on optical waveguides; prompt on fibers] (OTDR stands for optical time-domain reflectometer. APC stands for Angled Physical Contact and UPC stands for Ultra Physical Contact.)

<Physics>

5. An epitaph dated to this dynasty’s control of Namāra honors the “king of the Arabs,” a Nasrid phylarch (“FY-lark”) who defected [emphasize] *to* this dynasty before it lost Amida. This dynasty sent gifts to Mirian III after an eclipse and dispatched the ambassador Theophilus the Indian. A Heraclian ruler who took a regnal name from this earlier dynasty lost the Battle of the Masts to Mu‘āwiya I (“moo-AH-wee-yuh the first”). Magnentius killed a possibly gay member of this dynasty who escaped a massacre of its princes, like Gallus and a later ruler who died at Samarra after a failed assault on Ctesiphon (“k’TESS-ih-foh”). This dynasty’s Illyrian (“ill-LEER-ian”) founder, who defeated Carausius (“kuh-RAO-zee-us”) and was called “green” or “Chlorus,” served as *augustus* with Galerius. In 363, Jovian briefly succeeded this dynasty’s last ruler, Julian. For 10 points, what dynasty’s eponymous emperor defeated the rival tetrarchs Maxentius and Licinius (“lih-SIN-ee-us”)?

ANSWER: **Constantinian** dynasty [or **Constantinians**; or descriptions of the family of **Constantine** the Great, **Constantine I**, Flavius Valerius **Constantinus**, **Konstantinos I**, **Constantius Chlorus**, **Constantius I**, or Flavius Valerius **Constantius**; accept **Neo-Flavian** dynasty; reject “Flavian dynasty”] (Clues include the Lakhmid Imru’ al-Qays, Constans II, Constans, and Constantius II, from accounts by Ammianus Marcellinus, Philostorgius, and Zosimus.)

<Other History>

6. This mountain names a Sōtō Zen monastery founded by Jiyu-Kennet. This mountain and a county to its south, where the ground sloth *Nothrotheriops* (“NOTH-ro-THEER-ee-ops”) was discovered, are both named for a people who fought alongside the Takelma in the Rogue River Wars. A legend holds that this [emphasize] *extant* mountain is where the sky god Skell stood to throw rocks at the underworld god Llao (“lao”). The book *A Dweller on Two Planets* claims that this mountain hides Telos, a utopian city built by Lemurians. A town below this mountain sells trinkets that say “I love Weed.” Like a manmade lake of the same name that drains the Pit River, this mountain stands in a national forest that protects the Trinity Alps. A local word for this mountain inspired the name of Yreka (“wye-REE-kuh”), the seat of Siskiyou (“SISK-yoo”) County. For 10 points, Lassen Peak is southeast of what California volcano in the southern Cascades?

ANSWER: Mount **Shasta** [or **Waka-nunee-Tuki-wuki** or **Úytaahkoo** or **Wáik’a**; accept **Shasta**–Trinity National Forest; accept **Shasta** Lake, **Shasta** County, **Shasta** ground sloth, or **Shasta** Abbey]

<Geography>

7. Though its founder was born earlier, a movement in this century challenged clerical authority by claiming that a “Perfect Shī‘a” could commune with the Hidden Imam in the realm of *hūrqalyā* (“HOOR-kal-yah”). As recounted by Nabīl Zarandī (“nah-BEEL zuh-RAN-dee”), many members of that Shaykhī (“shaky”) movement from this century joined another movement whose key members included a female poet known as Tāhirih (“TAH-hee-ruh”). In this century, the Ṣubḥ-i-Azal (“SOOB-hee-uh-ZAWL”) rejected a self-proclaimed successor to that movement’s founder, a merchant who declared the abrogation of prior religious law in the *Bayán* (“buh-YAHN”) and called his closest followers the “Letters of the Living.” During this century, the fulfillment of that man’s prophecies was declared in the Garden of Ridván. For 10 points, in what century did a follower of the Báb declare himself “He Whom God Shall Make Manifest” to found the Bahá’í (“bah-HAH-ee”) faith?

ANSWER: **19th** century [or **19th** century CE or **19th** century AD; or **1800s**; accept **1st Badí’** century or **1st Bábí** century or **1st Bahá’í** century until “Bahá’í” is read; accept **13th hijrī** century or **1200s hijrī**] (Nabīl Zarandī or “Nabīl-i A‘zam” wrote *The Dawn-Breakers*.)

<Religion>

8. This property produces dispersive Raman peaks that Mildred and Gene Dresselhaus attributed to resonance rather than only increases in the density of states near edges. Thin layers with this property are formed as a consequence of Ostwald’s rule of stages during the process of deposition. This property raises the ratio of the D peak to the G peak, which is very low for graphite. Materials with this property have broad vibrational peaks due to their large values of RMS bond angle deviation. The low packing factor of the random close pack means that losing this property through annealing often raises density. Solids with this property consist of rings and chains governed by Zachariasen’s rules and are isotropic because they lack long-range order. For 10 points, name this property of materials that do not form crystals.

