

TOSSUPS

1. In this text, a robber launches into a state of nature argument against morality after a philosopher interrupts his meal of human livers. This text's dialogue between Penumbra and Shadow follows an explanation of its use of "imputed," "repeated," and "goblet" words. The final chapter of this text credits the author's friend with "ten theses," including "I set off... today and came there yesterday." A. C. Graham noted primitivist and syncretist sections that follow this text's Inner Chapters. In this text, a man retorts "You're not I, so how do you know that I don't know" when his friend Huizǐ ("HWAY-tsih") questions whether he knows what makes fish happy. This text's most popular passage illustrates the "transformation of things" with a skeptical scenario. For 10 points, name this Daoist text that describes the "butterfly dream" of its title philosopher.

ANSWER: Zhuāngzǐ ("jwong-tsih") [or Chuang-Tzu; or Zong-zi] (The first sentence is about the "Robber Zhǐ" dialogue.)

<Philosophy>

2. This person and Charles Vyner Brooke name steamships that evacuated Singapore in 1942. This European starred in the faux "Istanbul comedy" *The Crusaders* and an 1898 coronation drama for the monarch who opened Kartini schools. "Chatto" and this person inspired the story "Giulia Lazzari" by a protégé of John Wallinger, who tracked this woman's hiring of Inayat ("ee-NAH-yat") Khan's orchestra during the Ghadar ("gudder") conspiracy. This modern woman's persona defined later media coverage of Manchuria's Yoshiko Kawashima and Canada's Gerda Munsinger ("MOON-zinger"). British atrocity propaganda contrasted the nurse Edith Cavell with this contemporary, who was dubbed "H-21" after she accepted 20,000 francs in her neutral home country. This Frisian took a stage name meaning "sun" in Malay. For 10 points, in 1917, a French firing squad executed what Dutch exotic dancer and alleged German spy?

ANSWER: Mata Hari [or Margaretha Geertruida Zelle; or Margaretha Geertruida MacLeod; or MZM; accept Margaretha or M'greet; accept "Agent H-21" until read; accept HMS Mata Hari] (Queen Wilhelmina opened Kartini schools as part of Ethical Policy. Somerset Maugham's Ashenden stories, like "Giulia Lazzari," were based on his espionage with Wallinger.)

<European History>

3. Scholars debate whether one of these people kills someone, or is killed, in the Dead Sea Scrolls text 4Q285, which is nicknamed for a "Pierced" one. In a parable, Joshua ben Levi meets one of these people "at the gates of Rome." The *Sefer Zerubbabel* ("seffer zuh-ROO-buh-bell") describes one of these people being killed by the bug-eyed king Armilus, who is then killed by another of them. Rabbinical texts identify two to three of the "Four Craftsmen" in Zechariah with these people and distinguish an unfortunate "ben Joseph" one from the son of the warrior Hephzibah ("HEP-zih-buh"). The only non-Jew to be called one of these people was Cyrus the Great. One of these people from the line of David defeats Gog and Magog in Ezekiel. For 10 points, name these "anointed ones," the last of whom will build the Third Temple and serve as a Jewish savior.

ANSWER: Jewish Messiahs [or moshiakh or mashiakh or meshikhim; accept sprout of Jesse or Son of Man; accept Son of David until "David" is read; accept anointed ones until read; accept Messiah ben Joseph; prompt on kings or rulers or equivalents; prompt on saviors until read]

<Religion>

4. This man “in decline” is called a “seer of terrible omens” in one of two poems titled for him by Umberto Saba. A Communist poet wrote of this “miserable / blood-soaked, white-bearded man” causing a woman’s “despair.” This man’s heart “exulted coldly, empty of love” as he abandoned “the peace and repose / of the house” in a poem translated by Daniel Mendelsohn. An author from the Generation of the ’30s wrote “fortunate is he” who imitates this man in “Upon a Line of Foreign Verse.” This man meets the elephant caravan of Prince Motherth in a 33,333-line poem. An author named for this man wrote *The Axion Esti*. In a short poem, someone traveling to this man’s realm is told to “hope that the road is a long one.” For 10 points, Nikos Kazantzakis (“kazz-ant-ZACK-iss”) wrote a “modern sequel” about what king, whose home island titles Constantine Cavafy’s (“kuh-VAFF-ee’s”) poem “Ithaca”?

ANSWER: **Odysseus** [or **Ulysses**; accept **Odysseas** Elytis or **Odysseas** Alepoudellis] (Clues include “Penelope’s Despair” by Yannis Ritsos and “Second Odyssey” by Cavafy.)

<European Literature>

5. An influential definition of this process was presented in Wilcox and Murphy’s paper on its consequences, which took Jared Diamond’s side in an ongoing debate. Decades-long experiments at the BDFFP have shown that this process causes hyperdynamism. An ongoing project studying this process was started by Thomas Lovejoy in 1979 to challenge the assumption that this process produces the nested species assemblage seen in the works of E. O. Wilson. This process produces a matrix of ecotones that facilitate invasion as the ratio of edge to interior increases. Metapopulations formed by this process have subsets that are each more susceptible to extinction. This process occurs as roads and farmland create artificial transects through an ecosystem. For 10 points, name this process in which a habitat is divided into smaller pieces.

ANSWER: habitat **fragmentation** [accept population **fragmentation**; prompt on habitat loss, habitat destruction, habitat degradation, ecosystem disturbance, deforestation, or forest clearing]

<Biology>

6. *Description acceptable.* An article written in response to this event recounts two men talking about their sexual conquests while the author attempts to read *The Sound and the Fury*. Alan Dixon’s political career ended after his role in this event prompted a primary challenge by Carol Moseley Braun. A “twilight zone” that is characterized by competing “Appropriations” of this event is discussed in the essay “Whose Story Is It, Anyway?” from a collection edited by Toni Morrison. Rebecca Walker coined the term for “third wave” feminism in response to this event, whose central participant headed the EEOC. During this event, Joe Biden chaired an all-White, all-male Senate committee to adjudicate testimony from a Black central participant, who used the phrase “high-tech lynching.” For 10 points, the subject of what 1991 event was accused of sexual harassment by Anita Hill?

