

Chicago Open 2023

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Tossups

1. **The mass of these particles is related to the masses of two smaller particles by the GMOR, or Gell-Mann–Oakes–Renner relation. A Lagrangian that is invariant under S·U-two cross S·U-two canonically contains a term normalized by f squared over 4, where f is a constant named for these particles. The strength of the spontaneous breaking of chiral symmetry in QCD is related to this particle's "decay constant." The theoretical decay of the phi meson into three of these particles is suppressed per the (*) OZI rule.** The paper that originally proposed this particle derived its existence from a potential given by an exponential screening term, times a typical "one over r " Coulomb potential. Hideki Yukawa proposed that this particle mediates the strong force between nucleons. For 10 points, an up or down quark bound to an up or down antiquark comprises what lightest meson?

ANSWER: **pions** [or **pi mesons**; prompt on **pi**]

<Billy Busse, Physics>

2. **An event centering on this person followed a similar event that targeted the alcoholic John Pickering. This person used natural law to argue that the *ex post facto* clause does not apply to civil cases in his majority opinion for *Calder v. Bull*. This person mocked the defense as "a non sequitur" in a libel trial concerning the pamphlet *The Prospect Before Us*. This person told a grand jury in Baltimore that repeal of the Judiciary Act of 1801 was turning America into a (*) "mobocracy." Aaron Burr presided over this person's trial, in which Luther Martin successfully defended this person from John Randolph of Roanoke's charges that he had been biased against John Fries and James T. Callender. For 10 points, name this Supreme Court justice who was unsuccessfully impeached by the Democratic-Republicans.**

ANSWER: Samuel **Chase**

<Caleb Kendrick, US History>

3. **A poet with this surname expanded on a FEMA employee's emails for a poem in a 2008 collection that narrates the progression of Hurricane Katrina. Another author with this surname wrote "we let the night blur into cum wonder & blood hallelujah" in a poem that describes an HIV diagnosis as a "strange dowry." That author with this surname used the long poem "summer, somewhere" to open the collection *Don't Call Us Dead*. A poet with this surname wrote (*) "We saw to the edge of all there is— / So brutal and alive it seemed to comprehend us back" in reference to her father's work on the Hubble Space Telescope. That poet with this surname wrote the memoir *Ordinary Light* and a collection that includes the poem "My God, It's Full of Stars." For 10 points, give this surname shared by a nonbinary poet named Danez ("duh-NEZ") and *Life on Mars* author Tracy.**

ANSWER: **Smith** [accept Tracy K. **Smith**, Danez **Smith**, or Patricia **Smith**]

<Henry Atkins, American Literature>

4. A thinker from this country invented the first categorial grammar, which he co-names with Yehoshua Bar-Hillel. Anita and Solomon Feferman wrote a definitive 2004 biography of a thinker from this country who argued that “logical notions” must be permutation invariant on a domain. A thinker who led a philosophical school in this nation developed a “calculus of names” and founded the subfield of mereology. Aristotle’s (*) sea battle argument inspired a thinker from this country to develop the first three-valued logic. This nation names both a style of prefix and a “reverse” style of postfix logical notation. A logician from this nation defended the view that a statement in an object language is true if and only if it’s true in the metalanguage, his semantic theory of truth. For 10 points, Alfred Tarski and Jan Łukasiewicz (“yahn woo-kah-SHAY-veech”) belonged to what nation’s Lvov–Warsaw School?