ANSWER: **amorphous** solids [accept **glassy** or **glasses** or **vitreous** solids; prompt on **metastability** or **metastable**; prompt on **isotropic** until read; prompt on **non-crystalline** or **polycrystalline** until “crystals” is read; prompt on **disordered** or **randomly** packing until “random” is read]

<Chemistry>

9. A popular hero of this conflict was a lame silver miner who set a granary door on fire. During this conflict, the picaresque author of *The Mangy Parrot* wrote pamphlets for an army that names an 18-mile avenue. The Ottoman Empire donated a clock for this conflict’s centennial, whose angel-topped victory column inters a Black general of the *Insurgentes* (“in-soor-HEN-tays”) who embraced a former royalist at Acatempan (“ah-kah-TEM-pahn”). To celebrate this conflict’s resolution in the Treaty of Córdoba, nuns made *chiles en nogada* in the colors of the flag of the Three Guarantees. This conflict’s September 16th festivities begin with shouts of “viva” in the Zócalo (“SOH-kah-loh”) for heroes like La Corregidora (“ko-ray-hee-DOR-uh”), José María Morelos, and Vicente Guerrero (“gair-RAIR-oh”). This conflict’s Plan of Iguala (“ee-GWAH-luh”) outlined an empire led by Agustín de Iturbide (“ee-toor-BEE-day”). For 10 points, what conflict began with Father Hidalgo’s Cry of Dolores?

ANSWER: **Mexican** War of **Independence** [or War of **Mexican Independence** or equivalents; or Guerra de **Independencia** de **México**; accept **Hidalgo** Revolt or Agustín de **Iturbide**’s revolt until each is read; accept **New Spain** or **Nueva España** in place of “Mexican”; prompt on War of **Independence** or La **Independencia** by asking “of what country?”; reject “Mexican Revolution”] (Clues include El Pípila burning Guanajuato’s Alhóndiga de Granaditas and José Joaquín Fernández de Lizardi.)

<World History>

10. The narrator of a five-part novella by this author disrupts a sermon and loses all business due to a cursed marriage arranged by a rival copra trader. The protagonist of a story by this author inherits land for his “Bright House” after an object originally owned by Prester John returns to his chest. This author’s journalistic *Footnote to History* reports “eight years of trouble” in a country where he was nicknamed “Tusitala” (“too-see-TAH-lah”), where he wrote “The Beach of Falesá” while recovering from lung hemorrhages. This friend of King Kalākaua, who sailed on the *Equator*, wrote of Keawe’s quest to sell an infernal wish-granting vessel at a loss in one of his *Island Nights’ Entertainments*. This author of “The Bottle Imp” left an epitaph in Sāmoa that inspired Philip Larkin’s poem “This Be The Verse.” For 10 points, what Scottish expatriate wrote *Kidnapped*?

ANSWER: Robert Louis **Stevenson** [or Robert Lewis Balfour **Stevenson**; accept **Tusitala** until read]
<British Literature>

11. Cells performing this process have a chance to kill themselves by targeting “like S-gamma” regions past the alpha-2 exon, which will “loop out” an entire locus. Errors in this process cause translocation of c-myc [emphasize] *downstream* of J sub H, the most common mutation in Burkitt lymphoma. This process excises a ring of DNA with up to seven exons preceding the C-alpha gene. S-regions are joined together during this process, which borrows endonucleases (“endo-NOO-kee-aces”) from base excision repair to cleave abasic (“AY-basic”) sites formed by cytidine deaminase (“dee-AM-in-ace”), diverting them from somatic hypermutation. This process follows VDJ recombination in an activated B cell and can change the expressed constant region from mu to gamma-3 or gamma-1. For 10 points, name this process that swaps out the heavy chain to allow expression of immunoglobulins other than IgM.

ANSWER: **class switching** [or **class switch** recombination; accept **CSR**, **isotype switching**, **isotype recombination**, or **isotypic commutation**; prompt on recombination; prompt on changing isotype or changing antibody class by asking “what is the name of that process?”; reject “VDJ recombination”]
<Biology>

12. A woman living in this city called Oliver Wendell Holmes Sr. and Louis Agassiz (“AGG-uh-see”) to testify about an alleged forged signature that was then analyzed with statistical forensics by Benjamin and C. S. Peirce (“purse”). This city’s elite joined a volunteer Civil War regiment nicknamed the “Blue-Bloods.” The first Union League Club was founded in this city, where wealthy matriarchs established the Phelps Stokes Fund and Russell Sage Foundation. Hetty Green lived in this city when she became America’s richest woman during the Gilded Age. In this city’s 1886 mayoral race, Abram Hewitt defeated the author of *Progress and Poverty*. Hewitt’s father-in-law established this city’s tuition-free college, naming it after the inventor of the “Tom Thumb” steam locomotive. For 10 points, the Cooper Union is located in what city controlled by Tammany Hall?

ANSWER: **New York** City [or **NYC**] (Henry George wrote *Progress and Poverty*. Green was called the “Witch of Wall Street.”)
<American History>

13. *Specific word required.* During Prom 53 in 2017, “Brasshouse” was followed by a piece titled for this word, played by Leo P and Christian Scott. This word titles the last track on the 1966 album *Portrait of Wes*. On a 1960 Atlantic album, this word titles a track that begins with a baritone saxophone glissando from F up to C, and then a leap down to D-flat. This word titles an album whose B-side begins with a drum solo played with mallets, as part of the first of three “themes” in a seven-and-a-half minute “suite.” This is the common title of a 1959 Blue Note album that includes “Blues March” and a cover of “Come Rain or Come Shine.” Track 3 on the Mingus album *Blues & Roots* shares this title with a call-and-response hard bop standard by Bobby Timmons. For 10 points, give this title of the first track on *Art Blakey and the Jazz Messengers*, and colloquially of the album itself.

