

# SOUTHEAST-MIDWEST HOUSEWRITE: PACKET 20

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NOTE: THESE TOSSUPS AND BONUSSES ARE PAIRED. IF THE TOSSUP GOES DEAD, SKIP THE ASSOCIATED BONUS. DO NOT GO BACK AND READ ANY BONUSSES THAT ARE SKIPPED.

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**1. The bishop Samuel Ruiz served as a mediator for one revolt caused by the signing of this agreement. Shortly after this agreement went into effect, one country experienced a severe economic crisis known as the “December Mistake.” This agreement included a clause affirming the modification of Article 27 of one country’s constitution, making it easier to sell (\*) indigenous lands. The signing of this agreement led Subcommandante Marcos to declare war on that country as part of the Zapatista uprising. Following the implementation of this agreement, *maquiladoras* (“mah-kee-luh-DOH-rah”) became increasingly prevalent in cities like Ciudad Juárez. For 10 points, name this 1994 international trade agreement signed between the United States, Canada, and Mexico.**

ANSWER: **North American Free Trade Agreement [or **NAFTA**]**

<Lau, World History> [Ed. Prabhakar]

1. Convulsions developed among cats infected with this disease leading to it being alternatively named “dancing cat fever.” For 10 points each:

[H] Name this neurological disease named for the Japanese city in which it was discovered. People with this disease experienced involuntary movement and slurred speech, among other symptoms.

ANSWER: Chisso-**Minamata** disease

[E] Minamata disease was caused by exposure to the methylated form of this element, which was leaked into the waters of Minamata Bay. This metal, symbolized Hg, is liquid at room temperature.

ANSWER: **mercury** [accept methylmercury]

[M] Mercury is also contained in this vaccine preservative. This compound was removed from vaccines to quell widespread conspiracy theories linking it to autism in children.

ANSWER: **thimerosal** [or **thiomersal**; prompt on **Merthiolate**]

<Nageswaran, Biology> [Ed. Lei]

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**2. It’s not Persian, but a poet in this language bemuses how the “kindness of exalted Night” grants only “oblivion and holy drunkenness” in his poem “Bread and Wine.” Another poet in this language describes being “hurl’d...to the ground” by love in a work inspired by his rejected marriage proposal to a woman 46 years his junior. A blue flower was associated with youth and hope by poets who wrote in this language like (\*) Novalis. The collection *Roman Elegies* is in this language, as is a ballad in which a man assures his son that what he’s seeing is “mist” and “sad wind” before his son is murdered by the title magical figure. “Erlkönig” is a poem in, for 10 points, what language used by the Romantic poets Friedrich Hölderlin and Johann Wolfgang von Goethe?**

ANSWER: **German** [or **Deutsch**]

<Ashbrook, Poetry> [Ed. Leahy]

2. In this director's film *Life and Nothing More*, a father and son search a rural village for the two main characters of his earlier film *Where Is the Friend's Home?* in the aftermath of a real-life earthquake. For 10 points each:

[H] Name this director of the *Koker* trilogy who, in another film, dramatized the story of a man who convinced a family he was a famous director casting them in a new film.

ANSWER: Abbas **Kiarostami**

[M] In Kiarostami's film *Close-Up*, the impersonator dupes a family who enjoyed director Mohsen Makhmalbaf's film about these things. A Vittorio de Sica film is titled for the *Thieves* of one of these objects owned by Antonio.

ANSWER: **bicycles** [or **bikes**; accept *Bicycle Thieves*; accept *The Cyclist*]

[E] Kiarostami was associated with an Iranian movement with this name. An experimental French movement with this name grew from the magazine *Cahiers du cinema* and included Agnes Varda and Jean-Luc Godard.

ANSWER: **New Wave** [or *La Nouvelle Vague*; accept Iranian **New Wave** or French **New Wave**]

<Strombeck, Film> [Edited]

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3. Some people recite penitential poems called *selichot* (“sell-lee-KOTE”) the Saturday before this holiday between midnight and dawn. Observers of this holiday sometimes eat the head of a fish in the hope of “being a head and not a tail.” This is the earliest holiday that uses a specialized prayer book called the *machzor* (MAHK-zorr”). One ritual of this holiday involves casting bread crumbs into a body of water to represent casting away sins; that ritual is (\*) *tashlikh* (“tahsh-LEEK”). This holiday is preceded by the time period of *Elul* (“eh-LOOL”). Synagogue services include the blowing of a *shofar*, or ram’s horn, up to one hundred times each day of this holiday to signify the beginning of Tishrei. The first of the High Holy Days is, for 10 points, what holiday that marks the beginning of the Jewish New Year?

