

2022 ARCADIA □

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Packet 12: no more gender, just knives

Tossups

1. While playing with the “Jazzopatens,” a player of this instrument led the first recording of Juan Tizol’s “Caravan.” A player of this instrument used a “Mexican Blues” to write a standard that was renamed for a lyric by Irving Mills. Dizzy Gillespie wrote “Down Under” for a player of this instrument who led several bands called “The Herd.” This instrument and trombone play in inverted registers on “Mood Indigo,” which Duke Ellington co-wrote with a player of this instrument, Barney Bigard. A player of this instrument and his (*) “Gramercy Five” popularized Cole Porter’s “Begin the Beguine.” Teddy Wilson and Gene Krupa backed a player of this instrument for a concert at Carnegie Hall that included a rendition of Louis Prima’s “Sing, Sing, Sing.” For 10 points, name this instrument played by the “King of Swing,” Benny Goodman.

ANSWER: clarinet

<HG, Auditory Arts>

2. In the short length-scale limit of the renormalization group flow, a fixed point described by this adjective occurs in which QFTs behave like CFTs. A “divergence” named for this adjective occurs when *high-momentum* terms cause Feynman integrals to explode. That divergence was named in analogy to a situation described by this adjective and caused by the lambda to the negative-fourth dependence of (*) Rayleigh-Jeans law. In an important early result in quantum mechanics, Max Planck resolved a situation described by this adjective as unphysical by assuming that light is emitted as discrete packets. An infinite energy divergence in the power of blackbody radiation creates a namesake “catastrophe” in, for 10 points, what region of the electromagnetic spectrum that is more energetic than visible light?

ANSWER: ultraviolet [or UV; accept ultraviolet fixed point, ultraviolet divergence, or ultraviolet catastrophe]

<VD, Physics>

3. Rogers Brubaker argues that the “modern” form of this concept was an invention stemming from the French Revolution in a classic 1992 book that draws contrasts between France and Germany. A 1999 book notes how members of Hong Kong’s business elite seek a “flexible” form of this concept as a “matter of convenience” and is by Aihwa Ong. A constitutional amendment clause titled for this concept was interpreted in (*) *United States v. Wong Kim Ark*, expanding this concept to certain relatives. The Northern Mariana Islands are a popular destination for pregnant Asian women since the United States uses this concept’s *jus soli* form. Many Rohingya people do not possess this legal status since they are stateless. For 10 points, name this concept that refers to one’s legal membership in a country.

ANSWER: citizenship [accept word forms like citizen; accept Citizenship Clause; accept birthright citizenship; prompt on nationality]

<AS, Social Science>

4. Annette Beveridge referred to this ruler’s daughter as “Princess Rosebud” and translated a namesake text that has two missing sections likely due to its pages being lost during a storm. This ruler was likely first buried in the “Garden of Rest” that he designed. Ustad Ali Quli (“*KOO-lee*”) was sent by Selim I to aid this ruler in using artillery during battles. This ruler’s general Mir Baqi (“*BAH-kee*”) built a structure in Ayodhya

that was later (*) destroyed by a mob in 1992. Rana Sanga of Mewar (“MAY-ver”) was poisoned by his own Rajputs to prevent a second conflict with this ruler, the first of which ended at the Battle of Khanwa. The poet Rahim translated this ruler’s eponymous Chagatai-language memoir into Persian. This victor at the First Battle of Panipat founded a state later ruled by Akbar. For 10 points, name this founder of the Mughal dynasty.

ANSWER: Bābur [or Zahīr al-Dīn Muhammad] ([The Babri Masjid was destroyed by Hindu nationalists.](#))

<GP, World History>

5. This character is parodied as a college dean named Telaped Decanus in a lengthy play-within-a-novel in John Barth’s *Giles Goat-boy*. A reimagining of this character tries to claim that Aderepo bribed the soothsayer Baba Fakunle to lie about him in *The Gods Are Not to Blame* by Ola Rotimi. This character notes that three peals of thunder indicate his forthcoming death and is then buried in a tomb of unknown location in a play that begins with him resting on a (*) stone in the title village. This character titles a play in which he learns that he was involved in a fateful murder at a crossroads; he then finds that his wife has hanged herself and removes the gold pins from her dress. For 10 points, name this character who blinds himself upon learning that he has married his mother Jocasta in a Sophocles play titled for him.

