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**PACKET 8**

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## TOSSUPS

1. This ruler represented both a Messiah and an Antichrist according to Ernst Kantorowicz (“kan-TOH-roh-vitch”), who was so obsessed that he wrote a 700-page biography of this ruler and placed a wreath on his grave. This ruler trapped a man in a barrel to see if the soul escaped the body upon death, according to the *Twelve Calamities* of this ruler’s reign written by Salimbene di Adam (“sah-leem-BEH-nay dee ah-DAHM”). This ruler received the pope’s kiss of peace during the Treaty of San Germano with Gregory IX (“the ninth”). That ended the excommunication of this ruler, issued after his diplomacy with the Ayyubid ruler al-Kamil secured new lands for the Kingdom of Jerusalem in the nearly-bloodless Sixth Crusade. He spoke six languages, including Arabic, contributing to his reputation as the “splendor of the world” or *stupor mundi*. For 10 points, what King of Sicily and Holy Roman Emperor was the last of the Hohenstaufens (“HOH-en-SHTAUF-enz”)?

ANSWER: **Frederick II** [or **Friedrich II**; prompt on Frederick or Friedrich]

<European History>

2. These particles name a phenomenon combined with CMB data in 2019 by Ed Macaulay et al.’s “inverse” calibration method for the Dark Energy Survey’s Type Ia (“one-A”) supernovae. SDSS-III (“S-D-S-S-three”) measured that phenomenon named for these particles using the distribution of luminous red galaxies in the BOSS survey. The DESI survey maps large-scale structure to locate a feature named for these particles, an excess clustering of galaxies separated by 150 Mpc/h (“mega-parsecs-on-h”). These particles name one of the main “early universe” techniques that yield low values for the Hubble constant. The decoupling of these particles from photons imprinted a “standard ruler” on the early universe visible in their namesake acoustic oscillations. 5% of the observable universe is ordinary matter named for these particles. For 10 points, name these particles with an odd number of quarks, such as protons and neutrons.

ANSWER: **baryons** (“BARRY-ons”) [accept **baryon** acoustic oscillations or **baryonic** acoustic oscillations or **baryonic** matter; prompt on hadrons; prompt on protons or neutrons before respective mention by asking “Can you be less specific?”]

<Misc. Science>

3. A revisionist interpretation of this work is presented in an article that examines priests in Benares (“buh-NAH-russ”) who function as “cess-pits” for sin; that article is by Jonathan Parry. Marshall Sahlins claimed that this work sought to answer the same question as Thomas Hobbes’s *Leviathan*. A later article by the author of this work examines the similarity in a certain language family’s words for “poison,” and finds the same connection in the myth of Hreidmarr (“h’RAID-mar”). This work describes people accumulating decorated coppers, which the author calls the “money of renown.” This essay popularized the Maori concept of *hau* (“HAH-ooH”), the “spirit” of its title subject. Translations of this essay often use terms like “total reciprocity” to convey its concept of “total prestation.” For 10 points, name this essay examining the *kula*, potlatch, and other systems of exchange, written by Marcel Mauss (“mohss”).

ANSWER: *The Gift* [or *Essay on the Gift*; or *Essai sur le Don*]

<Social Science>

4. A 16th-century spoon made from this material features a pear-shaped bowl and a European figure with a round cap standing on its curved handle. An acorn sits at the top of another work made from this material, whose base includes hanging snakes whose heads nearly touch the snouts of the dogs below. This is the primary material of two arm cuffs that show the repeated figure of an *oba* with mudfish for legs. Mudfish also alternate with bearded faces in the tiara of another work made from this material. Portuguese traders commissioned Sapi artists to make salt cellars from this material. A portrait mask made from this material in honor of King Esigie's ("eh-see-gee-eh's") mother Idia was stolen, along with the Benin Bronzes, by the British in 1897. West African artists carved reliefs into olifants made from this material. For 10 points, name this white material sourced from elephants.

ANSWER: **ivory** [or elephant **ivory**]

<Painting/Sculpture>

5. The narrator of a novella compares this character to a Davega bicycle that his brother received for his ninth birthday and gave away to a stranger. In a novella titled for this character, the narrator apologizes for his many digressions by offering an "unpretentious bouquet of early-blooming parentheses," which are actually printed in the text. In another novel, the Hollywood actress Charlotte Mayhew is revealed to have nine stitches in her face because this character threw a rock at her face as a child. A message written in soap on this character's bathroom mirror quotes the Sappho verse for which that novel is titled. This character leaves his fiancée at the altar in the novella *Raise High the Roofbeam, Carpenters*, and teaches Sybil Carpenter about a gluttonous aquatic species in a short story. For 10 points, name this former child prodigy who shoots himself in J. D. Salinger's "A Perfect Day for Bananafish."