ANSWER: **Rosh Hashanah** [accept **Yom Teruah**; prompt on High Holy Days until read]

<Ashbrook, Religion> [Edited]

3. Constance Markievicz (“MARK-uh-vitch”) avoided execution for her role in this event on the basis of her sex. For 10 points each:

[H] Name this event, during which Markievicz led troops at one location along with Michael Mallin. Winifred Carney served as the secretary to one leader in this event who would ultimately be executed after its failure.

ANSWER: **Easter Rising** [or **Easter Rebellion**; accept reasonable equivalents for “Rising”; accept **Éirí Amach na Cásca**]

[M] Markievicz later fought during the Irish War of Independence, despite this man’s opposition to women in combat. This second Taoiseach (“TEE-shuck”) founded Fianna Fáil (“FEE-uh-nuh FALL”) and restricted women’s rights with the Constitution of 1937.

ANSWER: Éamon **de Valera**

[E] During the Easter Rising, many women like Julia Grenan and Elizabeth O’Farrell served in this profession. Florence Nightingale and Mary Seacole served in this profession during the Crimean War.

ANSWER: **nursing** [or **nurses** or medical **nurses**; prompt on medicine; do NOT accept or prompt on “doctors”]

<Prabhakar, British/European History> [Edited]

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4. This artist painted a group of adults playing with a scraggly oak tree on their right and birch trees on their left in the painting *A Game of Horse and Rider*. The Frick mansion has a room dedicated to a series by this artist that includes a painting in which a young man in a red shirt climbs over a ledge using a ladder. A child holds a stick tied to a rock up to the hand of a (\*) blindfolded woman in one painting by this artist. A young woman crowns her fiancé with flowers in a series by this artist commissioned by the Countess du Barry. In a painting by this artist of *The Progress of Love* series, a cupid statue stands over a man hiding in bushes, looking up the skirt of a lady whose shoe flies off her foot. For 10 points, name this Rococo painter of *The Swing*.

ANSWER: Jean-Honoré **Fragonard**

<Ashbrook, Painting & Sculpture> [Edited]

4. A character created by an author of this ethnicity imagines her father in boastful clothing in a story titled “Never Marry” a person of this ethnicity. For 10 points each:

[M] Name this ethnicity of the author of the collection *Woman Hollering Creek and Other Stories*. That author also wrote a novel about a girl who thinks her name has too many letters and wishes to change it to “Zeze the X.”

ANSWER: **Mexican**-American [or **Chicano**; or **Chicana**; prompt on American; prompt on Latino or Latina or Latinx or Latine; prompt on Hispanic]

[E] The author of *Woman Hollering Creek*, Sandra Cisneros, also wrote this seminal Chicano novel. This novel’s 44 vignettes concern the life of Esperanza Cordero and her life in the title Chicago residence.

ANSWER: *The **House on Mango Street***

[H] This other Chicana author wrote the first novel composed in Spanglish, the cross-genre *Yo-Yo Boing!* This author's alter ego tries to save Segismundo from the basement of the Statue of Liberty in her novel *United States of Banana*.

ANSWER: Giannina **Braschi**

<Leahy, Short Fiction/Other> [Edited]

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**5. For a nuclear reaction, the reactants and products are plugged into this equation to calculate the Q-value. Virtual particles are deemed “off-shell” because they are not located on the hyperboloid formed by one form of this equation. The term “*p* squared *c* squared” is added to this equation if an object is not in the (\*) rest frame. This equation is used to find the mass defect in atomic nuclei. Along with the photoelectric effect, Brownian motion, and special relativity, this equation was presented in one of the Annus Mirabilis papers. For 10 points, name this equation derived by Albert Einstein which states that a quantity measured in joules is equivalent to another quantity measured in kilograms.**

ANSWER:  **$E = mc^2$**  (“*E* equals *m c* squared”) [or **mass-energy** relation or **energy-mass** relation; accept **mass-energy** equivalence or **energy-mass** equivalence; accept  **$E^2 = (pc)^2 + (m_0c^2)^2$** ; accept **energy-momentum** relation or **momentum-energy** relation; prompt on Einstein equation]

<Karthik, Physics> [Ed. Bowman]

5. This philosopher misspelled the word “difference” and used it as a term to refer to the infinite deferral of meanings of words. For 10 points each:

[M] Name this postmodern philosopher who developed the deconstructionist method of reading texts in his book *Of Grammatology*.

