

# SOUTHEAST-MIDWEST HOUSEWRITE: PACKET 11

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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. This colony's former Attorney General Jacob Milborne was executed for his part in a rebellion that was suppressed with the arrival of Henry Sloughter. An indentured servant named Mary Burton testified against John Ury in a trial concerning a conspiracy to burn this colony's largest city down in 1741. In a trial in this colony, Andrew Hamilton defended a (\*) newspaper publisher against charges of libel from William Cosby.** Leisler's Rebellion took place in this colony where John Peter Zenger was put on trial. This colony was gained by the English from Peter Stuyvesant during the Second Anglo-Dutch War. For 10 points, what Middle Colony was previously known as New Netherland?

ANSWER: Province of **New York** [prompt on New Netherland before mentioned]

<Prabhakar, American History> [Ed. Nageswaran]

1. The catalyst titanium silicalite is used with this other molecule to selectively oxidize compounds. For 10 points each:

[E] Name this molecule which can be produced via the anthraquinone oxidation process. This molecule with formula  $H_2O_2$  is often stored in brown bottles to prevent its decomposition into water and oxygen gas.

ANSWER: **hydrogen peroxide** [prompt on peroxide]

[M] One of these compounds, primarily used to produce propylene glycol, is synthesized from propylene using titanium silicalite. These compounds are cyclic ethers with a three-membered ring.

ANSWER: **epoxides** [or oxiranes]

[H] Another major use of titanium silicalite is to produce catechol and hydroquinone from hydrogen peroxide and this compound. This compound and acetone are produced from a cumene intermediate in the Hock process.

ANSWER: **phenol** [or C6H5OH]

<Karthik, Chemistry> [Ed. Lei]

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**2. Finding the volume of the amplituhedron allows for the computation of values that characterize this phenomenon. A type of this phenomenon is the dominant interaction at energy levels between those of the photoelectric effect and pair production. The shift in that type of this phenomenon is equal to "one minus cosine of theta" all multiplied by (\*) " $h$  over  $mc$ ." A type of this phenomenon that is caused by aerosols in clouds is described by Mie theory. Arthur Compton discovered an inelastic type of this phenomenon between electrons and photons. Because Rayleigh's model of this phenomenon is more accurate at short wavelengths, it explains why the sky is blue. For 10 points, name this phenomenon in which one particle alters the trajectory of another particle.**

ANSWER: **scattering** [accept Compton scattering or Rayleigh scattering or Mie scattering; accept scattering amplitudes]

<Karthik, Physics> [Ed. Bowman]

2. The first of these sections repeats the phrase “these are the days my friends” in a spoken passage beginning “Will it get some wind of the sailboat.” For 10 points each:

[H] Name these sections of a larger work that often include a chorus repeatedly counting up from 1. The fifth and last of these sections comes after “Spaceship” and describes two lovers sitting on a park bench in the moonlight.

ANSWER: **knee plays** [do NOT accept or prompt on “Einstein on the Beach”]

[E] Knee plays divide the sections of *Einstein on the Beach*, a plotless opera by this minimalist composer. *Einstein on the Beach*, along with *Satyagraha* and *Akhmaten*, form this composer’s “Portrait Trilogy.”

ANSWER: Philip **Glass**

[M] The section “I Feel the Earth Move” in *Einstein on the Beach* is set in one of these locations. In a much earlier opera, Leonore saves her husband Florestan from one of these locations supervised by Don Pizarro.

ANSWER: **prisons** [accept equivalents like **jails**]

<Dantzler, Opera> [Ed. Strombeck]

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**3. Cybele transformed some of these things into a group of nymphs that were led by Cymodocea. The slave girl Pholoe was given to Sergestus for saving one of these objects even though he lost to Cloanthus in a competition involving these objects. Gyas wins that competition with one of these objects called the (\*)**

Chimaera. At the behest of Juno, Iris convinces a group of women to burn these objects. One figure’s namesake obol allowed spirits to use one of these things and Book Two of the Iliad includes a catalogue of these things. By using the Golden Bough, Cumaean Sibyl and Aeneas were granted access to one of these objects belonging to Charon. For 10 points, the Argo is what sort of vehicle?

ANSWER: **ships** [accept **boats**; prompt on **trees** before Pholoe by asking “What objects were the trees made into?”]