ANSWER: **Seymour** Glass [or **Seymour Glass**; accept *Seymour: An Introduction*; prompt on **Glass**]

<American Literature>

6. The shelf-life of this substance can be increased by adding adenine to the CPD mixture. A particularly desirable type of this substance is called LTOWB ("L-T-O-W-B"). A washed version of this substance is used to prevent an allergic reaction in patients with IgA ("I-G-A") deficiency, while an irradiated version is used in neo-nates. Because this substance is typically collected using citrate, protocols for using "massive" amounts of it may lead to low calcium. Neutrophil priming and anti-HNA antibodies may be responsible for an adverse effect of administering this substance, in which cytokine release causes pulmonary edema; that side effect is TRALI ("trolley"). Apheresis can fractionate this substance into its components, which can also be done by centrifugation, which causes the formed elements to collect at the bottom. For 10 points, name this substance that is typically typed and cross-matched before transfusion.

ANSWER: **blood** [or whole **blood**, or packed **red blood cells** or **pRBC**; accept **platelets** or **plasma** or **fresh frozen plasma** or **FFP** or **serum**] (All the clues are about whole blood or RBC transfusion, but TRALI can happen with platelets or FFP as well.)

<Biology>

7. In a film by this director, a scene suffused with red light in which the protagonist vomits from seeing his wife kiss another man is followed by a shot of that protagonist, a sculptor, destroying his studio. At the end of another film by this director, two people sit by a stream and tell each other that they should "open the coffin" as a man suffocates in a hearse, but instead listen while he dies. In that film by this director, a Jewish woman dyes her hair blonde and calls herself Ellis de Vries ("v'REESS") to seduce a Nazi officer. This man directed a film about Eric, whose wife Olga has brain cancer and eats only the title delicacy to protect her teeth. Films by this director set in his home country include *Turkish Delight*, *Black Book*, and *Soldier of Orange*. This man also made a political satire about Johnny Rico's participation in an interstellar war against arachnids. For 10 points, name this Dutch director of *Starship Troopers* and *RoboCop*.

ANSWER: Paul **Verhoeven** ("ver-HOO-ven")

<Other Fine Arts>

8. A poem by this author describes a building in which broken bows of former huntresses hang on walls painted with the stories of characters like Callisto and Atalanta. The “Envoy” of that poem by this author paraphrases Hippocrates in lamenting “the life so short, the craft so long to learn.” A woman asks Nature for a year to decide between three suitors in that poem by this author, whose narrator falls asleep after reading the *Dream of Scipio* (“SKIPPY-oh”), and is led by Scipio Africanus through the gate of the Temple of Venus. In a poem by this author, a nun has a pendant that says “Amor Vincit Omnia” and a man narrates a section in which the rooster Chauntecleer (“SHAWN-tuh-kleer”) escapes from the jaws of a fox. For 10 points, name this author of “The Parliament of Fowls” who wrote a work whose “General Prologue” introduces characters like the Prioress and the Nun’s Priest.

ANSWER: Geoffrey Chaucer

<British Literature>

9. This man wrote a letter to his son while staying at the Bulvar Palace Hotel, not knowing that his son had been arrested. In one tract, this man implored listeners to “begin with nothing” and ignore the complaints of imperialists and “xenomaniacs.” This man famously replied “*hichi*,” or “nothing,” when asked by a reporter how he felt about returning to his country. While on a three-month tourist visa, this man purchased a cottage in Neauphle-le-Château (“NOAF-luh-shah-TOH”), a suburb of Paris, and released cassette tapes expounding on “The Rule of the Jurist.” This man, whose arrest sparked the 15 Khordad demonstrations, traveled to Turkey and the Iraqi city of Najaf after being arrested by the SAVAK (“suh-VAHK”) secret police. The use of the term “Great Satan” for the U.S. was begun by, for 10 points, what Islamist leader who came to power in a 1979 revolution in Iran?

ANSWER: Ayatollah Khomeini (“hoh-MAY-nee”) [or (Sayyid) Ruhollah (Musavi) Khomeini; reject “Ali Khamenei” and if there is an ambiguity, please ask players to give the first vowel]

<World History>

10. This Christian writer quipped that “nine out of ten of what we call new ideas are old mistakes” in an essay explaining how “ten thousand reasons” amount to one conclusion: the title belief system is true. This writer claimed that if a man can derive enjoyment from skinning a cat, then denying the existence of sin amounts to denying the cat. A book by this author rebuts H. G. Wells’s *The Outline of History* with a counter-narrative centered on “The Man Called Christ.” C. S. Lewis credited this author’s book *The Everlasting Man* with converting him to Christianity. This British author of “Why I Am a Catholic” and *Orthodoxy* shared many beliefs, such as a commitment to distributism, with his friend and fellow fiction writer Hilaire Belloc. A priest who reforms the criminal Flambeau was created by, for 10 points, what author of detective stories about Father Brown?