ANSWER: Oedipus [accept Oedipus Rex or Oedipus at Colonus]

<JF, Other Literature>

6. Many of these modifications create a namesake “shield” against antibody recognition for SARS-CoV-2’s spike protein, whose protomers have 22 sites for it. A “bottlebrush” structure formed by extensive modifications of this type confers hygroscopic properties on mucins. A form of this modification has an asparagine-X-serine or threonine consensus sequence and uses (*) dolichol phosphate templates. This modification distinguishes blood type antigens, and antibodies can’t be recombinantly expressed in bacteria because they can’t perform this modification. Tagging proteins bound for the lysosome entails this modification using mannose-6-phosphate. The ER and the Golgi body are responsible for the N-linked and O-linked forms of this modification, respectively. For 10 points, name this protein modification that involves linking sugars to proteins.

ANSWER: glycosylation [accept N-linked glycosylation or O-linked glycosylation; accept glycan shield; prompt on any answer that describes adding sugars or adding carbohydrates]

<HK, Biology>

7. The middle-aged protagonist of a novel by this author becomes a smuggler in Paraguay due to the influence of his travels with his elderly Aunt Augusta. In a novel by this author, the protagonist confiscates a German letter addressed to a captain’s daughter and then burns it after reading it. The protagonist of a novel by this author falls in love with Helen after she washes ashore from a shipwreck with an album of postage stamps. A novel by this writer ends with (*) Louise learning of her husband’s suicide by sleeping pills after he was blackmailed by the Syrian Yusef. This author’s travels inspired his novel in which a mestizo helps a lieutenant hunt for an unnamed “whiskey priest” in Mexico. For 10 points, name this author of *The Heart of the Matter* and *The Power and the Glory*.

ANSWER: Graham Greene [or Henry Graham Greene] ([The first clue refers to *Travels with My Aunt*.](#))

<JF, British Literature>

8. At the end of this decade, the Rowell–Sirois Commission examined disparities between federal and provincial powers. Tom Carroll’s development of the self-propelled combine in this decade shot Saskatchewan to be the richest province per capita in Canada. In the early years of this decade, the RCWU was organized by Arthur “Slim” Evans. Radio evangelist “Bible Bill” Aberhart was first elected to lead Alberta during this decade on a platform based on the ideas of C. H. Douglas, who advocated giving (*) free money to citizens in a “Social Credit” system. Strikers led the “On to Ottawa Trek” during this decade to protest

Prime Minister R.B. Bennett's interventionist economics based on the "New Deal." For 10 points, name this decade during which Canada suffered from the effects of the Great Depression.

ANSWER: 1930s [prompt on the 30s]

<GE, Other History: British>

9. While researching an outbreak of this disease in the 1970s, Robert F. Stock identified the four models of disease diffusion used today. Jonathan M. Katz and Renaud Piarroux ("PYAR-roo") found that one outbreak of this disease was not of environmental origin, contrary to Rita Colwell's hypothesis. A quarantine camp for pilgrims returning from Mecca names this disease's (*) El Tor strain. In October 2022, an outbreak of this disease spread through a prison in Port-au-Prince. Most of the seven worldwide pandemics of this disease originated in the Ganges Basin, where women use saris to filter this disease's causative agent from water. A 2010s outbreak of this disease was caused by Nepalese peacekeepers in Haiti, while an earlier outbreak was traced to a water pump on Broad Street. For 10 points, epidemiology was pioneered by a 1854 map of what disease by John Snow?

ANSWER: cholera

<KT, Other Academic>

10. According to the *Golden Legend*, when the remains of this saint were interred with those of St. Lawrence, the latter's bones moved aside to make room. A golden "purse" containing soil stained with this saint's blood was a fixture of the Holy Roman Emperor's imperial regalia. Book XXII ("twenty-two") of the *City of God* recounts many miracles that occurred after this saint's relics were brought to Hippo. The Synagogue of the Freedman confronted this angelic-faced man who later recounted the history of Israel in front of a (*) "stiff-necked" audience while speaking before the Sanhedrin. A crowd mobbed this man after he claimed to see Heaven open up to reveal the son of Man standing at God's right hand. Witnesses to this saint's death threw their cloaks at Saul's feet before stoning this man to death as recounted in Acts. For 10 points, name this first Christian martyr.

ANSWER: Saint Stephen

<KT, Beliefs>

11. The Supreme Court case *Halter v. Nebraska* concerned these objects in beer advertisements. Sidney Street proclaimed, "If they did that to James Meredith, we don't need [one of these objects]," in a protest that led to a 1968 New York case. In a dissent from a case about these objects, John Paul Stevens imagined bulletin boards on the Washington Monument. *United States v. (*) Eichmann* reaffirmed "expressive conduct" with these objects. A 1989 federal ban emerged after a Communist Youth Brigade member destroyed one of these objects outside the Republican National Convention in Dallas. The case *Texas v. Johnson* protected the right to "symbolic speech" by burning, for 10 points, what object that flies above courthouses?