ANSWER: Clarence **Thomas hearings** [or Clarence **Thomas**’s Supreme Court confirmation **hearings**, Clarence **Thomas**’s **confirmation** hearings, Clarence **Thomas**’s **nomination** to the Supreme Court, or equivalents; accept Anita **Hill**’s **testimony** or Anita **Hill hearings** or similar answers until “Hill” is read; prompt on Clarence **Thomas** scandal or Clarence **Thomas** controversy or equivalents] (“Whose Story Is It, Anyway?” appears in *Race-ing*

Justice, En-gendering Power.)

<American History>

7. A man with this job becomes a Marxist guerrilla in the novel *Between Tides*. The cynical cook Zacharia ridicules an absentee with this job who departs Tala country after he learns that the “sixa girls” work at a brothel. An employer of Toundi with this job dies in a motorcycle crash in the first “exercise book” of Ferdinand Oyono’s *Houseboy*. Before his death is labeled a “doubtful case,” a man with this job speaks of a “flail” threshing above the city’s rooftops. V. Y. Mudimbe’s (“moo-deem-bay’s”) *The Invention of Africa* critiques the “vital force” outlined by an author with this job in *Bantu Philosophy*. This is the occupation of Drumont (“drew-MON”) in a satire by Mongo Beti and of a man who justifies children’s suffering in two speeches after Castel’s serum fails to save Othon’s son in Oran (“oh-RAWN”). For 10 points, name this occupation of Paneloux in Albert Camus’s *The Plague*.

ANSWER: **priests** [or **fathers**, **confessors**, **curates**, **prêtres**, **pères**, **doms**, or **curés**; accept **clergy**, **missionaries**, **clerics**, **pastors**, **ministers**, **vicars**, **prelates**, **Jesuits**, **Franciscans**, **friars**, or equivalents of any; reject “monks” or “abbots” or “bishops”] (Placide Tempels wrote *Bantu Philosophy*. Beti wrote *The Poor Christ of Bomba*.)

<World Literature>

8. A cello concerto in this key begins with a quiet dotted pickup for horns and violas. Haydn used this key for a symphony whose fourth-movement cembalo (“CHEM-buh-loh”) solo was likely written for himself. Mozart used this key for a seven-movement piece for 12 winds and double bass, his Tenth Serenade. This is the key of a cello concerto whose slow movement was posthumously replaced with passages from three of its composer’s other cello concertos. This is the key of Haydn’s Symphony No. 98, Mozart’s *Gran Partita*, and a cello concerto arranged by Friedrich Grützmacher (“GROOTS-mah-ker”), Boccherini’s Ninth. This major key’s tonic is the most common note in which trumpets and clarinets are pitched. Classical pieces in this key often tune the timpani to F, which is this key’s dominant. For 10 points, name this major key with two flats.

ANSWER: **B-flat** major [reject “B” or “B-flat minor”]

<Classical Music>

9. Lennard-Jonesium (“lennard-jones-ium”) 38 requires enhanced sampling to visit the entire space spanned by these variables because it is not ergodic on the timescale of the simulation. Berendsen et al. extracted the essential dynamics of protein fluctuations into modes that make excellent choices for these variables, which are obtained through dimensional reduction of trajectories in molecular dynamics. An “intrinsic” choice of these variables traces the unique minimum energy path through $3N$ -minus-6-dimensional configuration space. The synchronous transit method finds points where the derivative of the Gibbs free energy with respect to these variables is zero on a PES (“P-E-S”). These variables are the x -axis on plots with local maxima at transition states. For 10 points, name these variables chosen to represent changes in structure during a reaction.

ANSWER: reaction **coordinates** [or **collective** variables; accept intrinsic reaction **coordinates** or geometric **coordinates** or **order parameters**; prompt on **parameters**; prompt on atomic or nuclear **positions**, bond **angles**, **dihedral** angles, or bond **lengths** by asking “they are part of what broader set of variables?”]

<Chemistry>

10. The oldest surviving myth in this language has a story-within-a-story in which a burning star kills 74 family members of a giant blue snake with a human head. A satirical text in this language pities a weaver who can't breathe and a builder with kidney disease to extol the life of officials. In a fragmentary text in this language, a man and his soul argue whether life or death is better, and then switch sides and make opposite arguments. In a myth in this language, the king's death so shocks a man that he flees east, passes out, and then becomes a foreign military commander who defeats a Goliath-like enemy from Retjenu ("reh-cheh-NOO"). The story of Sinuhe ("see-NOO-hay") was written in this language, as was a myth about a series of "Contendings" that includes a painted wooden boat, a breath-holding contest, and semen-infused lettuce. For 10 points, name this language whose writing system was invented by Thoth.

ANSWER: **Egyptian** [or r n **km.t** ("er en kemet"); accept Ancient **Egyptian**, Middle **Egyptian**, Archaic **Egyptian**, Old **Egyptian**, or Late **Egyptian**; prompt on **demotic** or **hieratic** or **hieroglyphic**; reject "Coptic"] (The oldest surviving myth is the "Tale of the Shipwrecked Sailor." The second line refers to the *Satire of the Trades*.)
<Mythology>

11. An early painting in this genre by Hans Memling with a Christ monogram and a namesake carpet was done on the reverse of his *Portrait of a Young Man Praying*. Oil-on-copper, monogrammed paintings in this genre were made by the Bosschaert ("BOSS-hart") family. An album cover by Peter Saville added small color blocks to a painting in this genre by Henri Fantin-Latour. A pupil of Maria Sibylla Merian used real butterfly wings in "impossible" paintings in this genre; that artist was the first woman to join the Confrerie Pictura of The Hague. It's not landscapes, but a Brueghel family member nicknamed for paintings in this genre collaborated with Peter Paul Rubens. Rachel Ruysch worked in this genre, which a later artist painted for a studio shared with Paul Gauguin. For 10 points, the Yellow House was decorated with paintings in what genre by Vincent van Gogh?