ANSWER: G. K. Chesterton [or Gilbert Keith Chesterton]

<Religion>

11. Allegedly, during a rehearsal of this piece’s finale, conductor Victor de Sabata (“day SAH-buh-tuh”) demonstrated himself how to play an unusual brass part in the correct octave, after a player insisted it was impossible. This piece’s third movement opens with a D-sharp pedal in the low strings, above which the piano plays glittering thirty-second-note B pentatonic major arpeggios. The organ plays a B-flat pedal on the 8-foot, 16-foot, and 32-foot stops in this piece’s finale, in which saxhorns or flugelhorns are commonly substituted for the six *buccine* (“boo-CHEE-nay”) in the score. The composer called for a recording of a nightingale to be used in this piece’s third movement, which is set on Janiculum Hill and precedes a movement set on the Appian Way. Sequels titled for “fountains” and “festivals” follow, for 10 points, what first tone poem in the Roman trilogy of Ottorino Respighi?

ANSWER: Pines of Rome [or Pini di Roma]

<Classical Music>

12. According to this empire's laws, a divorced woman retained the *kushata*, or bride price paid to her family, as well as all *iwaru* given to her husband, as explained in Trevor Bryce's book on this empire's *Life and Society*. Rock reliefs at Firaktin ("FUR-ahk-tun") show this empire's queen making libations to the sun goddess Hebat. That queen of this empire, a former priestess, commissioned the scribe Walwaziti to research the festivals of her homeland Kizzuwatna. One of this empire's *tawanannas*, Puduhepa, reformed the worship of its "thousand gods." The murder of this empire's king Mursili ("MOOR-shee-lee") inaugurated the anarchy which the Edict of Telipinu sought to end. This empire was the northern of two signatories of the world's first peace treaty, written after a battle on the Orontes River. For 10 points, name this empire whose king Muwattali II fought Egypt in the Battle of Kadesh.

ANSWER: Hittite Empire [or the Hittites or Hatti; accept Nesili or Nesilim]

<Other History>

13. This essay relates an incident in which Einstein looked out a train window and scoffed that a particular object was "terribly wasteful." The author of this essay recalls canceling travel arrangements upon hearing about plans to rig a forest with loudspeakers playing the *Moonlight Sonata*. This essay observes that Gothic cathedrals are designed so that their spires will reach as high as possible, in contrast to buildings in which the roof is laid out first. The maxim "Elegance is frigid" is cited in this essay, which claims that the color of soup is better appreciated when it's in a lacquer bowl rather than ceramic one. This essay praises outdoor toilets that one leaves the house to use at night, which, like Noh drama and alcoves, illustrate the beauty of darkness. For 10 points, name this essay celebrating traditional Japanese aesthetics by Junichiro Tanizaki.

ANSWER: In Praise of Shadows [or In'ei Raisan]

<World Literature>

14. This pure solvent is vaporized to give a thin film of phospho-lipids in the most common method of preparing vesicles *in vitro*. Mixtures of this solvent and methanol are used in most protocols to extract lipids from cells. This aliphatic compound is added to commercial TRIzol ("TRY-zoll") to make a pink reagent that dissolves proteins in a dense organic layer. This neutral solvent can be safely disposed by refluxing it in base to form a carbene. Impure formulations of this solvent produce a characteristic 7.26 parts-per-million peak used as an internal control. This nonpolar but non-flammable solvent is sold with trace ethanol or amylene ("AM-ill-een") to prevent its oxidation to phosgene ("FOSS-jeen"). In a nucleic acid extraction protocol, this solvent is mixed with phenol. A common proton NMR solvent is prepared by deuterating this sweet-smelling but toxic solvent. For 10 points, name this compound with formula CHCl<sub>3</sub>.

ANSWER: chloroform [or trichloromethane; or CHCl<sub>3</sub>, until it is read; accept deuterated chloroform or CDCl<sub>3</sub>]

<Chemistry>

15. A foreign project in this country gave, and then revoked, running water to villagers in Crawfish Rock. A law in this country allows loosely regulated Zones for Employment and Economic Development, or ZEDEs ("SAY-dess"). Economist Paul Romer disaffiliated with a project located on Roatán ("roh-uh-TAN"), part of this country's Bay Islands, which set up Próspera, a self-governed "charter city." This non-U.S. country is home to about 200,000 mixed Black and indigenous Garifuna ("guh-REE-foo-nuh") people. In 2022, it changed the dark blue on its flag to a lighter turquoise, but kept the five stars in an X shape in the center. Its second most populous city, San Pedro Sula, is in its northwest, but not as far west as its one major Maya ruin site, Copán ("koh-PAN"). For 10 points, name this Latin American country whose first woman president, Xiomara ("see-oh-MAH-rah") Castro, lives in its capital Tegucigalpa ("teh-GOO-see-GAL-pah").