<Prabhakar, Mythology> [Ed. Groger]

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3. In one play by this author, the artist Emily and her husband, the lawyer Amir, host Jory and Isaac for a dinner party that quickly spirals out of control. For 10 points each:

[H] Name this author of the play *Disgraced*. This author’s most recent novel is the semi-autobiographical *Homeland Elegies*.

ANSWER: Ayad **Akhtar**

[E] Many of Akhtar’s works focus on Americans of this faith. In *Disgraced*, Amir, who has mostly renounced this faith, is likely passed over for a promotion because he defended an imam of this faith in court.

ANSWER: **Muslim**-Americans [accept **Islam**]

[M] Like Akhtar, the narrator of *Homeland Elegies* grows up in this state. The first novel in Laura Ingalls Wilder’s Little House series, *Little House in the Big Woods*, is set in this state.

ANSWER: **Wisconsin**

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

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**4. A piano sonata in this key signature has a *Grave* (“GRAH-vay”) introduction to its first movement that transitions to rapidly ascending chords over oscillating octaves. In a symphony in this key, the timpani repeats the tonic during the building transition from a scherzo in this key to a joyful finale in its parallel major. This key is used for the “Funeral March” second movement of the (\*) *Eroica* Symphony, as well as the outer movements of the *Pathetique* Sonata. A symphony in this key has a repeating motif of “short short short long,” compared to “fate knocking at the door.” Beethoven used this “stormy” key signature for his Fifth Symphony. For 10 points, name this key that is the relative minor of E flat major and begins on the same note as the major scale with no sharps or flats.**

ANSWER: **C minor** [prompt on **C**; do NOT accept or prompt on “C major”]

<Dantzler, Classical Music> [Ed. Strombeck]

4. Followers of a cargo cult named for this man opposed the independence of one state, fearing it would lead to Westernization undermining their traditional *kastom*. For 10 points each:

[H] Name this man, whose eponymous cargo cult started in the late 1930s and encouraged the rejection of Western culture. The Tanna Army, followers of that cult, celebrate February 15th as the day this man will return.

ANSWER: **John Frum** [accept **Jon Frum** or **John Brum** or **John Prum**; prompt on partial answers]

[M] Followers of the John Frum movement live on the island of Tanna in Vanuatu, a country formerly ruled by these two colonial powers. The earlier Fashoda Incident illustrated tensions between these two colonial powers.

ANSWER: **France** and Great **Britain** [accept in either order; accept **France** and **United Kingdom**; accept **France** and **U.K.**; or **France** and **United Kingdom of Great Britain and Northern Ireland**]

[E] John Frum is often shown as a World War II-era soldier from this country. Many Vanuatians helped the military of this North American country during the Guadalcanal Campaign.

ANSWER: **United States** of America [accept **U.S.A.** or **U.S.** or **America**]

<Sareddy, Other History> [Edited]

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**5. One character in this novel smiles upon seeing a bird in the reflection of the dying dog Khubchand's testicles. A former Rhodes scholar in this novel orders a boy to roll up his windows during a march. That boy notices an armless man wearing only a plastic bag and wears his hair in an "Elvis-puff." At a funeral in this novel, a bat makes its way into an old woman's dress. In this novel, the English woman Margaret marries Joe, prompting her ex-lover Chacko to take ownership of (\*) Paradise Pickles. One of the protagonists of this novel is molested during a performance of The Sound of Music by the Orangedrink Lemondrink man. Velutha is savagely beaten by police for crossing caste-lines in this novel, which ends with the fraternal twins Rahel and Estha committing incest. For 10 points, name this first novel by Arundhati Roy.**

ANSWER: *The **God of Small Things***

<Kala, Long Fiction> [Ed. Leahy]

5. Answer the following about orthogonal matrices, for 10 points each.

[E] A matrix  $A$  is orthogonal when " $A$  times  $A$ -transpose" equals one of these matrices. These matrices have zeroes everywhere except for ones along the main diagonal.

ANSWER: **identity** matrices

[M] The row vectors of an orthogonal matrix form an orthonormal basis, meaning they are mutually perpendicular and each have this property. Vectors with this property are denoted with a hat over the letter symbolizing them.

ANSWER: their **magnitude** is **1** [or they have **unit length** or are **unit** vectors; accept any answers indicating that the length of the vector is equal to **1**; prompt on **normalized** with "what is the magnitude of a normalized vector?"]