ANSWER: American flag [accept the US flag; accept descriptive answers that indicating the flag of the United States of America; accept Old Glory; accept the Star and Stripes; accept the Star Spangled Banner; prompt on flag by asking, "Which one?"]

<GE, American History>

12. This economist proposed an accelerator model that relates the level of investment to the marginal rate of consumption. It's not Eugene Fama, but this economist proved in a 1965 paper that asset prices in an informationally efficient market will fluctuate randomly. The Lindahl equilibrium fulfills a condition named for this economist. This economist is the latter namesake of a doubly eponymous theorem which states that a relative price increase for a good will cause an increase in its inputs, along with Wolfgang (*) Stolper. This economist found that a consumer's utility function could be derived from observing their purchasing behaviors, now known as revealed preference. For 10 points, name this neo-Keynesian American economist who, with William Nordhaus, authored a popular *Economics* textbook.

ANSWER: Paul Samuelson [or Paul Anthony Samuelson; accept Stolper–Samuelson Theorem; accept Samuelson condition]
<KJ, Social Science>

13. This operation names the product on a Chow ring, which is key to a subfield of algebraic geometry named for this operation. For manifolds, the domain of a transition map between two charts is restricted to *this* operation between the charts. In topology, openness is closed under finite instances of this operation, but arbitrary instances of a related operation. If this operation between two vector subspaces gives the zero vector, the dimension of their sum is the sum of their dimensions. By a theorem of (*) Cantor, this operation over a decreasing sequence of nested compact sets must be nonempty. If this operation between sets A and B is empty, then A and B are disjoint. A cap resembling an upside-down U symbolizes, for 10 points, what operation between two sets that returns the set of elements that belong to both?

ANSWER: intersection [accept intersection theory]
<VD, Other Science: Math>

14. This author created a character who notes that a boiled chicken made by his mother to impress a coworker is his only recent dinner that has not been pizza. One of this author's characters sheepishly recalls that he took a cab to a restaurant to tip a waiter on the morning after a first date. The title character of another story by this author ritually brings the narrator pieces of candy every night until Halloween. After crashing into a telephone pole while trying to buy (*) fish, the title woman stops taking care of Eliot in this author's story "Mrs. Sen's." In a story by this author, periodic blackouts prompt a series of shared secrets over dinner between the estranged couple Shoba and Shukumar. For 10 points, name this author whose story "A Temporary Matter" appears in her collection *Interpreter of Maladies*.

ANSWER: Jhumpa Lahiri [or Nilanjana Sudeshna Lahiri] (The story in the third sentence is "When Mr. Pirzada Came to Dine.")
<AS, American Literature>

15. Janet Baker's last operatic appearance was as her signature role in an opera by this composer. An unusual minor-key love song in an opera by this composer, "O del mio dolce ardor," was long misattributed to Alessandro Stradella. Cupid disguises himself as Erasto to convince Helen to love Paris in that opera, *Paride ed Elena*. A title character in another of this composer's operas sings the aria "Che puro ciel" after arriving in Elysium. This composer's librettist (*) Ranieri de' Calzabigi wrote a preface to another opera that highlights this composer's move to deemphasize the *da capo* arias and *secco* recitative. After the rondo "Che farò senza," Amore brings one of the title characters back to life in an opera by this composer that includes the "Dance of the Blessed Spirits." For 10 points, name this German composer of the reform operas *Alceste* and *Orfeo ed Euridice*.

ANSWER: Christoph Willibald Gluck
<IZ, Other Arts: Auditory>

16. A woman who "feared the heat, the swarms of flies, the filthy hotels" of this country returns running to a fort's terrace after *not* having an affair with a soldier on a bus. A schoolmaster with the sky beating down on his head in this country is surprised to see a prisoner walking towards prison, then returns home to find an accusatory message written on his chalkboard. After (*) Castel's serum fails to save Othon's child in this country, a Jesuit priest who originally called the title calamity a punishment from God instead refers to it as a test of faith. A doctor and a journalist stuck in this country join "sanitary squads" originally created by Tarrou. Bernard Rieux ("ree-OOH") observes rats overrunning the streets of Oran in this country. For 10 points, name this country, the setting of *The Plague* by Albert Camus.

ANSWER: Algeria [or Algérie] (The stories clued are "The Adulterous Woman" and "The Guest," both from Camus's collection *Exile and the Kingdom*.)

<JF, European Literature>

17. This quantity is assigned with Bader's zero-flux approach and Hirshfeld partitions. Levy's constrained search is a minimization over the space of wavefunctions that fix this quantity. Dispersion forces are hard to calculate from this quantity, since they are not modeled by standard approximations to the exchange-correlation energy like the GGA or LDA. This quantity, which is normalized to N , uniquely determines the ground state energy by the first (*) Hohenberg-Kohn theorem. This quantity is computed by integrating the squared orbital wavefunction. Electronic structure calculations are greatly simplified by computing observables like energy as functionals of this quantity. An atomic orbital on shell n has n minus 1 nodes in this quantity. For 10 points, give this quantity that gives the amount of negative charge per unit volume.