ANSWER: Jacques **Derrida**

[H] This philosopher asked, “why must we worry over so simple a thing as preface-making?” in her English translation of *Of Grammatology*. This philosopher wrote about the difficulty of oppressed peoples making their voices heard in the essay “Can the Subaltern Speak?”

ANSWER: Gayatri Chakravorty **Spivak**

[E] In *Of Grammatology*, Derrida examines this field of study and how it subjugates writing into a derivative discipline. This field is the study of languages.

ANSWER: **linguistics** [accept word forms like **linguists**]

<Ashbrook, Philosophy> [Edited]

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**6. One of these events held annually in Philadelphia is named for Marcus Garvey's Black Star Line and was first held in 2012. In 2018, Kate Muir criticized Thierry Frémaux ("TYAIR-ee FRAY-moh") for the lack of female representation at one of these events. *The Life Aquatic with Steve Zissou* ("ZEE-soo") opens with Steve presenting at the "Loquasto International" one of these events. A member of the Hole-in-the-Wall gang played by Robert Redford names one of these events that is held at a resort in (\*) Utah. Golden Bears are awarded at the Berlinale, one of the three largest of these annual events in the world. For 10 points, a golden feather known as the Palme d'Or is awarded at what type of event held in Cannes ("kan") in which cinematic pieces are aired for judging?**

ANSWER: **film festivals** [accept **movie festivals** or other synonyms such as **cinema festivals**; prompt on **movie premieres** or synonyms; prompt on **festivals**]

<Delot-Vilain, Other Academic> [Ed. Ashbrook]

6. The genderless prophet Public Universal Friend led a splinter community in Jerusalem, New York with teachings similar to this religion. For 10 points each:

[E] Name this pacifist Christian sect whose views on gender equality were influenced by Sarah Blackborow. Many women of this sect moved to a personal plot of land granted to its practitioner William Penn.

ANSWER: **Quakers** [or Religious Society of **Friends**]

[M] Mary Dyer was one of the Quaker martyrs hanged for preaching in this city. Anne Hutchinson held religious gatherings at her house in this city before being banished during the Antinomian Controversy.

ANSWER: **Boston**, Massachusetts

[H] Three sisters with this last name popularized Spiritualism, which was embraced by some radical Quakers. Those sisters with this last name claimed to communicate with spirits while making rapping sounds.

ANSWER: **Fox** Sisters [accept Leah **Fox**; accept Margaretta "Maggie" **Fox**; accept Catherine "Kate" **Fox**]

<Strombeck, American History> [Ed. Nageswaran]

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**7. Jan Pen represented the magnitude of this phenomenon with a model of a parade of dwarves followed by giants. In his book on "The Price of" this phenomenon, Joseph Stiglitz argued that this phenomenon is heightened through the profiteering process of "rent-seeking." The rise and fall of this phenomenon in a growing economy is represented in a graph created by Simon Kuznets. The idea that this phenomenon is caused by return on capital being greater than economic growth is central to (\*) Thomas Piketty's *Capital in the 21st Century*. Finding the area between a 45-degree line and the Lorenz curve is used to compute a measure of this phenomenon called the Gini coefficient. For 10 points, identify this measure of uneven resource distribution among people.**

ANSWER: income **inequality** [or economic **inequality**; or wealth **inequality**; or resource **inequality**; accept close synonyms like the **wealth gap**; prompt on "**wealth distribution**" or "**resource distribution**" by asking "what specific aspect of wealth distribution?"]

<Ashbrook, Economics> [Edited]

7. Schubert's E major symphony of this number, which only exists in the form of sketches, was orchestrated posthumously by Brian Newbould. For 10 points each:

[M] Name this number. Beethoven's A major symphony of this number was labelled "the apotheosis of the dance" and includes a (*read slowly*) "long-short-short-long-long" rhythm in its Allegretto second movement.

ANSWER: **seven** [accept **seventh** symphony or Symphony No. **7**]

[E] Schubert's 8th Symphony is nicknamed for having this quality, reflected by it having only two movements.

ANSWER: **unfinished** symphonies [accept **Unvollendete**]

[H] Instead of his 8th Symphony, Schubert focused on this piece for solo piano, whose four movements open with variations of a melody from the *lied* of the same name. Franz Liszt later arranged this work for piano and orchestra.