ANSWER: **Poland** [or **Polska**] (The unnamed thinkers are Kazimierz Ajdukiewicz and Stanisław Leśniewski.)
<Caleb Kendrick, Philosophy>

5. *Note to moderator: Please read the answerline carefully.*

Description acceptable. Roger Norrington and the Orchestra of the Age of Enlightenment recreated this event for a 2005 series that called its central figure a “generous spirit.” Gaspare Spontini tried to preempt this event and unsuccessfully sought to prevent repeat instances of it. Two clarinets replaced an oboe d’amore and oboe da caccia (“CAH-chuh”) in the featured piece of this event, made possible by a Christmas gift from its central figure’s grandmother. Eduard Devrient (“duh-FREENT”) helped convince Carl Friedrich (*) Zelter to host this event at the Singakademie (“ZING-uh-kah-deh-mee”). An aria that opens with an obbligato violin over *pizzicato* strings was sung by a soprano instead of an alto at this event, whose central figure cut many arias and chorales, such as settings of “O Haupt voll Blut und Wunden,” from it. That composer later conducted this concert’s featured piece at the Thomaskirche (“TOH-mas-keer-shuh”) for the first time in 100 years. For 10 points, what 1829 performance of a 1727 oratorio began the Bach Revival?

ANSWER: Felix **Mendelssohn**’s 1829 performance of J. S. Bach’s *St. Matthew Passion* [accept Jakob Ludwig Felix **Mendelssohn** Bartholdy in place of “Mendelssohn”; accept *Matthäus-Passion* or **BWV 244** in place of “St. Matthew Passion”; prompt on answers that describe **Mendelssohn** performing, conducting, or reviving pieces by J. S. **Bach** but do not mention the *St. Matthew Passion*; prompt on performances of the *St. Matthew Passion* that do not mention Mendelssohn by asking “whose performance?”]
<Rob Carson, Classical Music and Opera>

6. After allegedly making a comment about the utility of hay, an official in this century was unsuccessfully hanged three times before being beheaded and having hay shoved in his mouth. At the end of this century, an author discovered fondue during his time in self-exile in Switzerland, which he popularized in a later book that contains the aphorism “Animals feed, man eats.” A book by Mark Kurlansky records that this was the [emphasize] *final* century in which women wore false buttocks to smuggle food. Peasants were granted the right to hunt in this century’s (*) August Decrees. A minister in this century claimed that his king ate the mixed rye and wheat bread *maslin*. Food insecurity in this century gave rise to numerous “famine plots” that accused the aristocracy of hoarding grain, including finance minister Jacques Necker. For 10 points, in what century were the peasants of France allegedly told to “eat cake” by Marie Antoinette?

ANSWER: **18th** century [or **1700s**] (The official in the leadin is Joseph Foullon de Doué, who allegedly said, “If those rascals have no bread, then let them eat hay.”)
<Alex Fregeau, European History>

7. An art historian from this country corrected “improprieties” in Michelangelo’s *Last Judgment* and gave other rules for iconography in his *The Art of Painting*. A movable screen painting in the sacristy of a palace in this country depicts angels in a high vaulted room floating over an excommunication ceremony. A bearded woman nurses a baby in a painting from this country whose artist moved away from tenebrism with a brilliantly golden version of the (*) *Immaculate Conception*. An artist from this country depicted a young boy holding a note that reads “Give me alms!” as well as a cane to help with his clubfoot. The many paintings of monks by an artist from this country include one of Saint Serapion drawn and quartered. Pantry items typically appear in still lifes from this country called *bodegones*. For 10 points, name this home country of Jusepe (“joo-SEP”) de Ribera and Francisco de Zurbarán.

ANSWER: Spain [or España; accept Kingdom of Spain or Reino de España; accept Spanish Empire] (The first line refers to Francisco Pacheco, who was the teacher of Diego Velázquez.)

<Ganon Evans, Visual Fine Arts>

8. A man in this novel urges, “Do not suffer life to stagnate” since “distance has the same effect on the mind as on the eye.” A lecturer in this novel who compares reason to the sun and fancy to a meteor ignores all his teachings when his daughter dies of a fever. After a discourse on the nature of the soul held in some catacombs, this novel ends with a “conclusion, in which nothing is concluded.” Critics debate the contemporaneous claim that this novel was written in a week to pay for the (*) funeral of its author’s mother. This novel’s protagonist, who engages in a multi-chapter debate in which he supports marriage over celibacy, seeks to make his own “Choice of Life.” In *Jane Eyre*, Helen Burns is introduced while reading this novel. With Imlac and Nekayah, this novel’s protagonist escapes to Cairo from the Happy Valley. For 10 points, name this novella framed as a history of the title “Prince of Abissinia” by Samuel Johnson.