ANSWER: **moanin’** [accept **moaning**; prompt on Art Blakey and the Jazz Messengers until read by asking “what is the more common title?”]
<Other Fine Arts>

14. While in disguise, this character is nearly burnt to death for showing off the brutalized corpse of Kīchaka (“KEE-chuh-kuh”). This character averts a curse by praying that a jar with a single grain of rice will satisfy the hungry *rishi* Durvāsā. In the *Adi Parva*, this character insultingly disqualifies Karna for being a *sūta*. Dhritarāshtra (“drit-uh-RASH-truh”) offers three boons to this character, who reminds him that a *kshatrī* can only ask for two. When Prishati goes to bathe during a *yajña*, this character is born from the fire and confusingly given the name Krishnā (“krish-NAH”). After being summoned by Pratikamin, this character asks if Yudhishtira (“yoo-DISH-teer-uh”) has already bet himself in the dice game, questioning its legality. This character’s *svayamvara* (“swuh-YUM-vuh-ruh”) ends with the selection of the only man to shoot an arrow through a golden fish’s eye. For 10 points, name this woman with five Pāṇḍava husbands.

ANSWER: **Draupadī** (“DROH-puh-dee”) [or **Pāmcālī** or **Yajñasenī**; reject “Drupada”]

<Mythology>

15. In a poem commonly titled for this activity, the speaker describes Anaxo leading a procession of animals in a song whose first refrain addresses a wheel named after the “wryneck” bird. Alpheisboeus (“AL-fuh-sib-EE-uss”) responds to Damon with a song about this activity in Virgil’s eighth *Eclogue* (“ECK-log”), which was inspired by the second *Idyll* of Theocritus. Two people stealing materials for this activity, one of whom appears in *Epodes* 5 and 17, are driven off by a farting Priapus statue in Horace’s eighth *Satire*. Lucius disastrously spies on a practitioner of this activity with the help of the slave-girl Photis in Apuleius’s (“APP-yoo-LEE-uss’s”) *The Golden Ass*. Lucan’s Erichtho (“eric-thoh”) is an expert in this skill from Thessaly. A practitioner of this skill uses it to kill the giant Talos after butchering her brother Apsyrtus in the *Argonautica*. For 10 points, name this skill that Medea masters with the assistance of Hecate.

ANSWER: **witchcraft** [or word forms of **bewitching**; or **magic**; or **spellcasting**; or **sorcery**; accept love **spells**, **necromancy**, making **potions**, or other specific forms of witchcraft; accept **magia** or **pharmakeutria**; prompt on **herbalism**]

<European Literature>

16. This symphony’s scherzo (“skairt-soh”) ends with the very high violin figure “D-sharp, C-sharp,” which lands on the B that begins its slow movement. This symphony’s third movement ends with ten bars of very loud and fast 32nd notes in the strings, which lead into the bar of silence that begins its fourth movement. This symphony begins with strings and low brass playing a grace note B into a long C, over which stormy woodwinds enter with an arpeggio in D minor, and then in D major. However, this symphony uses progressive tonality and ends its finale in E major. This symphony’s number immediately follows the *Sinfonia Espansiva*. Four *attacca* movements make up this 1916 symphony, whose title reflects the composer’s belief that “music is life.” For 10 points, name this symphony that features violent dueling antiphonal timpani, by Carl Nielsen.

ANSWER: “The **Inextinguishable**” Symphony [or “*Det Uudslukkelige*”; or Carl **Nielsen**’s **Symphony No. 4**, Op. 29; or **Nielsen**’s **Fourth** Symphony; accept Symphony No. **4** or **Fourth** Symphony after “Nielsen” is read; accept Carl August **Nielsen** in place of “Carl Nielsen”]

<Classical Music>

17. *Translations or word forms acceptable.* A region denoted by this word named an ethnocentric society also called HaKaTa. This word euphemistically designated enslaved laborers from Galicia. Hermann Aubin founded a postwar journal for a discredited research discipline named for this word that rationalized the “drive toward” this word under Albert Brackmann. Alongside Göring’s *Hungerpolitik*, a “general plan” named for this word aimed to deport and recolonize areas that were earlier labeled “Ober” this word during their supreme command under Hindenburg. A Reichskommissariat named for this word controlled “White Ruthenia” and was the site of the Kaunas pogrom. After the Anschluss, Nazis described Austria as this sort of “Mark” instead of this sort of “Reich.” For 10 points, what word names a “Politik” by which Willy Brandt engaged with the GDR and the rest of its namesake “bloc?”

