**2021 WORKSHOP:** How did I never notice that your username is Santa Claus and mine is reindeer? Produced by Olivia Murton, Kevin Wang, Wonyoung Jang, Jordan Brownstein, Adam Fine, Will Holub-Moorman,

Athena Kern, JinAh Kim, Zachary Knecht, Caroline Mao, Christopher Sims, and Will Grossman

Packet 5

Tossups

1. This author described a train "bringing the cheque and the postal order" in a poem that notes, "for who can bear to feel himself forgotten?" A poem by this author imagines "cerebrotonic ("cerebro-tonic") Cato... extol[ling] the Ancient Disciples," and ends with herds of reindeer moving "silently and very fast" on golden moss. An "artificial wilderness / and a sky like lead" surprises a figure expecting "marble well-governed cities" on the title object of a poem by this author. This author declared (\*) "the lights must never go out / the music must always play" in another poem. This author of "The Fall of Rome" watches "the clever hopes expire / of a low dishonest decade," before asserting, "we must love one another or die." For 10 points, name this author of "The Shield of Achilles" and "September 1, 1939."

ANSWER: W. H. <u>Auden</u> [or Wystan Hugh <u>Auden</u>] (The first line poem is "Night Mail.") <RW, American Literature>

2. In a feminist reinterpretation of a painting from this modern-day country, Frima Fox Hofrichter noted how the painting's central figure is an "embarrassed victim." An artist from this modern-day country signed her paintings with her initials and a star, which ultimately revealed the misattribution of her works to contemporaries such as her husband. In a painting from this country, a woman rests her feet over glowing coals as she (\*) sews by candlelight and a man leans over her shoulder. *The Proposition* is a painting from this modern-day country, another painting from which depicts an owl perching on a beer-drinking woman. Judith Leyster was an artist from, for 10 points, what modern-day European country that was home to the artist of *Malle Babbe*, Frans Hals?

ANSWER: The <u>Netherlands</u> [accept <u>Holland</u>; or <u>Nederland</u>en; or <u>Dutch</u> Republic] <FW, Visual Arts>

3. One version of this practice arose when Muhammad performed it during a solar eclipse that coincided with the death of Ibrahim; this practice is now obligatory during eclipses. Abu Darda recorded a saying that indicated the necessity of sleeping prior to an optional type of this practice called *Tahajjud*. Thanks to the intervention of Moses, the amount of this practice required was (\*) reduced tenfold. Reciting the *Takbir* and *Al Fatiha* are part of this practice's cycles or *Rakats*. Once a week, the *zuhr* variety of this practice is replaced by the communal *jumu'ah* type. This practice is performed facing in the direction instructed by the *qiblah* and is announced by the *adhan*. For 10 points, name this pillar of Islam that Muslims perform five times a day.

ANSWER: Islamic **prayer** [or **salat** or **salah**] <FW, Religion>

4. Free-electron lasers are used in the serial femtosecond type of this technique, which can destructively image smaller samples. The Patterson function, which is a sum of Fourier transforms of intensities, can be used to solve for a quantity that cannot be measured with this technique. Kathleen Lonsdale's use of this technique to study (\*) hexamethylbenzene ("hexa-methyl-benzene") found a length difference between aliphatic and aromatic C–C bonds, contributing to the idea of resonance. Dorothy Hodgkin used this technique to discern the 3D structure of insulin. This technique uses wavelengths on the order of atomic spacings, making its scattering follow Bragg's law. For 10 points, name this analytical technique in which high-energy radiation is used to determine molecular structure.

ANSWER: <u>X-ray crystallography</u> [or <u>XRC</u>; accept <u>X-ray diffraction</u> or <u>XRD</u>; prompt on <u>crystallography</u>] <EGU, Chemistry>

5. A variant of this language known as its "white dialect" is used between speakers from regions whose dialects are less mutually intelligible. This is the most widely spoken language in which coronal consonants cause assimilation of the definite article, which distinguishes "sun" from "moon" letters. A group of dialects of this language are called "Hilalian" after an 11th-century group of nomadic invaders. The extinct (\*) "Siculo-" variety of this language developed into Maltese. This language's large influence on Spanish is seen in the subjunctive mood trigger *ojalá* ("oh-hah-LA"), which roughly translates as "god willing." For 10 points, name this Semitic language spoken throughout the Maghreb and Middle East, whose Classical variety is the liturgical language of Islam.

ANSWER: Arabic [or al-arabiyya, or arabi]

<EGU, Social Science>

6. One of this author's characters meets his wife while working as a donkey-boy, but divorces her to marry a prostitute before becoming the chief of the title group. Idris convinces his brother's wife to steal the title man's will in a novel by this author. In that novel by this author, hearing his grandfather's voice in the desert inspires a man to save all the souls near the title character's house before that man is murdered. After (\*) disobeying her husband and leaving the house, a woman created by this author collapses from the heat, is hit by a car, and breaks her collarbone. This author of *The Harafish* and *The Children of Gebelawi* wrote a series about Al-Sayyid Ahmed's family, which begins with *Palace Walk*. For 10 points, name this Egyptian author of *The Cairo Trilogy*.