[H] This decomposition puts a matrix in the form of an orthogonal matrix times an upper triangular matrix. This decomposition is often used to solve linear least-squares problems.

ANSWER: **QR** decomposition

<Karthik, Math> [Ed. Bowman]

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*Note to moderator: read the answerline carefully before reading out the question.*

**6. Description acceptable. An oft-quoted section of the Book of Malachi (“MAL-ah-kye”) is about God urging the sons of Jacob to perform this action to open the window of heaven. Oral Roberts called this practice forming a “blessing pact” with God and was one of the first preachers to designate “church partners” for people who performed it. It isn’t Eucharist-related, but some Protestant masses have a section called the offertory dedicated to this practice. This practice is the main component of (\*) “seed faith.”** The idea that doing this practice will increase God’s favor is one of the main tenants of prosperity theology. Modern preachers who support this practice often argue that God will return the favor “seven fold.” For 10 points, name this practice encouraged by many televangelists in order to make a profit off their preaching.

ANSWER: **tithing** [or word forms such as giving **tithes**; accept **giving money to the Church** or synonyms like **donating money to the Church**; accept equivalents to the Church indicating it’s the organization or people who run it, like **heads of the Church** or the **Church people**; accept **charity to the Church** or **almsgiving to the Church**; prompt on **giving money** or equivalents by asking, “To whom or what?”; prompt on **charity** or **almsgiving** alone by asking, “Who or what is the target of the charity/almsgiving?” prompt on **giving** alone or equivalents by asking, “giving what and giving to whom?”]  
<Ashbrook, Religion> [Edited]

6. During one campaign, this man remarked that Hubert Humphrey was the “last significant politician out of the St. Paul – Minneapolis area.” For 10 points each:

[M] Name this civil rights leader who founded the National Rainbow Coalition and Operation PUSH. Along with Florence Pendleton, this minister was one of the first shadow senators of Washington D.C.

ANSWER: Jesse Louis **Jackson** Sr.

[E] Jackson's jibe about Hubert Humphrey was aimed at Walter Mondale, who held this political office under Jimmy Carter. Hubert Humphrey himself held this political office under Lyndon B. Johnson.

ANSWER: **Vice President** of the United States [or **VP**; accept **Veep**]

[H] Like Jackson, this Ohio Senator was a candidate in the 1984 Democratic primaries. This man and John McCain were the only members of the Keating Five to be cleared of improper conduct.

ANSWER: John Herschel **Glenn** Jr.

<Alaro, American History> [Ed. Nageswaran]

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**7. This company invented the COM architecture that allows applications to be built from binary software components. This company unveiled its QDK in 2020, allowing users to write code for quantum computers. In the Blazor framework created by this company, users can create webapps with a language that is also used in the Unity game design platform. This company runs services like its Blockchain Workbench through its cloud computing platform called (\*) Azure.** This company develops the Visual Studio Code source-code editor. C-sharp was created as part of this company’s .NET initiative. The founder of this company developed a version of BASIC usable on PCs. For 10 points, name this company that develops the Windows operating system.

ANSWER: **Microsoft**

<Bowman, Computer Science> [Edited]

7. Answer the following about high-frequency trading, for 10 points each.

[M] High-frequency trading revolves around trading these assets, which represent a debt or equity. Stocks and bonds are types of these tradable financial assets.

ANSWER: **securities** [or **security**; prompt on **stock** or **bond**]

[H] High-frequency trading increases the liquidity in the market, which in turn raises the “spread” between these *two* prices. These *two* prices represent the prices at which a firm is willing to buy and sell a security.

ANSWER: **bid** price AND **ask** price [accept **bid-ask** spread; prompt on either answer individually]

[E] High-frequency trading is done using these devices due to their ability to handle large amounts of data and quickly make orders, making them much more efficient than human traders.