ANSWER: **Ost** [or **eastern** or **Osten** or **ostern**; accept **Eastern Bloc**, **Ostblock**, **East Germany**, **Ostdeutschland**, **Ostpolitik**, **Österreich**, **Ostmark**, Reichskommissariat **Ostland**, Generalplan **Ost**, Ober **Ost**, Drang nach **Osten**, **Ostarbeiter**, **Ostraum**, **Ostforschung**, **Ostkunde**, Deutscher **Ostmarkenverein**, or German **Eastern Marches Society**]
<European History>

18. According to one theorem, one of two conditions for this property is that the unit disk contains all zeros of a certain polynomial, with the unit circle containing only simple zeros. That “root condition” must hold in order for a method to have this property, as proven by Germund Dahlquist. For consistent methods, this property is equivalent to stability, as stated by the Lax equivalence theorem. Practical methods of solving ODEs (“O-D-E’s”) have a form of this property defined by the relation between the step size and the local error at a given point. For the Euler (“OY-ler”) method, this property has a relatively low namesake order and rate. The root test and the ratio test can be applied to a Taylor expansion to find this property’s namesake radius. For 10 points, name this property of methods or series that approach a finite limit.

ANSWER: **convergent** [or **converging** or **converges**; accept radius of **convergence**]
<Other Science>

19. A story by this author describes “a legion of Bartleby the Scriveners” who no longer act spontaneously because of a device called the “Predictor” that always flashes a light a second [emphasize] *before* you press a button. The narrator of a story by this author is shocked to find himself in Shinar after tunneling through what he thought was the vault of heaven. A story by this author includes diagrams of an air-water boundary to illustrate the principle of least time. Hillalum travels with a caravan up the title structure and learns that the universe is shaped like a seal cylinder in this author’s “The Tower of Babylon.” This author explored the Sapir–Whorf hypothesis in a story in which Louise Banks works with the aliens Flapper and Raspberry to learn the language Heptapod B. For 10 points, name this Chinese-American science fiction author of “Story of Your Life.”

ANSWER: Ted **Chiang** [or **Chiang** Feng-nan; or **Jiāng** Fēngnán] (The first story is “What’s Expected of Us.”)
<American Literature>

20. *Specific term required.* Thomas Ferguson theorized that this process occurs when business elites form new “investment blocs.” Eric Schickler theorized a “racial” form of this process due to altered “social group imagery” despite the stable attachments of “hearts and minds.” David Mayhew challenged the alleged periodicity of this process, whose gradual “secular” evolution was contrasted with its sudden, “critical” onset by V. O. Key, Jr. Since 2000, this process has occurred with respect to educational attainment among whites, causing America’s “diploma divide.” This process may be heralded by good showings by minor challengers that threaten to act as spoilers. In the US, this process is dated to 1828, 1860, 1896, and 1932, whose elections divide the five party systems. For 10 points, what process describes systemic shifts in voters’ party preferences and electoral patterns?

ANSWER: **realignment** [or **realigning** elections or word forms; accept **critical elections** or critical **realignments** until “critical” is read; accept political **realignment**, electoral **realignment**, secular **realignment**, or racial **realignment**; prompt on **partisanship**, **polarization**, **polarize**, **partyism**, **party** loyalty, **party** competition, or descriptions of **votes** or **voting** behavior by asking “what is the term for systemic changes in the patterns of that variable?”]

<Social Science>

BONUSES

1. These events impoverish the title character's father in Alberto Blest Gana's novel *Martin Rivas*. For 10 points each:

[10m] What sort of event inspired a diary by Vicente Pérez Rosales and a serial by Juana Manuela Gorriti? A novel about Eliza Sommers reworks stories of the bandit Joaquín Murrieta from one of these events.

ANSWER: **mining** booms [accept **gold** rushes, **gold** fever, **silver** rushes, **copper** rushes, or descriptions of **mines** or **mineral** speculation; accept California **Gold** Rush; prompt on economic **booms**, **rushes**, financial **speculation**, or similar answers] (Gorriti wrote "A Year in California." Eliza Sommers appears in *Daughter of Fortune* by Isabel Allende.)

[10h] Efraín's father prospects for gold in Chocó in this semi-autobiographical 1867 romantic novel. Jorge Isaacs drew on his Jewish heritage to depict the title *conversa* of this foundational Colombian novel.

ANSWER: **María**

[10e] Miners are compared to a pariah dog in a poem by Colombian author Guillermo Valencia, who is sometimes grouped within this movement led by Nicaraguan poet Rubén Darío.

ANSWER: **modernismo** [or **modernism**; or word forms of **modernist** or **modernistas**] (The poem is *Anarkos*.)
<World Literature>

2. Answer the following about Ælfgyva ("ALF-yee-vuh"), a woman depicted being touched in the face by an unnamed cleric on the Bayeux Tapestry, for 10 points each.

[10m] Some historians have identified Ælfgyva as this queen, who walked barefoot across burning plowshares to disprove adultery allegations. Her husband committed the Saint Brice's Day Massacre.

ANSWER: **Emma** of Normandy (Her husband was Æthelred II.)

[10h] That theory likens the Ælfgyva scene to Emma's adultery with Ælfwine ("ALF-win-uh"), a bishop stationed in this city. William Caxton based his manuscript of *Le Morte D'Arthur* ("luh MORT dar-TOOR") on one later discovered in this city by Walter Oakeshott.

ANSWER: **Winchester** [accept Ælfwine of **Winchester** or Bishop of **Winchester**; accept **Winchester** Manuscript]

[10e] Others propose that Ælfgyva is a mistress and later wife of this Danish victor at the 1016 Battle of Assandun. Alfred and this son of Sweyn Forkbeard are the only kings of England with the epithet "the Great."