ANSWER: Rasselas [or *The History of Rasselas, Prince of Abissinia*]

<Tim Morrison, British Literature>

9. Xie et al. developed a green, one-pot synthesis that generates cluster compounds containing this element surrounded by a coating of bovine serum albumin. Campanile probes for near-field scanning optical microscopy are usually covered in a layer of this element. MHA and *p*-MBA ligands are often used to stabilize cluster compounds of this element. Rod-shaped structures composed of this element are typically stabilized with a bilayer of the surfactant (*) CTAB. Though a variety of elements can be used today, this element is the one that was traditionally used in sputter coating of samples for electron microscopy. Surface plasmon resonance produces the red-to-pink color of monodisperse colloidal solutions of this element. For 10 points, relativistic effects in the 5*d* orbital produce the characteristic color of what noble metal?

ANSWER: gold [or Au]

<Billy Busse, Chemistry>

10. A scholar with this surname wrote a 1983 article in *Cognition* arguing that Chinese speakers who fail to understand counterfactuals translated from English are evidence for the Sapir–Whorf hypothesis. The first longitudinal study of language acquisition to be videotaped was presented in *One Word at a Time*, a book by a scholar with this surname and the first name Lois. Another psychologist with this surname linked language acquisition to preverbal theory of mind in the book *How Children Learn the Meanings of Words* and made a “case for rational compassion” in the 2016 popular-press book (*) *Against Empathy*. A scholar with this surname names a hierarchical model of cognitive abilities arranged from Remember to Create, which is often used to structure school curricula and is called his “taxonomy.” For 10 points, give this surname of Allan, the author of *The Closing of the American Mind*.

ANSWER: Bloom [accept Alfred H. Bloom; accept Lois Masket Bloom; accept Paul Bloom; accept Benjamin Samuel Bloom or Bloom’s taxonomy; accept Allen David Bloom]

<Andrew Hart, Social Science>

11. A player of this instrument backed Sophie Tucker's recording of "After You've Gone" while leading his namesake "Molers." Gunther Schuller's book *Early Jazz* praises the high-register solos executed by a player of this instrument from the Jazz Age, Jimmy Harrison. On all early Ellington versions of "East St. Louis Toodle-oo," this instrument plays an 18-bar solo after Bubber Miley's opening solo. Miley and a player of this instrument, "Tricky Sam" Nanton, developed Ellington's "jungle style" in the 1930s. Sy Oliver penned "Opus One" for a bandleader who played this instrument as leader of the (*) Clambake Seven in the Swing Era. This was the [emphasize] *larger* of two instruments to play in a growling style with a plunger mute, which is contrasted with the comic *glissandi* played by Dixieland artists. For 10 points, Jack Teagarden played what brass instrument, also played by the bandleader of "In the Mood," Glenn Miller?

ANSWER: **trombone** [accept slide **trombone**] (The opening line refers to Miff Mole.)

<Victor Pavao, Other Fine Arts>

12. "Highway" and "residual" constructs scale better by sometimes using the identity function as one of these functions. A "self-gating" one of these functions named Swish is atypically non-monotonic. These functions often have overall worse performance when their slope is near zero in so-called saturating regions; an issue in which one of these functions can become almost completely inactive in a saturating region is resolved by a (*) "leaky" variant. The softmax is used as the final one of these functions to "select" between classes in classification problems. The hyperbolic tangent and sigmoids have largely been replaced as the current standard for these functions by a simple piecewise-defined "rectified linear" one named ReLU ("REL-yoo"). For 10 points, name these functions applied to a weighted sum to produce the output of each node in a neural network.