ANSWER: **floral** still lifes [or still lifes of **flowers**; or still lifes of **sunflowers**; prompt on **still lifes** by asking "of what objects?"; prompt on **vanitas** by asking "what are the primary objects depicted in the paintings?"; prompt on **plants** or **botanical** art or equivalents]
<Painting & Sculpture>

12. A woman in this play suggests that "the fact that" her lips move may be "more significant... than the words which come through them." When a man insists that that woman in this play has had enough water, she warns, "If you take the glass... I'll take you." A man in this play tells his son that his only shortcoming as a boxer is that he can't attack or defend. In this play, a man says he punched an old lady after failing to help her move her iron mangle. The only female role in this play was premiered by its author's wife, Vivien Merchant. A chauffeur in this play dies after revealing that Mac had sex with Max's wife in his cab. In this play, Lenny gets angry that his brother ate his cheese roll, and Joey fails to go "the whole hog" with Ruth, who agrees to become a prostitute. For 10 points, Teddy introduces his wife to his estranged family in what play by Harold Pinter?

ANSWER: *The **Homecoming***
<British Literature>

13. A “comparative” study of this issue by A. M. Hocart called kingship its focal institution, unlike most Western studies. A book on this issue argues that it is not exploitative because it involves “contributions to a whole,” in contrast to de Tocqueville’s (“TOHK-veel’s”) individualism. A country’s remedies for this issue are subject to the “creamy layer” doctrine. This issue, which was publicized in the US by a 2020 case against Cisco, is the subject of Louis Dumont’s (“dew-MON’s”) study *Homo Hierarchicus*. A vetoed 2023 bill would have made California the first state to explicitly ban this form of discrimination, which is the subject of a book titled for its “Annihilation” by a writer who was hailed by the slogan *Jai Bhim*. For 10 points, what discrimination protested by B. R. Ambedkar (“ahm-BAYD-ker”) affects Silicon Valley workers from Dalit backgrounds?

ANSWER: **caste** discrimination [or **caste** system; accept **jajmani**, **jati**, **jadi**, or **varnas** in place of “caste”; accept descriptions of discrimination against **untouchables**, **Harijans**, “Other **Backwards** Classes,” “Educationally **Backwards** Classes,” or **OBCs**; accept discrimination against **Dalits** until read; prompt on **affirmative action** by asking “to remedy what specific form of discrimination?”] (India’s “creamy layer” doctrine states that affirmative action programs must prevent overuse by the richest part of disadvantaged groups.)

<Social Science>

14. Either this process or diffusion lends its name to an “artificial” numerical technique used in the Jameson–Schmidt–Turkel scheme, which can increase stability in CFD. Uniqueness theorems at very low Reynolds numbers can be used to prove that Stokes flow minimizes this process in a theorem sometimes named for Hermann von Helmholtz. The overall rate of this process is the volume integral of the contraction of the stress and strain rate tensors. This process’s rate per unit mass, denoted epsilon, scales with velocity cubed over length in Kolmogorov’s theory of turbulence, which asserts that this process occurs below the Kolmogorov length scale. This irreversible process occurs during damped oscillations due to friction. For 10 points, name this process in which a system loses energy.

ANSWER: energy **dissipation** [or **dissipating** or **dissipates** or **dissipative** process; accept **dissipation** of kinetic energy; accept artificial **dissipation**; prompt on **loss** of kinetic **energy** or equivalents until “loses energy” is read]

<Physics>

15. *Original-language term or variant required.* “Fayaz” and this word name *tepes* (“TEH-pehs”) that preserved Buddhist Gāndhārī writing near Termez. Scholars used “ilek” or this adjective to identify the Āl-i Afrāsiyāb dynasty, who patronized Yūsuf Balasaguni’s *Kutadgu Bilig* (“koo-TOD-goo BILL-ick”), built the Kalyan Minaret, and Islamized Khotan and Kashgar. This word and a hat name a minority whose autonomous republic contains “50 fortresses” occupied by the Khwarezmian Empire. This word identifies the Karluk “khanids” who ruled post-Samanid Transoxiana north of the Ghaznavids. Yēlū Dàshī’s (“yeh-loo dah-shurr’s”) Western Liáo (“lee-ow”) are also called this sort of Khitans. This Turkic adjective describes the animals grazed by Jahan Shah’s confederacy before it was driven from modern Iraq by the rival Aq Qoyunlu Turcomans. For 10 points, what word for “black” is a prefix in the names of the desert that contains Merv and the main capital of the Mongol Empire?

ANSWER: **kara** [or **qara**, **k’ra**, **kora**, **khara**, **kālā**, or **gara**; accept **Karakorum**, **Karakum** Desert, **Kara** Koyunlu, **Qaraqoyunlular**, **Kara** Khitai, **Kālā** Qidān, **Karakhanids**, **Kara**-Khanid Khanate, **Qarā**kāhāniyān, **Karakalpaks**, **Qaraqalpaqlar**, **Karakalpakstan**, or **Kara** Tepe; prompt on **black** or **hēi** until “black” is read by asking “that is a translation of what non-English word?”] (Gāndhārī is also called Kharoshthī. The Kalyan Minaret is in Bukhara.)

<World History>

16. A song by this artist plays over a 79-second static shot of a stream flowing under the arch of a stone bridge, through which a distant Scottish loch can be seen. That shot opens the epilogue of *Breaking the Waves*. Another song by this artist plays over Jacob Holdt's photos of impoverished Americans in the credits for Lars von Trier's *Dogville*. When this artist comes on the radio, a man in love runs ecstatically down a street in a sequence from Leos Carax's film *Mauvais Sang* ("mo-vay song") that inspired a similar scene in Noah Baumbach's *Frances Ha*. Shosanna puts on makeup and records a message to the Nazis in a montage from *Inglourious Basterds* set to a song that this artist recorded for Paul Schrader's *Cat People*. Seu Jorge ("say-oo ZHOR-zhee") sings this artist in Portuguese in *The Life Aquatic with Steve Zissou*. For 10 points, name this singer of "Modern Love" and "Life on Mars?".