ANSWER: **Cnut** the Great [or **Canute**; or **Knútr**]

<European History>

3. In this composer's 1638 "Lament of the Nymph," outer sections for men's trio surround a middle section for a solo soprano singing "at the tempo of her emotion." For 10 points each:

[10m] Name this composer whose operatic setting of the Ariadne myth is lost, except for a five-voice lament in which the title character asks to die. His best-known opera begins with a brass "toccata."

ANSWER: Claudio **Monteverdi** [or Claudio Giovanni Antonio **Monteverdi**] (The opera is *L'Orfeo*.)

[10e] Monteverdi spent his last 30 years in this present-day city, where opera theaters and season tickets were invented for shows that coincided with its masked Carnival.

ANSWER: **Venice** [or **Venezia**]

[10h] At least three Monteverdi libretti were written by Giulio, the adoptive father of this Venetian singer and composer of the aria "*Che si può fare*" ("KAY see pwoh FAH-ray") and the cantata "*Lagrima mie*" ("LAH-gree-may MEE-yay").

ANSWER: Barbara **Strozzi** [or Barbara **Valle**]

<Classical Music>

4. Radia Perlman's poem "Algorhyme" describes how a protocol she designed maintains one of these structures by having network switches exchange BPDUs. For 10 points each:

[10m] Name these structures that can be found in a graph by considering each node as a connected component, and then iteratively identifying the smallest edge weight between components.

ANSWER: **spanning trees** [accept minimum **spanning trees** or **MSTs**; accept **Spanning Tree** Protocol; prompt on **trees**] (BPDUs are Bridge Protocol Data Units. The process described is Borůvka's algorithm.)

[10e] Perlman's Spanning Tree Protocol prevents loops in these networks. In these networks, devices within a small geographic region are connected over Ethernet or Wi-Fi.

ANSWER: **LANs** ("lanz") [or **local area** networks]

[10h] Older Ethernet LANs ("lanz") had a bus topology that required this medium access control method to be used with collision detection. This method allows a machine to transmit only if no transmissions are detected on the bus.

ANSWER: **CSMA** [or **carrier sense multiple access**; accept **CSMA/CD** or **carrier sense multiple access** with collision detection; accept **CSMA/CA** or **carrier sense multiple access** with collision avoidance]

<Other Science>

5. The "Not Too Young to Run" movement lowered electoral age limits in this country, whose neopatrimonial ethnic clientelism inspired the theory of prebendalism. For 10 points each:

[10m] Name this country that transitioned to democracy with its Fourth Republic in 1999. The main parties in this federal republic's bicameral National Assembly are the Peoples Democratic Party and All Progressives Congress.

ANSWER: **Nigeria** [or Federal Republic of **Nigeria**; or Fourth **Nigerian** Republic; or Orilè-èdè Olómìniira Àpapò **Nàìjíríà**; or Ò hànǰikò Ò hànézè **Nàìjíríyà**; or Jamhuriyar Tarayyar **Najeriya**]

[10h] Nigeria's PDP began this practice of alternating presidential nominees between the north and south. Like the federal character principle, it aims to achieve regional balance.

ANSWER: **zoning** [or presidential **zoning**; or word forms of **zone**]

[10e] Legal systems in Nigeria's northern zones combine customary law, shari'a, and this body of law, which tends to weigh past cases over statutes. It is derived from English courts.

ANSWER: **common** law

<Current Events>

6. The mu(I) ("myoo-one") rheology describes the flow of these systems in a similar manner to that of complex fluids. For 10 points each:

[10m] In the Brazil nut effect, large particles tend to rise up through what systems? They are composed of many small macroscopic particles.

ANSWER: **granular** systems [or **granular** flows; prompt on **grains**; prompt on examples of granular systems, such as **sand**]

[10e] The Brazil nut effect is often called the granular version of this process, in which density or temperature differences cause motion via "currents" or "cells" within a fluid.

ANSWER: **convection** [or word forms of **convecting**; accept granular **convection** or **convection** currents or **convection** cells]

[10h] In a 2008 paper, Rietz and Stannarius studied granular convection for low values of this number, which exceeds one for a supercritical flow. It equals velocity over the square root of the product of little g and a length scale.

ANSWER: **Froude** ("flood") number [or **Fr**]

<Physics>

7. In *Wandering in Darkness*, Eleanor Stump contrasted “Dominican knowledge” with a type of non-propositional knowledge that she named for this group. For 10 points each:

[10e] Name this mendicant order whose scholastics took Augustinian positions versus Dominicans like Aquinas. William of Ockham defended this order’s practice of “apostolic poverty.”

ANSWER: **Franciscan** Order [or **Franciscans**; or Order of **Friars Minor** or Ordo **Fratrum Minorum**; or **Seraphic** Order; prompt on **friars** or **First** Order]

[10m] The Franciscans’ “most famous pair” of doctrines was the plurality of substantial forms and the “universal” form of this view. This Aristotelian view equates substance with matter and form.

ANSWER: **hylomorphism** [accept universal **hylomorphism**]

[10h] Franciscans embraced this position on divine and human action, in contrast to Aquinas’s intellectualism. This position shares its name with a modern “doxastic” view, which holds that people can choose their own beliefs.

ANSWER: **voluntarism** [or **voluntarist**; accept doxastic **voluntarism**]

<Philosophy>

8. The narrator of a poem by this author falls asleep after reading Cicero’s *Somnium Scipionis* and dreams that Scipio Africanus is guiding him to a celestial gate. For 10 points each:

[10e] Name this author who wrote about a debate between eagles that occurs when Nature convenes the birds to pick their mates in his *Parlement of Foules*.