ANSWER: **Wanderer Fantasy** [accept **Fantasia in C major**, Op. 15; accept **D. 760**; accept "Das **Wanderer**"; do NOT accept or prompt on "Das Wandern"]

<Nageswaran, Classical Music> [Edited]

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**8. This author's longest novel opens with the airship the *Chums of Chance* arriving at the 1893 Columbian Exposition. A long digression about the immortal and sentient "Byron the lightbulb" appears in a novel by this author whose protagonist fights off an octopus classically conditioned to attack a woman on a French beach. A novel by this author set after Reagan's election follows the hippie (\*) Zoyd Wheeler and his daughter Prairie. The protagonist meets Katje at the Hermann Goering casino in a novel by this author of *Against the Day*. The quote "a screaming comes across the sky" opens a novel by this author in which Roger Mexico fits the protagonist's sexual exploits to a Poisson distribution of V-2 rockets. For 10 points, name this reclusive author who wrote about Tyrone Slothrop in the notoriously dense book *Gravity's Rainbow*.**

ANSWER: Thomas Ruggles **Pynchon**

<Ashbrook, Long Fiction> [Ed. Leahy]

8. Under ideal conditions, the difference in specific enthalpy across these components is equal to one half of the difference of the volumes squared. For 10 points each:

[H] Name this system component that increases the velocity of a gas or liquid flowing through a system. These components are contrasted with diffusers.

ANSWER: **nozzles**

[E] Convergent nozzles accelerate fluids that travel slower than this speed. In the air, this speed is around 343 meters per second and is also known as Mach 1.

ANSWER: speed of **sound**

[M] Nozzles can be used in an adiabatic expansion step in these devices. The most common type of these devices employs a vapor compression cycle, which reverses the Carnot cycle.

ANSWER: **refrigerators** [or **fridges**]

<Ashbrook, Physics> [Ed. Bowman]

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**9. One history of this empire was written by the historian Berossus, who described one site in this empire purportedly discovered by Robert Koldewey. One ruler of this empire defeated Zimri-Lim to conquer the kingdom of Mari. Another ruler of this empire enlisted the help of Cyaxares during a war that ended when his successor won the Battle of (\*) Carchemish. That successor started this empire's namesake "captivity" after conquering the Kingdom of Judah. A seven-foot-tall stele contains one text written by a ruler of this empire decreeing principles like "an eye for an eye." Nebuchadnezzar and Hammurabi ruled, for 10 points, what empire whose capital was known for its apocryphal hanging gardens?**

ANSWER: **Babylonian** Empire [accept **Neo-Babylonian** Empire]

<Sareddy/Prabhakar, Other History> [Ed. Prabhakar]

9. Answer the following about twins in Greek mythology, for 10 points each.

[E] The twins Castor and Pollux were a part of this group of heroes who sought the Golden Fleece. While with this group, Pollux killed King Amycus in a boxing match.

ANSWER: Argonauts [accept Argonautai]

[H] These twins were saved from being sacrificed when their mother Nephele sent a flying ram to rescue them.

Although one of them fell off the ram and drowned, the surviving twin gave the ram's Golden Fleece to King Aëtes after arriving in Colchis.

ANSWER: Phrixus and Helle [prompt on Phrixus or Helle alone]

[M] In one myth, these twin giants stacked mountains in an attempt to reach Mount Olympus. In another myth, these twins trap Aries in a bronze jar then accidentally kill each other after Artemis transforms into a doe and jumps in between them.

ANSWER: Aloadae ("ah-LOW-uh-day") [accept Aloads; accept Otus and Ephialtes; prompt on Otus or Ephialtes alone]

<Groger, Mythology> [Edited]

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**10. Ions of one element in this group are found in reagents that displace halide groups with an R group. The evaporite minerals sylvite and carnallite are chlorides of an element in this group. Crown ethers form a host-guest complex when they encapsulate these elements. The frequency of the hyperfine transition between two ground states of one element in this group is used to define the second in SI units, leading to its use in (\*) atomic clocks. Elements in this group readily dissolve in ammonia to release electrons, forming blue solutions. These elements react violently with water to produce hydroxide and hydrogen gas. For 10 points, name this group located on the far left of the periodic table that includes elements like potassium and sodium.**

ANSWER: alkali metals [or Group 1 or Group 1A or lithium group or lithium family; do NOT accept or prompt on "alkaline" or "alkaline earth"]

<Zhao, Chemistry> [Ed. Lei]

10. The narrator of a poem relates an "oft-read tale" about a man from this city with "pregnant parts and quick inventive brain." For 10 points each:

[H] Name this city, whose ferry riders "blithe, returning home on summer-nights." In that poem, a man from this city leaves his studies to roam the world with "that wild brotherhood."