ANSWER: Republic of Honduras [or República de Honduras]

<Geography>

16. The first African American member of this city's Common Council was a woman nicknamed "Madam Alderman" who pushed for fair housing laws. Vel Philipps was from this city, whose Fourth Street Grade School was renamed after Golda Meir, who lived in a housing project built in this city's Hillside neighborhood. Early boosters of this city included Byron Kilbourn, who funded its *Advertiser* newspaper. Its Forest Home Cemetery is the burial site of industrialist Jacob Best, as well as 28 mayors including Frank Zeidler. Zeidler, like this city's other mayors Daniel Hoan and Emil Seidel and its representative Victor Berger, espoused a brand of progressive politics focused on public works termed "sewer socialism." Companies founded in this city include Harley-Davidson and Pabst Brewing. For 10 points, name this city, the most populous in Wisconsin.

ANSWER: **Milwaukee**

<American History>

17. This author's daughter Nada goes mute after his death due to her abhorrence of German in a 2018 novel by Katja Perat. In a story by this author, a forest ascetic called a *strannik* classifies the world's evils into the six categories of love, property, the state, war, work, and death. The protagonist of a novella by this author uses a *kantchuk* to threaten a woman for failing to soft-boil his eggs. That novella by this author opens with the narrator waking up after falling asleep reading Hegel and having a dream inspired by a Titian ("TIH-shin") painting. In that novella by this man, which is part of the cycle *The Legacy of Cain*, the narrator reads the *Memoirs of a Suprasensual Man*, in which Severin ("ZAY-vuh-rin") takes the name "Gregor" and asks to play the role of a servant for his lover Wanda. For 10 points, name this Austrian writer of *Venus in Furs*, whose name gave rise to a term for deriving pleasure from feeling pain.

ANSWER: Leopold (Ritter) von Sacher-**Masoch** ("ZAH-ker MAH-zock") (The term is *masochism*.)

<European Literature>

18. To support nominalism, this philosopher constructed a language that contains no predicate expressions, called "Jumblese" ("jumble-EEZ"). This philosopher introduced the practice of surrounding terms with stars or dots to differentiate "structural" and "functional" methods of distinguishing statements. A paper by this philosopher laid out the project of a "synoptic vision" that reconciled scientific theories with the "manifest image" of humanity. This philosopher's concept of the "space of reasons" was taken up by John McDowell in *Mind and World*. This author of "Philosophy and the Scientific Image of Man" proposed a thought experiment about a tribe of "Ryleans" ("RYLE-ians") to attack the assumption that sense-experience could be foundational. For 10 points, name this University of Pittsburgh philosopher who criticized the "myth of the given" in "Empiricism and the Philosophy of Mind."

ANSWER: Wilfrid **Sellars**

<Philosophy>

19. A princess from this modern-day country dared her suitors to ride their horses around her cliffside castle, and killed herself when a knight who succeeded rejected her. A Jewish legend from this country states that Saul Wahl served as its king for one day. In its version of the Faust legend, a man from this country lives on the Moon and sends a spider down on a web to eavesdrop on Earth. That sorcerer from this country rides a rooster and is tricked by the Devil into visiting the Rome Inn. A princess from this country drowned herself to avoid wedding the German invader Rytygier ("ruh-tug-yair"), and became queen because one of her brothers killed the other after they slew a monster by feeding it a sulfur-filled ram. In this country, the sons of Krakus killed a dragon under Wawel ("VAH-vell") Castle. For 10 points, name this country whose folk heroes include Sir Twardowski ("t'var-DOFF-skee") and Wanda of Krakow.

ANSWER: **Poland** [accept Republic of **Poland**]

<Mythology/Legends>

20. Bruker's software for handling data from this technique uses an "XY Drift" command to remove thermal drift that builds up over its long runtime. Oscillations in a dynamic form of this technique exhibit a frequency shift proportional to the gradient of the van der Waals interaction. This technique's F-D curves exhibit a small jump at "snap-in" and a larger jump due to "pull-off" adhesion. This technique typically gathers data by reflecting a semiconductor diode ("DYE-ode") laser off the apparatus and into a photo-diode. In this technique, fragile samples are imaged in tapping mode, which is slower than contact mode. Like a tunneling-based method, this technique uses a piezoelectric ("PEE-zoh-electric") scanner to move a tip across a sample, yielding higher resolutions than SEM ("S-E-M"). For 10 points, name this type of microscopy that measures surface topography using the deflection of a cantilever beam.

