

TOSSUPS

1. Troop deployments at this battle relied on a bridge over the Bormida river. General Anton von Zach was captured at this battle after three brigades of grenadiers were routed by François Kellermann's cavalry charge, though Louis Desaix was shot off his horse during the process. The crushing of Michael von Melas' armies at this battle eventually forced the (*) signing of the Treaty of Lunéville, which ended the War of the Second Coalition. For 10 points, name this battle in which Napoleon drove the Austrians out of northern Italy.

ANSWER: Battle of Marengo

2. The speaker of one of this author's poems "laughed and laughed into the sky, / Till at my throat a strangling sob / Caught fiercely." When another of this poet's speakers was only "knee-high," he was told: "There's nothing in the house / But a loaf-end of rye", and an (*) object with a "woman's head" that "Nobody will buy." The speaker of another of this author's poems delights in an object that "gives a lovely light!" For 10 points, name this author of "The Ballad of the Harp-Weaver," whose poem "First Fig" opens: "My candle burns at both ends."

ANSWER: Edna St. Vincent Millay

3. An artist from this country painted scenes of bourgeois and future revolutions inside a Polyforum located in its capital. Charles Darwin and a broken statue of Jupiter appear at the left of a painting from this country whose center shows a worker looking up at a huge machine. The painter of (*) *The March of Humanity* was from this country, as was an artist whose work Nelson Rockefeller had destroyed over a depiction of Lenin. *Man at the Crossroads* was painted by an artist from - for 10 points - what home country of muralists David Siqueiros and Diego Rivera?

ANSWER: Mexico [or United Mexican States; or Estados Unidos Mexicanos]

4. In Dzogchen, one of these phenomena may be observed around the dead body of someone who has achieved *bodhi*. Ezekiel's "wheel within a wheel vision" compares the radiance of God to these phenomena, one of which is created in Genesis 9. Borlung, Ngalyod, and Yingarna are names for a creature (*) named for these phenomena that created law during the Dreamtime. Alfred Radcliffe-Brown named the serpent worshipped by Aborigines after - for 10 points - what symbol put in the sky by God to symbolize the covenant after Noah's flood?

ANSWER: rainbows [accept Rainbow Serpents; prompt on "covenant"]

5. This country was the site of a settlement on "Beautiful Hill" led by the preacher Anthony the Counselor. This country's late 19th-century politics were dominated by bosses called colonels. The Prestes column marched during the second of two rebellions in this country led by officers called *tenentes*. This country, where the (*) Canudos War was fought, underwent a period of "coffee and milk politics" until a revolution that led to the creation of Petrobras. For 10 points, identify this country whose Estado Novo was led by Getulio Vargas.

ANSWER: Federative Republic of Brazil [or Republica Federativa do Brasil]

6. The only known example of a phi bond has been observed in a diatomic form of this element. A CO₂ laser is used in the Silex process to separate isotopes of this element, whose acetate is commonly used as a negative stain in electron microscopy. Lead-206 is the (*) final product in a nuclear decay chain that begins with this element, processing of whose ores involves an intermediate known as yellowcake. Gaseous centrifugation of this element's hexafluoride can separate its 235 and 238 isotopes. For 10 points, name this radioactive element with symbol U.

ANSWER: Uranium [or U before mention]

7. In most Bantu languages, there are few root words of this type and these words comprise a generally closed class only added to through derivation. The phrase "rather interested in that" is an example of a head-medial phrase named for these words. In English, archaic and poetic use accounts for much postpositive use of these words, as in "this is the (*) forest primeval." In Romance languages, these words agree in number, gender, and case with the words they modify and come after them. For 10 points, identify these words that describe some quality of a noun.

ANSWER: adjectives

8. This writer described a fellow poet's eye as "the spark that shakes the wire" and which "makes all things quiver with the past." This poet asked, "Is it all real? Is it time now to drift away?" in "The End," the last section of a poetry collection that opens with, "In Memory of the Demon," and is titled (*) *My Sister - Life*. The title character of a novel by this author falls in love with a woman who shot Komarovsky at a Christmas party. For 10 points, name this Russian author who wrote about Lara's relationship with Yuri in the novel *Doctor Zhivago*.