ANSWER: Naguib <u>Mahfouz</u> <PS, World Literature>

7. An event named after one of these things was spurred by a failed bombing of Roza Otunbayeva's flat. The youth group "Kmara" was involved in an event named after one of these things that was followed by a legitimacy crisis in Adjara. António de Spínola advocated for the end of the Overseas War in the leadup to an event named for one of these things that dismantled the ideology of "pluricontinentalism." Askar Akayev was (\*) ousted in an event named after one of these things two years after Eduard Shevardnadze ("sheh-vard-NOD-zeh") stepped down after being accosted with one of these things. A Eurovision entry was a signal for rebel leaders to mobilize against Marcelo Caetano's ("kye-TAH-noo's") Estado Novo during an event named after, for 10 points, what sort of thing that names a revolution in Portugal?

ANSWER: <u>flowers</u> [accept <u>tulips</u>, <u>roses</u>, or <u>carnation</u>s, but do not accept or prompt on any other specific type of flower]

<MM, Other History>

8. A road trip film from this country required its crew to push a car through a toll booth because its lead actor could not drive. That film from this country is the second in a loose trilogy of films that each treat the previous films as fictional in their respective universe. This home country of the director of *And Life Goes On* is the setting of another film in which shots of a photocopier scanning passports are followed by divorce proceedings between the two owners of those passports. In a film from this country that (\*) won the Oscar for Best Foreign Language Film in 2012, Simin tries to flee the country with her husband Nader and their daughter Termeh. *A Separation* is a film from, for 10 points, what Middle Eastern home country of the directors Asghar Farhadi and Abbas Kiarostami?

ANSWER: <u>Iran</u> [or Islamic Republic of <u>Iran</u>] <MF, Other Arts>

9. Description acceptable. The time scale of this process can be estimated via namesake dimension-6 operators, which contain the square of the cutoff scale in their denominators. Water-based neutrino detectors such as the IMB detector also provide the most stringent bounds on this process. According to the Georgi-Glashow

model, the products of this process are a neutral pion and a positron, which would violate the conservation of (\*) baryon number. Magnetic monopoles and this process are the two main predictions of GUTs that have not been experimentally verified. A 2015 analysis by Super-Kamiokande bounded the half-life of this process as at least 1.67 times 10-to-the-34 years. For 10 points, name this as-yet-unobserved process that occurs if a positively charged component of the nucleus has a finite half-life.

ANSWER: <u>proton decay</u> [accept answers indicating that <u>proton</u>s <u>decay</u> or are <u>unstable</u>; accept dimension-6 <u>proton decay</u> operators; prompt on <u>nucleon decay</u> by asking "which nucleon?"; prompt on <u>decay</u>] <ALI, Physics>

10. Twenty percent of the population of this country's capital was massacred by colonial forces during Yekatit 12. A leader of this country proclaimed "Death to the counterrevolutionaries!" before smashing three bottles of blood to launch a Red Terror campaign that targeted the socialist MEISON party. This country's defeat at Nakfa by the EPLF preceded a regime change prompted by Dawud Ibsa Ayana's militia joining forces with a northern (\*) secessionist organization. A 1980s famine in this country was exacerbated by harsh policies against this country's Tigray people. Mengistu Haile Mariam led a campaign of terror in this country as the chairman of its Derg military junta. For 10 points, name this East African nation once led by Halie Selassie.

ANSWER: Ethiopia [or People's Democratic Republic of Ethiopia; or Provisional Military Government of (Socialist) Ethiopia; or Federal Democratic Republic of Ethiopia; prompt on Derg by asking "what country did the Derg control?"]

<KT, World History>

11. Three finger proteins discovered in this substance include a highly-specific ligand for nAChR ("N-A-C-H-R") named for genus *Bungarus* and the AChE ("A-C-H-E") inhibitor fasciculin. Diluted samples of this substance can detect lupus anticoagulant in a clotting test. The extremely expensive CroFab is the only drug in the U.S. that targets crotalid examples of this substance. Antibodies for this substance are obtained from donor animals like sheep and (\*) horses. Alpha-neurotoxins were discovered in samples of this substance isolated from taipans, which can deliver several hundred times the LD50 at once. For 10 points, name this highly modified saliva used by snakes to incapacitate their prey.

ANSWER: snake <u>venom</u> [accept copperhead, viper, pit viper, Russell's viper, cobra, crotalid, crotalinae, elapid, or elapidae <u>venom</u>; prompt on <u>hemorrhagins</u>, hemo<u>toxin</u>s, or zoo<u>toxin</u>s; prompt on alpha-<u>neurotoxin</u>s or snake <u>saliva</u> until read]

<KT, Biology>

12. A part-human, part-bird robber from the myth of this people can stun enemies with a whistle. Thirty-one functions and an ordering were identified in the morphology of this people's folklore by Propp in anticipation of Lévi-Strauss's paradigmatic theory. Myths of this ethnic group describe a box under a mountain or a duck in a hare in a chest as potential places to find the egg that contains (\*) Koschei the Deathless's soul. Heroes of this people often receive advice from their steeds, such as when one is warned not to touch a golden cage while locating the avian thief of the king's golden apples. The story of the Firebird originates from the myths of, for 10 points, what ethnolinguistic group spanning Eastern Europe?