ANSWER: **computers** [or super**computers**; accept Bloomberg **terminals**; prompt on **machines**]

<Bowman, Economics> [Ed. Ashbrook]

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**8. It's not pink, but this color was used for the background of the earliest portrait of Madame Ginoux sitting with an open book. Green doors and shutters appear on a building of this color in a painting showing it at the corner of Place Lamartine. Several empty tables and chairs sit below an awning of this color in the painting *Café Terrace at Night*. Three French women in a field kneel around a figure of (\*) this color in a religious painting named for this color. This is the color of the floor in *The Night Café*. Paul Gauguin and Vincent van Gogh lived together in an Arles house of this color. Gauguin also used this primary color to depict a sickly Jesus on the cross in his painting [*this color*] *Christ*. For 10 points, name this color used by van Gogh to paint many sunflowers.**

ANSWER: **yellow** [accept *The **Yellow** House*; accept **Yellow Christ**]

<Strombeck, Painting & Sculpture> [Edited]

8. A non-scientist Bill Nye attacks the "heathen chinee" Ah Sin in a satirical poem about this activity. For 10 points each:

[H] Name this activity. At the end of a short story by the author of that poem, a character writes an epitaph on an object central to this activity and pins it to a tree after shooting himself in the heart with a Derringer.

ANSWER: playing **cards** [or playing **poker**; prompt on **gambling**]

[M] John Oakhurst kills himself after writing that he had “struck a streak of bad luck” on a playing card in "The Outcasts of Poker Flat," a story by this author of "The Luck of Roaring Camp."

ANSWER: Bret **Harte**

[E] Harte set many of his stories in this state. “The Luck of Roaring Camp” concerns gold miners in this state, where John Steinbeck set *Of Mice and Men*.

ANSWER: **California**

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

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**9. This non-British leader used the military strategy laid out in the Maitland Plan after being introduced to it by members of the Lodge of Rational Knights. This leader's subordinate Juan Cabral sacrificed himself to save this leader who was trapped under his dead horse at the Battle of San Lorenzo. At the Yatasto Relay, this man took command of the Army of the North from Manuel (\*) Belgrano. This general and his troops undertook the Crossing of the Andes with Bernardo O'Higgins before their forces won the Battles of Chacabuco and Maipú. This leader abdicated as Protector of Peru after meeting with Simon Bolivar at the Guayaquil (“GWY-ah-keel”) conference. For 10 points, name this Argentine military leader who liberated much of southern South America from Spanish rule.**

ANSWER: José Francisco de **San Martín** y Matorras

<Lau, World History> [Ed. Prabhakar]

9. Ribbit. Answer the following about frogs in mythology, for 10 points each.

[E] In some Native American legends, frogs lost their tails after helping this trickster figure steal fire. A Navajo myth claims this canine trickster figure turned Changing Bear evil, causing her to kill her brothers.

ANSWER: **Coyote** [accept **Ola'li** or **Sedit** or **Ueuecoyotl** or **Yelis** or **Ja'mu** or **Mo'luptsini'sla** or **Ispilyay** or **Itsappa** or **Itsappe** or **Izabui** or **Isapaippi** or **Isapaippu** or **Isa'opaippeh** or **Itsappu** or **Isappu** or **Sinawavi** or **Talapus**]

[M] This figure from Greek mythology turned a group of Lycian peasants into frogs after they refused to let her drink water. This figure's children, Apollo and Artemis, killed all 14 of the Niobids after Niobe insulted her.

ANSWER: **Leto** [accept **Latona**]

[H] Whowie ("HOO-wee") is a giant, six-legged, frog-headed, man-eating monster in the mythology of these people. Another of these people's myths claims that their creator god brought water into the world by tickling the bellies of frogs.

ANSWER: **Aborigines** [accept Australian **Aborigines** or **Aboriginal** Australians]

<Prabhakar, Mythology> [Ed. Groger]

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**10. A poem in this form describes how "Chinese tombs and the slag hills" usurp the soil; that poem by William Empson says "the waste remains and kills" and claims that "the heart expires" from the title "Missing Dates." The speaker of a poem in this form "shut [her] eyes and all the world drops dead" before repeating the line "I think I made you up inside my head." This form was used to write Sylvia Plath's "Mad Girl's Love Song," as well as a poem that begins "The art of (\*) losing isn't hard to master." A poem in this form describes "grave men, near death" and "wild men who caught and sang the sun in flight." That poem in this form urges the listener to "rage, rage against the dying of the light." Dylan Thomas' "Do not go gentle into that good night" was written in, for 10 points, what 19-line poetic form?**

ANSWER: **villanelle** (The "art of losing" quote is from Elizabeth Bishop's "One Art.")