ANSWER: Boris Pasternak

9. A king of this name ordered all bridges to be fortified to prevent Viking raids in the Edictum Pistense. Notker the Stammerer collected anecdotes about a ruler of this name who created the Spanish March after his son captured Barcelona. A king with this name received the westernmost lands of his father in the (*) Treaty of Verdun. A king known as "the Bald" had this name, as did a ruler who employed Alcuin of York and Einhard and made his court at Aachen. For 10 points, give the name of the man crowned Emperor of the Romans by Pope Leo III in 800.

ANSWER: Charles [or Carolus; accept Charlemagne or Carolus Magnus]

10. One of these particles arises as a solution to the Seiberg-Witten equations while another one of them was the first solution to the Yang-Mills field equations. Bogomol'nyi names the lower bound for the mass of these particles, which come in Wu-Yang and (*) t'Hooft-Polyakov varieties and can be considered uncharged dyons. According to Dirac, quantization of charge follows from these particles' existence, which would also invalidate Gauss's law for magnetism. For 10 points, name these unobserved hypothetical particles consisting of either a north or south pole.

ANSWER: magnetic monopoles

11. After being denied immediate entry into a castle, this figure threatens to place a curse bringing miscarriages to all of the pregnant women within. This figure gives a golden ring to a shepherd who owns a fire-breathing hound. This figure's cousin aids him in retrieving a comb and a pair of scissors from between the ears of a giant (*) boar as part of a series of tasks to win the hand of Ysbaddaden's daughter. For 10 points, name this cousin of King Arthur who, after rejecting his stepsister, was cursed to marry none but the beautiful Olwen.

ANSWER: Kilhwch [or Culhwch]

12. In Morocco, *smen* is a form of this substance that is buried in the ground for a few months. In Tibet, tea containing this substance, known as *po cha* or *cha suma*, is a popular drink. Biochemically, its production involves changing a fat-in-water emulsion to a water-in-fat by (*) rupturing lipoprotein membranes surrounding fat globules. Hollandaise contains egg yolk, lemon juice and this ingredient. A clarified form of this food is known in India as ghee. For 10 points, name this dairy product you can spread on toast.

ANSWER: butter or ghee [prompt on "fat"]

13. *Description acceptable.* Felix de Weldon made a wax model of this image which he later used as the basis for a memorial he designed. Ira Hayes descended into alcoholism thanks to the fame given him by this "gung-ho" photograph, which was taken as its creator turned around, though for a half-century it was charged that this photograph was (*) staged. This photo taken by Joe Rosenthal depicts six men, only three of whom lived through the year, on top of Mount Suribachi. For 10 points, name this iconic WWII photo showing a flag being raised during a Pacific battle.

ANSWER: *Raising the Flag on Iwo Jima* [accept anything involving a flag and Iwo Jima]

14. Criticism of the holder of this position is still prohibited by *lèse-majesté* laws as of a 2007 constitution. Implicit disloyalty to this state-heading position was a major criticism of the late 2000s anti-aristocracy "Red Shirt" movement. A proclamation issued by a holder of this position put (*) Yingluck Shinawatra into office. Prayut Chan-o-cha's government propaganda is based on loyalty to this position's holder. Members of the Chakri dynasty control - for 10 points - what monarchical position, whose holder Rama IX governs from Bangkok?

ANSWER: King of Thailand [or King of Siam from old-timey people]

15. As a child, this novel's protagonist pretends to hide from "Red Indians" in a pillow fort. After returning to school from a bout of scarlet fever, the protagonist discovers his friend Rose has acquired a new best friend. At this novel's end, the protagonist's Uncle William dies at the Blackstable estate. The protagonist attempts to patch up his relationship with the (*) syphilitic Mildred Rogers before eventually marrying Sally Athelny. Dr. Jacobs operates on Philip Carey's clubfoot in – for 10 points – what novel by William Somerset Maugham?

ANSWER: *Of Human Bondage*

16. This man's views on being and truth are the *first* of three critiques of the concept of structure presented in Jacques Derrida's "Structure, Sign, and Play." This thinker identified free will and confusing cause and effect as two of four great errors of philosophy. This thinker ascribed decadence to the thought of (*) Socrates because it opposed life-affirmation, a process by which humans question all impediments to their "will to power." For 10 points, identify this thinker who punned on Wagner with the title *Twilight of The Idols* and wrote *The Gay Science*.