ANSWER: atomic force microscopy [or AFM; accept atomic force microscope; accept dynamic force microscopy; accept scanning force microscopy or SFM; accept answers without microscopy or microscope after "microscopy"; prompt on scanning probe microscopy or SPM; prompt on microscopy or microscope]  
<Physics>

## BONUSES

1. Late in life, this author lived with over 40 peacocks on her estate of Andalusia in Milledgeville, Georgia. For 10 points each:

[10e] Name this author. The blue feather in the Tyrolean hat of the Black boy in her story “Everything That Rises Must Converge” is not explicitly a peacock feather, but it’s nice to imagine that it’s one.

ANSWER: Flannery **O’Connor**

[10m] In an O’Connor’s story, Joy Hopewell is described being “as sensitive” about this object “as a peacock about his tail.” The story ends with Bible salesman Manley Pointer stealing this object.

ANSWER: her **artificial leg** [or her **wooden leg**; or her **fake leg**; or her **prosthetic leg**; prompt on **leg**]

[10h] The opening line of this O’Connor story describes a peacock following Mrs. Shortley up the road. Its closing line describes a priest feeding that peacock while visiting the protagonist, who has lost her farm, her vision, and her voice.

ANSWER: “The **Displaced Person**”

<American Literature>

2. If a supersonic aircraft’s surface has a sufficiently large deflection angle, it will produce a detached “bow” instance of these phenomena. For 10 points each:

[10e] Name these discontinuities in pressure, temperature, and air density. Observers may hear them as sonic booms.

ANSWER: **shock** waves [accept bow **shocks**]

[10m] The pressure described by this word always decreases across a shock wave. This word also names any point where the flow velocity in the aircraft frame is zero, such as the entrance to a pitot (“PEE-toh”) tube.

ANSWER: **stagnation** [accept **stagnation** pressure or **stagnation** point]

[10h] Stagnation properties are compared to static properties measured in this undisturbed part of the airflow. A similar term to this one describes photons or neutrinos that propagate through space without scattering, in contrast to diffusive propagation. Give either term.

ANSWER: **freestream** [or **free streaming**; prompt on **free** or **streaming**]

<Physics>

3. Classical and early Romantic composers were fond of using a progression of intervals called “horn fifths” to imitate French horns. For 10 points each:

[10e] This composer used horn fifths to begin the finale of his Symphony No. 103, nicknamed the “Drumroll.”

ANSWER: Franz Joseph **Haydn**

[10h] A horn fifths progression opens the finale of this A-major symphony by Haydn, whose nickname derives from the play by Gustav Friedrich Wilhelm Grossmann that it accompanied. Numerically, it precedes a symphony nicknamed “Il distratto.”

ANSWER: Symphony No. **59** in A major, “**Fire**” [accept either underlined part; or **Feuersinfonie**]

[10m] A different composer used horn fifths to open this E-flat major piano sonata, which was inspired by the flight from Vienna of the composer’s patron, Archduke Rudolf.

ANSWER: “*Les **Adieux*** (“uh-DYUH”)” sonata [or Ludwig van **Beethoven**’s **Piano Sonata No. 26** in E-flat major, Opus 81a ; or Ludwig van **Beethoven**’s **Opus 81a**; accept **Lebewohl** or **Farewell sonata**]

<Classical Music>



4. Medieval euphemisms for a product with this function include the “English Overcoat” and “French Letter.” For 10 points each:

[10e] Describe this primary function of various “natural membrane” products, such as many made of sheepskin in ancient and medieval times.

ANSWER: **contraceptives** [or **contraception** or **birth control**; accept **condoms**; accept any answer which indicates preventing **pregnancy** or avoiding unwanted **children**]

[10m] This ruler’s court included a shadowy figure called “Colonel Condom,” who prescribed the use of contraceptive sheaths. The succession of this ruler’s brother was questioned in the Exclusion Crisis.

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

[10h] Giacomo Casanova falsely claimed to have discovered the technique of soaking a sponge in a substance made from these objects, then inserting the sponge into the vagina. In the Mediterranean, the rinds of these objects were used as contraceptives.

ANSWER: **lemons** [or **limone**; accept **lemon** juice; accept **limes** or **lime juice**]

<European History>

5. Credits for the vocals of this sound effect are usually given to Sheb Wooley, also known for singing “The Purple People Eater.” For 10 points each:

[10m] Name this sound effect. Its name comes from the film *The Charge at Feather River*, in which it plays when its namesake is hit by an arrow just above the knee.

ANSWER: **Wilhelm** scream

[10e] The Wilhelm scream was first recorded for the film *Distant Drums* and was intended to vocalize a man being eaten by one of these animals in the Everglades, where they are a keystone species.

ANSWER: (common) **alligators** [or **gators**; prompt on **crocodilians**; reject crocodiles]

[10h] Like the editors of ACF Nationals, this sound designer dug the Wilhelm scream out of its grave and used it as an in-joke in the *Star Wars* and *Indiana Jones* movies. This designer later created WALL-E’s voice.

