

TOSSUPS

1. An American who treated wounds in this place was tarred as “Dr. Death” for introducing reforms creating family doctors as health minister. An online press named for this place issued “Reft & Light” reports about “Tradition and Order” nationalists. A video titled for this place’s “puppets” leaked a phone call from Victoria Nuland to fuel “anti” counterprotests. The poem “The Caucasus” was recited in this place by the first of the “Heavenly Hundred Heroes” killed around it by the Berkut. Berehynia’s column marks this place’s renaming after 1990’s “Revolution on Granite.” The film *Winter on Fire* depicts this place’s 2013 protests, which initially demanded an EU free trade agreement but attracted violence from Right Sector “Banderites.” For 10 points, Viktor Yanukovich was forced out of office in the “Revolution of Dignity” around what public square in Kyiv?

ANSWER: **Maidan** [or Maidan **Nezalezhnosti** or **Independence** Square; accept Eurom**aidan** Press, Yevrom**aidan**, Anti-**Maidan**, **Independence** Monument, Monument **Nezalezhnosti**, **Shevchenko**, **Pechersk**, **Hrushevsky**, Square of the **October Revolution**, **Oktyabrskoi Revolyutsii**, or **Zhovtnevoyi revolyutsii**; prompt on public **square** or **plaza** until “square” is read; prompt on **Kyiv** or **Kiev** until read; prompt on **Ukraine** or **Ukrayina**] (The doctor was Ulana Suprun. Serhiy Nigoyan recited a poem by Taras Shevchenko.)

<Current Events>

2. This quantity is a simple linear function in the Milne universe. This quantity depends on one minus the cosine of conformal time, which is the functional form of the y -component of a cycloid, in a closed, matter-dominated universe. In a multi-component universe, powers of this quantity are the weights for the harmonic mean of each component’s density parameter that gives the total density parameter. This quantity squared multiplies the spatial components of the FLRW line element. This quantity is obtained as a function of the age of the universe by solving the Friedmann equations. This quantity, and its first and second time derivatives, are used to calculate the deceleration parameter. This quantity’s time derivative, divided by this quantity, equals the Hubble parameter. For 10 points, name this dimensionless cosmological quantity often denoted lowercase “a.”

ANSWER: **scale factor** [prompt on **a** or **R** until “a” is read] (The scale factor multiplies the spatial components of the Friedmann–Lemaître–Robertson–Walker metric.)

<Other Science>

3. A critic of this framework’s “way,” Deborah Mayo, holds that her “severity account” better handles irrelevant conjunctions in “tacking paradoxes.” The Judy Benjamin problem reveals an ambiguity in this framework, whose synchronic norms include Bas van Fraassen’s (“FRAH-sun’s”) Reflection Principle. In a book titled for this framework “or Bust,” John Earman formalized its “folklore” of “washing out,” its threat by the old evidence problem, and its triumph over the hypothetico-deductive model of confirmation. In a field of epistemology named for this framework, gambling-based Dutch Book arguments are used to justify requirements like Jeffrey Conditionalization. Subjectivists in this framework place no constraints on agents’ initial credences. For 10 points, frequentism opposes what approach in which prior probabilities are updated via an eponymous theorem?

ANSWER: **Bayesianism** (“BAYS-ian-ism”) [or **Bayesian** inference or **Bayesian** probability or **Bayesian** theories; accept Thomas **Bayes**, **Bayes**’s theorem, **Bayesian** epistemology, **Bayesian** subjectivism, **Bayesian** confirmation theory, or **Bayes** or *Bust?*; prompt on **subjectivism** or **subjective** or **personalism**; prompt on **conditionalization** by asking “conditionalization a principle in what broader framework?”]

<Philosophy>

4. This conflict's "prison songs" were collected in *Thunder from the Mountains* and *Gathering Seaweed*. A banker and an Indian tempt a leader of this conflict who is killed by an offstage firing squad in a bilingual play about his trial that was banned after FESTAC ("fess-tack") '77. Villagers displaced by this conflict built KCECC's community theater with collective labor, as recounted in the 2018 memoir *Wrestling with the Devil*. A carpenter who survived this conflict plans to carve a stool for his estranged wife in the last sentence of a novel in which D. O. Thompson is exiled for killing 11 hunger strikers. During this conflict, the settler Mr. Howlands castrates Boro's father and Njoroge ("un-juh-ROH-gay") is expelled from mission school in the novel *Weep Not, Child*. For 10 points, Mugo reveals that he betrayed Kihika during what conflict in *A Grain of Wheat* by Ngũgĩ wa Thiong'o?

ANSWER: **Mau Mau** rebellion [or **Mau Mau** uprising or **Mau Mau** revolt; or **Kenya Emergency**; prompt on **Emergency** or **struggle** or the **Movement**] (Clues include songs translated by Maina wa Kĩnyattĩ in Jack Mapanje's anthology *Gathering Seaweed*, Mĩcere Gĩthae Mũgo and Ngũgĩ's play *The Trial of Dedan Kimathi*, the World Black and African Festival of Arts and Culture, and the Kamĩrĩthũ Community Education and Cultural Centre.)

<World Literature>

5. David E. Stannard accredited this group's sense of vulnerability for the elaborate mourning of its "Way of Death." "Wayward" cases defined this group's moral boundaries per Kai T. Erikson's study of deviance. Sacvan Bercovitch formulated "dissensus" in his version of this group's "origins thesis." An epiphany about this group in the Congo inspired its "myth and symbol" analysis in Perry Miller's *Errand into the Wilderness*. The "Merton thesis" credits modern science to English members of this group, whose idea of "ordered liberty" defines the first of four folkways in D. H. Fischer's *Albion's Seed*. This group's egalitarian "habits of mind" fused the "spirit of liberty" and "spirit of religion" according to Alexis de Tocqueville. For 10 points, what group's 1630 sermon "A Model of Christian Charity" introduced the defining image of American exceptionalism, the "city on a hill"?