ANSWER: **activation** functions

<Alistair Gray, Other Science - Computer Science>

13. A character with this profession remembers acquiring a cat named Blackie to get rid of cockroaches while preparing a "strong-room of dreams." That character with this occupation opens a play by reminiscing about his previous job, where he translated for Mr. "Baas" Bradley during a General Cleaning in preparation for Henry Ford the Second's visit. The work of another character with this job causes the (*) Bale to feel jealous upon learning that he has been relegated to a corner "with one of the village latrines." John Kani first played a character with this job who, early in a 1972 play, meets a client who says his name is Robert Zwelinzima. In another play, a dance that depicts a white man with this job traveling in a car is performed by four girls with Lakunle. For 10 points, Styles in *Sizwe Banzi is Dead* shares what artistic job with the "Lost Traveller" in *The Lion and the Jewel*?

ANSWER: **photographer** [prompt on artist; prompt on portraitist]

<Rob Carson, World Literature>

14. Royal chicanery after the death of a man from this city inspired both the tenth clause of the Magna Carta and actions in York that earned a man named Richard the sobriquet "Mala Bestia." A man named Copin was the first of 19 people executed after an event in this city after John of Lexington drew a false confession from him. 12th-century "pipe rolls" contain primary records about a man from this city whose possessions escheated ("es-CHEAT-ed") to the king upon his death and became the subject of a special division of the (*) Court of Exchequer. This city was the home of Henry II's main creditor and perhaps the wealthiest man in Norman England, Aaron of [this city]. The death of an eight-year-old folk saint led to 1255 accusations of blood libel in this city. For 10 points, "Little Saint Hugh" was from what English city of the northern Midlands?

ANSWER: **Lincoln** [accept Aaron of **Lincoln** or Little Saint Hugh of **Lincoln**]

<Andrew Hart, Other History>

15. **Gashowu Yokuts lore relates how this animal lost its eyes in the brush after its mother and its human “pets” teamed up to kill it. Mono lore relates how Ground Squirrel’s beheading of this animal let loose a bloody deluge that drowned the world. This animal embodies the fundamental virtues of kindness, wisdom, justice, and discipline in Mapuche culture. This animal is incited to gouge out the eyes of an enraged bull after being lashed to it during the violent (*) Festival of Blood.** The staffs of the Staff-God depicted in Tiwanaku’s Gate of the Sun are tipped with the head of this animal, a motif that is shared by 16 figures on the gate’s lintel. While the puma and serpent represented the *uk’u* and *kay* (“kye”) levels, this animal acted as a divine messenger to the *hanan pacha*, or the Andean “Upper World.” For 10 points, name this animal whose namesake “temple” in Machu Picchu uses a pair of rocks to represent its large wingspan.

ANSWER: **condors** [accept Andean **condors** or Californian **condors**; accept apu **kuntur** or **manke**; accept Temple of the **Condor**; prompt on **birds** or **vultures**]

<Kevin Thomas, Beliefs>

16. **Proteins with an RTX motif share a common, ATP-dependent mechanism for this process. Proteins with an LPXTG motif that have undergone this process are then cleaved by sortases. A “passenger” domain allows some proteins to perform this process on themselves. An N-terminal motif containing a pair of “twin” arginine residues acts as a signal for this process in the Tat pathway. One system for this process consists of a “needle” complex attached to a (*) basal body.** *H. pylori*’s system for this process is evolutionarily related to the machinery for conjugation, while *Shigella*’s system for this process is sometimes called the “injectisome” and structurally resembles flagella. For 10 points, some bacteria use “type III” and “type IV” systems to accomplish what process of exporting a protein from a cell, exemplified by the release of hormones from endocrine glands?