ANSWER: Oxford

[M] This poet recounted a story from "Glanvill's book" in his poem "The Scholar-Gipsy." He coined Oxford's nickname as "the city of dreaming spires" in an elegy for Arthur Hugh Clough.

ANSWER: Matthew Arnold

[E] A different English locale names this best-known poem by Arnold, which describes a "darkling plain" where "ignorant armies clash by night."

ANSWER: "Dover Beach"

<Leahy, Poetry> [Edited]

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**11. Shamhuresh is one of seven kings of these creatures associated with the days of the week. After transporting a pavilion to the mountains of China, one of these creatures refused to hang a giant egg from a ceiling before revealing the identity of an evil cross-dressing magician. They aren't demons, but these creatures were enslaved to build the First Temple using a hexagrammic seal possessed by Solomon. The existence of these creatures is affirmed in the 72nd (\*) *surah*, which is named for them. The first of these creatures became Shaytan after refusing to bow to Adam. Iblis is one of these creatures, which are described as made up of "smokeless fire." For 10 points, name these creatures from Islamic mythology that grant wishes and live in talismans such as magic lamps.**

ANSWER: jinn [or djinn; accept genies; accept jinns, jinni, or jinn surah]

<Ashbrook, Mythology> [Edited]

11. This leader sponsored the rebel forces that overthrew Mobutu Sese Seko. For 10 points each:

[M] Name this leader of a small African country who has been accused of war crimes after his forces massacred refugees during the First Congo War. Along with Uganda, this leader's country initiated the Second Congo War.

ANSWER: Paul **Kagame**

[E] Kagame led Tutsi rebels against the Hutu-led government in this country. Hundreds of thousands of Tutsis were killed during this country's namesake genocide in 1994 that ended when Kagame's forces captured Kigali.

ANSWER: Republic of **Rwanda**

[H] Kagame's military career started fighting in a non-Rhodesian Bush War against this other African leader. This leader's forces killed thousands of people during that war in Operation Bonanza and the Luwero massacres.

ANSWER: Apollo Milton **Obote**

<Sareddy, World History> [Ed. Prabhakar]

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**12. A woman in this novel compares her troubles to having her tears dried by "the Gorgon" while on a ferry ride. This novel's protagonist recalls a scene from "The Shaughraun" while walking by a woman at the end of a pier who doesn't turn to see him. This novel opens with the protagonist seeing Christine Nilsson's performance in Gounod's *Faust* in an opera box too small to fit the obese (\*) Mrs. Mingott. The protagonist of this novel learns he impregnated his wife May Welland on the same night he intends to divorce. This novel ends with the protagonist visiting Paris with his son Dallas, where he fixates on the balcony of the room of his former lover, the Countess Olenska. For 10 points, name this novel about Newland Archer's life in New York high society, written by Edith Wharton.**

ANSWER: *The **Age of Innocence***

<Ashbrook, Long Fiction> [Edited]

12. The Pleistocene Park initiative seeks to revive this biome in the modern day, starting with a nature reserve in eastern Russia. For 10 points each:

[H] Name this megabiome that spread across northern Eurasia and North America during the Pleistocene era. This no-longer-extant megabiome featured high-productivity grasses and was home to bison and rhinoceroses alongside its namesake animal.

ANSWER: **mammoth steppes** [prompt on **mammoth** or **steppes** alone]

[M] Much evidence for the flora of the mammoth steppes can be found in the fossilized remains of these things, which are called coprolites.

ANSWER: pieces of **feces** [or pieces of **dung** or **poop**; accept more vulgar synonyms]

[E] Coprolites and animal skeleton remains from the mammoth steppes are well-preserved because they lay in this type of frozen soil. The thaw of this type of soil due to global warming would release enormous amounts of greenhouse gases.

ANSWER: **permafrost**

<Bowman, Earth Science> [Edited]

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**13. A candidate in this election claimed that the federal government possessed "powers that were never intended in the Constitution" in a speech in Philadelphia, Mississippi. Another candidate in this election struggled to answer a question from Roger Mudd about why he was running and later gave "The Dream Shall Never Die" speech. In this election's only debate, a candidate responded to attacks with the line (\*) "there you go again." The incumbent in this election was hurt by the failure of Operation Eagle Claw. John B. Anderson ran as an Independent in this election, whose winner's plans were labeled "voodoo economics." For 10 points, name this presidential election in which Jimmy Carter was defeated by Ronald Reagan.**

ANSWER: United States Presidential Election of **1980**

<Alaro, American History> [Ed. Nageswaran]

13. This prayer is introduced in the Sermon on the Mount after Jesus exhorts his listeners to “not be like hypocrites” seeking attention while they pray. For 10 points each:

[E] Name this prayer also known as the *Pater Noster*. Among other petitions, this prayer asks God to “give us this day our daily bread” and “lead us not into temptation, but deliver us from evil.”