ANSWER: <u>Slavic</u> mythology [or <u>Slavic</u> people; or the <u>Slavs</u>; accept the Eastern, Western, or Southern <u>Slavs</u>, or the <u>Belarusian</u>s, <u>Bosniak</u>s or <u>Bosnian</u>s, <u>Bulgarian</u>s, <u>Bunjevci</u>, <u>Croat</u>s or <u>Croatians</u>, <u>Czechs</u>, <u>Goranis</u>, <u>Hussites</u>, <u>Kashub</u>s or <u>Kashubian</u>s, <u>Lechs</u> or <u>Lechites</u>, <u>Lusatians</u>, <u>Macedonians</u>, <u>Montenegrins</u>, <u>Moravians</u>, <u>Pole</u>s or <u>Polish</u>, <u>Russians</u>, <u>Rusyns</u>, <u>Serbs</u>, <u>Silesians</u>, <u>Šokci</u>, <u>Sorbs</u>, <u>Slovak</u>s or <u>Slovakians</u>, <u>Slovenes</u> or <u>Slovenian</u>s, <u>Torbeši</u>, <u>Ukranians</u>, <u>Wends</u> or <u>Wendish</u>, or <u>Yugoslavs</u> or <u>Yugoslavian</u>s]

13. A holder of this position, who converted to Christianity after meeting a seer on the Isles of Scilly, legendarily slapped a queen known as "the Haughty" with his glove for refusing to convert. A holder of this

position died after being wounded three times while fighting a peasant army at the Battle of Stiklestad. That holder of this position, from the Fairhair dynasty, established his country's national church with Bishop Grimkell and was (\*) canonized after death. A holder of this position was killed while fighting against Harold Godwinson at the Battle of Stamford Bridge. Olaf Tryggvason and St. Olaf encouraged the Christianization of their country while holding this position. For 10 points, Harald Hardrada held what title as the ruler of a Scandinavian kingdom?

ANSWER: <u>king</u>s of <u>Norway</u> [or <u>Norges Konge</u>; prompt on <u>ruler</u> of <u>Norway</u> or similar] (The first line refers to Olaf Tryggvason and the second to St. Olaf.)

<KT, European History>

14. In a play from this country, a character relays a story where he deliberately mistranslates his boss's instructions into "wear a mask of smiles" after cleaning a motor plant. That play from this country ends with a man being told to smile for a photo before a "camera flash and blackout." The main character of that play from this country finds Robert's corpse behind Sky's bar and steals his identity. A former (\*) snake pit was the first venue of an acting troupe from this country named the Serpent Players. In a play set in this country, the characters attempt to identify a "man of magnitude" from a history textbook. Sam and Willie face a torrent of racist abuses in that play set in this country. For 10 points, John Kani hails from what nation where Athol Fugard set Master Harold... and the Boys?

ANSWER: <u>South Africa</u> [or Republic of <u>South Africa</u>] (The first play is *Sizwe Bansi is Dead*.) <JVN, British Literature>

15. Ancient Greek versions of these items were usually manufactured with a hole at the top and, depending on the owner's gender, commonly sacrificed to Artemis or Apollo at a certain moment of their life. Johnny Gruelle combined the titles of two James Whitcomb Riley poems to name a fictional one of these objects. A type of these objects representing spirits that live on Humphreys Peak have been manufactured by the (\*) Hopi people since the early 19th century. A type of these objects whose name translates to "little matron" traditionally has a sarafan-wearing figure on the outside and a baby on the inside. For 10 points, name these objects, examples of which include Kachina figures, matryoshkas, and Raggedy Ann.

ANSWER: <u>dolls</u> [prompt on <u>figurines</u>, <u>models</u>, or <u>toys</u>; accept more specific varieties of <u>doll</u>s] <EGR, CE/Geo/Other>

16. Types of this phenomenon called *olin, malinalli*, and *nepantla* are differentiated in James Maffie's *Aztec Philosophy*, which is subtitled for it. Thomas Bradwardine formulated a "mean" theorem of this phenomenon at Merton College. Aristotle's account of this concept's "natural" and "violent" types was expanded in Jean Buridan's most famous theory. This phenomenon is a "reduction of something from potentiality to actuality" according to an argument that cuts off an (\*) infinite regress by postulating a "prime" cause that initiates this phenomenon without experiencing it. The first of Thomas Aquinas's "Five Ways" is the "argument from" this phenomenon. "Achilles and the tortoise" is one of Zeno's paradoxes intended to show the impossibility of, for 10 points, what physical phenomenon?