ANSWER: **secretion** [accept **translocation**; prompt on descriptive answers indicating that a **protein** is being **moved** across the **cell membrane**; reject any descriptive answers involving the membrane of something other than the cell, like “moving stuff into the endoplasmic reticulum” or “moving stuff into the mitochondria”]

<Billy Busse, Biology>

17. **This state destroyed image temples and mandated uniform religious art according to Mary Boyce’s influential “iconoclasm” thesis. A kingmaking priest of this state left an inscription bragging about wiping out religious minorities and executed a painter who evoked Jesus by entering a university city on a donkey. A colossal statue of a ruler of this state carved from a single limestone stalactite is identifiable by its crown and *korymbos*. The priests Tansar and (*) Kartir consolidated the official religion under this state’s first rulers. In this state, rabbinical scholars at Sura and Pumbedita published the Babylonian Talmud. This state, which crushed a proto-socialist heresy led by Mazdak, backed the Nestorian Church after Chalcedon in cities like Nisibis and Gundeshapur.** For 10 points, magi completed the Avesta under Shapur II in what final Zoroastrian empire of Persia?

ANSWER: **Sassanid** Empire [or **Sasanian** Empire or **Eranshahr**; prompt on the Neo-Persian Empire]

<Henry Atkins, World History>

18. **This body of water was central to a dispute resolved in 1927 that resulted in the unusual geographic position of the so-called “Country Club Area.” C. R. Moore foiled a double assassination attempt in 1909 during a conference that involved land adjacent to this body of water called Cordova Island. A 1967 discovery by James Hill Jr. has allowed over 250 people to successfully claim citizenship due to being born near this body of water on the Horcón (“ohr-KOHN”) Tract. Outside of Bluetown near the mouth of this river sits a historical marker for the (*) Thornton Affair.** Its course was partly placed into a concrete channel in the 1960s to resolve the long-running Chamizal dispute. An incident at a city near this river’s mouth resulted in Theodore Roosevelt dishonorably discharging buffalo soldiers who allegedly killed a white bartender. For 10 points, Brownsville lies at the mouth of what river which sets the US–Mexico border in Texas?

ANSWER: Rio **Grande** [or Rio **Bravo** del Norte]

<Andrew Hart, Geography>

19. Many Anglicans first adopted these objects after crafting one of them from household junk became an annual tradition on the children's TV show *Blue Peter*. One of these objects names a set of kombologia-inspired Lutheran prayer beads popularized in the 1990s. Johann Wickern used a wagon wheel to construct a now-ubiquitous type of these objects while teaching at a mission school. A devotional pattern poem shaped like one of these objects presents one "of deserved praise" and is by George Herbert. (*) Scandinavian girls wear baptismal robes and a single one of these objects decorated with lights during St. Lucy's Day processions. They're not made of ribbon or metal, but these objects often decorate the tops of maypoles. In many churches, one of these objects in the chancel accumulates four or five purple, rose, or white candles during Advent. For 10 points, name these circular ornaments used to decorate doors during Christmas, usually made from evergreen or holly.

ANSWER: wreaths [or garlands or chaplets; accept flower wreaths or Advent wreaths; accept Advent crowns; prompt on crowns]

<Henry Atkins, Beliefs>

20. One of this author's characters, who "censures" a novel for being written in a dialect "without article," is said to be left in the "X condition" after heavy drinking. This author claims that a rival's books, "being bad, are harder than stones," after giving a parable about a man who is beaten for dropping a rock on a prized "lurcher." In a novel by this author, a rival's book is called "so bad" that it would be impossible to do worse on purpose by devils using it as a (*) tennis ball at the gates of hell. In a preface, this author asks whether "it is an easy thing to write a book" after telling a story about a madman who uses a pointed reed to inflate a dog. An affidavit stating that another author's characters are impostors is signed by Álvaro Tarfe in a novel by this author that ends with an attack on a "pretended Tordesillesque ("tor-day-SEE-yesk") writer." For 10 points, name this author who savaged Alonso Fernández de Avellaneda ("ah-bay-ah-NAY-dah") for writing an unauthorized sequel.

ANSWER: Miguel de Cervantes [or Miguel de Cervantes Saavedra] (The first line refers to the Aragonese dialect, in which Avellaneda's unauthorized continuation of *Don Quixote* was written.)