ANSWER: **Puritans** [accept **Separatists** or **separating Puritans**; accept **Puritan** origins thesis, *The Puritan Origins of the American Self*, *Wayward Puritans*, or *The Puritan Way of Death*; prompt on **Pilgrims**, **Protestant** settlers, **Nonconformists**, **Independents**, **colonists**, or **colonial** Americans; prompt on **Americans** until read]

<American History>

6. A businesswoman created by this author seductively addresses the protagonist as "Aeneas" as they take shelter from a storm while riding horses in the woods. In a novella by this author, the narrator hopes that he is the "man by the fountain" in a parable told by his love interest, from whom he wins a kiss in a game of forfeits against a doctor, a hussar, and a poet. The jealous narrator of that novella by this author takes a knife to a garden, only to discover his father is his rival for a woman who calls him "Woldemar." A novella by this author in which the confectioner's daughter Gemma enthralls Sanin in Frankfurt was partly inspired by this author's love for Pauline Viardot. In a novella by this author, the teenager Vladimir falls for Princess Zinaida. For 10 points, name this Russian author of *Spring Torrents* and *First Love*.

ANSWER: Ivan **Turgenev** [or Ivan Sergeyevich **Turgenev**]

<European Literature>

7. An artist's *Descriptive Catalog* mentions a painting of this figure in a loincloth encircled by a serpent that strangles allegorical figures representing nations. That painting is William Blake's *The Spiritual Form of [this figure] Guiding Leviathan*. Two children look up at this figure in a monument by John Flaxman. A pendant piece to a painting by Philip James de Loutherbourg centering on this figure is J. M. W. Turner's only royal commission and his largest painting. Benjamin West painted the "Immortality" of this man, who titles a sculpture with 37 pieces of Dutch wax fabric as part of an object inside a large bottle; that Fourth Plinth sculpture is by Yinka Shonibare. Edwin Landseer sculpted four lions for the base of this man's namesake column. For 10 points, many 19th-century British artists honored what dedicatee of Trafalgar Square?

ANSWER: Horatio **Nelson** [or Lord **Nelson**; or Horatio Nelson, 1st Viscount **Nelson**; or Duke of **Bronte**; accept **Nelson**'s Column, *Nelson's Ship in a Bottle*, *The Immortality of Nelson*, Monument to Vice-Admiral Horatio **Nelson**, or *The Spiritual Form of Nelson Guiding Leviathan*]
<Painting & Sculpture>

8. An early use of relaxation methods by Manfred Eigen found that this reaction takes ten hours in one direction but only picoseconds in reverse. The "rational" equilibrium constant for this reaction is 1.74 magnitudes too small in some organic chemistry textbooks due to a convention mistakenly introduced by Johannes Brønsted. The spatial separation of this reaction's products is facilitated by solvent clusters that form a "wire" between them. The Charlott equation explicitly considers the effects of this reaction, which is ignored by the Henderson–Hasselbalch equation. Using an activity of 1 instead of a concentration of 55 M allows a value of 10 to the negative 14 to be assigned to this reaction's equilibrium constant, $K_{\text{sub-w}}$. For 10 points, name this reaction that ensures water has a non-zero concentration of both hydronium and hydroxide.

ANSWER: **autoionization** of water [or **self-ionization**; accept **autoprotolysis**, **self-dissociation**, **autodissociation**, **disproportionation** of water, or word forms; prompt on **ionization** or **protolysis** or **dissociation**; prompt on formation of **hydronium**, **H₃O⁺**, **hydroxide**, or **OH⁻** until "hydronium" is read; prompt on **neutralization** of hydronium and hydroxide until "hydronium" is read by asking "what is the reverse reaction?"] (The rational value of pK_w is 15.74; the log of 55 is 1.74.)
<Chemistry>

9. The son of an MIT alumnus who nationalized this country's banks implemented a carbon tax before he led the WEF. Carmen Lyra, a Communist from this country's positivist Olympian generation, inspired its 1934 strike with the novel *Bananas and Men* and helped depose its oligarchic Tinoco brothers. This country, whose Black non-citizens in Limón won the vote in 1949, annexed part of its southern neighbor's province of Chiriquí in the 1921 Coto War. In the 1940s, this country's Calderonistas enshrined its "Social Guarantees" of welfare and took land from Heredia's ("eh-RED-ee-ah's") coffee barons. After a failed Dominican invasion, the Caribbean Legion helped this country's National Liberation Army depose Teodoro Picado. José Figueres Ferrer electrified this country with hydropower. For 10 points, a 1948 civil war led what Central American country to abolish its army?

ANSWER: **Costa Rica** [or Republic of **Costa Rica** or República de **Costa Rica**; accept 1948 **Costa Rican** Civil War or Guerra civil de **Costa Rica** de 1948; accept Afro-**Costa Ricans** or afro**costarricenses**] (The first line refers to José María Figueres. The southern neighbor is Panama.)
<World History>

10. Sankoff and Laberge used this thinker's concept of a "linguistic marketplace" to predict dialect variation in Montreal. Michèle Lamont's cross-cultural critiques of this thinker grew into studies of boundary work. The "omnivorousness" thesis challenges a theory of this thinker that popularized multiple correspondence analysis. This thinker described professors as a "double negation between the artist and bourgeois" in *Homo Academicus*. This thinker created an equation whose entire right side consists of the term "practice" in a work that popularized the sociological concept of "fields" to describe dispositions called *habitus*. This author of *Outline of a Theory of Practice* wrote that "taste classifies, and it classifies the classifier." For 10 points, name this French sociologist who analyzed the cultural capital of the ruling classes in *Distinction*.