<Leahy, Poetry> [Edited]

10. This structure can be cleaved by RuvC, resulting in resolution to either the "crossover" or "patch" conformations. For 10 points each:

[H] Name this cruciform structure discovered by its namesake scientist in 1964, where DNA sequences are exchanged during branch migration.

ANSWER: **Holliday** junction

[E] Holliday junctions are structural intermediates in homologous recombination, which causes "crossing over" during this process of cell division contrasted with mitosis.

ANSWER: **meiosis**

[M] Another method of dealing with double stranded breaks is NHEJ, which can result in one of these chromosomal abnormalities. The Philadelphia chromosome is a cancer-causing one of these abnormalities.

ANSWER: **translocation**

<Lau, Biology> [Ed. Lei]

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**11. Disputes about where this sport originated often center on the pre-Columbian use of *caballitos de totora* in Peru. In a failed racial migration scheme, Alexander Hume Ford popularized this sport on the east coast of the United States. An athlete in this sport named Mark Foo popularized the phrase "Eddie would go" among practitioners of this sport and later died at a center for it in (\*) Mavericks, California. Wiliwili trees were historically used to make some items used in this sport known as *olo*. George Freeth and Duke Kahanamoku introduced this sport to the United States in the early 20th century. Participants in this sport may attempt to balance without using their toes, or "hang ten." For 10 points, identify this sport in which the athlete rides a wave on a board.**

ANSWER: **surfing** [accept **he'e nalu**; accept **wave sliding**; accept big wave **surfing**]

<Delot-Vilain, Other> [Ed. Leahy]

11. The presence of these beings causes the speaker of one poem to “hold [himself] back and swallow the cry of a darkened sobbing.” For 10 points each:

[H] Name these beings who "would often not know whether they moved among living or dead" in the first poem of one collection. That poem states that these beings would “utterly trample their market of solace.”

ANSWER: **angels** [or **Engel**]

[E] This author penned the line “Who, if I cried out, would hear me among the Angelic Orders?” to begin his *Duino Elegies*.

ANSWER: Rainer Maria **Rilke**

[M] In the first Duino Elegy, Rilke asks if one has remembered this female Italian Renaissance poet “sufficiently yet.” This poet is best known for writing 300 poems to her lover, the count Collaltino di Collalto.

ANSWER: Gaspara **Stampa**

<Karthik, Poetry> [Ed. Leahy]

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**12. Saul Winstein and H. C. Brown heavily debated the nature of bonding in one type of these species, which was confirmed to be non-classical using crystallography in 2013. Beta-silicon atoms provide additional thermodynamic stability to one type of these species. That type of these species is easily formed in a one-to-one mixture of antimony pentafluoride and fluorosulfuric acid, which George Olah used to study them. An (\*) intermediate of this type known as a sigma complex is formed in electrophilic aromatic substitution. Hydride or methyl groups spontaneously migrate when these species rearrange. Tertiary examples of these species containing carbon are more stable than primary ones. For 10 points, name these positively charged ions.**

ANSWER: carboc**ations** (“car-boh-CAT-eye-ons”) [prompt on **ions**]

<Zhao, Chemistry> [Ed. Lei]

*Note to moderator: Emphasize the italicized word in the third part of this bonus.*

12. A mass gathering in the hometown of this event’s target caused a stampede that killed 56. For 10 points each:

[M] Name this January 2020 event, which was hastily ordered following an attack on a Baghdad embassy. This event targeted an official as he was leaving Baghdad International Airport.

ANSWER: **assassination** of Qasem **Soleimani** [accept any answer describing the **kill**ing of Qasem **Soleimani**]

[E] Soleimani worked with the Peshmerga to retake Tikrit from this self-proclaimed caliphate in 2015. This group’s destruction of cultural sites in Palmyra and beheadings of Americans led to its classification as a terrorist group.

ANSWER: **I**slamic **S**tate [or **ISIS** or **ISIL** or **Daesh**; accept **I**slamic **S**tate of Iraq and Syria; accept **I**slamic **S**tate of Iraq and the Levant]

[H] Following Soleimani’s death, a flight from this country’s largest airline was shot down by the IRGC. In March 2020, the Netherlands began the trial of four foreigners for an earlier shooting down of a plane *in* this country.