<Andrew Hart, European Literature>

Bonuses

1. Andrew Lanham's review of this book for the *Boston Review* begins by discussing a letter to LBJ in which Walt Rostow compares the "long, hot summer" to the war in Vietnam. For 10 points each:

[h] What 2019 book by Stuart Schrader draws a causal connection between tactics honed in the US empire's global counterinsurgencies and the domestic "war on crime?"

ANSWER: **Badges Without Borders**

[m] Daniel Immerwahr's book *How to Hide an Empire* borrows this adjective from Bill Rankin to refer to the US empire, specifically its visual quality of being scattered in small bases across a world map.

ANSWER: **pointillist** [accept **pointillist** empire]

[e] Greg Grandin's 2007 book *Empire's Workshop* is about the US empire's relationship with this multi-continental region in the Western Hemisphere, whose "open veins" title a book by Eduardo Galeano.

ANSWER: **Latin America** [or **América Latina**; accept **Open Veins of Latin America**; prompt on **America**]

<Andrew Hart, Other Academic>

2. In a 2015 Robert O'Hara play, two different O'Mallery families—one white and one Black—organize these events as pretexts for clumsy interventions. For 10 points each:

[m] During what sort of event does the drunken teacher Rosemary rip a man's shirt while trying to dance with him? The day after one of these title events, a drifter flees from the police by hopping a freight train to Tulsa.

ANSWER: **picnics** [or **barbecues**; prompt on **parties**; prompt on family **reunions**] (The plays are *Barbecue* and William Inge's *Picnic*.)

[e] In this play, Lily cancels her date with Sid after he comes home stinking drunk from a Fourth of July barbecue. An exclamation from the *Rubaiyat of Omar Khayyam* titles this play, the only comedy by Eugene O'Neill.

ANSWER: **Ah, Wilderness!**

[h] In this play, the ghost of Juicy's father asks him to kill his uncle during a family barbecue. James Ijames ("imes") won the 2022 Pulitzer for Drama for this retelling of Hamlet.

ANSWER: **Fat Ham**

<Henry Atkins, American Literature>

3. Cutbacks are added to this material to reduce its viscosity, allowing it to be applied at lower temperatures as a tack coat or a chip seal. For 10 points each:

[e] Name this material whose common "hot mix" form is manufactured by combining aggregate with a bitumen binder heated to around 150 degrees Celsius.

ANSWER: **asphalt** [or **asphalt concrete**, or **blacktop**, or **pavement**; accept **farmac**, or **tarmacadam**, or **bitumen macadam**, or **bituminous macadam**; reject "concrete"]

[h] All modern pavers use the free-floating form of these devices, which adjust their height based on tow speed and the flow of asphalt underneath to create a level mat. The name of these tools can also refer to the material leveled by them.

ANSWER: **screed** [accept free-floating **screed**]

[m] Crocodile cracking of asphalt is sometimes named for this process, in which cracks in a material grow larger via cyclic loading. This process can be described by the Coffin-Manson equation in the low-cycle regime.

ANSWER: **fatigue**

<Jonathen Settle, Other Science - Applied and Engineering>

4. Land reclamation around this body of water halted in the 1950s after it was accidentally broken into a series of smaller lakes. For 10 points each:

[m] Name this body of water referenced in the names of both Húběi to its north and Húnán to its south. Some of the earliest dragon boat races occurred 2,500 years ago on this freshwater lake, the largest in China after Lake Póyáng.

ANSWER: Lake **Dòngtíng** [or **Dòngtíng** Hú]

[e] While Lake Dòngtíng's surface area can increase sevenfold during flooding season, it now plays a smaller role in regulating the discharge of the Yangtze thanks to the completion of this massive structure upstream in 2006.

ANSWER: **Three Gorges** Dam [or **Sānxiá** Dàbà]

[h] Wildlife like the finless porpoise face extinction in Lakes Dòngtíng and Póyáng due to demand for this resource. Singapore is the world's largest importer of this resource, much of which is extracted illegally in Malaysia and Cambodia.

ANSWER: **sand** [accept **sand** dredging, river **sand** mining, or **sand** quarrying] (Singapore imports sand for land reclamation.)