ANSWER: Friedrich Nietzsche

17. An *unofficial* team of this sport called the Cavaliers was created for a single game of it in 1986. A planned match of this sport prompted protests against Robert Muldoon's government since it may have violated the Gleneagles Agreement. *Eminent Victorians* profiles Thomas Arnold, who headed the (*) school where this sport was invented. Players of this sport introduced the traditional *baka* dance from Maori culture to popular audiences. The Springboks and All-Blacks are teams in - for 10 points - what football sport popular in the Commonwealth?

ANSWER: rugby union

18. Viscin threads and the formation of dyads and tetrads increase the efficiency of this process. Bakerian mimicry cheats organisms that help perform this function, which are attracted by pseudocopulatory structures in Pouyannian mimicry. In anemophilous organisms, this process is promoted by (*) wind. This process's namesake substance is transported from the anther to the stigma of the pistil, often with the help of insects like butterflies or bees. For 10 points, name this transport of male gametes that precedes fertilization in plants.

ANSWER: pollination [accept word forms; prompt on "fertilization" until "namesake substance"]

19. A piece by this composer has the horn player produce a four-note chord via multiphonics. This non-Hummel composer's Bassoon Concerto in F major is the second-most performed one after Mozart's. A spooky crescendo of clarinets and tremolo strings opens a scene by this composer that depicts a conversation with a (*) demon in a forest. Hector Berlioz orchestrated one of this man's piano pieces for an opera where Max sees the casting of magic bullets in the Wolf's Glen. For 10 points, name this composer of *Invitation to the Dance* and *Der Freischütz*.

ANSWER: Carl Maria von Weber

20. This river names the *larger* of the two known species of dwarf crocodile. Three portage rail lines are used to transport around impassable sections of this river, such as a stretch beginning at Matadi. Near Inga falls along this river, the world's most dangerous rapids can be found. The Virunga Mountains along the (*) Albertine rift separate this river's drainage basin from that of the Nile. The Lualaba feeds into this river, along which lies Livingstone Rapids. For 10 points, what river names countries with capitals Brazzaville and Kinshasa?

ANSWER: Congo River [or Zaire River]

21. Obi Okonkwo receives six lash strokes to his buttocks for writing a naive letter to this person in *No Longer at Ease*. The protagonist of another novel grows a beard and wears dark glasses to gain credibility when lecturing about this person. The "Iceland Understanding" is signed between Charles (*) Lindberg and this person in Philip Roth's novel *The Plot Against America*. For 10 points, name this historical leader studied by Professor Jack Gladney in Don DeLillo's novel *White Noise*, whose own writings include *Mein Kampf*.

ANSWER: Adolf Hitler

22. In a flashback in this movie, a car rolls backwards into the tail of a model dinosaur. Characters in this movie are irritated by the jingle from a Triplicated Gum commercial. The collapse of islands like Family and Hockey is caused by the loss of (*) core memories in this movie. One character uses Bing Bong's magic wagon to escape the Memory Hole. In the frame story, Riley plans to run away after her family moves from Minnesota to San Francisco. For 10 points, name this 2015 Pixar movie that shows emotions like Disgust, Joy, and Sadness in the mind of a girl.

ANSWER: Inside Out

23. This concept titles a 1954 book chronicling political activism in the Gold Coast written by Richard Wright. This two-word concept was suggested as a replacement for “Freedom Now!” after James Meredith was shot on the March Against Fear during the speech that popularized this concept given by (*) Stokely Carmichael. During the 200-meter dash medal ceremony, two athletes made a gesture symbolizing this concept at the 1968 Olympics. A raised fist symbolizes - for 10 points - what two-word political slogan for African-American strength?
ANSWER: **Black Power** [do not accept or prompt on anything else]

24. Data with a geometric distribution optimally use a type of this procedure named for Golomb. Scalar or vector quantization are often used to accomplish this procedure. A greedy algorithm for this procedure minimizes the sum of weights times lengths of binary (*) code-words. A dictionary with a list of repeating sequences is used in the four Lempel-Ziv algorithms for this task, which is also the goal of Huffman coding. Artifacts may be left by its lossy type, which is used in JPEGs. For 10 points, identify this task of encoding information to use less space.
ANSWER: information **compression** [or data **compression**, etc.; prompt on “coding” before mentioned]

BONUSES

1. Undesired Passerini products can be generated from a side-reaction when performing this reaction. For 10 points each:

[10] Name this four-component reaction that utilizes a carboxylic acid, aldehyde, amine and isocyanate to synthesize amides. It's useful for generating diverse libraries of compounds.

ANSWER: **Ugi** reaction

[10] Amides are derivatives of this functional group that consists of a carbonyl carbon bonded to an alcohol.