ANSWER: Pierre **Bourdieu** ("boord-YUH")

<Social Science>

11. Emmy Klieneberger-Nobel discovered L-forms while researching this genus, sparking debate about if a shared fried-egg appearance indicated a shared nature. Members of this genus are characteristically pleomorphic in cultures because they incorporate cholesterol directly from media. This genus is introduced to cell lines by human breath, necessitating monthly screening. Leonard Hayflick developed a culture for this genus after working with animal pleuropneumoniae. A DNA watermark linking to the J. Craig Venter Institute was the culmination of work begun in this genus's *genitalium* species. Species of *Chlamydia* and this genus are the main causes of atypical pneumonia. The first synthetic organism was derived from members of this genus with minimal genomes. For 10 points, name this genus of very small bacteria that lack cell walls.

ANSWER: **Mycoplasma** [accept **Acholeplasma**; accept **Mycoplasma genitalium** or **Mycoplasma** *genitalium*; prompt on **Mollicutes**; prompt on **pleuropneumonia**-like organisms until "pleuropneumoniae" is read]

<Biology>

12. This person inspired the portrayal of Scottish politician William Maitland of Lethington in the propagandistic "Dialogue of the Twa Wyfeis ("two wives")." Innocent Gentillet ("zhon-tee-LAY") published a tract denouncing this person in the aftermath of the Saint Bartholomew's Day Massacre. In a book on this person's "moment,"

J. G. A. Pocock links him with a contemporary historian who brokered the League of Cognac. This person, who was imprisoned after the Sack of Prato, complained of farm life in letters to Francesco Vettori. Shortly after being elected king, Frederick the Great published a critique of this man edited by Voltaire. This man's study of the Roman text *Ab urbe condita* ("ab OOR-bay CON-dee-tuh") informed his views on republics. For 10 points, the maxim that it is "safer to be feared than loved" originates from what Renaissance-era political theorist?

ANSWER: Niccolò **Machiavelli** [or Niccolò di Bernardo dei **Machiavelli**; or Nicolas **Machiavel**; accept **Anti-Machiavel** or **Discours contre Nicolas Machiavel Florentin**] (Francesco Guicciardini wrote a landmark *History of Italy* and led Papal armies under Clement VII.)

<European History>

13. This work's protagonist hallucinates her doctor carrying an infant on a bayonet and casting it into a poisonous well. A man in this work says that Florence Nightingale ruined wars because soldiers should be allowed to "perish where they fall." Characters cannot recall this work's title spiritual past the line "done taken my lover away." In this work, a man notes that a sapping party's life expectancy is nine minutes. Lusk Committee members pressure people to buy Liberty Bonds in this work, which titles a collection of three pieces that the author refused to call "novellas." This work was inspired by its author's time at the *Rocky Mountain News*. In this work, Dr. Hildesheim treats Miranda, who learns that Adam Barclay died of the same disease that she survived. For 10 points, name this short novel about the Spanish flu by Katherine Anne Porter.

ANSWER: ***Pale Horse, Pale Rider***

<American Literature>

14. In the cantata *L'enfance du Christ* ("lon-FONSE dew KREESE"), this instrument and two flutes play an interlude about young Ishmaelites. This instrument only plays in the second movement of the song cycle *Les nuits d'été* ("lay NWEÉ day-TAY"). 12 of these instruments feature in the march that ends the Te Deum ("tay DAY-um") setting by Berlioz. This instrument plays harmonics at the start of the "*Ballet des sylphes*" ("ballet day SEELF") from *La damnation de Faust*. Berlioz's innovative uses of two of these instruments is exemplified by their ascending figures at the start of the "*Un bal*" movement in *Symphonie fantastique*. This instrument is pitched in C-flat, but can be transposed by depressing its seven pedals by up to two notches. Berlioz's *Lélio* has a movement titled for an ancient version of this instrument played by the wind. For 10 points, name this instrument with 47 vertical strings.
ANSWER: **harp** [or concert **harp** or double-action pedal **harp**; accept Aeolian **harp**]
<Classical Music>

15. This person warned of "gradual moral ruin" from contact with "the child of nature" in *On the Edge of the Primeval Forest*. This person's view that a "disordered society" demands "fundamental rights be abridged" informed Lorraine Hansberry's portrayal of Torvald Neilsen in *Les Blancs*. This person, who was lionized by W. Eugene Smith's *Life* photo-essay "A Man of Mercy," was quoted by Chinua Achebe as calling the "African" "my junior brother." This man lectured on the "problems of peace" and funded a leprosarium after he won the 1952 Nobel Peace Prize for a philosophy of "reverence for life." In his autobiography *Out of My Life and Thought*, this "great white doctor" described treating dysentery at his Paris Missionary Society hospital in Lambaréné, Gabon. For 10 points, what Alsatian theologian wrote *The Quest of the Historical Jesus*?
ANSWER: Albert **Schweitzer** [or Ludwig Philipp Albert **Schweitzer**; accept Albert **Schweitzer** Hospital]
<Other Academic>

16. This adjective titles a poem whose speaker says that "For every bird there is a stone thrown at a bird" and admits to shortening her life "in a thousand delicious, ill-advised ways." The line "Life is short, though I keep this from my children" opens a poem titled for this kind of "bones" by Maggie Smith. A John Donne poem titled for this adjective asks "what thou and I / Did, till we loved" and describes a love "so alike, that none do slacken, none can die." In "Wild Geese," Mary Oliver declares that "you do not have to be" this adjective, which is the second-to-last word in the title of a poem that asks a father to "Curse, bless, me now with your fierce tears." That poem titled for this adjective states that "Old age should burn and rave at close of day." For 10 points, what adjective modifies "night" in a Dylan Thomas villanelle?
ANSWER: **good** [accept "Do not go gentle into that **good** night"; accept "The **Good**-Morrow"; accept "**Good** Bones"]
<British Literature>