ANSWER: <u>motion</u> [or <u>movement</u>; accept physics terms concerning bodies in motion like <u>speed</u>, <u>velocity</u>, <u>acceleration</u>, <u>impetus</u>, <u>inertia</u>, <u>momentum</u>; accept <u>motive</u> force or the unmoved <u>mover</u>; accept <u>kinêsis</u> or <u>motu</u>; prompt on <u>change</u>, <u>flux</u>, <u>force</u>, or word forms of <u>causation</u>]

<JB, Philosophy>

17. This medical condition floods a character's soul "with intense inner light" while he is attacked by a man with a knife in a hotel stairway. A man worries about this condition after his love interest tells him not to talk about the idea "beauty will save the world." The consumptive Hippolyte reveals he hates a character with this condition in an "Essential Statement." The murder of (\*) Dimitri's father is committed by Smerdyakov, who has this medical condition. A man who breaks a Chinese vase is forced to end his speech at a dinner party due to this

condition. After discovering Rogozhin murdered Nastasya, a man returns to a Swiss sanatorium where he was treated for this condition. For 10 points, name this neurological disorder that afflicted both Fyodor Dostoyevsky and Prince Myshkin in his novel *The Idiot*.

ANSWER: epilepsy

<CM, European Literature>

18. Early '90s Microsoft software would discourage this process by telling users "the tree of evil bears bitter fruits" when it was detected. Andreas Zeller pioneered a technique for this process that isolates a minimal slice by iterating through deltas, inspiring the implementation of "git bisect." Magic values like CAFEBABE ("café-babe") and DEADBEEF ("dead-beef") are chosen to be visible in (\*) hex dumps during this process. Hitting F12 in Chrome provides a toolkit for this process that includes the ability to set breakpoints and insert print statements. Programmers can do this task using GDB or by explaining their work to a rubber duck. For 10 points, name this process of finding and removing errors from software.

ANSWER: <u>debug</u>ging [or <u>debugger</u>s; accept answers that indicate <u>finding</u>, <u>fixing</u>, or <u>removing bug</u>s; accept <u>error</u>s in place of "bugs" until read; accept <u>tracing</u>, <u>dumping</u>, or word forms until read; prompt on <u>copying code</u>, <u>reverse engineering</u>, <u>piracy</u>, or word forms by asking "what specific methods were used to do that?"] <ALIN, Other Science>

19. This author angered Lady Somerset by criticizing remarks about people like "the locusts of Egypt" congregating at the "grog shop." This then-resident of "The Curve" neighborhood publicized the murder of the owners of the People's Grocery. This author wrote a preface addressed "To The Seeker After Truth" for a pamphlet on *The Reason Why the Colored American Is Not in the World's Columbian Exposition*. This writer's calls for a Black exodus from Memphis led to a mob attack on (\*) her newspaper, the *Memphis Free Speech*. This activist criticized WCTU leader Francis Willard over the latter's refusal to denounce a practice that this writer documented in the pamphlets *The Red Record* and *Southern Horrors*. For 10 points, name this journalist known for her exposés of lynching.

ANSWER: Ida B. <u>Wells</u> [or Ida Bell <u>Wells</u>-Barnett] <FW, American History>

20. Near the end of a piece by this composer, the choir enters with the triple-p theme G, [pause] G, G, G, [pause] A-flat, G. The entrance of that theme was compared by this composer to a "breath." An instrumental coda featuring offbeat bells follows the choir's final E-flat major chord in another piece by this composer. That piece by this composer contains a fourth-movement alto solo beginning with the lyrics (\*) "O Red Rose." A Friedrich Klopstock poem inspired the finale of this composer's second symphony, which includes the movement "Urlicht" ("OOR-leekt"). This composer's eighth symphony sets the hymn "Veni Creator Spiritus" and the final scene of Goethe's Faust. For 10 points, name this composer of the Resurrection Symphony and the Symphony of a Thousand.

ANSWER: Gustav Mahler <CSI, Auditory Arts>

## **Bonuses**

1. In a book about this man's "secret voyage," Samuel Bawlf claims that the "Nova Albion" he discovered was actually on Vancouver Island, not in California. For 10 points each:

[10m] Name this explorer, who probably did not enter the Pacific Ocean via his eponymous channel near Cape Horn.

ANSWER: Sir Francis Drake

[10e] Drake led the second expedition to accomplish this feat. Unlike Ferdinand Magellan, whose expedition first accomplished this feat, Drake managed to survive the journey.

ANSWER: <u>circumnavigation</u> [accept word forms; accept <u>sailing around the world</u> or equivalents]

[10h] Among the most important stops during Drake's circumnavigation was in this spice-rich archipelago. In the 1520s, Spain and Portugal each claimed that these "Spice Islands" were located in their zone of influence as set out by the Treaty of Tordesillas.