<Henry Atkins, Geography>

5. This Brazilian city was a major center for the importation of *panos* ("PAH-nooss") *da costa*, colorful textiles from Africa. For 10 points each:

[m] Name this city where *panos* were often sold by its substantial population of African merchants. The trade in *panos* was partially spurred by their ritual use in the Candomblé religion, which had an especially strong presence in this city.

ANSWER: **Salvador** [or **Salvador** da Bahia]

[e] The trade in *panos da costa* was enabled by policies that allowed enslaved mariners to bring goods to Brazil in types of these objects named for "liberty." As one of the few pirates to actually bury treasure, Captain Kidd likely used some of these hinged boxes to do so.

ANSWER: treasure **chests** [or liberty **chests** or **caixas de liberdade**]

[h] The highest quality *panos* were generally considered to be those purchased in this African city. The Paraisos were an influential Afro-Brazilian family living in this city who advised the local king of the Gun ("goon") people.

ANSWER: **Porto-Novo** [or **Hogbonu** or **Ajashe**]

<Michael Coates, World History>

6. A genderbent version of this character storms out after learning that her ungrateful master planned to throw her dead body out a window in a Giambattista Basile tale. For 10 points each:

[h] Name this compassionate fae who feigns the drowning of "Lucky Constantino" so that he can marry the princess.

In another tale, this character dresses up a poor miller's son as the Marquis of Carabas.

ANSWER: **Puss in Boots** [or Der **gestiefelte Kater**, Il **gatto con gli stival**, le **Maître chat**, or Le **Chat botté**; accept **Master Cat**; prompt on **Cat** as a Helper] ("Lucky Constantino" is by Giovanni Straparola. The Marquis of Carabas is from Perrault's account.)

[e] In Perrault's ("peh-ROH's") account, Puss consumes an ogre in the guise of this animal to secure a castle for the Marquis. Six of these animals transform into dapple gray horses in Perrault's version of "Cinderella."

ANSWER: **mouse** [or **mice**]

[m] In another Perrault tale, a character named "Hop on My [this object]" tricks an ogre into killing his daughters by exchanging their crowns with nightcaps. A Round Table knight named for this object dies from a spider-bite.

ANSWER: **thumb** [accept Hop on My **Thumb**, Hop o' My **Thumb**, Little **Thumbling**, Little **Thumb**, Little **Poucet**, Le petit **Poucet**; accept Tom **Thumb**]

<Kevin Thomas, Beliefs>

7. Anton Shammas translated many novels by his friend Emile Habbibi, such as *The Secret Life of Saeed the Pessoptimist*, into this language. For 10 points each:

[e] Name this language in which Amos Oz wrote *A Tale of Love and Darkness*.

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

[h] Shammas broke ground as a Palestinian author by writing a memoiristic, Hebrew-language novel with this title. “Nevsky Prospekt” appeared in a Gogol collection of this name that also includes assorted musings on art.

ANSWER: **Arabesques** [or **Arabeskot** or **Arabeski**]

[m] *Two answers required*. Shammas’s novel *Arabesques* is often described as an example of “minor literature” in a major language, a concept defined by these two writers in a book that analyzes Kafka as a German-speaking Bohemian Jew.

ANSWER: Gilles **Deleuze** AND Félix **Guattari** [accept Gilles Louis René **Deleuze** in place of “Gilles Deleuze”; accept Pierre-Félix **Guattari** in place of “Félix Guattari”]

<Arya Karthik, World Literature>

8. William Halsted developed a debilitating cocaine habit in his quest to find analgesics for the patients that he subjected to this surgery. For 10 points each:

[h] Name this surgery, often justified by Halsted’s bogus “centrifugal spiral” theory of lymphatic spread. This surgery nearly always caused disfigurement and severe lymphedema.

ANSWER: **radical mastectomy** [prompt on **mastectomy**]

[m] Many of Halsted’s cocaine-fueled radical mastectomies were performed around the turn of the century in this city, where he worked with fellow physician William Osler to establish the first formal residency program.