ANSWER: electron density [accept charge density or probability density; prompt on charge until read; prompt on probability]

<VD, Chemistry>

18. A city in this war was defended by the "Prince Regent's Bum," one of the "Grand Mortars" commanded by Thomas Graham. During this conflict, irregular troops nicknamed "land corsairs" were allowed to keep any spoils of war. The War of the Oranges foreshadowed this conflict, called an "ulcer" by one side that collaborated with Manuel Godoy. At a meeting in (*) Bayonne that provoked this conflict, Charles IV ("the fourth") and his son both abdicated in favor of the host ruler's brother. André Masséna was forced to retreat during this conflict due to secret forts constructed along the Lines of Torres Vedras. The term "guerrilla" was coined during this conflict in which the Battle of Salamanca was won by the Duke of Wellington. For 10 points, name this invasion of Portugal and Spain by Napoleon.

ANSWER: Peninsular War [accept Spanish War of Independence; accept Guerra de la Independencia; accept Napoleon's invasion of Portugal or Napoleon's invasion of Spain or Napoleon's invasion of Iberia until "invasion" is read; prompt on Napoleonic Wars; reject "Spanish Civil War"]

<GE, European History>

19. This book concludes a sailing metaphor by declaring that, if a psychologist is willing to make a sacrifice, psychology will be the "queen of the sciences" again. This book argues that every elevation of the type "man" thus far has been the work of societies that require slavery. One section of this book opens by claiming that dogmatism masquerading as a search for objective truth would be replaced by (*) "free spirits." The many aphorisms in this book include "If you gaze into the abyss, the abyss will gaze into you." This book begins by comparing philosophers to spurned skirt chasers with the line "Supposing that truth is a woman - what then?" This book was expanded on by its author's "On the Genealogy of Morals." For 10 points, name this book that instructs readers to abandon traditional views of its two title concepts, by Friedrich Nietzsche.

ANSWER: Beyond Good and Evil [or Beyond Good and Evil: Prelude to a Philosophy of the Future or Jenseits von Gut und Böse: Vorspiel einer Philosophie der Zukunft]

<MB, Philosophy>

20. A man shackled to a chair performs this activity in one of the 33 prints of a Francisco Goya series. An artist cut a painting of a performer of this activity from a larger canvas after being accused of copying the body in Jean-Léon Gérôme's painting *The Death of Caesar*. Edward Quinn photographed Picasso holding up a wicker mask meant for trainees in this activity. In one painting, portraits of performers of this activity like Islero and Manolete are scornfully viewed by (*) Gala's floating head under a series of arches. Gadflies form the hat of a performer of this activity whose face is created from superimposed images of the *Venus de Milo* in different colored skirts in an arena. Manet depicted a dead participant of this activity clutching a pink cloth. For 10 points, name this activity performed by the subject of Salvador Dalí's painting *The Hallucinogenic Toreador*.

ANSWER: bullfighting [accept *La Tauromaquia*; accept corrida de toros]

<AY, Visual Arts>

Bonuses

1. Elizabeth A. Fenn's *Encounters at the Heart of the World* argues that these people's economic dominance in pre-Columbian North America came from their location near the center of the continent. For 10 points each:

[10h] Name this Native American people of modern-day North Dakota who formed the Three Affiliated Tribes with the Hidatsa and Arikara.

ANSWER: Mandan people [or Numákhú·ki; accept Aroxbagua; accept *Encounters at the Heart of the World: A History of the Mandan People*]

[10e] The Mandan flourished due to their tradition of maintaining surpluses of this crop. The Three Sisters of Native American agriculture were beans, squash, and this grain.

ANSWER: corn [or maize; accept húupatka or góoxaadi]

[10m] The Mandan traded their corn surplus for this resource from the Assiniboiné and Cree. The Blackfoot collected this substance at the bottom of cliffs called *pisskan* and used it to make pemmican.

ANSWER: bison meat [accept bison fat; accept buffalo meat; accept midéegaadi *irúga* or iiní *'ksisakoyi*; accept buffalo jump or bison jump; prompt on dried meat or máaskape or irúgashidi or í'ksisakoyi or fat by asking, "From what animal?"]

<AS, American History>

2. During this holiday's Gol-e-Sorkh festival in Afghanistan, people flock to Mazar-e Sharif and take part in buzhashi, a polo-like sport played with a goat's carcass. For 10 points each:

[10m] Name this holiday whose observers often arrange a table with the seven symbolic objects beginning with the letter *sin* ("seen"). People jump over fires during Charharshanbe Suri, a festival that precedes this holiday.