ANSWER: Geoffrey **Chaucer**

[10h] In this other Middle English debate poem, one participant says that her opponent is only useful as a scarecrow. This poem’s two title birds seek out Nicholas of Guildford to settle their debate.

ANSWER: *The **Owl and the Nightingale*** [or ***Hule and the Nightingale***; or *Altercatio inter **filomenam et bubonem***]

[10m] In John Clanvowe’s *The Book of Cupid, God of Love*, the nightingale defends love in a debate with this other bird, which the narrator chases off with a stone. The poem “Sumer is icumen in” asks this bird to sing.

ANSWER: **cuckoo** [or **cuccu** or **cukkow**; accept common **cuckoo** or European **cuckoo** or other species]

<British Literature>

9. A band who faced backlash over their outspoken opposition to the Iraq War dropped this word from their stage name in 2020. For 10 points each:

[10e] Identify this word used as a prefix for the States’ Rights Democratic Party led by Strom Thurmond, which carried four states in the Deep South in the 1948 election.

ANSWER: **Dixie** [accept **Dixiecrats**; accept **Dixie** Chicks]

[10m] The Chicks’ decision to remove “Dixie” from their name was announced in the protest song “March March,” devised after they attended this demonstration. It coordinated with the Everytown organization.

ANSWER: **March for Our Lives** [or **MFOL**]

[10h] This filmmaker documented The Chicks’ Iraq War backlash in *Shut Up and Sing*. A 1976 documentary by this filmmaker features bluegrass music by Hazel Dickens as well as Florence Reece’s protest song “Which Side Are You On?”

ANSWER: Barbara **Kopple** (The second documentary is *Harlan County, USA*.)

<American History>

10. These events begin with a greeting ceremony called a *milni*. For 10 points each:

[10e] Name these events in which two people take seven steps around a sacred fire representing Agni in the *saptapadi* ceremony.

ANSWER: Hindu **weddings** [or **marriages** or equivalents; accept **vivaha**, **lagna**, **bibaho**, kettu **kalyanam**, **thali kettu**, **maduve**, **thirumanam**, **PELLI**, or **bahagara**]

[10m] During a Hindu wedding, a groom parts the bride's hair with a blade of grass and anoints the part with this vermilion pigment. Wearing a *bindi* or *puttu* of this pigment signifies a woman's married status.

ANSWER: **sindoor** [or **sindura**; prompt on **red** or **vermillion** or other shades of red]

[10h] Grooms arrive at the *milni* in one of these festive processions, whose name often refers to the groom's party as a whole. Increasingly, modern grooms ride a sports car in these processions instead of the traditional horse.

ANSWER: **baraat** [or **varayatra**; accept **janjh**, **baryatra**, **barjatra**, **varaaf**, **janti**, **jaan**, **varghodo**, **janavasam**, **dibhana**, **edurukolu**, **varanugaman**, or **bor jatra**]

<Religion>

11. Proteins in this family are fused to recombinant proteins to improve expression and solubility. For 10 points each:

[10h] Name this family predominantly attached to nuclear proteins like RanGAP1 ("ran-gap-one"). Like NEDD8 and ubiquitin, proteins in this family are added by a cascade of activation, conjugation, and ligation.

ANSWER: **SUMO** [or **small ubiquitin-like modifiers**; accept **sumoylation**]

[10m] During autophagy, an E3-like complex joins LC3 to a phospholipid whose head consists of ethanol and this group. Choline binds to phosphoglycerol through its alcohol, exposing a more substituted example of this group.

ANSWER: **amine** [accept quaternary **ammonium** or phosphatidylethanol**amine**]

[10e] Ethanolamine phosphate joins the GPI anchor to this terminus of a protein, which is also the site of prenylation by isoprenes. This terminus is opposite the N-terminus.

ANSWER: **C**-terminus [or **carboxyl**-terminus or **carboxy**-terminus or **COOH**-terminus]

<Biology>

12. The future Yōngzhèng ("yohng-jung") Emperor commissioned a series of 12 of these people. For 10 points each:

[10m] What term identifies a group including Diāochán ("dee-ow-chahn") and Wáng Zhāojūn ("jao-jwin"), who were often painted on Qīng ("cheeng") scrolls? They were also painted in the *bijin-ga* genre.

ANSWER: **beauties** [or **beauty**, **měi**, **beautiful** women, or equivalents; accept Four **Beauties** (of Ancient China), Si dà **měi** nǚ, Twelve **Beauties** (of Jīnlíng), Twelve Golden **Hairpins**, or Jīnlíng shí'èr **chāi**; prompt on **concubines**, **consorts**, official **lovers**, or pínfēi by asking "known for what trait?"]

[10h] The calligrapher Zhèng Xiè ("jung shee-eh"), who satirized Qīng flogging in a paean to the beauty of the male buttocks, was one of eight artists known by this term. These artists from 18th-century Yángzhōu ("yahng-joh") juxtaposed ugliness and elegance in their paintings.