17. An untitled encore by this musician had its lead sheet ("LEED sheet") published in the first edition of the *Real Book* under the title "Memories of Tomorrow." In an Oxford Studies in Recorded Jazz book analyzing one of this musician's recordings, Peter Elsdon contrasts Chick Corea's "Noon Song" with this musician's "In Front," since both are from debut 1971 solo albums recorded for Manfred Eicher's label. This musician recorded the albums *Changeless* and *Changes* with Gary Peacock and Jack DeJohnette, the other members of his "Standards Trio." Four solo tracks titled "Part I," "Part II a," "Part II b," and "Part II c" make up an ECM album that this pianist performed on an unkempt Bösendorfer baby grand. The all-time best-selling solo piano album is this jazz pianist's live album documenting a 1975 performance in the title German city. For 10 points, name this pianist of *The Köln Concert*.
ANSWER: Keith **Jarrett**
<Other Fine Arts>

18. Nashik's "counter" versions of these objects with a "three-arched hill" suggest conflict between the Sātavāhanas and the Kshatrapa ("SHAH-trop") Nahapāna. "Tribal" types of the objects with a *nandipada* attest to republican *ganās* like the Yaudheyas. The Kushans adopted styles of these objects from Ai-Khanoum's Yona kings, like Agathocles, who used them to promote the cults of Balarāma and Vāsudeva and trace his "pedigree." Eucratides I made a giant version of these objects after the Diodotids retook their production from the Euthydemids in Bactria. These objects date the Yavana era. India's "punch-marked" types of these objects were replaced by versions of Hellenistic *philippeioi*, which supplanted Achaemenid ones like darics and *sigloi* and matched the Euboic standard of Attic talents. For 10 points, Alyattes of Lydia made electrum into what objects that include the stater and drachma?

ANSWER: **coins** [or **coinage**; accept **medals**, **medallions**, **médailles**, or **croesids**, accept **drachmas** or tetrá**drachm**on until "drachma" is read; accept **talent**s or **stater** until each is read; prompt on **money**, **currency**, **cash**, or equivalent; prompt on **weights**, precious **metals**, **silver**, **Ag**, **gold**, **Au**, **copper**, **Cu**, or **electrum** by asking "made into what objects?"] (The first line refers to counterstruck coins.)

<Other History>

19. One of these statements sometimes used in describing high-velocity welding is named after the location of a 1991 APS meeting in Williamsburg. Gustav Tammann adapted one of these statements often used in impact modeling and named for Peter Guthrie Tait. One of these statements is appended to the Rankine–Hugoniot ("RANK-in oo-go-nee-OH") conditions to determine the Hugoniot curve. In cosmology, these statements are often written as a simple ratio that equals the number w . Modern examples of these statements can involve multiple Maxwell loops, which extend the Maxwell construction's equal area rule. A cubic one of these statements, like one named for Peng and Robinson, includes a and b parameters. For 10 points, name these equations that relate the thermodynamic variables of a system, exemplified by one named for Johannes van der Waals and by the ideal gas law.

ANSWER: **equation**s of **state** [accept equations of **state** after "equations" is read; prompt on **EOS** by asking "what does that stand for?"]

<Physics>

20. A verse in this *sūrah* was revealed after soldiers almost followed 'Abdallāh ibn Ḥudhāfa's ("hoo-THAH-fah's") joking orders to jump into a fire. In the *ḥadīths*, Muḥammad said that a controversial verse in this *sūrah* was revealed when "I wanted one thing, but God wanted another." Scholars like Asma Barlas and amina wadud ("wah-DOOD") argue that translations of that verse in this *sūrah* misuse modern meanings of the root [read slowly] *ḍaad-**raa**-baa* ("dodd-reh-beh") to justify violence. This *sūrah* mandates loyalty to secular authorities dubbed *'ulū'l-'amr* ("oo-LOOL-AH-mer") and requires payments called *mahr* concerning the title group. This *sūrah* contains a verse often interpreted as allowing "lightly striking" the title people if chastisement and "abandoning the bed" fail. For 10 points, name this fourth *sūrah*, which underpins many patriarchal practices.

ANSWER: Sūrat al-**Nisā'** ("an-niss-SEH") [or Surah of the **Women**; accept synonyms; accept **Fourth** Sūrah until read; accept **wives**, **brides**, **fiancées**, or equivalent] (The first sentence concerns the *ulu'l-amr* verse. The *ḥadīths* state that Muḥammad originally wanted to ban corporal punishment of wives but was explicitly overridden by God.)

<Religion>

BONUSES

1. Muhammad Iqbal rooted this concept's "intellectual revolt" in the anticlassical "spirit of the Qur'an" in a critique of Oswald Spengler. For 10 points each:

[10m] Name this concept identified with Kali Yuga by Julius Evola, who called for a "revolt" against it. Charles Taylor identified the individualism of self-fulfillment as a "malaise" of this concept.

ANSWER: **modern**ity [or word forms of **modern**ism; accept **modern** civilization or **modern** science; accept *Revolt Against the Modern World*; prompt on civilization or science; reject "postmodernism" or "Western civilization" or "the West"]

[10h] This traditionalist scholar of Sūfism critiqued materialist science in *The Crisis of the Modern World*. This French perennialist wrote that "counterinitiation" can invert the authentic Advaita Vedanta.

ANSWER: René **Guénon** [or René Jean-Marie-Joseph **Guénon**; or Abd al-Wāḥid **Yahyā** or Abdalwahid **Yahia**] (Guénon's idea of unicité, or "unity of Existence," derives from the Sūfī concept of waḥdat al-wujūd.)

[10e] Following Guénon, Seyyed Hossein Nasr argued that modernity strips nature of this quality and defined its perennial "science of the Real." Mircea Eliade contrasted this forbidden quality with worldly spaces.

ANSWER: **sacred**ness [or **sacral**ity, **sacrum**, **sacré**, or **sacru**; accept *scientia sacra* or **sacred** science; accept *The Sacred and the Profane*; accept resacralization or desacralization or word forms of **sacral**ize; prompt on holy, holiness, blessed, or blessing; reject "enchantment" or "magic"]

<Philosophy>

2. This technique names a style of stained glass that became popular in the 13th century due in part to a Cistercian prohibition on alternatives. For 10 points each:

[10h] Name this technique that is similar to, but more limited than, *camaïeu* ("kah-mah-yur"). A style of manuscript illumination featuring this technique is exemplified by Jean Pucelle's *Hours of Jeanne d'Evreux*.