ANSWER: the **Lord’s Prayer** [accept the “**Our Father**”]

[M] This book, the main Anglican liturgical book, contains a popular version of the Lord’s Prayer. Thomas Cranmer originally wrote this book, which contains all the necessary material for daily service for anybody to use.

ANSWER: *Book of **Common Prayer*** [accept **BCP**]

[H] The Anglican version of the Lord’s Prayer leaves out one of these short hymns used by some Protestants, which are Greek for “glory saying.” A popular one of these hymns begins, “Praise God, from whom all blessings flow.”

ANSWER: **doxologies** [or **doxology**]

<Ashbrook, Religion> [Edited]

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**14. It’s not by John Coltrane, but one song in this style opens with several gong strikes followed by a rhythmic ostinato in 18/8 time; that song is the namesake track of the album *Birds of Fire*. Another song in this style opens with the keyboard playing the Adagio from Rodrigo’s *Concierto de Aranjuez*. That track in this style is the final track on *Light as a Feather*. Bands in this style include the Mahavishnu Orchestra and (\*) Return to Forever, which performed the song “Spain” under its leader Chick Corea. Joe Zawinul, a pioneer of this style, wrote the “Pharaoh’s Dance” that begins an album in this style. That album, *Bitches Brew*, was released by Miles Davis during his electric period. For 10 points, name this musical style which combines jazz with elements of rock music.**

ANSWER: jazz **fusion** [or **progressive jazz**; accept **jazz rock** before “rock;” prompt on **jazz** before mention]

<Dantzer, Jazz> [Edited]

14. In one play, a character with this name talks about “a cement backyard and a front yard full of trash” when recalling a time before his parents abandoned him and his brother. For 10 points each:

[H] Identify this name, shared by a man who wears whiteface to work at an arcade and a man who works in the Great Hole of History in two plays by Suzan-Lori Parks.

ANSWER: **Lincoln**

[M] In Parks’ *Topdog/Underdog*, Booth shoots his brother Lincoln after betting his inheritance on this activity. In another play, this activity is interrupted after a radio used to play the Varsouviana is thrown out the window.

ANSWER: playing **cards** [accept **three-card monte** or **poker**; prompt on **gambling**] (The other play is *A Streetcar Named Desire*.)

[E] Along with being an impersonator, Parks’ Lincoln in *The America Play* holds this profession. A member of this profession in Act V of Hamlet throws the skull of Yorick at Hamlet while burying Ophelia.

ANSWER: **gravedigger** [accept synonyms like **cemetery worker**]

<Leahy, Drama> [Edited]

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**15. An operation analogous to this operation characterizes how well a function can be approximated by a Mobius transformation and is called the Schwarzian. This operation returns a nonzero value everywhere for a conformal map. This operation is performed successively on each row in the matrix used to calculate the Wronskian. When using vectors, the (\*) “directional” type of this operation can be expressed as a dot product with the gradient. This operation is zero at least once over closed intervals with endpoints of equal height per Rolle’s theorem. The chain rule is used to evaluate this operation for composite functions. For 10 points, name this operation that finds the instantaneous rate of change of a function, the opposite of integration.**

ANSWER: **derivative** [or **differentiation**; accept Schwarzian **derivative**; accept directional **derivative**]

<Bowman, Math> [Edited]

15. Answer the following about various language isolates throughout the world, for 10 points each.

[E] Along with Japanese, failed attempts have been made to connect this Asian language isolate to the Altaic family. This language spoken in Seoul uses the Hangul alphabet.

ANSWER: **Korean** [accept **Hanguggeo**; accept **Chosonmal**]

[M] The language isolate of Hadza is spoken on the shores of this country's Lake Eyasi. It's not in the Middle East, but Arabic holds official status in one autonomous region of this country that includes the historic Stone Town.

ANSWER: **Tanzania**

[H] Purépecha ("poo-RAY-pay-cha"), a language isolate with over 100,000 speakers, is mainly spoken in this Mexican state with capital Morelia. Thousands of troops have been deployed to this western state to fight drug cartels like La Familia.