ANSWER: <u>Maluku</u> Islands [or <u>Moluccas</u>; do not accept or prompt on "Malacca"] <CSI, European History>

2. In the state of Odisha, Jagannath and his two siblings are celebrated with a Ratha Yatra. For 10 points each: [10h] During the annual Ratha Yatra, celebrants pull 50-foot-tall examples of these objects through the streets. These objects are decorated with painted flowers, and Hare Krishnas also create and parade these objects worldwide. ANSWER: carts [or chariots]

[10m] *Description acceptable*. Depictions of Jagannath, which usually take the form of a round, simple face with circular eyes, can be described with this adjective. This adjective also describes phallic representations of Shiva called lingams.

ANSWER: <u>aniconic</u> [or <u>abstract</u>; prompt on <u>not realistic</u> or synonyms; prompt on <u>iconographic</u> by asking "what type?"]

[10e] While Jagannath is also part of some Buddhist and Jain beliefs, to many Hindus he is an abstract representation of Krishna, an avatar of this preserver deity of the Hindu trimurti.

ANSWER: <u>Vishnu</u> [accept <u>Narayana</u>, <u>Hari</u>, <u>Lakshmikanta</u>, <u>Padmanābh</u>, or <u>Mukunda</u>] <AK, Religion>

3. The speaker of a poem titled for this type of person declares, "My breasts have become my own tomb / The whole length of my body grown over with lichen / and moss." For 10 points each:

[10m] Name this type of person who titles a short story that concludes with the plea "Save the children..." and is first in the collection *Call to Arms*.

ANSWER: a <u>mad</u> person [or <u>kuáng</u>; accept "A <u>Madman's</u> Diary" or "Diary of a <u>Madman</u>" or "<u>Mad Woman</u>"; accept "<u>Kuángrén</u> Riji"]

[10e] "Mad Woman" is one of the unsigned poems posted in this location. Wendy Xu created a sonnet form beginning with 6 lines of 4 words, referencing the protests that ended in this location in Beijing on June 4th, 1989. ANSWER: **Tiananmen** Square

[10h] The speaker of one of Wendy Xu's Tiananmen sonnets sees "brothers stranded in apricot mist" west of this poet. A poem by this poet describes an "empty mountain" and sunlight shining on green moss.

ANSWER: <u>Wang</u> Wei [or <u>Wang</u> Youcheng or <u>Wang</u> Mojie or <u>Wang</u> Weimojie] (The poem is "Deer Park.") <CM, World Literature>

4. One of this thinker's students, Heinrich Hotho, may have distorted his views when compiling his "Lectures on Aesthetics." For 10 points each:

[10m] Name this German idealist thinker who described the "ideal beauty" of Greek and Roman art in those lectures, where he frequently discusses the "dissolution" of art.

ANSWER: Georg Wilhelm Friedrich Hegel

[10h] Hegel called this medium the most "inward," and thus most perfect, form of art. Fragments from Friedrich Schlegel's *Atheneum* discuss a "Romantic" form of this medium, which is "progressive" and "universal."

ANSWER: poetry

[10e] Hegel praised "classical" Greek art for its depiction of the freedom of this thing. This concept is central to Hegel's most famous work, which is titled for its "Phenomenology."

ANSWER: **spirit** [or **geiste**s]

<MS, Philosophy>

5. The Dante Rossetti-inspired gesso ("JESS-oh") panel *O ye, all ye that walk in Willowwood* was intended to hang in a grey, purple, and white Room de Luxe in this city. For 10 points each:

[10h] Name this city. Floral-inspired designs juxtaposing hard angles with soft curves feature in the "rose motif" of an architect from this city, who designed *House for an Art Lover* and the Willow Tearooms.

ANSWER: Glasgow, Scotland

[10e] Charles Rennie Mackintosh's design of the Willow Tearooms, which he created with his wife Margaret Macdonald, features a high-backed set of these objects. Eero Saarinen designed a "tulip" one of these objects.

ANSWER: chairs

[10m] Margaret Macdonald painted a triptych depicting seven of these people as a centerpiece for a music room. A painting showing one of these people *from the Land of Porcelain* hangs above the fireplace in the Peacock Room.

ANSWER: <u>princess</u>es [accept *The Seven <u>Princess</u>es*; accept *The <u>Princess</u> from the Land of Porcelain*] <CM, Other Arts>

6. Before he is sent to one of these places, Leo Auberg meets men called the Swallow, the Fir, the Ear, and the Thread in Alder Park. For 10 points each:

[10m] Name this type of location that titles a book dedicated "to all those who did not live to tell it." A man living in one of these places builds a wall for the Power Station and is roommates with Alyosha the Baptist.

ANSWER: gulags [or Soviet labor camps or Soviet prison camps; accept The Gulag Archipelago]

[10e] This author related the experiences of 227 survivors in *The Gulag Archipelago*. Alyosha lives with Shukhov in this author's *One Day in the Life of Ivan Denisovich*.

ANSWER: Aleksandr (Isayevich) Solzhenitsyn

[10h] A *Gulag Archipelago* epigraph by a poet with this surname notes, "How heavy are the stones themselves." Leo Auberg is sent to a gulag in a prose poem by an author with this surname who wrote *The Land of Green Plums*.