ANSWER: **carboxylic acid**

[10] In the Hofmann rearrangement, this element and NaOH can be used to convert amides to primary amines. This element can be added to an alkene radically with NBS and gives M and M+2 peaks of the same size on a mass spec.

ANSWER: **Bromine**

2. Six actors, including Cate Blanchett, play facets of this musician in *I'm Not There*, in which his band blasts the audience with machine guns before playing "Maggie's Farm" at Newport Folk Festival. For 10 points each:

[10] Name this singer-songwriter whose tours were the subject of D. A. Pennebaker's documentaries *Dont Look Back* and *Eat the Document*. He wrote songs like "Blowin' in the Wind."

ANSWER: Bob **Dylan** [or Robert Allen **Zimmerman**, though don't let him hear you say that!]

[10] Martin Scorsese named his Dylan documentary, *No Direction Home*, from this song which asks a certain "Miss Lonely," "How does it feel?"

ANSWER: "**Like a Rolling Stone**"

[10] This four-word phrase ends each stanza of Dylan's "Rainy Day Women #21 & 35." Dylan contends that it's an allusion to the Book of Acts, not a drug reference.

ANSWER: "**Everybody must get stoned**"

3. The hieroglyphs on this slab of "Green breccia" are largely indecipherable due to its use as a millstone. For 10 points each:

[10] Name this relic that was originally housed in the Great Temple of Ptah. Part of the legible hieroglyphs inscribed into this object declare the supremacy of Ptah, and describe him as the creator of everything.

ANSWER: the **Shabaka Stone** [or **Shabaqo stone**]

[10] The Great Temple of Ptah was located in this city. This city's protective triad consisted of Ptah himself, along with Sekhmet and Nefertem.

ANSWER: **Memphis**

[10] Though Ptah was sometimes depicted wearing the *Atef* crown, it is more typically seen atop the head of this god of the afterlife. This husband of Isis was chopped up into fourteen pieces by his malevolent brother Set.

ANSWER: **Osiris**

4. Answer the following about the traitorous general Wu Sangui, for 10 points each.

[10] Wu's army fought against the forces of this rebel leader at the Battle of Shanhai Pass. This leader, known as the "Dashing Prince," sacked Beijing and gained the support of peasants by promising the abolition of grain taxes.

ANSWER: **Li Zicheng** [prompt on partial answer]

[10] After Li's defeat, Wu accepted the suzerainty of these people, but later rebelled against their Kangxi emperor.

ANSWER: **Manchus** [prompt on the **Qing** dynasty; do not accept "Jurchens"]

[10] Wu basically let the Manchus into China by allowing to get past this several-thousand-mile-long edifice, which was built to keep pesky northern ruffians like the Manchus out.

ANSWER: **Great Wall** of China [or Wanli **Changcheng**]

5. According to William Hazlitt, this character's "only passion is thought." For 10 points each:

[10] Name this character, who delivers a speech in which he characterizes soldiers as "Full of strange oaths" and justice as "In fair round belly... with eyes severe, and beard of formal cut."

ANSWER: **Jaques** (not a typo)

[10] Jaques delivers the "All the world's a stage" speech in this Shakespeare play. Other characters in this play include the fool Touchstone, the noble Orlando, and Rosalind, who disguises herself as Ganymede.

ANSWER: **As You Like It**

[10] *As You Like It* is set in a fictional version of this forest, which is located in Warwickshire County.

ANSWER: Forest of **Arden**

6. The Nazis planned to drain these marshes and their racially inferior inhabitants, but scuttled the plan due to fears of a dustbowl. For 10 points each:

[10] Identify these vast marshes in Southern Belarus, which are found along a namesake river.

ANSWER: **Pripyat** marshes [or **Pinsk** marshes]

[10] The Pripyat marshes were one of the habitats of this last subspecies of wild horse to never be domesticated. Sometimes also known as the Dzungarian horse, this subspecies is commonly named for a Russian explorer.

ANSWER: **Przewalski's** horse [or *dagj*; or *takhi*]

[10] Pripyat, a city near the marshes, became a ghost town when it was evacuated after this 1986 nuclear disaster.

ANSWER: **Chernobyl** disaster [accept anything involving **Chernobyl**]

7. Avastin was one of the first drugs approved to inhibit this process. For 10 points each:

[10] Name this process in which new blood vessels are formed from pre-existing ones. Tumors use this process to boost their growth, leading Judah Folkman to propose that inhibiting it could starve tumors.