ANSWER: Ben **Burtt**

<Other Academic>

6. The fact that this author was an illegitimate son may have inspired his play *The Illegitimate Son*, which depicts fathers’ obligations to marry the mothers of their children. For 10 points each:

[10h] Name this playwright who fictionalized his father as the title character of the play *The Prodigal Father*. His most famous title character was modeled on Marie Duplessis (“dew-pleess-SEE”).

ANSWER: Alexandre **Dumas, fils** (“feess”) [accept Alexandre **Dumas Jr.**; accept Alexandre **Dumas the Younger**; prompt on **Dumas** or Alexandre **Dumas**] (The French word *fils* means “son.”)

[10e] Duplessis inspired Dumas *fils*’s *The Lady of the Cameliars*, which is about a courtesan dying of this disease. Fantine dies of this disease in Victor Hugo’s *Les Misérables*.

ANSWER: **tuberculosis** [or **TB**; or **consumption**]

[10m] Dumas *fils*’s first play retold the tale of Chactas and Atala, which was popularized by an 1801 novella by this French author who included it as part of his *The Genius of Christianity*.

ANSWER: François-René de **Chateaubriand** (“shah-TOH-bree-YAHN”) [or Vicomte **Chateaubriand**]

<European Literature>

7. Graham Sutherland's *Christ in Glory in the Tetramorph*, a 24-meter-tall tapestry with green background and yellow accents, was designed for this church. For 10 points each:

[10m] Name this church that Basil Spence designed to sit adjacent to the bombed-out ruins of its predecessor. The east wall of this church features a sculpture of St. Michael's victory over the Devil.

ANSWER: **Coventry** Cathedral [prompt on Cathedral Church of Saint Michael by asking "What city is it in?"]

[10e] The aforementioned sculpture of Saint Michael was created by a sculptor with this name and surname Epstein. Another sculpture by Epstein depicts a Biblical figure with this name wrestling an angel.

ANSWER: **Jacob** [accept **Jacob** Epstein]

[10h] Epstein's *The Rush of Green* shows a long-limbed family being driven by Pan's music toward this location just across the street. In 2018, Christo placed a mastaba built from 7,506 oil barrels in a lake here.

ANSWER: **Hyde Park** [accept The **Serpentine** or **Serpentine** River]

<Painting/Sculpture>

8. Dana Tomlin classified operators that act on these objects as local, focal, zonal, or global depending on their scope. For 10 points each:

[10h] Name these objects that are manipulated in a namesake "algebra" developed by Tomlin and implemented in an extension of Esri's ("EZZ-ree's") flagship software.

ANSWER: **maps** [accept **map** algebra; prompt on charts; anti-prompt (ask "Can you be less specific?") on choropleths or cartograms]

[10e] The aforementioned Esri product is the "Arc" suite of this type of software. This software manipulates and visualizes geospatial data, often collected via remote sensing.

ANSWER: **GIS** [or **geographic information systems**; accept **ArcGIS**]

[10m] A global operator in map algebra might calculate Geary's ("GEAR-ee's") *C* or Moran's *I*, measures of the spatial form of this property. For a time series, this property is measured by taking [read slowly] the expectation value of the time series, multiplied by itself at a later time.

ANSWER: **autocorrelation** [accept spatial **autocorrelation** or **autocorrelation** function; prompt on correlation or cross-correlation or correlation function]

<Misc. Science>

9. You and a friend see an object you both accurately say is orange. Could you be seeing orange while your friend sees what you'd call blue? Answer the following about the "inverted spectrum" problem, for 10 points each.

[10e] This Englishman imagined a man who sees "violet" where another sees "marigold," and vice versa, in his *Essay Concerning Human Understanding*.

ANSWER: John **Locke**

[10m] Ned Block and Jerry Fodor brought up "inverted qualia" to attack this view in philosophy of mind, that each mental state or process just *is* the task that it *does*.

ANSWER: **functionalism** [or **functionalist**]

[10h] This longtime Cornell professor reconciled functionalism and inverted qualia in his 1982 paper "The Inverted Spectrum." This author of *Self-Knowledge and Self-Identity* developed a "quasi-memory" theory of personal identity.

ANSWER: Sydney **Shoemaker**

<Philosophy>

10. This empire's deposed ruler Bumi Jeleen converted from Islam to Catholicism upon visiting Portugal, but was killed by a Portuguese captain on the return trip. For 10 points each:

[10m] Name this empire at the westernmost edge of Africa, centered in present-day Senegal. Alternatively, you may identify the similarly named, extant ethnic group that dominated it.

ANSWER: **Jolof** ("JOH-loff") empire [or **Wolof** ("WOH-loff") people]

[10e] The explorer Juan Garrido ("guh-REE-doh") was born in this African kingdom, which conducted a major Atlantic slave trade with Portugal. Afonso I ruled this kingdom, which shares its name with a river.