ANSWER: <u>Müller</u> [accept (Johann Ludwig) Wilhelm <u>Müller</u> or Herta <u>Müller</u>] (The prose poem is *The Hunger Angel*.)

<CM, European Literature>

7. You are in a rocket and want to exit the Solar System. Answer the following about your journey, for 10 points each.

[10e] You first consider trying to get further away from the Sun by increasing the semi-major axis of *this* entity, your gravitationally-influenced trajectory around the Sun. You fire your thrusters, thereby altering this entity. ANSWER: **orbit** 

[10m] Unfortunately, your transfer orbit keeps you moving along an ellipse, which won't let you escape the Solar System. You decide to emulate the Voyager missions by doing one of *these* maneuvers, which will take advantage of Jupiter's large mass to "slingshot" you towards the edge of the Solar System.

ANSWER: gravity assist maneuver [accept gravitational assist or swing-by; prompt on partial answer]

[10h] To calculate the right maneuver, you recall that gravity assists conserve this quantity, which is a function of semi-major axis, eccentricity, and inclination. You vaguely remember that it's named for a French astronomer.

ANSWER: <u>Tisserand's parameter</u> [accept <u>Tisserand's criterion</u> or <u>Tisserand's relation</u>] <AF, Physics>

- 8. When this ruler asked for time to discuss the possibility of withdrawing from Alexandria, Gaius Popilius drew a circle around him and demanded a response as soon as this man stepped out of it. For 10 points each:
- [10h] Name this ruler who, after withdrawing from Egypt, assaulted Jerusalem and reinstalled Menelaus as high priest. This ruler sacrificed a pig to Zeus on an altar he had placed in the Temple during his suppression of Judaism. ANSWER: Antiochus IV Epiphanes [prompt on Antiochus]

[10e] Antiochus IV ruled this Near Eastern Empire whose other rulers include Demetrius I Soter. After the death of Alexander the Great, this empire's namesake diadochus founded it and took the epithet "Nicator."

ANSWER: Seleucid Empire

[10m] After Antiochus IV sacked Jerusalem, Judaea erupted into this revolt that was led by Mattathias and his sons Judah, Simon, and Jonathan. This revolt led to the establishment of the Hasmonean Dynasty.

ANSWER: <u>Maccabean</u> Revolt [accept <u>Maccabees</u>] < KT, Ancient History>

9. A mock waterfall and snowstorm are among the visual elements that the Royal Choral Society included in annual dramatic stagings of a cantata trilogy by this composer from 1924 until World War II. For 10 points each: [10h] Name this Black British composer of *The Song of Hiawatha*. Edward Elgar mentored this composer in his

early career, during which critic August Jaeger told Elgar that this composer was a "genius."

ANSWER: Samuel Coleridge-Taylor

[10m] The RCS staged the *Song of Hiawatha* at this venue, where an overflow of singers had to change costumes outside in tents in Hyde Park. Today, this Victorian concert hall hosts the BBC Proms each summer.

ANSWER: Roval Albert Hall

[10e] This composer started, but never finished, his own cantata about the *Song of Hiawatha* after hearing Native American music while visiting Iowa. His interest in Native American music also inspired his *New World Symphony*.

ANSWER: Antonín (Leopold) Dvořák

<JE, Auditory Arts>

10. This drug functions by undergoing a ligand ("LIG-und") replacement reaction with DNA, forming a bond between its metal center and a nitrogen atom in guanine. For 10 points each:

[10m] Name this chemotherapy medication whose synthesis involves substituting two chlorine ligands for ammonia, a notable example of the trans effect.

ANSWER: cisplatin

[10e] The trans effect is most commonly observed in molecules with this molecular geometry. Xenon tetrafluoride has this geometry, in which four ligands coordinate at right angles to each other with lone pairs above and below.

ANSWER: square planar

[10h] This class of ligands exhibits a very strong trans effect since they are strong pi acceptors. Two of this functionality are found in TRANSDIP, a compound that unusually forms square planar complexes by chelating ("KEE-late-ing") two trans sites of a metal.

ANSWER: <a href="mailto:phosphine">phosphine</a>s [or diphosphine</a>s or biphosphines; accept answers with "phosphane" in place of "phosphine"; prompt on <a href="mailto:organophosphorus">organophosphorus</a> compounds] <EGU, Chemistry>

11. John Fryer described the risks of "not living fully our humanity" in a speech denouncing psychiatric views on this trait, which he delivered as "Dr. Henry Anonymous" while wearing a joke-shop mask. For 10 points each: [10m] Name this trait that the DSM declassified as a mental illness in 1973.

ANSWER: <a href="https://example.com/homosexual">homosexual</a> ity [or being <a href="mailto:gay">gay</a>; prompt on <a href="lesbian">lesbian</a> ism or being <a href="https://example.com/homosexual</a> ity [or being <a href="mailto:gay">gay</a>; prompt on <a href="mailto:lesbian">lesbian</a> ism or being <a href="mailto:LGBTQ+">LGBTQ+</a>]

[10h] A study by this psychologist showed that experts couldn't distinguish the MAPS, TAT, and Rorschach tests of straight and gay men, demonstrating that gay men weren't inherently mentally ill and influencing the 1973 decision.