ANSWER: Nowruz [or Nevruz; prompt on Iranian New Year]

[10h] This red-brown, germinated wheat pudding is one of the seven *sins*. No man is allowed to take part in the creation of this dessert, which takes about a week to prepare.

ANSWER: samanu [or samanak or sümelek]

[10e] Nowruz has its roots in this traditional Iranian religion that worships Ahura Mazda.

ANSWER: Zoroastrianism

<AS, Beliefs>

3. The speaker sees "wings tethered inside / the pale cage of your body—run through / by Lorca's horn of moonlight" in a Natalie Diaz poem "with a line from" this poet. For 10 points each:

[10e] Name this poet. The line "the Dawns are heartbreaking" quoted in Diaz's "Monday Aubade" originates in the poem "The Drunken Boat" by this French Symbolist and lover of Paul Verlaine.

ANSWER: Arthur Rimbaud [or Jean Nicolas Arthur Rimbaud]

[10m] Another Diaz poem describes a "wing in my mouth" described by this adjective and wonders "what Lorca meant / when he said [how I want you]" this adjective in the poem "Romance Sonámbulo."

ANSWER: green [or verde] (*The Diaz poem is "From the Desire Field."*)

[10h] The thrumming of "honeysuckle's orange guitar" features in a Diaz poem in this form, "Lorca's Red Dresses." A García Lorca poem in this form begins, "I want to sleep the sleep of the apples."

ANSWER: ghazal [accept gacela; accept "Ghazal of the Dark Death" or "Gacela of the Dark Death" or "Gacela de la muerte oscura"]

<CM, European Literature>

4. This computer scientist introduced a logically-equivalent "calculus" and "algebra" as ways of formulating queries in a model that he developed. For 10 points each:

[10h] Name this computer scientist who developed the model implemented in IBM's System R project. With Raymond Boyce, he names a normal form whose conditions are met if and only if every determinant is a candidate key.

ANSWER: Edgar F. Codd [or Edgar Frank Codd]

[10m] Codd's improvement was this type of database, which stores data items based on their values rather than separately specified linking or nesting. In this type of database, each row in a table is assigned a unique key.

ANSWER: relational databases

[10e] System R implemented this language known by a three-letter acronym, which is the standard for manipulating relational databases. New database tables can be created using JOIN clauses in this language.

ANSWER: SQL [or Structured Query Language]

<KJ, Other Science: Computer Science>

5. This film begins with a series of shots depicting a concerned group of parents being thwarted in their attempts to convince their city to build a playground. For 10 points each:

[10m] Name this film about a cancer-stricken bureaucrat who tries to live his life to the fullest after learning of his diagnosis. It was partially inspired by Tolstoy's novella *The Death of Ivan Ilyich*.

ANSWER: Ikiru [accept To Live]

[10e] *Ikiru* was directed by this Japanese filmmaker of *Seven Samurai* and *Rashomon*.

ANSWER: Akira Kurosawa

[10h] In this other film, a man puts on a woman's glove while sitting on a swing during a stroll through a playground. A speech given in a taxicab with blinds in this film describes a "one way ticket to Palookaville."

ANSWER: On the Waterfront

<HG, Other Arts: Visual>

6. A writer primarily associated with this form described her work as a "history of emotions" exemplified by how emotions of the postcommunist transition in Russia are captured in her book *Secondhand Time*. For 10 points each:

[10m] Name this form that is vital to the preservation of Soviet-era history due to the historical censorship of historians. Studs Terkel received the Pulitzer for *The Good War*, a work in this form.

ANSWER: oral history [accept oral tradition; prompt on interviews or witness accounts by asking, "They are often compiled in what form of knowledge?"]

[10h] This oral historian wrote *Secondhand Time* and interviewed various firefighters and "liquidators" tasked with limiting the damage of a nuclear disaster near Pripyat.

ANSWER: Svetlana Alexievich [or Svetlana Alexandrovna Alexievich]

[10e] Alexievich published those eyewitness accounts of this nuclear disaster, and the ensuing Soviet cover-up, in a book titled for "voices from" it.

ANSWER: Chernobyl disaster [or Chernobyl accident]

<GP, European History>

7. During the Quarrel of the Ancients and the Moderns, the French Academy split into factions favoring the colors of Peter Paul Rubens versus this artist's drawing skills. For 10 points each:

[10m] Name this artist championed by Charles Le Brun. This artist of the *Funeral of Phocion* depicted a woman in yellow watching as three shepherds admire a tomb in another painting.