ANSWER: **grisaille** ("gree-ZYE") [prompt on monochrome or monochromatic; prompt on grey or gray by asking "what is the term of art?"] (The Cistercians prohibited colored glass.)

[10m] *Two answers required*. Some of the first *grisaille* ("gree-ZYE") wall paintings were Giotto's frescoes of 14 allegorical representations of these two collective concepts in the Arena Chapel. Renaissance artists often depicted the Choice of Hercules between these two concepts.

ANSWER: **vices** AND **virtues** [accept accept answers in either order; accept **sins**, **peccati**, **peccato**, **vizi**, or **vizio** in place of "vices"; accept cardinal **virtues** or **virtù** cardinali in place of "virtues"; reject "seven deadly sins"]

[10e] *Grisaille* was often used in the outer panels of altarpieces to imitate sculptures, such as the depictions of John the Baptist and John the Evangelist in this altarpiece by Hubert and Jan van Eyck.

ANSWER: ***Ghent Altarpiece*** [or ***Adoration of the Mystic Lamb*** or ***Adoration of the Lamb of God*** or ***De aanbidding van het Lam Gods***; prompt on the *Adoration* or *De aanbidding*]

<Painting & Sculpture>

3. The Sicilian gambit was a tabular alternative to the Vaughan Williams scheme for a class of drugs targeting this organ. For 10 points each:

[10m] Name this organ whose workload is managed by ACE ("ace") inhibitors. Venomous toads in the genus *Bufo* and poisonous plants in the genus *Digitalis* produce steroid glycosides named for targeting this organ.

ANSWER: **heart** [prompt on cardiac glycosides]

[10e] Cardiac glycosides treat arrhythmias by inhibiting the ATPase that pumps this ion against sodium.

ANSWER: **potassium** [or **K**-plus; accept sodium-**potassium** pump or sodium-**potassium** ATPase]

[10h] This form of V-tach can be triggered by dozens of drugs that have the human *Ether-a-go-go*-related gene as an antitarget. QT prolongation is a risk factor for this arrhythmia, in which premature beats twist peaks below the isoelectric line.

ANSWER: ***torsade de pointes*** ("tor-SOD duh pwant") [or **TdP**; prompt on ventricular tachycardia]

<Biology>

4. An essay argues that if this sentence is true and its author “knows how to express it,” then “she will light a torch in that vast chamber nobody has yet been.” For 10 points each:

[10m] Give this sentence from Mary Carmichael’s novel *Life’s Adventure*. Upon reading this sentence, the narrator of an essay wonders how different *Antony and Cleopatra* would have been had a similar statement been true.

ANSWER: “**Chloe liked Olivia.**”

[10e] The hypothetical novel *Life’s Adventure* appears in this Virginia Woolf essay, which states that a woman must have money and the title space if she is to write fiction.

ANSWER: *A **Room of One’s Own***

[10h] Woolf names this novel as coming close to that rare work in which two women are friends. Augustus Warwick tries to divorce this 1885 novel’s title character, who was based on Caroline Norton.

ANSWER: ***Diana of the Crossways*** (by George Meredith)

<British Literature>

5. The modern term for these periods combines a word for ritual court audiences with one for an era’s temporal span. For 10 points each:

[10e] Name these periods theorized to rise and fall in a “cycle” that recognized the succession of five of them during the era of “ten kingdoms.” 24 imperial histories of these unified periods begin with *Records of the Grand Historian*.

ANSWER: Chinese **dynasties** [or **dynasty**; or cháodài, tiāncháo, běncháo, guócháo, huángcháo, or wángcháo; accept Five **Dynasties** and Ten Kingdoms or Wūdài Shíguó; accept **dynastic** cycle or cháodài xúnhuán; prompt on **imperial** China or equivalents]

[10m] The Sòng court inherited numerous ceremonies from the Five Dynasties, such as performing this act daily at the vacant throne. Umayyad envoys refused to perform this act for Xuánzōng (“shwen-dzong”) of Táng.

ANSWER: **kowtow** [or word forms of **kowtowing**; or kòutóu, kětóu, quỳ lạy, khầu đầu, godu, kōtō, kaitō, nukazuku, nukatsuku, or nukadzuku, prompt on **prostration**, **bowing**, **kneeling**, **homage**, **tapping** one’s head against the ground, or equivalents of any]

[10h] This 6th-century dynasty originated ethnographic portraits of foreign tributaries. Zhū Wēn (“joo-wun”) began the Five Dynasties with a “later” version of this dynasty, whose Buddhist founder Wǔ (“woo”) commissioned the *Thousand Character Classic*.

ANSWER: **Liáng** dynasty [or **Liáng** Cháo, Southern **Liáng**, Nán **Liáng**, or Xiāo **Liáng**; accept Later **Liáng** or Hòu **Liáng** or Zhū **Liáng**; accept Wǔ of **Liáng** or **Liáng** Wǔdì] (The ethnographic envoy portraits are called *Zhígòng tú*, translated as *Portraits of Periodical Offering* or *Illustrations of Tributaries*.)

<World History>

6. *Description acceptable.* Among Slavic Native Faith groups, this belief is most prominent in the Ynglist (“ING-list”) Church, which preaches it to fight “gray” demons from the astral plane. For 10 points each:

[10m] Describe this belief whose Germanic Pagan adherents are influenced by Ariosophy and prefer the name “Odinism.” This belief divides the Asatru Folk Assembly from “universalist” opponents like The Troth.

ANSWER: **racism** [or **white supremacy**; accept Neo-**Nazism**; accept descriptions of **nativism**, **ethnic chauvinism**, **racial** restrictions on membership, **ethnocentrism**, **eugenics**, **anti-miscegenation**, or equivalents or word forms of any; accept **folkish** or **völkische**] (Most studies agree that overt racism is rare among modern Germanic pagans, especially in the US.)