ANSWER: **angiogenesis**

[10] Two 2010 *Nature* papers described mechanisms of angiogenesis in these most common and aggressive of malignant brain tumors, whose primary and secondary forms are often distinguished by IDH1 mutations.

ANSWER: **glioblastoma** multiforme [or **GBM**; or **grade IV astrocytoma**]

[10] Besides angiogenesis, another one of “The Hallmarks of Cancer” proposed by Hanahan and Weinberg is the ability of cancer cells to evade this process of programmed cell death.

ANSWER: **apoptosis**

8. All four *maddhabs* of jurisprudence are represented at this university, which disputes its status as the oldest institution of its kind with al-Karaouine in Morocco. For 10 points each:

[10] Identify this university in Cairo, regarded as the most prestigious for scholars of Sunni Islam.

ANSWER: al-**Azhar** University [DO NOT reveal this answer, but accept “al-**Azhar** Madrasa”]

[10] This generic Arabic word for any school is applied to institutions of Islamic education like al-Azhar.

ANSWER: **madrasas** [or **madāris**]

[10] al-Azhar University is tasked with appointing the Grand Mufti in Egypt, who issues legal edicts and interpretations like these ones. Another of these opinions called for the death of Salman Rushdie.

ANSWER: **fatwas** [or **fatāwa**]

9. Nikolai Tikhonov took this man's place during his sick leave, spelling death for reforms. For 10 points each:

[10] Identify this politician, who worked with Evsei Liberman to implement economic reforms that rehabilitated the role of business profits and restored autonomy to managers in Soviet enterprises.

ANSWER: Alexei **Kosygin**

[10] Kosygin was premier during the tenure of this Secretary and leader the Soviet Union from 1964 to 1982, who succeeded Nikita Khrushchev.

ANSWER: Leonid **Brezhnev**

[10] Pressure by Kosygin was a big reason Brezhnev didn't bother this other relatively liberal communist leader, whose mild Hungarian regime was called “Goulash Communism.”

ANSWER: János **Kádár**

10. Answer the following about prostitution in Europe, for 10 points each.

[10] This country passed a law in 1999 criminalizing the purchase, but not the sale, of sexual favors, a model for a law passed more recently in France.

ANSWER: (Kingdom of) **Sweden** [or Konungariket **Sverige**]

[10] The red-light district *De Wallen* is found in this country's largest city of Amsterdam.

ANSWER: The **Netherlands** [or **Nederlanden**]

[10] This country, the home of activist Iana Matei, is the source of most foreign prostitutes in Germany. After this country joined the EU in 2007, the larger of two countries to do so, over 100,000 citizens migrated to the UK.

ANSWER: **Romania**

11. This work quotes the Hippocrates aphorism, “Those who do not perceive that they are wasted by serious illness are sick in mind.” For 10 points each:

[10] Name this missive written to Francis Bacon by the title fictional author. It was written by Hugo von Hofmannsthal.
ANSWER: “The Letter of Lord **Chandos**” [accept “The Lord **Chandos** Letter” or anything mentioning Lord **Chandos**; prompt on “A Letter” or “Ein Brief”]

[10] Hofmannsthal is better known for his works in this genre. Other famous writers of works in this genre include Lorenzo Da Ponte, Francesco Maria Piave, and Eugene Scribe.

ANSWER: **libretti** [accept “**libretto**” if people do not know how to properly pluralize]

[10] Hofmannsthal’s 1911 adaptation of the morality play *Everyman* attempts to explain Christianity via allegory, which was similarly accomplished by this author in his hugely influential work, *The Pilgrim’s Progress*.

ANSWER: John **Bunyan**

12. Elite universities have played a key social role in American social dynamics. For 10 points each:

[10] This economist, himself educated at Cornell, used elite universities as examples of conspicuous consumption in *Theory of the Leisure Class*.

ANSWER: Thorstein **Veblen**

[10] This book examines the importance of backgrounds in elite Ivy League schools and fraternities and classifies the people who come out of them into six general groups, including the men it calls “warlords.”

ANSWER: *The **Power Elite*** (by C. Wright Mills)

[10] Backgrounds in elite US universities often lead to assortative mating, which some scholars say has contributed to ongoing increases in this phenomenon like those described in *Capital in the Twenty-First Century*.