ANSWER: David **Bowie** [or David Robert **Jones**]

<Other Fine Arts>

17. The province named for this city contains a museum about what was once Europe's largest sulfur mine in the Marecchia ("mah-RECK-yah") Valley. This city's *piadineria* restaurants use Cyrillic menus, as its thousand-plus hotels serve many Russians. The film *Amarcord* evokes this city's Borgo San Giuliano across the Tiberius Bridge from the Castel Sismondo, whose museum honors native son Federico Fellini. Daily buses link this city to nearby San Marino. At this city, Frederick II granted Kulm to Prussia's Teutonic State in a 1226 Golden Bull. Leon Battista Alberti built the Tempio cathedral for this city's ruling House of Malatesta. A lustful daughter of Guido da Polenta who died in this city with her lover inhabits the wind-filled second circle of Dante's *Inferno*. For 10 points, what resort on the Adriatic's Riviera Romagnola ("roman-YO-lah") was the adopted home of Paolo's lover Francesca?

ANSWER: **Rimini** [accept Francesca da **Rimini**; accept Golden Bull of **Rimini**; accept Province of **Rimini** or Provincia di **Rimini**] (The first line refers to the Museo Sulphur in Perticara. A piadina is a flatbread sandwich.)

<Geography>

18. This woman's charms are explained using Francis Bacon's claim that there is "no exquisite beauty" without "some strangeness in the proportion." This woman's raven-black curls are called "hyacinthine" ("high-uh-SIN-thyne"), and her eyes are likened to the "gazelle eyes of the tribe of the valley of Nourjahad." With her last breath, this woman quotes Joseph Glanvill's statement that "Man doth not yield him to the angels" except due to his "feeble will." A poem by this character describes "a blood-red thing that writhes from out / The scenic solitude!" After her death, this woman's widower moves from a "decaying city by the Rhine" to an English abbey and marries Lady Rowena Trevanion of Tremaine. This woman writes that the "play is the tragedy, 'Man,'" in her poem "The Conqueror Worm." For 10 points, name this title woman, who takes over Rowena's body in a story by Edgar Allan Poe.

ANSWER: **Ligeia** ("lye-JEE-uh")

<American Literature>

19. In a step of the quadratic sieve, the block Lanczos ("LAHN-tsoash") algorithm is often used to find an element of this set over a finite field. One of the two possibilities given by the finite-dimensional Fredholm Alternative is that an example of this set is trivial. For nilpotent objects, the dimension of this set is equal to the number of Jordan blocks. This set and its "co-" or "left" analog are two of the "four fundamental" sets for an operator. Functionals for which this set includes a set A make up the annihilator of A . This set consists of elements orthogonal to all elements of the row space. The dimension of the domain equals the dimension of the image plus the dimension of this subspace of the domain. For 10 points, singular matrices have nontrivial examples of what subspace, which consists of the vectors mapped to zero?

ANSWER: **kernel** [or **null space**; or **ker**; accept co**kernel** or left **kernel**; accept **null** after "subspace" is read; prompt on **null** until "subspace" is read; reject "null set"]

<Other Science>

20. This man prays for the Three Kings to kill him instead of his brother in the text “The Metal-Bound Coffin.” A canon ascribed to this man defines 360 posts under six offices and helped “institute ritual and music.” A later thinker lamented that not dreaming of this deified author of the *Book of Dreams* signaled his decline. For refusing to write a speech comparing the Yǒnglè (“yohng-luh”) Emperor to this man, Fāng Xiaorú (“fahng shee-OW-roo”) was “exterminated to the tenth degree.” After he suppressed the Rebellion of the Three Guards, this man codified the *fēngjiàn* (“fung-jee-en”) system of fiefs and moved the nine *dǐng* (“deeng”) bronzes to a city that he founded for deposed elites near modern Luòyáng (“lwoh-yahng”). This official’s abdication for his nephew King Chéng (“chung”) legitimized the newly-formulated “Mandate of Heaven.” For 10 points, Confucians idealized what official who served as regent after the fall of the Shāng?

ANSWER: **Duke** of **Zhōu** (“joh”) [or **Zhōu Gōng**, **Chou Kung**, **Lord Zhōu**, **Lord Chou**, **Duke Wén** of Zhōu, **Zhōu Wén Gōng** Dàn, **Chou** Wen **Kung** Tan, **Jī Dan**, **Chi Tan**, or **Gēi Daan**; prompt on **Zhōu**, **Chou**, **Wén** of Zhōu, **Wen** of Chou, or Zhōu **Wén**; prompt on **Jī**, **Chi**, **Gēi**, **Dàn**, **Tan**, or **Daan**; reject “King Wén of Zhōu” or “Zhōu Wén Wáng”] (The second line refers to the *Rites of Zhōu*. The city was called Chéngzhōu.)

<Other History>

BONUSES

1. In a painting for Malmaison, François Gerard depicted this figure as an old man awakening spirits on the banks of the Lora. For 10 points each:

[10h] Name this figure who, in a painting intended for Napoleon's Quirinal bedroom, lies asleep on a rocky landscape under a vision of marble warriors and lyre-playing women.

ANSWER: **Ossian** ("OSH-in") [or **Oisean**; accept *The Dream of Ossian*] (*The Dream of Ossian* was painted by Jean Auguste Dominique Ingres.)

[10m] This artist painted *Ossian Receiving the Ghosts of French Heroes* for Malmaison. This proto-Romantic student of Jacques-Louis David painted *The Sleep of Endymion* and *The Funeral of Atala*.