[10h] Another divide in modern paganism is between groups that emphasize accurately recreating historical traditions and those that freely innovate or syncretize. Give either of the standard terms for those approaches.

ANSWER: **reconstructionism** OR **eclecticism** [prompt on **non-denominational** in place of “eclecticism”]

[10e] In a third divide, the “Dianic” branch of this eclectic witchcraft-centered pagan faith controversially bans transgender people from its “Goddess worship.”

ANSWER: **Wicca** [or **Wiccan**; accept specific traditions like Gardnerian **Wicca** or Dianic **Wicca** or Alexandrian **Wicca**]

<Religion>

7. 2–4 (“two four”) trees are equivalent to these self-balancing binary search trees, which store one extra bit of data in each node. For 10 points each:

[10m] Name these trees that can flip that bit during an insertion or deletion to maintain their invariants.

ANSWER: **red–black** trees [reject “black–red trees”]

[10h] Robert Sedgwick claims that this implementation of red–black trees is simple to code since its condition on red edges reduces the number of cases to consider for insert and delete. However, this implementation’s detractors say that its asymmetry requires more cases to be considered and more rotations to be performed.

ANSWER: **left-leaning** red–black tree [or **LLRB** tree; reject “left” or “leaning”]

[10e] Balanced binary search trees guarantee this time complexity for search, insert, and delete. The average case of binary search has this time complexity because each step divides the search space in half.

ANSWER: big O of **log** n [or **log** time or **logarithmic** time; or big O of **log** base-2 n; or big O of the base-2 **logarithm** of n; or big O of **log 2** of n; accept answers that use a different base in place of 2]

<Other Science>

8. Brendan Koerner’s book *The Skies Belong to Us* recounts George Wright hijacking a plane to this city, where Nina Simone attended a landmark 1969 cultural festival. For 10 points each:

[10m] Name this so-called “capital of the Third World,” which sheltered fugitives like Donald L. Cox. A motel named for this city was the site of police killings during the 1967 Detroit riots.

ANSWER: **Algiers** [or **al-Jazā’ir**; or **Alger**; accept **Algiers** Motel] (Algiers hosted the first Pan-African Cultural Festival.)

[10e] During their Algerian exile, Kathleen and Eldridge Cleaver led an international section of this organization, which often screened *The Battle of Algiers* under Huey Newton.

ANSWER: **Black Panthers** [or **Black Panther** Party or **BPP**; or **Black Panther** Party for Self-Defense; prompt on the **Panthers**]

[10h] Socialisme ou Barbarie’s Algerian dispatches were published with *The American Worker* by this Chinese American critic of the BPP’s Maoism. She led Detroit Summer and wrote *Facing Reality* with C. L. R. James.

ANSWER: Grace Lee **Boggs** [or **Grace Chin Lee**; prompt on **Lee**]

<American History>

9. A poet who wrote during this dynasty described a Dantesque tour of the afterlife in *The Epistle of Forgiveness*. For 10 points each:

[10h] Name this dynasty whose poetic innovations were discussed in a treatise by a prince who ruled it for one day. Under this dynasty, a scholar divided meters into five circles based on their “pegs” and “cords.”

ANSWER: **Abbasid** dynasty [or **Abbasid** Caliphate; or Banu al-‘**Abbās**; or al-Khilāfah al-‘**Abbāsiyyah**] (Clues include al-Ma‘arrī, Prince Abdallah ibn al-Mu‘tazz, and al-Khalīl ibn Aḥmad al-Farāhīdīal-Farahīdī.)

[10e] The Abbasid poet al-Ma‘arrī subjected himself to a demanding form of this device for the poems of his *Luzūmiyyāt*. “Schemes” of this poetic device are notated with sequences of letters like AABA.

ANSWER: **rhyme** [accept **rhyme** schemes]

[10m] The Abbasid caliph Hārūn instructs his son to insult a bully’s mother in this later poetry collection. A man with no shoes meets a man with no feet in a poem from this collection by the Persian author of the *Bustan*, Sa’di.

ANSWER: **Gulistān** [or **Golestān**; or *The Rose Garden*]

<World Literature>

10. A pervasive set of Japanese terms called *aizuchi* (“eye-ZOO-chee”) serve as these expressions, which facilitate turn-taking. For 10 points each:

[10h] Name these phatic expressions that convey engagement with, and attention to, conversation partners. English often uses reduplication in these utterances, like “uh-huh” and “mm-hmm.”

ANSWER: **backchannels** [or **backchanneling**]

[10e] Backchanneling, phatic expressions, and turn-taking fall under the purview of this subfield, which draws heavily on Grice’s maxims. This linguistic subfield studies how context influences language.

ANSWER: **pragmatics**

[10m] Turn-taking can also be facilitated by these questions that add a hedge or request for clarification at the end of a sentence. Janet Holmes found that women used more “affective” or “facilitative” examples of these questions than men.

ANSWER: **tag** questions [or question **tags**]

<Social Science>

11. This essay discusses notes sent by “patriotic Georgians” in response to an article about the state’s “arrested cultural development,” including one boasting that Coca-Cola is from Georgia. For 10 points each:

[10m] Name this essay in which H. L. Mencken accuses the South of being just as “sterile, artistically, intellectually, culturally” as the titular desert.

ANSWER: “The **Sahara of the Bozart**”

[10h] Mencken names this Virginian as the only “Southern prose writer who can actually write.” The fictional land of Poictesme (“pwa-TEM”) appears in his cycle *Biography of the Life of Manuel*, which includes a fantasy novel about a pawnbroker.

ANSWER: James Branch **Cabell** (“cabble”) (The fantasy novel is *Jurgen: A Comedy of Justice*.)

[10e] In response to Mencken, the Southern Agrarians published the essay collection *I’ll Take My Stand*. Among the authors was this man, who based his character Willie Stark on Louisiana governor Huey Long.