ANSWER: income **inequality** [or economic **inequality**]

13. Bennie Maupin was the only holdover from the Mwandishi band to perform on this album. For 10 points each:

[10] Name this jazz/funk fusion album, which became the best-selling jazz album of all time after a 1992 re-release. It features the song “Chameleon” and a radical reworking of the song “Watermelon Man.”

ANSWER: **Head Hunters**

[10] *Head Hunters* was the twelfth studio album of this keyboarder, who created “Watermelon Man.”

ANSWER: Herbie **Hancock**

[10] Before recording *Head Hunters*, Herbie Hancock played on this musician’s quintet, recording for albums such as *Nefertiti* and *E.S.P.* He’s best known for the album *Kind of Blue*.

ANSWER: Miles **Davis**

14. This novel’s title object was initially stolen during the Siege of Seringapatam. For 10 points each:

[10] Identify this early detective novel that concludes with Rachel Verinder’s marriage to her cousin Franklin, and the return of the title object to the forehead of an Indian statue.

ANSWER: **The Moonstone**

[10] *The Moonstone* was written by this English novelist, who also penned the “sensation novel” *The Woman in White*.

ANSWER: William Wilkie **Collins**

[10] In *The Moonstone*, a trio of ominous Brahmins sent to recover the gem disguise themselves as members of this profession.

ANSWER: **jugglers** [prompt on less specific answers like circus **performers**]

15. Name some people who, as of the writing of this bonus in early October, were Republican candidates for President. For 10 points each:

[10] This bombastic real estate magnate has been a leading candidate in the polls for several months.

ANSWER: Donald **Trump**

[10] In his first appearance in a debate, this candidate mainly emphasized his leadership on 9/11 since he really doesn’t have much to distinguish himself on. His campaign’s motto is the similarly generic “People Over Politics.”

ANSWER: George **Pataki**

[10] This Senator, who is widely rumored to be gay, has remained low in the polls but was widely regarded as the winner of the September 16th “kid’s table” debate.

ANSWER: Lindsey **Graham**

16. This person was depicted sitting in the passenger seat, clutching a canvas of a mountainous watercolor, while in Wyoming. For 10 points each:

[10] Name this person that Robert Henri described as “a little human question mark.” In a more famous painting, this person wears a beige hat and holds a cup of coffee as a row of light fixtures reflect in the window behind her.

ANSWER: **Josephine** Verstillé “**Jo**” Hopper [accept either underlined answer; accept “Edward **Hopper’s wife**”]; prompt on **Hopper**

[10] Josephine’s husband, Edward Hopper, is best-known for this iconic 1942 oil painting of a lonely diner and its patrons.

ANSWER: **Nighthawks**

[10] In *Nighthawks*, Hopper included an advertisement for this product above the central diner.

ANSWER: 5¢ **Phillies Cigars** [accept either underlined part]

17. The rather unassuming town of Chaeronea was pretty important in ancient times. For 10 points each:

[10] It was the site of a battle where the armies of Athens and *this leading Boeotian city*, including its elite Sacred Band, were crushed by Philip II of Macedon.

ANSWER: **Thebes** [or **Thebai**]

[10] It was the site of a later battle where Archelaus, a general of this ruler, was crushed by Lucius Cornelius Sulla.

ANSWER: **Mithridates VI** of Pontus [or **Mithridates the Great**]

[10] It was the birthplace of this author of the *Moralia*, whose best known work arranges anecdotes of famous Greek and Roman historical figures to explore common themes of character and morality.

ANSWER: **Plutarch** [or **Ploutarchos**; or Lucius Mestrius **Plutarchus**] (the work is *Parallel Lives*)

18. The work done by this type of process is equal to minus n R T times the natural log of final volume over initial volume. For 10 points each:

[10] Name this type of process that occurs as a series of infinitesimal changes, so no energy is dissipated as heat.

ANSWER: **reversible** process

[10] This paradox states that an irreversible process cannot arise from time-symmetric dynamics. In other words, the second law of thermodynamics prefers one direction of time.

ANSWER: **Loschmidt’s** paradox

[10] Loschmidt’s paradox was proposed as a criticism of this man’s H-theorem. With James Maxwell, he names the distribution of particle speeds in an ideal gas.

ANSWER: Ludwig **Boltzmann**

19. Answer the following about classical music and Switzerland, for 10 points each.

[10] This piano sonata by Beethoven was nicknamed for evoking a heavenly phenomenon seen on Lake Lucerne. It opens the left hand softly playing octaves and the right hand playing triplets.