ANSWER: **Girodet** [or Anne-Louis **Girodet**-Trioson; or Anne-Louis **Girodet** de Roucy-Trioson]

[10e] Drawings of Ossian were created by Philipp Otto Runge, who painted *The Huelsenbeck Children* playing with one of these objects. A painting shows one of these vehicles crossing the River Stour next to Willy Lott's Cottage.

ANSWER: **wagons** [or **carts**; accept *The Hay Wain*]

<Painting & Sculpture>

2. Classically, a caged molecule has a protecting group removed by this stimulus. For 10 points each:

[10e] Name this stimulus that can excite electrons enough to cleave bonds.

ANSWER: **light** [accept visible **light**, **ultraviolet** light, **UV** light, **infrared** light, or **IR**; prompt on electromagnetic radiation]

[10m] Photoclick decaging is a common means of forming prodrugs that adhere to this principle. This approach was developed in the Bertozzi lab to study the glycocalyx and consists of reactions whose components are effectively absent from living systems and are thus unaffected by enzymes.

ANSWER: **bioorthogonal** chemistry [or **bioorthogonality**; prompt on **orthogonal** chemistry or **orthogonality**]

[10h] The biosynthesis of this probe molecule involves a click reaction between a nitrile and the thiol of cysteine. After being adenylated, this molecule is oxidized to form a dioxetane ring that quickly decomposes.

ANSWER: **luciferin** [accept firefly **luciferin** or beetle **luciferin**]

<Chemistry>

3. Siddhartha Mukherjee's *The Emperor of All Maladies* calls an activist from this family the "prophet" of the War on Cancer. For 10 points each:

[10h] Name this family whose fortune came from campaigns for brands like Sunkist by the "father of advertising." This family's foundation lobbied to expand the NIH and endowed awards dubbed "America's Nobels."

ANSWER: **Lasker** family [accept **Lasker** Awards or **Lasker** Foundation; accept Mary **Lasker** or Mary Woodard **Lasker**; accept Albert **Lasker** or Albert Davis **Lasker**; prompt on Mary **Woodard** by asking "what family did she marry into?"]

[10m] A Lasker Award honors this type of theoretical research into nature's underlying principles. Often said to be curiosity-driven, it is contrasted with clinical and applied science.

ANSWER: **basic** research [or **basic** science; accept **pure** or **fundamental** in place of "basic"; accept Albert Lasker Award for **Basic** Medical Research]

[10e] René Dubos, an early Lasker laureate for basic medical research, coined the advice to "act" in this manner. This adjective colloquially describes produce ("PRO-duce") sold at farmer's markets within a certain distance of "food miles."

ANSWER: **local** [accept **local** food or **local** produce or **locavores**; accept "think globally, act **locally**"]

<Other Academic>

4. *The Glorious Victories* chronicles Amdä Şeyon's conquest of Islamic Ifat from this sultanate's founding Walashma dynasty, which aided Hadiya after Zara Yaqob forcibly converted Princess Eleni. For 10 points each: [10m] Name this sultanate that fortified its "holy city" of Harar after Lebnä Dengel allied Ethiopia with Portugal to fight its Afar and Somali forces. It was based north of the Ajuran Empire.

ANSWER: **Adal** Sultanate [or **Adäl** Kingdom or **Adäl** Empire or **Bar Sa'd ad-Din**; accept **Adel** or **Adalite** in place of "Adal"; accept Ethiopian-**Adäl** War or Abyssinian-**Adäl** War] (Nur ibn Mujahid fortified Harar.)

[10h] This general broke with Adäl nobles to import cannons to Zeila and wage a 14-year conquest of Ethiopia. Gälawdewos defeated this left-handed imam at the 1543 Battle of Wayna Daga.

ANSWER: Imam **Ahmad** [or Aḥmad **Gragñ**, Ahmed **Gragné**, Ahmed **Grañ**, **Axmed** Gurey, or Axmed **Gurey**; or **Ahmad** ibn Ibrāhīm al-Ghāzī or **Axmed** Ibraahim al-Qaasi; prompt on al-**Ghāzī** or al-**Qaasi**] (*The Futūḥ al-Habaša*, or *Conquest of Abyssinia*, is a primary chronicle of the war.)

[10e] Aḥmad's war left Harar vulnerable to raids by these pastoral people, who often converted to Islam during early modern migrations that made them Ethiopia's largest ethnic group.

ANSWER: **Oromo** people [or **Oromoo**; accept **Oromo** migrations or **Oromo** expansions]

<World History>

5. In a story titled for one of these things "at the Bottom of the World," townspeople rip apart a scarecrow and discover a dark fungus twisted into the form of a man. For 10 points each:

[10e] Name this thing that hangs "over Innsmouth" in the title of an H. P. Lovecraft novella that concerns a cult that forces people to breed with the Deep Ones, reflecting Lovecraft's fear of miscegenation.

ANSWER: **shadow** [accept *The **Shadow** over Innsmouth*; accept "The **Shadow** at the Bottom of the World"]

[10h] "The Shadow at the Bottom of the World" appears in this writer's collection *Grimmscribe: His Lives and Works*. This American weird fiction writer wrote *Songs of a Dead Dreamer*.

ANSWER: Thomas **Ligotti**

[10m] Lovecraft's *The Shadow Out of Time* is narrated by a professor at this fictional university in Arkham. Scholars from this university travel to Antarctica in *At the Mountains of Madness*.

ANSWER: **Miskatonic** University

<American Literature>

6. Answer the following about ways to simplify notation in quantum field theory, for 10 points each.

[10e] These diagrams, which represent particle interactions, are used to compactly express the expansion of *S*-matrix elements.

ANSWER: **Feynman** ("FINE-mun") diagrams [or **Stueckelberg** diagrams]

[10m] Slash notation is used to express the contraction of a covariant quantity with these four matrices, which are used to form the spinor ("SPIN-or") representation of the Clifford algebra.

ANSWER: **gamma** matrices [or **Dirac** matrices]

[10h] Freeman Dyson introduced this operation often used in the interaction picture. It precedes an exponential term in Dyson's formula.