ANSWER: Evelyn  $\underline{\text{Hooker}}$  [accept Evelyn  $\underline{\text{Gentry}}$ ]

[10e] Homosexuality wasn't fully excised from the DSM until a form named for being "dystonic" with this concept was removed in 1987. Freud modeled the psyche as the id, this concept, and this concept's "super" counterpart.

ANSWER: **ego** [accept **ego**-dystonic homosexuality]

<PS, Social Science>

12. The ex-soldier Dana Mills is contrasted with the dissatisfied housewife Willa in *The Mere Wife*, Maria Dahvana Headley's suburban retelling of this epic. For 10 points each:

[10e] Name this Old English epic titled for a hero who kills Grendel. Modern Internet slang is included in Headley's 2020 feminist translation of it.

ANSWER: **Beowulf** 

[10m] Headley renders this first word of *Beowulf* as "Bro!" This Old English word, whose meaning has long been debated, has also been translated as "Listen!" or "So!"

ANSWER: hwæt ("wet")

[10h] In a list of Cain's descendants, Headley translates *orcneas* as this specific word. An author who divided *Beowulf* into A and B sections on youth and age discussed how these beings oppose gods and heroes in Northern mythology.

ANSWER: monsters [accept "The Monsters and the Critics"]

<CM, British Literature>

13. An equation of this name is derived by vertically integrating the momentum equation for an incompressible, shearless fluid, and is frequently used in spherical coordinates and without friction. For 10 points each:

[10h] Give this name used for non-dispersive systems where the horizontal length scale is significantly larger than the vertical. In another application, friction is relevant because phenomena with this name are able to touch.

ANSWER: <a href="mailto:shallow">shallow</a>-water equations [accept the <a href="mailto:shallow">shallow</a>-water waves]

[10e] Because shallow-water waves are defined by a base of less than one-twentieth the wavelength, these waves are only shallow over trenches. These destructive waves are typically formed by earthquakes displacing water.

ANSWER: **tsunami**s [or **tidal wave**s]

[10m] The process of waves slowing down and steepening is named for these shallow formations, which include sandbars. These submerged features cause wavefronts to refract as they approach the shore.

ANSWER: **shoal**s [or **shoaling**; prompt on <u>reef</u>s]

<KW, Other Science>

14. During a break on his bus ride to Selma, the plaintiff of this case attempted to purchase a cheeseburger from a white diner at a Trailways bus station. For 10 points each:

 $[10h]\ Name\ this\ 1960\ Supreme\ Court\ case\ that\ nominally\ struck\ down\ racial\ segregation\ in\ public\ transportation.$ 

CORE cofounder James Farmer organized a movement founded in the aftermath of this case.

ANSWER: Boynton v. Virginia

[10e] Several members of the Freedom Riders were violently beaten at this city's Greyhound bus station on South Court Street. A bus boycott in this state capital was instigated by the arrests of Claudette Colvin and Rosa Parks.

ANSWER: Montgomery, Alabama

[10m] This original member of the Freedom Riders recounted being knocked unconscious with a wooden crate at a bus station in Montgomery. Stokely Carmichael later replaced this activist as chairman of the SNCC.

ANSWER: John (Robert) Lewis

<RW, American History>

15. A 1961 "instructional piece" features a jar of these objects on a chair, along with directions telling viewers to put them into a white panel. For 10 points each:

[10h] Name these items used in the signature works of Günther Uecker. The distinctive appearance of Congolese *nkisi* sculptures results from the practice of putting these objects into them to activate their powers.

ANSWER: <u>nail</u>s [prompt on answers mentioning <u>sharp</u> or <u>metal</u> objects]

[10e] That "instructional piece," *Painting to Hammer a Nail*, was by this Japanese artist of *Cut Piece*. This associate of the Fluxus art group conducted a "bed-in" with her husband, John Lennon.

ANSWER: Yoko Ono

[10m] An artist from this country created many works featuring white canvases raised above a frame by nails. An artist from this country taped a banana to a wall in 2019 and has exhibited a solid gold toilet titled *America*.

ANSWER: <u>Italy</u> (Those artists are Enrico Castellani and Maurizio Cattelan.)

<JB, Visual Arts>

16. This author wrote a one-act play in which two women surmise that Minnie killed her husband after finding evidence like a strangled canary, but decide to keep their findings from their husbands. For 10 points each: [10m] Name this playwright who founded the Provincetown Players with her husband George Cram Cook and wrote about the death of John Wright in her play *Trifles*.

ANSWER: Susan (Keating) Glaspell

[10h] The Wrights' neighbors have this surname in *Trifles*. In *The Crucible*, a reverend with this surname tests knowledge of the Ten Commandments during an investigation of John Proctor's home.