ANSWER: Robert Penn **Warren** (Stark appears in *All the King’s Men*.)

<American Literature>

12. For *The Shining*, a Steadicam was used to follow Danny as he rides his tricycle over a hexagonally patterned carpet through these areas of the Overlook Hotel. For 10 points each:

[10e] Name these places. A shot from *2001: A Space Odyssey* inspired Christopher Nolan to stage a fight scene in a rotating one of these places in *Inception*.

ANSWER: **hallways** [or **corridor**s or equivalents]

[10m] A shot from this film shows a man apologizing to a woman on the phone for a bad date before panning right to an empty hallway. Later in this film, that man uses his bloody hand to mime shooting himself in the head.

ANSWER: **Taxi Driver**

[10h] In *Barton Fink*, Charlie Meadows guns down two detectives in a hallway as it erupts into flames while yelling that he will show them this thing. The four-word phrase for this concept recurs throughout the film.

ANSWER: the **life of the mind**

<Other Fine Arts>

13. Answer the following about changes of angle in special relativity, for 10 points each.

[10e] Explaining the apparent time discrepancy in this thought experiment relies on the fact that one of the two people involved turns through 180 degrees and starts traveling in the opposite direction.

ANSWER: **twin** paradox

[10h] In this visual distortion effect, objects traveling at relativistic speeds appear to observers at a different angle of perspective, since light from different points on the object takes different times to reach the observer.

ANSWER: **Terrell** effect [accept **Terrell** rotation, Penrose–**Terrell** effect, **Terrell**–Penrose effect, Lampa–**Terrell**–Penrose effect, or Lampa–Penrose–**Terrell** effect]

[10m] When converting between two inertial reference frames, values of this hyperbolic angle can simply be added together. This quantity is equal to $\operatorname{arctanh}$ (“ar-tanch”) of v over c .

ANSWER: **rapidity** [or **rapidities**; reject “rapid”]

<Physics>

14. Immigration to Australia from this colony ignited a 1916 debate that led the “children of Billy Hughes” to be briefly deported to New Caledonia. For 10 points each:

[10e] Name this island country that was a British Crown colony from 1813 to 1964. It was earlier ruled by the Knights Hospitaller.

ANSWER: **Malta** [accept Republic of **Malta** or Repubblica ta’ **Malta** or Repubblica di **Malta**; accept Crown Colony of **Malta**, Crown Colony of the Island of **Malta** and its Dependencies, Kolonja tal-Gżira ta’ **Malta** u l-Gżejjer li jaghmlu Magħha, or Colonia dell’Isola di **Malta** e sue Dipendenze; accept William “**Maltese**” Hughes]

[10h] *Specific term required.* In 1930, Westminster suspended this two-word status in Malta over fascist suspicions. Charles Coghlan (“COG-lin”) stoked anti-Afrikaner sentiment in Southern Rhodesia to win this precursor of dominion status, which the Cape Colony achieved in 1872.

ANSWER: **responsible government** [or **responsible self-government**; or word forms like **responsibly governed**; accept **Responsible Government** Association; prompt on **representative government**, **self-government**, **self-governing**, **constitutionalism**, **autonomy**, or **autonomous**; prompt on **RGA** by asking “what does that stand for?”; reject “independence”]

[10m] Since few Māori could vote under responsible government, many joined a movement for autonomy with this name. New Zealand became a dominion after the tenure of Richard Seddon, who got this nickname for policies like annexing Niue (“NEW-ay”).

ANSWER: **king** [or **kingi**; accept Māori **King** Movement or **Kingitanga**; accept “**King** Dick” or “**Kingi** Tiki”; prompt on **Dick** by asking “preceded by what word?”] (The Cook Islanders’ *ariki* council petitioned to incorporate Niue during the islands’ annexation by Seddon.)

<Other History>

15. The 1755 Lisbon earthquake destroyed hundreds of Carlos Seixas's ("SAY-shahss's") keyboard sonatas in this style, whose Neapolitan idiom was brought to St. Petersburg by Giovanni Paisiello. For 10 points each:

[10m] Name this simplified 18th-century musical style often likened to contemporaneous rococo painting.

Empfindsamkeit ("emp-FINT-zahm-kyte") grew out of this style, whose exemplars included Giovanni Battista Sammartini and J. C. Bach.

ANSWER: **galant** style [or style **galant**; accept **galanteries** or **Galantarien**]

[10h] A galant composer from this country wrote music for a royal palace's 1744 wedding. A rococo composer from this country wrote volumes of "epistles" and "songs" under a patron of Joseph Martin Kraus.

ANSWER: **Sweden** [or **Sverige** or **Ruotsi**; or Kingdom of **Sweden** or Konungariket **Sverige**; accept **Swedish** or **svenska**] (Johan Helmich Roman composed the "Drottningholm Music." Carl Michael Bellman composed *Fredman's Epistles* and *Fredman's Songs* under Gustav III.)

[10e] Johann Gottlieb Naumann reformed one of these places in Sweden after he composed the "Dresden amen" for another of them. Georg Philipp Telemann and other "Masters" of these small institutions led orchestras and choirs.

ANSWER: **chapels** [accept court **chapels** or Hof**kapellen**; accept **Kapellmeister**, Hof**kapellmeister**, maestro di **cappella**, or **Kapellmästare**; prompt on **churches**, **cathedrals**, **Kirchen**, **Domkirche**, or **Kathedralen**]

<Classical Music>

16. Studies of combustion can achieve this condition with jets in a design of Jack Longwell's. For 10 points each:

[10m] Name this condition that holds when residence time is relatively large and allows a constant concentration to be assumed. In a plug flow reactor, this condition only holds in the radial direction.

ANSWER: perfectly **mixed** [accept well-**mixed**; prompt on continuously **stirred**]

[10e] The cross-sectional velocity profile of a laminar flow reactor has this shape because the velocity is a quadratic function of distance from the wall.