ANSWER: **Ukraine**

<Strombeck, Current Events> [Ed. Nageswaran]

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**13. This country and its northern neighbor share the shortest international land border in the world, which separates this country from the tied island of Peñón (“pen-YONE”) de Velez de la Gomera. Tree-climbing goats can be found in this westernmost home of the *argan* tree, whose oil is extracted by women’s cooperatives in this country. A sand berm runs through one of this country’s disputed territories, which has its capital at (\*) Laayoune (“lah-YOON”). This country’s longest river, the Draa, provides water to inland cities in this country including Zagora and Ouarzazate (“WARE-zeh-zeh”). This country controls around 80% of the disputed region of Western Sahara. For 10 points, name this North African country with capital at Rabat.**

ANSWER: Kingdom of **Morocco**

<Sareddy/Prabhakar, Geography> [Ed. Prabhakar]

13. Answer the following about the Raphael Rooms, for 10 points each.

[M] The Raphael Rooms were originally intended as a suite of apartments for this pope who commissioned many of Raphael's works, as well as Michelangelo's ceiling of the Sistine Chapel.

ANSWER: Pope **Julius II** [or Giuliano **della Rovere**; prompt on Pope **Julius**]

[E] The most famous work of the Raphael Rooms is this fresco in the Stanza della Segnatura, which depicts various philosophers like Plato and Aristotle.

ANSWER: *The **School of Athens*** [or ***Scuola di Atene***]

[H] While *The School of Athens* represents philosophy, this other fresco in the Stanza della Segnatura represents poetry. It depicts Apollo playing an instrument in a grove while surrounded by the nine muses.

ANSWER: *The **Parnassus*** [***Il Parnaso***]

<Dantzer, Painting & Sculpture> [Edited]

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**14. In a play by this author, the bodyguards Slick and George search the protagonist's room but are unable to find a revolver hidden by his fiancee. Later in that play, the protagonist uses that revolver to kill the secretary of the Illyrian Communist Party, Hoederer. In another play by this author, one character refuses to sit on a sofa because she is (\*) "in pale blue and it's vivid green." This author, who wrote about Hugo Barine in *Dirty Hands*, wrote a play in which one character asks "Where are the instruments of torture?" to another whose uncle lives on the third floor. Earlier in that work, a valet who lacks eyelids collects three people in a room with Second Empire furnishings. For 10 points, name this author who proclaimed that "Hell is other people" in *No Exit*.**

ANSWER: Jean-Paul **Sartre**

<Karthik, Drama> [Ed. Leahy]

14. Answer the following about the city of Pressburg, for 10 points each.

[M] The first mention of Pressburg comes from 907 AD, when Luitpold of Bavaria was defeated at the Battle of Pressburg by these people led by their prince Árpád. Otto the Great defeated these people at the Battle of Lechfeld.

ANSWER: **Magyars** [prompt on **Hungarians**]

[H] The War of the Third Coalition was ended by the 1805 Peace of Pressburg between Napoleon and this final Holy Roman Emperor. Along with Tsar Alexander I of Russia, this emperor was defeated at the Battle of Austerlitz.

ANSWER: **Francis II** [accept **Franz II**; prompt on **Francis** or **Franz**]

[E] After World War I, Pressburg was renamed Bratislava and is now the capital of this country. This country was united with Czechia for much of the 20th century until the Velvet Divorce in 1992.

ANSWER: **Slovakia**

<Karthik, British/European History> [Ed. Prabhakar]

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**15. The Rajput king Jai Singh II ordered the construction of five of these places collectively called the Jantar Mantars. The *Zij-i Sultani* was published at one of these places with the help of devices like armillary spheres. Along with a *madrasa*, one of these places was built in Samarkand by (\*) Ulugh Beg. John Flamsteed was the first occupant of one of these places designed by Christopher Wren. Ptolemy wrote the *Almagest* in one of these places in Alexandria, and these places often contain astrolabes and sundials. The island of Hven was home to one of these places called Uraniborg that was used by Tycho Brahe. Greenwich is home to an example of, for 10 points, what places from which astronomers can make measurements?**

ANSWER: **observatory** [accept **observatories**; accept **sundials** until "Zij" is read and prompt on it afterwards]

<Karthik, Other History> [Ed. Karthik]

15. Answer some questions about people who didn't like the theories of John Rawls, for 10 points each.

[E] Much critique against Rawls is around his belief that this concept can be attained by building society from behind a "veil of ignorance." Rawls defined this concept as "fairness" in his book on *A Theory of it*.