ANSWER: Hale [accept Reverend John Hale]

[10e] Glaspell was friends with this member of the Provincetown Players, who wrote the play *Aria Da Capo*. This author of "Renascence" ("ree-NAY-sense") described her "candle burning at both ends" in her collection *A Few Figs from Thistles*.

ANSWER: Edna St. Vincent Millay

<JVN, American Literature>

17. Answer the following about proteins whose genes are frequently used in DNA barcoding, for 10 points each. [10e] The gene for the large subunit of this most abundant protein on Earth is commonly used to barcode plants. This enzyme's low turnover number results from its ability to bind oxygen instead of one of its primary substrates. ANSWER: **RuBisCO** [or **ribulose-1,5-bisphosphate carboxylase/oxygenase**; or **RuBPCase**; or **RuBPCO**; accept **rubisco-large subunit**; prompt on **rbcL** by asking "what protein is encoded by that gene?" [10m] Another common plant barcode is maturase K, which excises introns from pre-mRNA during this process. ANSWER: RNA **splicing** [or mRNA **splicing**; accept **alternative splicing**; prompt on RNA processing, spliceosome formation, or post-translational modification; do not accept or prompt on "(m)RNA editing" [10h] DNA barcoding of animals often uses a mitochondrial gene for this final protein in the electron transport chain. Cyanide irreversibly inhibits this enzyme, which donates electrons from its namesake substrate to a reaction that forms water from oxygen and protons.

ANSWER: <u>cytochrome c oxidase</u> [do not accept or prompt on partial answer; accept <u>complex IV</u> or <u>cytochrome c oxidase I</u>; prompt on MT-<u>COI</u>, <u>CO1</u>, and <u>COX1</u>]

<JE, Biology>

18. A new religious movement founded in this country asserts that its founder and namesake, Simon Kimbangu, is the reincarnation of the Holy Spirit. For 10 points each:

[10h] Name this country where a syncretized form of Christianity and traditional beliefs is known as *jamaa*. The Christian and animist CODECO militia groups of the Lendu people fought in the Ituri conflict in this country.

ANSWER: **Democratic Republic of the Congo** [or **DRC**; prompt on Congo; do not accept or prompt on "Republic of the Congo"]

[10m] The Kongo Kingdom, located partly in the modern DRC, established Christianity as the state religion in the early 16th century under this king. This king petitioned Portugal for relief from the illegal slave trade.

ANSWER: <u>Afonso I</u> [or <u>Alfonso I</u>; or <u>Mvemba</u> a <u>Nzinga</u>; or Funsu <u>Nzinga Mvemba</u>; prompt on <u>Afonso</u> or <u>Alfonso</u>]

[10e] The majority of people in the DRC belong to this denomination. This denomination's Zaire Use, formalized after the reforms of Vatican II, allows congregants to dance and includes ancestor veneration.

ANSWER: <u>Catholic</u>ism [or Roman <u>Catholic</u> Church]

<ZK, World History>

19. Answer the following about ethnic enclaves in the United States, for 10 points each.

[10e] The neighborhood of Cedar-Riverside in this state's largest city has contained a large Somali population since the 1980s. Former residents include a current congresswoman from this state, Ilhan Omar.

ANSWER: Minnesota

[10m] Fort Wayne, Indiana, is home to 6,000 former residents of this country, including some who arrived as refugees after the 8888 ("eight-eighty-eight") Uprising and, more recently, members of a Muslim sect based in this country's Rakhine State.

ANSWER: <u>Myanmar</u> [or <u>Burma</u>; or Republic of the Union of <u>Myanmar</u>; or Pyidaunzu Thanmăda <u>Myăma</u> Nainngandaw]

[10h] The three consulates to the Marshall Islands in the United States are in Washington D.C., Hawai'i, and this state, where many Marshallese emigrated in the 1980s to work as employees of Tyson Foods.

ANSWER: Arkansas (The consulate is located in Springdale.)

<EL, CE/Geo/Other>

20. This system was shown to decline due to a pattern of "asymmetrical cooperation" in a book titled *After* [this system]. For 10 points each:

[10m] Name this phenomenon. Antonio Gramsci ("GRAHM-shee") attributed the lack of a Marxist workers' revolution to the "cultural" form of this phenomenon, and called for a "war of position" and "war of maneuver" to eliminate it.

ANSWER: <u>hegemony</u> [accept After <u>Hegemony</u>; accept cultural <u>hegemony</u>]

[10h] *After Hegemony* is a text in the neo-liberal school of international relations by this Princeton political scientist, one of the "KKV" co-authors of *Designing Social Inquiry*. His wife Nan is a former president of Duke.

ANSWER: Robert (Owen) **Keohane** ("KO-hane")

[10e] Cynthia Weber's "Good Girls, Little Girls, and Bad Girls" is a response to the "male paranoia" in Keohane's criticism of this school of IR theory. Betty Friedan was a member of this movement's "second wave."

ANSWER: **feminism** [or word forms]

<HG, Social Science>