ANSWER: Nicolas Poussin

[10h] The domination of the Poussinists ended with this painting's 1717 acceptance into the Academy. Students during the French Revolution threw breadcrumbs at this painting, which was inspired by a grove scene from Carton Dancourt's play "The Three Cousins."

ANSWER: *The Embarkation for Cythera* [or *Pilgrimage to the Isle of Cythera*; or *Pilgrimage to the Isle of Cythera*; or *Voyage to Cythera*]

[10e] Antoine Watteau's influence on the Academy ushered in this art movement of frivolous, pastel colored-paintings like Jean-Honoré Fragonard's *The Swing*.

ANSWER: **Rococo** [prompt on Late Baroque; reject "Baroque"]

<GE, Visual Arts>

8. In *On the Revenge of Woman*, He-Yin Zhen observes that women are prescribed to engage in this type of ritual for shorter amounts of time than men. For 10 points each:

[10h] Name this type of ritual that Zhuangzi avoided by instead pounding on a tub and singing, since engaging in this behavior shows that one does not "understand anything about fate."

ANSWER: **mourning** rituals [or **shǒusāng**; accept answers like **grieving** the dead or **paying respect to** the dead; prompt on answers like **honoring ancestors** or **remembering ancestors**]

[10e] He-Yin criticizes this tradition for its misogyny, noting that the *Analects* speak of "women and petty-minded individuals" as if they were the same.

ANSWER: **Confucianism** [or **Ruism**]

[10m] He-Yin also notes the Confucian misogyny inherent in how this second sage of Confucianism plotted to get rid of his wife because she failed to greet him. This thinker argued that humans are good by nature.

ANSWER: **Mengzi** [or **Mencius**]

<MB, Philosophy>

9. In Danai Gurira's play *Eclipsed*, Maima tries to convince The Girl to become one of these people to leave behind the abusive C.O., their husband. For 10 points each:

[10h] Name these people. Ishmael Beah's memoir *A Long Way Gone* centers around his life as one of these people, during which he became addicted to drugs like brown-brown.

ANSWER: **child soldier**s [prompt on partial answers like **soldiers** or **children** or **rebels**] ([Lupita Nyong'o played The Girl when Eclipsed was on Broadway.](#))

[10e] The child soldier Agu helps overthrow the abusive Commandant in *Beasts of No Nation*, which takes its title from a novel by this country's author Chinua Achebe.

ANSWER: **Nigeria** [or Federal Republic of **Nigeria** or Jamhuriyar Tarayyar **Najeriya**] ([Beasts of No Nation is by Uzodinma Iweala. The Achebe novel is No Longer at Ease.](#))

[10m] Ugwu works as a servant for Odenigbo and Olanna before he is forcibly conscripted to fight as a child soldier in the Biafran War in this Chimamanda Ngozi Adichie novel.

ANSWER: **Half of a Yellow Sun**

<AS, World Literature>

10. One proposed mechanism of action for aspirin involves performing this reaction on a serine residue in COX enzymes, thereby inhibiting the biosynthesis of pain-inducing prostaglandins. For 10 points each:

[10m] Name this transformation that features the attachment of a 2-carbon carbonyl group. The reverse of this reaction converts aspirin into salicylic acid.

ANSWER: **acetylation** [accept adding an **acetyl** group; prompt on **acylation** or **adding an acyl** group]

[10e] This functional group on aspirin acetylates the serine residue, converting an alcohol into this functional group. Ethyl acetate is a solvent with this functional group, which is associated with fruity smells.

ANSWER: **ester** [accept **COOR**]

[10h] In this rearrangement reaction, aspirin's acetylated phenol is converted into an acyl phenol in the presence of a Lewis acid. The same transformation can be carried out with just light in the "photo" variant of this rearrangement.

ANSWER: **Fries** ("**freeze**") rearrangement [accept photo-**Fries** rearrangement]

<JZ, Chemistry>

11. In a novel, Wistan kills Sir Gawain in a duel after the latter reveals his duty to protect a dragon named Querig (“kweh-rig”) who causes this condition. For 10 points each:

[10h] Name this condition. At the end of a 2015 novel, Wistan ends this condition and a woman convinces her husband to wait for her on the shore while a ferryman rows them one at a time to an island of married couples.

ANSWER: **amnesia** [accept synonyms like **forgetfulness** or **not remembering**]

[10e] Axl and Beatrice struggle to remember their son in *The Buried Giant*, a novel by this British-Japanese author who included flashbacks to Stevens’s time with Lord Darlington throughout *The Remains of the Day*.

ANSWER: Kazuo **Ishiguro**

[10m] A protagonist with this profession struggles to recall his histories with those he meets in Ishiguro’s *The Unconsoled*. Michael and Julia, who conduct an affair, both have this general profession in a Vikram Seth novel.