ANSWER: **time-ordering** operation [accept **time-ordered** product; prompt on **path-ordering** or **path-ordered** or **T**; reject "time evolution (operator)"]

<Physics>

7. Answer the following about the seemingly paradoxical concept of unconstitutional constitutional amendments, for 10 points each.

[10e] While the theory is usually used as a defense against democratic backsliding, Arthur Machen infamously argued in 1910 that this Reconstruction amendment protecting the right to vote was unconstitutional.

ANSWER: **Fifteenth** Amendment [or **15th** Amendment]

[10m] The idea is defended as a function of “constituent power,” an idea proposed by this thinker. A pamphlet by this thinker argued that “principles of social science” should organize the title group’s desire “to be something.”

ANSWER: Emmanuel-Joseph **Sieyès** (“say-yess”) [or Abbé **Sieyès**] (Sieyès is often but wrongly credited with coining the term “social science” in *What Is the Third Estate?*)

[10h] Article 79 of Germany’s Basic Law makes abolishing federalism or democracy unconstitutional with one of these clauses. These clauses insulate specific provisions from normal amendment procedures.

ANSWER: **eternity** clauses [accept **entrenched** clauses or word forms; prompt on **republican** form of government clauses by asking “they are a specific example of what broader category of provisions?”]

<Social Science>

8. An 1840 coffee blight led Dominica (“dom-in-EE-kuh”) to export these fruits, which were planted on Montserrat’s sugar estates by the Quaker Sturge family to showcase free West Indian labor. For 10 points each:

[10e] Name these fruits whose use in grog to prevent scurvy inspired a common nickname for Royal Navy sailors.

ANSWER: **limes** [accept **limeys**; accept key **limes**, West Indian **limes**, Mexican **limes**, or *Citrus × aurantifolia*; prompt on **citrus** fruits; reject “lemons”]

[10h] This author extolled White English management of a Dominican (“dom-in-EE-kin”) lime and coffee plantation. The Trinidadian linguist J. J. Thomas denounced the “audacity” of this man’s racist West Indian “fables.”

ANSWER: James Anthony **Froude** [accept **Froudacity** or *Froudacity: West Indian Fables by James Anthony Froude*]

[10m] *Specific term required.* To decry Black suffrage in Jamaica and Trinidad, Froude alleged that Haitians ate babies as part of this Afro-diasporic tradition. The “Saint Lucia horror” was blamed on this healing tradition after the Leeward Islands banned it in 1904.

ANSWER: **obeah** [or **obeahism**, **obi**, **obia**, **obayi**, **obeya**, or other variants; accept **myal**; accept **Obeah Act**]

<Other History>

9. Kalela dancers in Zambia’s Copperbelt sang about a sect named for this building “trying cunningly to convert” them. For 10 points each:

[10m] What building names an anticolonial movement led by Elliot Kamwana? Katanga’s revolutionary Kitawala groups derived from a “Bible and Tract Society” named for it that proselytizes for Jehovah’s Witnesses.

ANSWER: **watchtower** [accept *The Watchtower* or *The Watchtower Announcing Jehovah’s Kingdom*; accept **Watch Tower** Society or **Watch Tower** Bible and Tract Society (of Pennsylvania); accept **Watchtower** Movement or African **Watch Tower** Movement or Church of the **Watchtower**; prompt on **tower** or **fortification**] (Jehovah’s Witnesses derive from the broad-sense Watchtower Movement and currently lead the society.)

[10e] *Specific name required.* This place’s “Watchtower” titled tracts spread to Malawi by Joseph Booth. This term for Jerusalem names a Swazi stream of African-initiated churches and the Rastafari promised land.

ANSWER: **Zion** [or **Tzion** or **Sion** or **Tsiyyon**; accept Mount **Zion** or Har **Sīvyōn** or Jabal **Sahyoun**; accept African **Zionism**, ama**Zionio**, African **Zionist** Churches, or **Zion** Christian Church; accept *Zion’s Watch Tower and Herald of Christ’s Presence*] (African Zionist churches derive from John Alexander Dowie’s Christ Community Church in Zion, Illinois.)

[10h] The prophet Ntsikana inspired both Ethiopianist churches contrasted with African Zionism and the work of this hymnodist. This first Black South African reverend recorded Xhosa (“KAW-suh”) customs at Lovedale College.

ANSWER: Tiyo **Soga**

<Religion>

10. A book by an author with this surname ends with servants covering mirrors so that Abraham Anslo's soul can wander to "unimaginable worlds." For 10 points each:

[10e] Give this surname of the Polish author of *Still Life with Bridle*. He claimed to be a descendent of the English poet George, who included pattern poems like "Easter Wings" in *The Temple*.

ANSWER: **Herbert** [accept George **Herbert**; accept Zbigniew **Herbert**]

[10m] This novel ends by interpolating the last sentence of Herbert's *Still Life with Bridle*. However, the narrator credits it to Thomas Browne, whose works are cited throughout this novel set in Suffolk.

ANSWER: *The **Rings of Saturn*** [or *Die **Ringe des Saturn**: Eine englische Wallfahrt*] (by W. G. Sebald)

[10h] This thinker's bed titles a piece in *Still Life with Bridle* about his legal battles. In Olga Tokarczuk's ("toh-KAR-chook's") *Flights*, this thinker's friend Philip reflects on his arguments while dissecting his own amputated leg.

ANSWER: Baruch **Spinoza** [or Benedictus de **Spinoza**; or Baruch **Espinosa**; or Bento de **Spinosa**]

<European Literature>

11. During a debate on theology and this criterion, Anthony Flew used the "Parable of the Invisible Gardener" to show how it can be evaded via "death by a thousand qualifications." For 10 points each:

[10e] Name this criterion of being able to be proven wrong, which Karl Popper introduced to differentiate science from non-science.