ANSWER: **Michoacán** [accept **Michoacán de Ocampo** and **Free and Sovereign State of Michoacán de Ocampo**] <Sareddy, Geography> [Ed. Prabhakar]

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**16. A ruler of this country sent the envoy Mateus to the Portuguese court to form a military alliance, bringing back the ambassador Francisco Alvares. Vasco da Gama's son Cristóvão da Gama led a military expedition to assist this country. A civil war in this country began after the Spaniard Pedro Páez and other Jesuits converted this country's ruler (\*) Susenyos I to Catholicism. The Portuguese earlier aided this country in a war against the Adal Sultanate. At the 1441 Council of Florence, envoys from this country were surprised to hear their emperor referred to as Prester John. The Solomonic Dynasty ruled, for 10 points, what Christian country located in the Horn of Africa?**

ANSWER: **Ethiopia** [accept **Abyssinia** or the **Ethiopian Empire**] <Bowman/Prabhakar, British/European History> [Ed. Prabhakar]

16. This artist is suspected to have been trained by Levina Teerlinc, whom he succeeded in his highest post. For 10 points each:

[H] Name this English court painter and miniaturist known for the Phoenix and Pelican portraits, both of which depict Queen Elizabeth I in pearls and flowery garb.

ANSWER: Nicholas **Hilliard**

[E] Teerlinc herself succeeded this artist, the official King's Painter for King Henry VIII. This artist is best known for a double portrait of Jean de Dinteville and Georges de Selve titled *The Ambassadors*.

ANSWER: Hans **Holbein** the Younger

[M] As part of his training with Teerlinc, Hilliard would have learned how to produce these artworks. Examples of these works produced during the Middle Ages include the Lindisfarne Gospels and the Book of Kells.

ANSWER: **illuminated manuscripts** [prompt on **manuscripts** or **books**] <Delot-Vilain, Painting & Sculpture> [Edited]

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**17. Bernard Williams stated that a maxim by this thinker fails to recognize the possibility of a "third-person fact" existing without a mind to hold it. Pierre Gassendi's frequent clashes with this thinker included his critique of this thinker's distinction between imagining and perceiving using the example of a chiliagon ("KILL-ee-ah-gawn"). This thinker argued that God is an innate idea, rather than a fictitious or adventitious idea. (\*) Gilbert Ryle wrote that this philosopher made a category error that likened the mind to a "ghost in the machine." A book by this thinker imagines an evil demon that could be deceiving all of his perceptions. *Meditations on First Philosophy* was written by, for 10 points, what French philosopher who stated, "I think, therefore I am?"**

ANSWER: René **Descartes** ("day-CART") [accept Renatus **Cartesius**] <Ashbrook, Philosophy> [Edited]

17. This chemist's namesake rule, contrasted with Zaitsev's rule, states that the least substituted alkene will be the major product. For 10 points each:

[H] Name this chemist. A reaction named for this chemist uses methyl iodide to carry out an exhaustive methylation step.

ANSWER: August Wilhelm von **Hofmann** [accept **Hofmann**'s rule; accept **Hofmann** elimination or **Hofmann** degradation]

[M] In the Hofmann elimination, exhaustive methylation is used to produce a "quat," named for its resemblance to this cation. This cation with a plus-one charge is isoelectronic to methane.

ANSWER: **ammonium** cation [or  $\text{NH}_4^+$ ; accept quaternary **ammonium** salts; do NOT accept or prompt on "ammonia" or " $\text{NH}_3$ "]

[E] Another reaction that follows Hofmann's rule, ester pyrolysis, is the first step in one type of this reaction. In another type of this reaction, heating a hydrocarbon in the presence of oxygen produces carbon dioxide and water.

ANSWER: **combustion** [accept ester **combustion**; accept biodiesel **combustion**; accept hydrocarbon **combustion**] <Karthik, Chemistry> [Ed. Lei]

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18. Witold Lutoslawski's only work in this genre includes a *Cantilena* movement after "Four Episodes." A single French horn is the only brass instrument called for in one of these non-chamber works that opens with the four-note motif [read slowly] "G F-flat, up to C-flat B-flat." Victor Herbert's works in this genre inspired another composer to write one of these works premiered by Leo Stern. One of these works whose first movement features a 9/8 theme introduced by violas opens with the soloist playing a set of powerful (\*) quadruple stops. That E minor work in this genre by Edward Elgar was played in a famous recording by Jacqueline du Pré. Many works in this genre, including one in E-flat major by Dmitri Shostakovich, were dedicated to Mstislav Rostropovich. For 10 points, name this type of orchestral composition that features a low string instrument.