ANSWER: **musician** [accept concert **musician** or **pianist** or **violinist**, but reject other types of musicians like “singer”; prompt on **performer**] (*The Seth novel is An Equal Music.*)

<CM, British Literature>

12. In a *mélodie* by this composer, the narrator dismisses his beloved when she fantasizes about voyaging “To the faithful shore, where one loves forever!” For 10 points each:

[10e] Name this composer of *Les nuits d’été* (“lay nwee day-TAY”). As a teenager, this composer wrote a love song for his neighbor Estelle Duboeuf that he used in *Symphonie fantastique*.

ANSWER: Hector **Berlioz** [or Louis-Hector **Berlioz**]

[10h] A setting of “L’invitation au voyage” is one of 17 *mélodies* by Henri Duparc, the dedicatee of this piece. This cyclic piece opens with low strings playing “D, C-sharp, high F,” paraphrasing Beethoven’s *Muss es sein* motif.

ANSWER: César **Franck**’s **Symphony** in D minor [prompt on **Symphony in D minor**]

[10m] A *mélodie* by this composer expresses relief at leaving a “pays morose” (“pay mo-ROZE”) to return to Paris. The title characters sing the *Salve regina* as they are guillotined one by one in this composer’s opera *Dialogues of the Carmelites*.

ANSWER: Francis **Poulenc** [or Francis Jean Marcel **Poulenc**] (*The mélodie is “Voyage à Paris” from Banalités.*)

<IZ, Auditory Arts>

13. This country sacked a number of high ranking ministers during the “kevazingogate” scandal, in which banned exports products were set to be smuggled to Asia for use in furniture. For 10 points each:

[10m] Name this oil-rich African country led by the “hyperpresident” Léon M’ba. A corrupt “Little Big Man” named Omar Bongo ruled this country.

ANSWER: **Gabon** [or **Gabonese Republic**]

[10e] Jean-Hilaire Aubame initiated a 1964 coup in Gabon due to M’ba’s ties to French companies in this industry. Illegal workers in this industry, who harvest kevazingo, threaten the Congo Basin’s role as the “lungs of Africa” for acting as a carbon sink larger than the Amazon.

ANSWER: **logging** [or **wood**; or hard**wood**; or **timber**; accept **trees**]

[10h] Yahya Jammeh, a longtime dictator of this country, has been branded as a primary facilitator of the illegal timber trade when he wasn’t busy trying to cure AIDS with natural herbal treatments.

ANSWER: The **Gambia** [or Republic of The **Gambia**]

<GE, World History>

14. The 2020 book *Revivalistics* argues for lessons from this language, such as its welcoming of hybridity or concept of “tarbutomics,” to be applied to Indigenous Australian revitalization movements. For 10 points each:

[10m] Name this language. Welsh immersion schools called *wlpan* (“OOL-pahn”) are based on a system for learning this language, in which immigrants learn to read this language without vowel markings called *nikud*.

ANSWER: **Hebrew** [or Modern **Hebrew** or **Ivrit** chadashah]

[10h] Revitalization efforts for endangered languages like Lakota, Romani, and Võro have met success after adopting these immersion-based classrooms for early-childhood education, which were first pioneered by the Māori.

ANSWER: language nests [accept kōhanga reo or iyapi wahōhpi or keelepesä]

[10e] Languages like Yiddish, Navajo, and Scottish Gaelic have had increased interest thanks to this popular language learning app. This app's successes are linked to gamified aspects like "lingots" and its green owl mascot.

ANSWER: Duolingo

<AS, Social Science>

15. Since these spaces by definition have an inner product that can be used to define a norm, each of these spaces are Banach Spaces. For 10 points each:

[10m] Name these spaces whose usage in quantum mechanics was expounded by John von Neumann as a way to extend the techniques used on Euclidean vector spaces to infinite-dimensional spaces.

ANSWER: Hilbert spaces

[10e] By fixing a basis in finite-dimensional Hilbert spaces, operators in quantum mechanics may be represented by square types of these objects, which have rows and columns and non-commutative multiplication.

ANSWER: matrix [or matrices]

[10h] The generic solution to the Schrödinger equation is to multiply the initial state by this family of unitary operators. These operators are represented in the form of the exponential of minus i over \hbar times the Hamiltonian.

ANSWER: unitary time evolution operators

<BW, Physics>

16. Thanks to measures like widespread adoption of Yacouba Sawadogo's *zai* ("zye") technique, the Gambia, Sierra Leone, and Burkina Faso have recently experienced the greatest increases in this value in the world. For 10 points each:

[10h] Name this value. Physiological density is calculated by taking this value into account when finding a region's population density.