ANSWER: **falsification** [or **falsifiability**; or word forms of **falsifying**; prompt on being **refutable** or **refutability**]

[10h] In response, this thinker coined the term "blik" to describe meaningful beliefs that can't be falsified. The approaches of "archangels" and "proles" are combined in the ethics of this author of *The Language of Morals*.

ANSWER: R. M. **Hare** [or Richard Mervyn **Hare**]

[10m] Hare's example of a "blik" concerns a "lunatic" who thinks that this place's employees are trying to kill him. The first example of a "category mistake" in *The Concept of Mind* is about a visitor touring this place's buildings.

ANSWER: **Oxford** University [or University of **Oxford**; prompt on the **university** or equivalents]

<Philosophy>

12. The benzimidazole ("benz-imid-azole") family of anthelmintics limit the ability of this protein to aggregate. For 10 points each:

[10h] Name this protein also targeted by colchicine and vincristine. The hydrolysis of GTP bound to this protein produces the curvature of the plus end and allows heterodimers to dissociate.

ANSWER: **beta-tubulin** [prompt on **tubulin**]

[10m] Microtubule-associated tau proteins with this property aggregate into tangles linked to the pathogenesis of many dementias. This property describes proteins that have been completely saturated by a kinase, and is used to inhibit Rb during the G1/S checkpoint.

ANSWER: **hyperphosphorylated** [or **hyperphosphorylation**; prompt on multi-**phosphorylated** or **phosphorylation**]

[10e] G1 is one of two "gap" phases during this long period of growth in between bouts of cell division.

ANSWER: **interphase**

<Biology>

13. In *The Work of Revision*, Hannah Sullivan states that this poem's aim was to trace "the poet's vocation, not his whole life," and notes how it was revised over 50 years. For 10 points each:

[10m] Name this long autobiographical poem that provides the title of Sullivan's 2023 collection *Was It For This*. In its first book, the narrator takes an "elfin" boat out onto a lake and is overwhelmed by a distant peak.

ANSWER: *The **Prelude*** (by William Wordsworth)

[10e] Sullivan's *The Work of Revision* analyzes Allen Ginsberg's release of an "Original Draft Facsimile" of this poem 30 years after its publication. Its second section describes the idol Moloch.

ANSWER: "**Howl**"

[10h] Sullivan's poem "Repeat Until Time" is subtitled for this man. A Gerard Manley Hopkins poem whose title uses this man's name as an adjective ends by stating that "this Jack" is "immortal diamond."

ANSWER: **Heraclitus** [or **Heraclitus** of Ephesus or **Herákleitos**; accept "That Nature Is a **Heraclitean** Fire and of the Comfort of the Resurrection" or "Repeat Until Time: The **Heraclitus** Poem"]

<British Literature>

14. Angela Gheorghiu ("gay-or-GHEE-oo") recorded an album of this composer's "heroines," including *spinto* roles often sung by Lianna Haroutounian ("hah-roo-TOON-ian") and Sonya Yoncheva. For 10 points each:

[10e] Name this opera composer whose celebrated interpreters include Zinka Milanov as Leonora and Marina Rebeka as Violetta.

ANSWER: Giuseppe **Verdi** [or Giuseppe Fortunino Francesco **Verdi**; accept ***Verdi Heroines***] (Leonora is from *Il Trovatore*, while Violetta appears in *La Traviata*.)

[10m] Anna Netrebko broke into heavier Verdi roles with a 2014 performance as this character, opposite Željko Lučić ("ZHAYL-koh LOO-cheech") in the title role. Ekaterina Semenchuk has given mezzo-soprano takes on this role, who sings "*Vieni t'affretta*."

ANSWER: **Lady Macbeth**

[10h] The Met's 2014 HD broadcast of *Macbeth* was hosted by this Georgian mezzo known for dramatic Verdi roles like Amneris and Azucena ("ah-dzoo-CHAY-na"). After she lost her voice in 2021, she was unable to play Eboli ("AY-bo-lee") in *Don Carlo*.

ANSWER: Anita **Rachvelishvili**

<Other Fine Arts>

15. *Greek-derived term required*. Serbia and Wallachia installed "great" officials with this title, whose rank was elevated by Andronikos II as the office grew to resemble a prime minister. For 10 points each:

[10h] Give this title of fiscal ministers who managed Constantinople's *genikon*, postal *dromos*, and imperial herds. Alexios I Komnenos's reforms placed all *sekreta* below one of these bureaucrats.

ANSWER: **logothete** ("logo-theet") [or **logothetēs**, **logothétai**, **logothetae**, or **logothesia**; accept grand **logothete**, great **logothete**, megas **logothetēs**, or other specific logothetes; reject "logariastes"]

[10m] Chronicler Niketas Choniates ("nee-KAY-tuss ko-nee-AH-tays") became grand logothete after this dynasty's ruler Alexios III deposed its founder Isaac II in 1195. This dynasty may have revived the *genikon* after it declined under the late Komnenians.

ANSWER: **Angelos** dynasty [or **Angeloi**, **Angelids**, **Angelus**, or **Angelina**; accept Isaac II **Angelos** or Isaákios Komnēnós **Ángelos**; accept Alexios III **Angelos** or Áléxios Komnēnós **Ángelos**]

[10e] The last Angelid emperor, Alexios V, fired Niketas months before he lost his home in this conflict, whose leader Enrico Dandolo negotiated with the logothete of the drome.

ANSWER: **Fourth Crusade** [prompt on 1204 **Sack of Constantinople** or equivalents by asking "it occurred during what conflict?"; prompt on **Crusades** or **Crusaders**]

<European History>

16. The only soloist in this composer's Stabat Mater is a soprano who sings in just three of its 12 movements. For 10 points each:

[10h] Name this Catholic composer of a concerto for organ, timpani, and strings. In his G-major setting of the Gloria, the chorus enters with a double-dotted melody that stresses odd syllables.