ANSWER: **cello concertos** [or **cello concerti**; accept answers mentioning **cello concertos** by Elgar, Dvořák, or Shostakovich; prompt on **concertos** or **concerti**] (The third line refers to Dvořák's Cello Concerto in B-minor.) <Dantzler, Classical Music> [Ed. Strombeck]

18. At the end of this novel, Jane Withersteen and Jim Lassiter seal themselves in Surprise Valley while fleeing from Elder Tull. For 10 points each:

[H] Name this novel by Zane Grey. This novel focuses on tensions between the Mormon settlers and the non-Mormon "Gentiles" in Cottonwoods, Utah.

ANSWER: ***Riders of the Purple Sage***

[E] *Riders of the Purple Sage* is a prominent example of this genre of literature and helped establish several of its tropes. Films in this genre include *Stagecoach* and *High Noon*.

ANSWER: **Western** literature

[M] Grey was a frequent participant in this activity at the University of Pennsylvania, which he wrote about in stories like "The Rube's Waterloo." Roy Hobbs participates in this activity in a Bernard Malamud novel.

ANSWER: **baseball**

<Delot-Vilain, Long Fiction> [Ed. Leahy]

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**19. When this tissue is damaged, intracellular traffic within it can be obstructed by production of P-proteins. “Yellowing” may occur due to infection of this tissue by mycoplasma-like organisms. The conductivity of plasmodesmata in this tissue is thought to determine the specificity of transporting signaling molecules within it. This tissue facilitates local active transport in a process called translocation. This tissue causes the bulk flow from “sources” to “sinks” according to the (\*) pressure flow hypothesis. Companion cells pump sucrose into this tissue, which consists of sieve tube members separated by sieve plates. In secondary growth of dicot stems, this tissue and cortex are found between cork and vascular cambia. For 10 points, name this vascular plant tissue that transports sugars and nutrients, and is contrasted with xylem.**

ANSWER: **phloem**

<Lau, Biology> [Ed. Lei]

19. This archaeological site is known for its many Danzante stone carvings. For 10 points each:

[H] Name this archaeological site that was the center of the Zapotec civilization before it was taken over by the Mixtecs.

ANSWER: **Monte Albán** [accept **Danipaguache**]

[E] Monte Albán is located in Oaxaca (“wuh-HOCK-uh”), a coastal state in the south of this modern-day country. The Toltec and Olmec civilizations were also based in this country.

ANSWER: **Mexico** [accept **United Mexican States**]

[M] Among the artifacts found at Monte Albán is a mask of the Zapotec bat god made from this material. The Olmecs also made face masks from this stone, which was also used in burial suits for Han Dynasty emperors.

ANSWER: **jade**

<Sareddy, Other History> [Ed. Prabhakar]

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**20. One character in this story takes a picture of an emaciated man and his bulls after a complaint about the lack of air-conditioning in a car. Another character in this story realizes that he has never seen his wife fully naked while fantasizing about future conversations with a woman with a strawberry symbol on her T-shirt. A tourist in this story is asked “is it really pain you feel, or is it guilt” after revealing her infidelity with her husband’s friend during a trip to the (\*) Sun Temple. At the end of this story, a man observes a family cleaning their son while a piece of paper with his address slips out of a woman’s handbag. That character, Mr. Kapasi, saves Bobby Das from a group of monkeys and translates the ailments of patients at a doctor’s office. For 10 points, name this story that titles a collection by Jhumpa Lahiri.**

ANSWER: **“Interpreter of Maladies”**

<Sareddy, Short Fiction/Other> [Ed. Leahy]

20. An official dubiously claimed that this location was selected after an agreement with the Union League of Philadelphia fell through. For 10 points each:

[M] Name this local business where the Trump campaign advertised its lawsuits over the legality of ballot-counting measures in a widely mocked press conference.

ANSWER: **Four Seasons** Total Landscaping [do NOT accept or prompt on “Four Seasons Hotel” or “Four Seasons Hotel Philadelphia”]

[E] The press conference was hosted by this attorney for President Trump, who mocked the importance of “all the networks” calling the 2020 election. This man earlier served as mayor of New York City during the 9/11 attacks.

ANSWER: Rudy **Giuliani** [or Rudolph William Louis **Giuliani**]

[H] A Super Bowl ad by this company featured the Four Seasons adding a Press Venue sign to its exterior. This Israeli online marketplace for freelancers has been criticized for promoting unhealthy aspects of the gig economy.

ANSWER: **Fiverr**

<Leahy, Current Events> [Edited]

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