ANSWER: **eccentricity** [or **strangeness**, **oddness**, **bewildering**, **bewilderment**, **uncanny**, **uncanniness**, **mystifying**, **guài**; accept **oblique**, **slant**, **deviate**, **stray**, **contrary**, or **piān**; accept Eight **Eccentrics** of Yángzhōu or Yángzhōu Bā **Guài**; reject "deviants"]

[10e] Huáng Shèn ("hwahng shun"), another of the Eight Eccentrics, painted the beauty Mágū ("mah-goo") and a drunk man with this vocation. The ten *Ox-Herding Pictures* illustrate training masters of this vocation, who designed raked rock gardens in Japan.

ANSWER: Buddhist **monks** [or **monastics**; or **bhikkhu** or **bhikṣu**; or **sōryo**, **bōsan**, **bōzu**, or **heshàng**; accept **saṅgha** or **samgha**; prompt on **Buddhists**, **Zen**, **Chán**, **Mahāyāna**, **Rinzai-shū**, **Línjì** zōng, or equivalents; prompt on **teachers**, **instructors**, **ascetics**, **renunciants**, **priests**, or equivalents of any; reject "Buddhist nuns" or "bhikkhunī"]

<Painting & Sculpture>

13. Victor Papanek's book *Design for the Real World* presents a chair inspired by Carlo Mollino to criticize this field's attempts to quantify human ecology. For 10 points each:

[10e] Give this term for a "science of work" that studies how human factors influence interactions with engineered systems. Designs known by this term maximize safety and comfort.

ANSWER: **ergonomics** [accept **ergonomic** design; accept physical **ergonomics**]

[10h] This industrial designer outlined human dimensional constraints in the early ergonomic text *The Measure of Man*. This author of *Designing for People* created Bell's black Model 500 telephone.

ANSWER: Henry **Dreyfuss** [accept Henry **Dreyfuss** Associates]

[10m] A yellow data selector rates this variable in Henry Dreyfuss Associates' ergonomics manual *Humanscale*. Rice bucket digs can increase this variable, which physical therapists quantify with dynamometers during crushing.

ANSWER: **grip strength** [or hand**grip strength** or maximum **grip strength** or **grip force**; accept **hands**, **fingers**, **digits**, or **handshake** in place of "grip"; prompt on physical **strength** or maximum **effort**; prompt on maximum **force** or kilogram-**force** or **F** by asking "measured to estimate what variable human trait?"]

<Other Academic>

14. In a story by this author, Spurgeon bails his father out of jail and ends up at the Million Man March, where his father tries to sell exotic birds to the attendees. For 10 points each:

[10h] Name this author of "The Ant of the Self," whose story "Brownies" is about Black Girl Scouts who try to beat up an all-White troop before realizing they are disabled. She wrote the collection *Drinking Coffee Elsewhere*.

ANSWER: ZZ **Packer** [or Zuwena **Packer**]

[10m] In the title story of *Drinking Coffee Elsewhere*, Heidi gets fellow Yale student Dina to open her room door by reciting this poet's "Autobiographia Literaria." One of his poems opens, "Lana Turner has collapsed!"

ANSWER: Frank **O'Hara** [or Francis Russell **O'Hara**]

[10e] Heidi and Dina bond by skipping class and reading unassigned books, including this Yale literary critic's *The Anxiety of Influence*.

ANSWER: Harold **Bloom**

<American Literature>

15. Slabs of this material engraved with cross-hatching from Blombos Cave's Still Bay deposits may represent abstract art from over 75,000 years ago. For 10 points each:

[10m] Name this pigment that was mined at Ngwenya. Diepkloof ("DEEP-kluff") Rock Shelter and Wonderwerk ("VOON-dair-vairk") Cave contained a red, hematite-rich form of this pigment used in many Paleolithic artworks.

ANSWER: **ochre** [or **ocher**; accept red **ochre**; prompt on **iron oxides**, **iron(III) oxide**, **ferric oxide**, or **Fe₂O₃**]

[10h] Animals etched with ochre and charcoal on quartzite fragments in this cave are among the oldest African *art mobilier*. W. E. Wendt named this Namibian cave for its discovery in 1969.

ANSWER: **Apollo** 11 Cave [or **Apollo**-11-Höhle]

[10e] Patricia Vinnicombe's *People of the Eland* documented this cultural group's sparkling ochre rock art in the Drakensberg. An obsolete family grouped the click languages of these hunter-gatherers and Khoi pastoralists.

ANSWER: **San** peoples [or **Sho** or **Sǎkhoen** or **Sonqua**; accept Khoi**san** languages; accept **Bushman**, **Bushman**, **Boesmans**, **Boschjesmens**, **Basarwa**, or **Mosarwa**; accept **!Kung**, **!Xuun**, **‡X'aol'aen**, **Ju**'hoansi, **Ju**'hoan, **Ju**/wasi, **Ju**/twasi, **Zhu**, **Dzu**, **‡Khomani**, **/Xam**, **‡Aakhoe**, **Hailom**, **!Xoon**, **!Xoongakem**, **'Nlohan**, **Nlumde**, **Naro**, **NcoaKhoe**, **Glui**, or **G!ana**]

<Other History>

16. A slogan attributed to Bronisław Malinowski urges anthropologists to get “off the verandah” and into this area, whose namesake “schools” were formalized by the Archaeological Society of America. For 10 points each:

[10e] Give this generic term for research sites outside of controlled settings like labs.