ANSWER: justice [accept *A Theory of Justice*]

[M] This thinker argued against Rawls by saying that a just society necessitates inequality. This thinker's book *Anarchy, State, and Utopia* is a libertarian response to Rawls.

ANSWER: Robert Nozick

[H] This philosopher argued that even in a hypothetical new state, personal ties like family would make a "veil of ignorance" impossible. This thinker taught an extremely popular course on justice while at Harvard.

ANSWER: Michael (Joseph) Sandel

<Ashbrook, Philosophy> [Edited]

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**16. In a story by this author, a man theorizes about actinic rays to explain invisible monsters; that man, Hugh Morgan, is ruled to have died as a result of a mountain lion attack. In another story by this author of "The Damned Thing," the narrator doubts the validity of Herbert Spenser's definition of "life" before he is rescued by the metalworker Haley from a burning house. In that story by this author, an inventor is killed by his own (\*) automaton after defeating it in chess. In another story by this author, a patch of gravel on a riverbank is compared to gemstones as a character escapes from a grey-eyed marksman. In that story by this author, Peyton Farquhar envisions returning to his plantation before being hanged by Union troops. For 10 points, name this author of "Moxon's Master" and "An Occurrence at Owl Creek Bridge."**

ANSWER: Ambrose Gwinnett Bierce

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

16. Yemeni people known as *Teimani* visiting these places traditionally remove their shoes before entering. For 10 points each:

[M] Name these places with platforms called *bimah*. These places have a perpetually lit lamp whose name translates to "eternal light."

ANSWER: synagogues [accept *bet kneset*; accept *bet tefila*; prompt on temples]

[E] Synagogues host these coming-of-age ceremonies for Jewish children when they reach the age of 13, the non-Orthodox version of which involves reading the Torah to the congregation. Either ceremony name is acceptable.

ANSWER: bar mitzvah [or bat mitzvah; accept b'nai mitzvah; accept b'not mitzvah]

[H] Some synagogues have a structure called a *mechitza* for this purpose during prayer. Asra Nomani led a modern movement advocating for ending rules with this purpose in mosques.

ANSWER: separating men and women [accept anything relating to men and women being in different locations during prayer]

<Prabhakar, Religion> [Edited]

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**17. This film's cinematographer created an effect that used a mirror to superimpose actors onto miniature set pieces, known as the Schüfftan process. A shot of Death playing a bone like a flute is included in a montage in this film that also shows a kaleidoscopic image of businessmen's eyes and a dancing woman. This film's protagonist stands in for a man running a clocklike machine after seeking help from the assistant (\*) Josaphat. The protagonist of this film hallucinates slaves being fed to Moloch after wandering underground. The evil scientist Rotwang builds a robotic woman to incite riots among workers who live underground and power a city run by Joh ("Joe") Frederson in this film. For 10 points, name this 1927 Fritz Lang film about a giant city.**

ANSWER: Metropolis

<Ashbrook, Film> [Edited]

17. Along with Daman and Diu (“dee-yoo”), this region was annexed in an invasion by K. P. Candeth. For 10 points each:

[M] Name this former Portuguese colony that was annexed in 1961 as part of Operation Vijay. Afonso de Albuquerque conquered this region for the Portuguese Empire in 1510.

ANSWER: **Goa**

[H] Operation Vijay also refers to the Indian operation in this 1999 conflict which began after Pakistani forces crossed the Line of Control. Indian troops defeated the Pakistanis at the Battle of Tololing during this conflict.

ANSWER: **Kargil** War [accept **Kargil** conflict]

[E] Both operations employed bombers named for this other country’s capital city as part of air raids and reconnaissance. Indian prime minister Morarji Desai (“des-EYE”) was nearly assassinated in this country’s city of Sydney.