ANSWER: amount of arable land [prompt on agricultural land or farmable land or land]

[10e] Chris Reij ("ray") has helped spread local agroforestry techniques throughout the Sahel after observing their efficacy against deforestation with Landsat imagery from these devices. GPS uses a network of these devices in medium Earth orbit.

ANSWER: satellites

[10m] Geographers help plan agroforestry in West Africa using these maps colored by variables like rainfall or land use. These thematic maps contrast with heat maps as they are colored by defined geographic areas.

ANSWER: choropleths ("CORE-uh-pleths") [reject mispronunciations like "chloropleth"]

<JF, Geography>

17. The reverence given to this deity by some South Indian Muslims can be traced to his friendship with the brigand Vavar ("VAH-ver"). For 10 points each:

[10h] Name this god widely worshiped in Kerala and Tamil Nadu as a celibate god of righteousness. This god, who was created to defeat the buffalo demoness Mahishi, has a shrine at Sabarimala ("SHUH-buh-ree-muh-luh") that draws millions of worshippers each year.

ANSWER: Ayyappan ("EYE-uh-pah") [or Ayyappa; accept Dharmashāstā or Manikkandan or Hariharasudhan; prompt on Shasta]

[10e] Ayyappan is often championed by LGBTQ+ South Indians for having these two deities as his parents. Along with Brahma, these two gods form the Trimurti.

ANSWER: Shiva AND Vishnu [accept Narayana or Mohini in place of "Vishnu," accept Mahadeva in place of "Shiva"]

[10m] In one myth, Ayyappan set out to retrieve the milk of one of these animals in order to heal his stepmother, the Queen of Pandalam (“PUN-duh-lum”), who was feigning her illness. Along with lions, these animals serve as the main mounts for Durga.

ANSWER: tigers [accept tigresses]

<AS, Beliefs>

18. In a play by this author, Amir admits to feeling a “blush of pride” on 9/11 because “we were finally winning,” comparing it to how he imagines Jews feel about Israel. For 10 points each:

[10h] Name this playwright who depicted dinner party discourse on Muslim-American identity in his Pulitzer-winning play *Disgraced*.

ANSWER: Ayad Akhtar

[10e] Akhtar’s later play *Junk* follows Robert Merkin, who works at one of these institutions. Stefano Massini’s *Lehman Trilogy* is titled for one of these institutions that collapsed in 2008.

ANSWER: investment bank [or investment firm; or investment company]

[10m] In a section of his novel *Homeland Elegies*, Akhtar recalls being harassed by a state trooper after his car breaks down in this state. In a play set in this state, a man blows his trumpet three times before the protagonist’s funeral.

ANSWER: Pennsylvania (The section is titled “Scranton Memoirs.” The play is *Fences*.)

<IZ, American Literature>

19. The seeds of members of this family are sparse in nutrients and thus must be infected by members of *Basidiomycota* and develop unique mycorrhizal structures called pelotons before they can germinate. For 10 points each:

[10h] Name this second-largest family of flowering plants after *Asteraceae*. These plants’ flowers are bilaterally symmetrical and have fused stamens and carpels.

ANSWER: orchids [or Orchidaceae]

[10e] Some orchids remain obligate myco-heterotrophs throughout their lives because they do not produce chlorophyll and as a result cannot perform this process, which converts energy from sunlight into glucose.

ANSWER: photosynthesis

[10m] Orchid mycorrhizae deliver nitrogen to plant cells either as ammonium or amino acids, preferring this amino acid which contains a 3-nitrogen guanidinium group, making it the amino acid with the highest nitrogen content.

ANSWER: arginine [or Arg, or R]

<HK, Biology>

20. Curse tablets discovered within this type of structure contained pleas to a syncretic goddess asking her to curse thieves who stole their clothes. For 10 points each:

[10e] Name this type of structure, one of which was constructed over Aquae Sulis’s hot springs. Aqueducts carried water to another of these structures constructed by Caracalla.

ANSWER: public bath [or thermae; accept “Sacred Spring”] (*Aquae Sulis is the modern-day city of Bath*.)

[10h] Aquae Sulis’s baths were devoted to a syncretized deity influenced by the Celtic Sulis and this deity. The Quinquatria festival was dedicated to this goddess who acted as Domitian’s patron.

ANSWER: Minerva [accept Sulis Minerva]

[10m] Aquae Sulis was situated on a system of roads detailed in an itinerary named for this emperor. Two decades after Hadrian, this emperor moved the border with Caledonia north to the Firth of Forth with his own wall.

ANSWER: Antoninus Pius [or Titus Aelius Hadrianus Antoninus Pius; accept Antonine Wall]

<GP, Other History: Ancient>