ANSWER: Francis **Poulenc** ("poo-LANK") [or Francis Jean Marcel **Poulenc**]

[10m] Four of these pieces make up a Poulenc collection titled for penitence and based on texts for Tenebrae. Anton Bruckner's 40 or so pieces in this genre include *Os justi*.

ANSWER: **motet**

[10e] This is the genre of Poulenc's *Figure humaine*. J. S. Bach wrote over 200 pieces in this genre, including one based on the hymn "*Wachet auf*" and another that includes the chorale "Jesu, Joy of Man's Desiring."

ANSWER: **cantata** [accept church **cantata**; accept chorale **cantata**]

<Classical Music>

17. Cabbeling ("kuh-BELL-ing") is the puzzling process in which two regions of water combine to form water with a higher value for this quantity than that of either original region. For 10 points each:

[10e] Name this intensive quantity that is maximized for water at four degrees Celsius. It does not change along an isopycnic ("iso-picnic") surface.

ANSWER: **density** [or mass **density**; or word forms of **dense**]

[10h] The stability of density stratification in lakes is analyzed using this quantity that, in general, represents the oscillation frequency of a perturbed fluid parcel within a stably stratified body.

ANSWER: **Brunt-Väisälä** ("VAY-sah-lah") frequency [or **BV** frequency; accept **buoyancy** frequency; prompt on **stability** frequency]

[10m] Sonar signals reflect off of these vertically-thin regions because water density changes rapidly in them. In a stratified lake, one of these transition zones separates a wind-mixed upper layer and a deep layer.

ANSWER: **thermoclines** ("thermo-clynes") [or **metalimnions** or **metalimnia**; prompt on **thermal** layers; prompt on **clines**]

<Other Science>

18. In Robert Alter's translation, this speaker describes a being whose "sneezes shoot out light" and whose nostrils emit smoke like "a boiling vat on brushwood." For 10 points each:

[10m] Name this speaker who advises "Gird your loins like a man" and launches into a litany of rhetorical questions, like "Who fixed its measures, do you know, / or who stretched a line upon it?"

ANSWER: **God** [or the **Lord**, **Yahweh**, **YHWH**, or equivalents; or the **voice** from the **whirlwind**]

[10e] Alter believes that God's speech to Job was meant to go after Job's "hymn" to this concept, which names an ancient Near Eastern literary genre exemplified by the Proverbs.

ANSWER: **wisdom** [or **chokhmah**; accept **wisdom** literature]

[10h] Many couplets in God's poem exemplify this device, which has "synonymous" and "antithetic" types. Bishop Lowth established the now-standard view that this "thought-rhyming" device is the defining feature of biblical poetry.

ANSWER: **parallelism** [or **parallelismus** membrorum; accept synonymous **parallelism** or antithetic **parallelism** or synthetic **parallelism**; reject "parallel"]

<World Literature>

19. The *Castañeda* standard circumscribes classes in this subject, which enroll abnormally few Californians due to a 1998 proposition sponsored by Ron Unz (“unds”). For 10 points each:

[10e] Name this subject that Guatemala teaches with an “intercultural” model that replaced castilianization (“castilian-ization”). Its classes may use software like Rosetta Stone.

ANSWER: foreign **languages** [accept **Spanish**, **español**, **English**, **inglés**, **Maya** languages, or other specific languages; accept **L2**, second **languages**, **ESL**, English as a second **language**, **bilingual** education, or other specific types of foreign **language** learning] (Unz sponsored Proposition 227, which was repealed in 2016 by Prop 58.)

[10h] Duolingo’s Guatemalan CEO Luis von Ahn has denounced the country’s control by this informal political cabal. Bernardo Arévalo (“ah-RAY-vah-lo”) claimed to defeat this “parallel state” that obstructed prosecutions by CICIG (“see-SEEG”).

ANSWER: pact of the **corrupt** [or **corrupt** pact; or pacto de **corruptos**; accept **corrupt** elite or **corruptos** or word forms of **corruption**; prompt on **pact** or **pacto**] (CICIG was the International Commission against Impunity in Guatemala.)

[10m] The Summer Institute of Linguistics spread from Guatemala to this member state of the Taalunie (“TALL-oo-nee”). Chinese and Brazilian “New Migrants” have learned Sranan Tongo in this country’s goldfields since Alcoa closed its bauxite mines.

ANSWER: **Suriname** [or Republic of **Suriname** or Republiek **Suriname**; accept **Surinamese** Creole] (Taalunie is the Dutch Language Union.)

<Current Events>

20. The allegedly feral child Marie-Angélique was actually from this Algonquian people, whose Grand Village at the Bell site was besieged with De Louvigny’s (“duh loo-veen-YEE’s”) grenades. For 10 points each:

[10h] Jean Nicolet (“nee-ko-LAY”) charted a river named for what “people of the red earth?” Glory of the Morning allied her Ho-Chunks with the French in their genocidal second war over this people’s fur trade.

ANSWER: **Fox** people [or **Meskwaki**; or **Renards**; or **Outagami**; or variants of **Miscoqui**, **Meshkwahkihaki**, **Miskweevuk**, or **Musquakie**; accept **Wagosh**; accept **Fox** River or **Fox** Wars; prompt on **Sauk and Fox** Nation or **Sac and Fox** Nation; reject “Sauk” or “Sac”]

[10m] *Two answers required*. This duo mapped the portage between the Fox and Wisconsin Rivers. One was a Québécois fur trader, and the other was a French Jesuit who names a port that shipped Iron Range taconite (“TACK-uh-nyte”).

ANSWER: Jacques **Marquette** AND Louis **Jolliet** [accept answers in either order; accept James **Marquette** or **Marquette**, Michigan or **Marquette** Iron Range in place of “Jacques Marquette”]

[10e] Richard White cited Marquette’s reports of Fox famines in *The Middle Ground*, which examines this Odawa war leader’s diplomatic tour of the Illinois Country after his failed 1763 siege of Fort Detroit.

ANSWER: **Pontiac** [accept **Pontiac**’s Rebellion or **Pontiac**’s War]

<American History>