ANSWER: **Australia**

<Karthik, World History> [Ed. Prabhakar]

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**18. One type of these organisms secretes a signaling molecule called QMP, and balling behavior occurs in them when they are treated with secretions from the Koschevnikov glands. The consumption of ethanol reduces a phenomenon in these organisms in which they secrete tricosane and pentacosane. These organisms’ larvae turn dark brown and take on a “chinese slipper” appearance when infected with the Sacbrood virus, which is associated with an event exacerbated by neonicotinoids. That event is likely caused by infections of the (\*) *Varroa destructor* mite in these organisms’ populations. Karl von Frisch explained a behavior in these organisms that is characterized by a figure eight pattern, the waggle dance. For 10 points, name these organisms of genus *Apis* that are affected by colony collapse disorder, which causes spontaneous hive collapse.**

ANSWER: **honey bees** [accept ***Apis*** before mention; prompt on **bees**; prompt on **queens**]

<Valan, Biology> [Ed. Lei]

18. Answer some questions about the moment of inertia, for 10 points each.

[M] Name this theorem which calculates the moment of inertia at a reference point that isn’t the center of gravity.

ANSWER: **parallel axis** theorem

[E] For an ideal one of these objects, the moment of inertia is equal to  $m$  times  $r$ -squared. These objects consist of a mass on a string that oscillates back and forth.

ANSWER: **pendulum**

[H] According to this theorem, an object with three different moments of inertia is rotationally stable around its first and third axes, but not its second.

ANSWER: **tennis racket** theorem [or **intermediate axis** theorem; accept the **Dzhanibekov** effect]

<Ashbrook, Physics> [Ed. Bowman]

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**19. This politician’s opponents ended his first government after joining forces in the Lichfield House Compact. During a failed assassination attempt, this politician’s secretary Edmund Drummond was killed by the lumberjack Daniel M’Naghten (“mc-NOT-en”). The Bedchamber Crisis began after this politician refused to form a government after Lord Melbourne’s resignation. This issuer of the (\*) Tamworth Manifesto covertly purchased American maize during his second term after the start of the Irish Potato Famine. As Home Secretary, this politician founded the Metropolitan Police Service, causing them to be nicknamed “bobbies.” For 10 points, name this Conservative prime minister who repealed the Corn Laws.**

ANSWER: Robert **Peel**, Second Baronet

<Lau, British/European History> [Ed. Prabhakar]

19. George Bernard Shaw argues this play's matriarch "would be justified in walking out of *her* house" in an essay collection on the "Quintessence" of its author. For 10 points each:

[H] Name this play. A painter in this play claims all of his paintings "turned upon the joy of life" and draws inspiration from his incestuous relationship with his half-sister.

ANSWER: ***Ghosts*** [or ***Gengangere***]

[E] *Ghosts* is a play by this Norwegian author, who depicted Nora Helmer slamming the door on her husband Torvald in the play *A Doll's House*.

ANSWER: Henrik **Ibsen**

[M] In *Ghosts*, the Alving family is persuaded to not insure a building of this type to show their "right faith in a Higher Providence." That building of this type burns down after Pastor Manders tosses a candle into some wood shavings.

ANSWER: an **orphanage**

<Saredy, Drama> [Ed. Leahy]

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**20. This thinker's argument against relations being intrinsic to entities became known as their doctrine of external relations. This thinker analogized substances to a postal directory, arguing that they may be mental or physical depending on the context. This proponent of neutral monism proposed that any function has a formally equivalent function at the first level, known as the axiom of (\*) reducibility. This thinker broke from the object theory of Alexius Meinong ("MAY-non") in an essay that questions the meaning of the sentence "The present king of France is bald;" that essay is "On Denoting." For 10 points, name this English logician who, with Alfred Whitehead, attempted to formalize all mathematics to logic in the book *Principia Mathematica*.**

ANSWER: Bertrand Arthur William **Russell**

<Ashbrook, Philosophy> [Edited]

20. In a setting of this specific text, thundering G minor chords alternate with bass drum hits. For 10 points each:

[M] Name this section of the Requiem mass, the first in the *Sequentia*. An oft-quoted Gregorian chant setting of this text begins with the notes [read slowly] "F, E, F, D, E, C, D."

ANSWER: "**Dies Irae**" [accept "The **Day of Wrath**"]

[E] This composer included an apocalyptic "Dies Irae" in his *Requiem*. This composer is better known for his many operas, such as *Rigoletto* and *Aida*.

ANSWER: Giuseppe **Verdi**

[H] Verdi created a setting of this hymn as part of his late collection *Quattro pezzi sacri*. Giovanni Pergolesi's most famous sacred piece is a setting of this Latin hymn.

ANSWER: ***Stabat Mater dolorosa***

<Strombeck, Classical Music> [Edited]

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