ANSWER: **Moonlight** Sonata [or Piano Sonata **No. 14** in C-sharp minor “*Quasi una fantasia*”]

[10] This composer wrote his Violin Concerto in D major, which Adolf Brodsky premiered after Leopold Auer refused to, while vacationing in Switzerland with his lover Iosif Kotek.

ANSWER: Pyotr Ilyich **Tchaikovsky**

[10] This Swiss-born American composer explored his ethnic heritage in works like *Schelomo*, part of his “Jewish Cycle.” His other works include two concerti grossi and *America, an Epic Rhapsody*.

ANSWER: Ernest **Bloch**

20. This text uses a visual device to illustrate “scale of being” called its author’s namesake “tree.” For 10 points each:

[10] Identify this text by Porphyry, written as a guide for the Senator Chrysaorius to part of the *Organon*. It largely ignores the question of universals, instead focusing on defining five types of universality.

ANSWER: **Isagoge** [or **Introduction**; or **Introduction to the Categories**]

[10] The *Isagoge* served as an introductory text on this subject studied by George Boole, the study of reasoning.

ANSWER: **logic** [or **logike**]

[10] Porphyry edited and compiled the writings and teachings of this teacher of his in the six *Enneads*. He developed the discussion of henology and The One, which he paired with the intellect and soul as the Three Principles.

ANSWER: **Plotinus**

21. This writer referred to the common people as the “booboisie.” For 10 points each:

[10] Identify this German-American “Sage of Baltimore,” a clever satirist who coined the term “Monkey Trial.”

ANSWER: H. L. **Mencken** [Henry Louis **Mencken**]

[10] Mencken was openly opposed to this concept, which he regarded as a method for inferior men to dominate superior ones. Alexis de Tocqueville wrote about this concept *in America*.

ANSWER: **democracy** [accept **Democracy in America**]

[10] Mencken called this state the “apex of moronia”, which its legislature responded to by praying for Mencken’s soul. Factions of this state’s Republican Party fought a conflict over its governor’s election in 1872.

ANSWER: **Arkansas** (the conflict is the Brooks-Baxter War)

22. Answer some questions about everyone’s favorite field of geochemistry: organic geochemistry. For 10 points each:

[10] Alfred Treibs, the father of the field, linked geology to biochemistry by isolating these molecules from petroleum. One of these planar macrocycles is coordinated to iron in heme, and they consist of four pyrrole rings.

ANSWER: **porphyrins**

[10] Most geochemical dating is done with this isotope with a halflife of roughly 5700 years. It is produced when nitrogen in the atmosphere reacts with cosmic rays.

ANSWER: **carbon-14**

[10] This is the term given to the mixture of insoluble organic compounds present in many sedimentary rocks. When this substance is prevalent in oil shales, hydrocarbons can be extracted.

ANSWER: **kerogen**

23. This term was coined by Viktor Shklovsky in the essay “Art as Device.” For 10 points each:

[10] Identify this term, which refers to a literary or artistic technique of presenting everyday concepts to the audience in an new or strange way in order to provide a fresh perspective and enhance its understanding.

ANSWER: **defamiliarization** [or **ostranenie**]

[10] This author borrowed the term *ostranenie* or “defamiliarization” as *Verfremdungseffekt* in his essay “Alienation Effects in Chinese Acting.” He created Chinese acting of his own in a play about the kindly prostitute Shen Te.

ANSWER: Bertolt **Brecht** [the play is *The Good Person of Szechwan*]

[10] Brecht’s *The Good Person of Szechwan* is an example of drama breaking from the form established by this writer, who theorized how tragic characters experienced *anagnorisis* in his *Poetics*.

ANSWER: **Aristotle** [or **Aristoteles**]

24. When the title objects of this poem “are bowed / So low for long, they never right themselves.” For 10 points each:

[10] Name this poem that concludes by quipping: “One could do worse than be a swinger of [the title trees].”

ANSWER: “**Birches**”

[10] “Birches” was written by this American poet of “Mending Wall” and the frequently misinterpreted “The Road Not Taken.”

ANSWER: Robert Lee **Frost**

[10] The title creature of this Frost poem is a “singer everyone has heard... who makes the solid tree trunks sound again.” The question the title creature “frames in all but words / Is what to make of a diminished thing.”

ANSWER: “**The Oven Bird**”