ANSWER: the **field** [accept **fieldwork** or **field** research; accept **field** schools]

[10m] Bruce Jackson’s folklore fieldwork manual cites Jean Malaurie’s (“mal-oh-REE’s”) *The Last Kings of Thule* (“THOO-lee”) as a masterclass in developing rapport with these people. This is the generic term for people who provide data to ethnographers.

ANSWER: **informants** [accept **consultants** or **informers**; prompt on **subjects**]

[10h] This nonprofit based in New Haven teaches note-taking with informants in its online workbooks. The Standard Cross-Cultural Sample complements the Probability Sample File from this group’s World Cultures database.

ANSWER: **HRAF** [or **Human Relations Area Files**; accept e**HRAF** World Cultures or e**HRAF** Workbooks]
<Social Science>

17. In a short film by this director, a young mother and her three girls flip a woman off in unison after the oldest, Kelly, tells her, “My mum looks like Victoria Beckham, you fat old cow!” For 10 points each:

[10h] Name this director of *Wasp*, which was filmed in her hometown of Dartford. She often uses the 4:3 aspect ratio, as in her films *Wuthering Heights* and *Fish Tank*.

ANSWER: Andrea **Arnold**

[10m] David Lowery used 4:3 for this film to portray the idea of being “trapped in a box for eternity.” Casey Affleck appears covered by a white sheet through most of this film.

ANSWER: *A **Ghost Story***

[10e] Recent films from this country that use 4:3 include Lila Avilés’s (“ah-vee-LACE’s”) *Tótem* and Carlos Reygadas’s *Post Tenebras Lux*. This country’s director Alfonso Cuarón did his own cinematography for his film *Roma*.

ANSWER: **Mexico** [or United **Mexican** States or Estados Unidos **Mexicanos**; reject “Estados Unidos”]
<Other Fine Arts>

18. Quartz cuvettes are designed to provide a standard value of 1 for this variable. For 10 points each:

[10e] Name this variable symbolized *b*. Like molarity, it is directly proportional to absorption by Beer’s law.

ANSWER: path **length** [or **distance**]

[10h] These devices provide effective path lengths in the kilometers in a form of spectroscopy that measures the time it takes a signal to “ring-down,” allowing the detection of concentrations in the parts-per-billion.

ANSWER: optical **cavity** [or optical **cavities**; or optical **resonators**; accept **cavity** ring-down (absorption) spectroscopy or Fabry–Pérot **etalons**; prompt on **interferometers**]

[10m] Open-path cavity ring-down provides a way to monitor this compound and ammonia at agricultural sites. The EPA uses ground-based atmospheric analysis to detect “fugitive” production of this compound, which can be reduced by flaring at exploration and production operations.

ANSWER: **methane** [or **CH₄**; prompt on natural **gas**]

<Chemistry>

19. Answer the following about the outsize role of onions in Indian politics, for 10 points each.

[10e] Inflated onion prices fell after this Congress Party leader's landslide victory in 1980's "onion election." India's Green Revolution began in the wheat belt of Punjab, where this leader attacked the Golden Temple.

ANSWER: **Indira Gandhi** [or **Indira Priyadarshini Gandhi** or **Indira Priyadarshini Nehru**; prompt on **Gandhi** or **Nehru**]

[10h] The agrarian populist Sharad Joshi modeled his Shetkari Sanghatana on this party after rallying Maharashtra's farmers to demand higher onion and sugar prices in Nashik. Rajaji founded this classical liberal party.

ANSWER: **Swatantra** Party [accept **Swatantra** Bharat Paksh; prompt on **SBP** by asking "what does that stand for?"]

[10m] This city investigated the "onion cartel" after 2010's "onion crisis." Onion prices fueled the BJP's historic 1998 defeat in this stronghold of the AAP's "mango people," where Jamia Millia Islamia students protested Citizenship Act amendments.

ANSWER: **Delhi** [or **Dillī**; accept New **Delhi** or Nāī **Dillī**; accept **National Capital** Territory, **NCT**, National Capital Territory of **Delhi**, or Rāṣṭrīya Rājadhānī Kṣētra **Dillī**] (The AAP is the Aam Admi Party.)

<World History>

20. In *Rameau's Nephew*, Lui ("lwee") remarks that a person with this job and a chessmaster "know everything about their respective games." For 10 points each:

[10m] Name this job of La Clairon, who startles Voltaire in an essay titled for it. Diderot coined the expression "staircase wit" in an essay about this job's "paradox," which arises from its "complete absence of sensibility."

ANSWER: **acting** [or **actors** or **actresses**; or **thespians** or equivalents; or **comédiens**; accept "Paradox of the **Actor**" or *Paradoxe sur le **comédien***]

[10e] La Clairon revolutionized costuming for this genre by not wearing *pannier* ("panny-er") hoop skirts.

Racine's ("ruh-SEEN's") *Phèdre* ("FED-ruh") is in this genre, which often hinges on the hero's "flaw," or *hamartia*.

ANSWER: **tragedy** [or **tragédie**]

[10h] Clairon tried to shut down a Charles Palissot play that satirizes this person as Crispin, who enters the stage on all fours munching on lettuce. This person lambasted the immorality of theater in a letter "on Spectacles."

ANSWER: Jean-Jacques **Rousseau** (Palissot's play is *The Philosophes*. The letter is *Letter to M. D'Alembert on Spectacles*.)

<European Literature>