ANSWER: Kingdom of **Kongo** [or **Kongo** Kingdom]

[10h] According to the historian al-Umari, Mansa Musa's predecessor sponsored a great Atlantic voyage, speculated to have found the Americas. You may name either the man often credited with sponsoring that voyage, who is not listed as a *mansa*, OR the *mansa* who precedes Musa in most official records.

ANSWER: **Abu Bakr II** OR **Mohammed ibn Gao** [accept **Abubakari II** or **Muhammad ibn Qu**; prompt on **Abu Bakr** or **Mohammed**]

<World History>

11. This book criticizes "Marx the Economist" while remarking favorably on "Marx the Sociologist" in its first section, "The Marxian Doctrine" and predicts the continued rise of planned economies. For 10 points each:

[10m] Name this 1942 book which describes how the structure of capitalism is "incessantly revolutioniz[ed]" through a process of "industrial mutation" which is sometimes called its author's namesake "gale."

ANSWER: **Capitalism, Socialism, and Democracy**

[10e] *Capitalism, Socialism, and Democracy* is a book by this Austrian political economist which elaborates on "creative destruction," an idea that he popularized.

ANSWER: Joseph **Schumpeter**

[10h] The metaphor of a "gale of creative destruction" was coined by this German as a fusion of Marxian and Nietzschean theory. This leader of the Youngest Historical School wrote the text *Modern Capitalism*.

ANSWER: Werner **Sombart**

<Social Science>

12. In 1937, this musician's ensemble defeated Benny Goodman in a much-heralded "Battle of the Bands." For 10 points each:

[10m] Name this Swing-era drummer, who led the house band at the Savoy Ballroom. This man was nicknamed for his diminutive height, a consequence of the spinal tuberculosis that claimed his life at age thirty.

ANSWER: "Chick" **Webb** [or William Henry **Webb**]

[10e] This legendary jazz vocalist catapulted to fame with Webb's Savoy band. This "First Lady of Jazz" was famous for her scat singing and for a series of "songbook" albums she put out on the Verve label.

ANSWER: Ella **Fitzgerald**

[10h] The Savoy Ballroom was a hub for the performance of this swing dance and names an East Coast variant of it. Breakaways are a prominent feature of this dance, whose West Coast variant was pioneered by Dean Collins.

ANSWER: **Lindy hop**

<Other Fine Arts>

13. This hypothesis built upon Kimura's neutral theory of evolution, and its relaxed version allows the mutation rate to vary between branches. For 10 points each:

[10m] Name this hypothesis, which states that the rate at which genetic material evolves over time remains relatively constant. As such, it is used to trace and date the ancestry of divergent species.

ANSWER: **molecular clock** hypothesis

[10e] The molecular clock hypothesis was proposed by Emile Zuckerkandl and this scientist. This scientist and two-time Nobel winner proposed that DNA had a triple-helix structure and advocated taking lots of vitamin C.

ANSWER: Linus **Pauling**

[10h] In 2008, Weir ("weer") and Schluter used the molecular clock to trace the evolution of this protein in avians. This protein, which assists in oxidative phosphorylation, is the only Complex III ("three") protein coded by mitochondrial DNA.

ANSWER: **Cytochrome b**

<Biology>

14. In this poem from the 2000 collection *Open Closed Open*, the speaker describes taking a self-portrait photo that is developed by God in His darkroom. For 10 points each:

[10h] Name this poem, whose speaker states "Jewish history and world history / grind me between them like two grindstones," even though he didn't experience the Holocaust or slavery in Egypt firsthand. You may give the seven-word title without the subtitle.

ANSWER: "**I Wasn't One of the Six Million**: And What Is My Life Span? Open Closed Open"

[10e] That poem is by Yehuda Amichai who, like Amos Oz, writes in this language.

ANSWER: **Hebrew**

[10m] In 1976, Amichai was the co-recipient of Israel's most prestigious literary award, which is named for this poet. This co-compiler of the *Sefer HaAggadah* wrote the epic poem *In the City of Slaughter* about the Kishinev pogrom.

ANSWER: Hayim (Nahman) **Bialik**

<World Literature>

15. Dave Grossman cited this book in his controversial "killology" seminars to highlight how even soldiers have an innate resistance to killing. For 10 points each:

[10h] Name this book by S. L. A. Marshall, which cites post-combat interviews to conclude that only 15 to 20 percent of World War II troops fired on exposed enemies.

ANSWER: **Men Against Fire: The Problem of Battle Command**

[10e] This institution maintains the Veterans History Project, which includes many oral histories of World War II. Carla Hayden currently leads this book-holding institution based on Capitol Hill.

ANSWER: **Library of Congress** [or **LoC**]

[10m] This oral historian of *Division Street: America* interviewed civilians and soldiers for his Pulitzer-winning 1985 book *The Good War: An Oral History of World War II*.