ANSWER: **parabola** [or **parabolic**]

[10h] This technique takes advantage of the flat profile of electro-osmotic flow to preconcentrate samples before capillary electrophoresis. This technique focuses analytes into discrete peaks by sandwiching them between buffers with different mobilities.

ANSWER: sample **stacking** [or word forms of **stacked**; accept **isotachophoresis** or **ITP**]

<Chemistry>

17. In a novella secretly published by this movement, Werner says he is "off to hell" after billeting in the house of a man and his niece, who refuse to speak to him. For 10 points each:

[10e] Name this movement whose Midnight Press printed *The Silence of the Sea* by Vercors. Albert Camus edited *Combat* as a member of this covert movement.

ANSWER: French **Resistance** [or La **Résistance**; accept the **Maquis**, **Free French**, or **France libre**; prompt on descriptions of **anti-Nazi** or **anti-Vichy** efforts in France]

[10h] The Resistance got the RAF to drop copies of this poem over France in 1941. "On every piece of dawn" is one of the places that "I write your name" in this Paul Éluard poem.

ANSWER: "**Liberty**" [or "**Liberté**"; or "**Freedom**"]

[10m] Vichy France is portrayed more ambivalently in Creon's speech about this object in Jean Anouilh's ("ah-NOO-ee's") *Antigone*. Give the three-word English name for this metaphor also used by Sophocles's Creon and by Plato, which analogizes a city's governance to navigation.

ANSWER: **ship of state**

<European Literature>

18. Kukeri figures scare evil spirits at the onset of this period in Bulgaria, where it is signified by Baba Marta's red and white yarn in a similar tradition to Martinka and Mărțișor ("murt-see-SHOR"). For 10 points each:

[10m] Name this period personified by the Yarilo, a Slavic dying god who is born to Perun, but kidnapped and raised by Veles. The Germanic dawn goddess was a byname for this time period.

ANSWER: **spring** [or **springtime**, **vesna**, **primăvară**, **prolet**, or **pranverë**; accept **Easter** or **Ēastre** or ***Austrōn**; reject "Ishtar"]

[10e] This substance is patronized by Kurent, whose namesake spring festival is celebrated by Cleveland's Slovene diaspora. The Romans gave a folk etymology to their god Liber from the freeing power of this substance.

ANSWER: **wine** [accept **alcohol**, **beer**, **spirits**, **liquor**, **vinum**, or other alcoholic beverages]

[10h] Kurent drives away personifications of winter like this Slavic relative of the Snow Maiden. Yugoslav and Soviet republics created local versions of this figure, like one who brings gifts with Saint Nicholas and Santa in Slovenia.

ANSWER: **Ded Moroz** [or **Father Frost** or **Grandfather Frost** or **Old Man Frost**; or **Morozko**, **Dyado Koleda**, **Dedek Mráz**, **Dedo Mráz**, **Djed Mráz**, **Dzmer Pap**, or variants of any; accept **Ayaz Ata**, **Ayaz Baba**, **Saxta Baba**, **Ois Babay**, or variants of any; accept **Moş Gerilă**; prompt on **Old Man Winter**; reject "Jack Frost"]

<Mythology>

19. A gilt eagle named for this person is mounted on a vase and displayed in the Louvre alongside the French crown jewels. For 10 points each:

[10m] Name this royal advisor who was convinced by Bernard of Clairvaux's *Apologia* to devote himself to religious life. He later unsuccessfully lobbied Louis VII not to join the Second Crusade.

ANSWER: Abbot **Suger** ("soo-zhair") [or Abbé **Suger**; or **Sugerius**; accept **Suger's Eagle** or Aigle du **Suger**]

[10h] Suger ("soo-zhair") briefly stayed at this pope's court. Letters attributed to this pope appear in his namesake codex, which served as a guide for pilgrims on the Camino de Santiago.

ANSWER: Pope **Callixtus II** [prompt on Pope **Callixtus** or *Codex Calixtinus*]

[10e] Callixtus II ended the investiture controversy by signing a concordat with Henry V in this Rhenish city, where Charles V later issued an edict branding Martin Luther a heretic.

ANSWER: **Worms** [or Free Imperial City of **Worms** or Freie Reichsstadt **Worms**; accept Concordat of **Worms** or **Wormser Konkordat**; accept Diet of **Worms**, Edict of **Worms**, Reichstag zu **Worms**, or **Wormser Edikt**]

<European History>

20. The ancient rainforests of Australia's eastern coast are named for this landmass, whose relict biota include *Araucaria* and southern beeches. For 10 points each:

[10m] Name this landmass known from coal seams in Odisha that contain fossils of Late Paleozoic *Glossopteris* flora. The name of this prehistoric landmass comes from a Deccan Adivasi people whose Garha kingdom was led by Rani Durgavati.

ANSWER: **Gondwana** [or **Gondwanaland**; accept **Gonds** or **Gondi** people or **Gondaranya**; accept **Koitur** or **Kōitōr**; accept **Gondwana Rainforests of Australia**; reject "Pangaea"]

[10e] Gondwanan rainforests once covered this extant landmass, whose deprecated floristic realm included buzzy burr and the Kerguelen ("KURR-guh-lin") cabbage. Argentina claims part of this landmass opposite French Adélie Land.

ANSWER: **Antarctica** [or **Antártida** or **Antarctique**; accept sub**antarctic**; accept **Antarctic** floristic kingdom or Hol**antarctic** floristic realm] (The Antarctic floristic kingdom is now divided into the Chile-Patagonian and Novozealandic realms as biogeographers recognize post-Gondwanan speciation and dispersal.)

[10h] On the Ross expedition, Joseph Dalton Hooker's *Flora Antarctica* illustrated these diverse, gigantic wildflowers that cover Macquarie ("muh-quarry") Island and New Zealand's subantarctic islands.

ANSWER: **megaherbs**

<Geography>