ANSWER: Louis "Studs" **Terkel**

<Other History>

16. In ordinary FRET (“fret”) experiments, this quantity is used to infer molecular distance. For 10 points each:  
 [10m] Name this quantity usually symbolized  $\phi$ , which characterizes the efficiency of a photochemical reaction as: “number of reactions, divided by number of input photons.”

ANSWER: **quantum yield** [prompt on yield; prompt on efficiency]

[10h] When the FRET donor and acceptor are identical, this quantity is instead used to infer molecular distance. A common binding assay detects the increase in this quantity for a fluorescent molecule when it binds to a large protein and tumbles more slowly.

ANSWER: fluorescence **polarization** [or **FP**; or fluorescence **anisotropy**]

[10e] FRET is only efficient at the length scale of this unit, the size of most biomolecules. The wavelength of visible light is between 400 and 700 of this unit of length.

ANSWER: **nanometers** [or **nm**]

<Chemistry>

17. This title was borrowed as a general word for “lord” into Swahili, in which it can refer to either a revered leader or to God. For 10 points each:

[10m] Give this title which Sufis used to denote the leaders of their *tariqat*, or fraternities. This title is bestowed on the poet Rumi by an order of Turkish Sufis which is commonly named for it.

ANSWER: **mevlev** [or **mawlana** or **mawlawi**; accept **Mevlevi** Order or **Mevlevi** Sufis]

[10e] The Mevlevi Order is best known for devout members known by this term, who worship ecstatically by whirling about to perform *dhikr*, or remembrance of God.

ANSWER: **dervishes** [or **darvesh** or **darwish**; accept whirling **dervishes**]

[10h] Another Turkish Islamic tradition, the Alevi, traces its lineage back to this 13th-century dervish. In the Ottoman era, this mystic named the official Sufi order of the Janissaries.

ANSWER: Haji **Bektash** Veli [accept **Bektashis**]

<Religion>

18. For 10 points each, answer the following about Asian-American activism in the 20th century:

[10e] Two students at this university, Emma Gee and Yuji Ichikoya, are partly credited with coining the term “Asian-American.” Ronald Reagan suppressed protests at People’s Park from the Free Speech Movement led by students from this university.

ANSWER: University of California **Berkeley** [or UC **Berkeley**]

[10m] Asian-American activists were galvanized by the 1982 murder of this man by two auto workers, Ronald Ebens and Michael Nitz, who wrongfully assumed he was Japanese.

ANSWER: Vincent (Jen) **Chin**

[10h] This Japanese-American woman and her husband Bill pushed for reparations for internment camps. She took an iconic photo of Malcolm X after he was assassinated in the Audubon Ballroom.

ANSWER: Yuri **Kochiyama** [or Mary Yuriko **Nakahara**]

<American History>

19. A play inspired by this author follows Eric Glass, a thirty-something gay intellectual evicted from his New York apartment. For 10 points each:

[10h] Name this author whose work inspired Matthew Lopez's Tony Award-winning play, *The Inheritance*, and a 2021 novel by playwright William di Canzio.

ANSWER: E(dward) M(organ) **Forster** (Di Canzio's novel is called *Alec*, and is a continuation of *Maurice*.)

[10e] *The Inheritance* is based on this Forster novel, in which the title estate, which belongs to the Wilcox family, is bequeathed to Margaret Schlegel. It introduced the motto "only connect."

ANSWER: ***Howards End***

[10m] *Howards End* was previously adapted into a Merchant Ivory film, with a screenplay by this German-Jewish author. The narrator travels to Satipur, India to learn the story of her grandfather's first wife, Olivia, in this author's Booker-winning novel *Heat and Dust*.

ANSWER: Ruth Praver **Jhabvala** ("JAHB-vah-lah") [or Ruth **Praver**]

<British Literature>

20. In the summer of 2020, this philanthropic organization replaced Thousand Currents as the fiscal sponsor of Black Lives Matter Global Network Foundation. For 10 points each:

[10h] Name this organization, founded by Drummond Pike and named for a burned-down bookstore in Sausalito. This foundation pioneered the "donor-advised fund" to quietly shuttle millions of dollars to liberal activist groups.

ANSWER: **Tides** Foundation [or **Tides** Advocacy]

[10e] The Tides Foundation partly inspired DonorsTrust, which helps anonymous donors in the "network" of this right-wing Kansas oil billionaire. His brother David died in 2019.

ANSWER: Charles G. **Koch** ("coke") [accept the **Koch** network; accept **Koch** brothers]

[10m] Major contributors to the Tides Foundation include this grantmaking organization, founded and chaired by George Soros, which supports a "progressive network" of civic groups worldwide.

ANSWER: **Open Society** Foundation [or **Open Society** Institute]

<Current Events>