ANSWER: **Baltimore**

[e] Half a century after Halsted’s tenure at Johns Hopkins, this woman’s cervical cancer was treated with radium at the hospital. Biologist George Gey used her cancer tissue to produce the first immortal cell line without her knowledge.

ANSWER: Henrietta **Lacks** [or Loretta **Pleasant**]

<Itamar Naveh-Benjamin, Biology>

9. Thomas F. X. Noble argued that this polity became functionally independent decades earlier than was traditionally accepted. For 10 points each:

[m] Name this polity that received land taken from the Byzantines in an agreement made at Sutri with King Liutprand. This polity later acquired the Duchy of the Pentapolis and the Duchy of Spoleto.

ANSWER: **Papal States** [or the **State of the Church**, **Republic of St. Peter**, **Stato Pontificio**, **Dicio Pontificia**, **Stato della Chiesa**, or **Status Ecclesiasticus**]

[h] Noble challenged the view that the history of the Papal States began only in 754, when this pope met with Pepin the Short and received a donation of land later confirmed by Charlemagne.

ANSWER: **Stephen II** [prompt on **Stephen**]

[e] Noble argues that two successive popes with this name played an especially important role in formulating the ideology of an independent “Republic of St. Peter” with its own people. Although it is named for him, an earlier pope with this name likely did not invent a style of chant.

ANSWER: **Gregory** [accept **Gregory I**, **Gregory II**, or **Gregory III**]

<Michael Coates, European History>

10. Charles IX (“the ninth”) commissioned a collection by this composer supposedly to atone for the Saint Bartholomew’s Day Massacre. For 10 points each:

[m] Name this incredibly prolific composer whose pieces in the *musica reservata* style include the extremely chromatic motet collection *Prophetiae Sibyllarum*.

ANSWER: Orlando di **Lasso** [or Orlande de **Lassus**, Roland de **Lassus**, Orlandus **Lassus**, Orlande de **Lattre**, or Roland de **Lattre**]

[e] The penultimate of Lasso’s *Penitential Psalms of David* is an acclaimed polyphonic setting of this psalm, which Josquin des Prez (“zhoh-SCAN day pray”) set twice. Many settings of this Psalm are titled with its Latin incipit, “from the depths.”

ANSWER: **De profundis** [accept Psalm **130** or Psalm **129**]

[h] Lasso symbolically scored this other collection for seven voices to represent Mary’s sorrows. This collection’s 20 *madrigali spirituali* set poems by Luigi Tansilli, and it also includes the motet *Vide homo, quae pro te patior*.

ANSWER: **Lagrime di San Pietro** [or the **Tears of Saint Peter**]

<Rob Carson, Classical Music and Opera>

11. The song “As Long as the Grass Shall Grow” asks if this leader can swim because the site of his grave was due to be flooded with the construction of the Kinzua Dam. For 10 points each:

[h] Name this Seneca war leader who, with Disappearing Smoke, led the Seneca forces in the Battle of Wyoming. Later in life, this leader broke off close relations with the Quakers to support his half-brother Handsome Lake.

ANSWER: **Cornplanter** [or John **Abeel**, **Gaiänt’wakê**, or **Kaiiontwa’kon**]

[m] Cornplanter fought with this man in an attack on Cherry Valley, which in part prompted the Sullivan Expedition. This man’s sister Molly was the wife of British administrator William Johnson.

ANSWER: Joseph **Brant** [or **Thayendanegea**]

[e] Later in life, Cornplanter was given a tract of land along this state’s Allegheny River. The sons of this state’s founder defrauded its native Lenape (“luh-NAW-pay”) people in the Walking Purchase.

ANSWER: **Pennsylvania** [or **PA**]

<Tejas Raje, American History>

12. A “Dumb-Show” before this play’s second act depicts a king refusing a clear glass of wine in favor of a golden cup of “potion” that represents insincere flattery—which turns out to be poison. For 10 points each:

[h] Name this play in which the “parasites” Hermon and Tyndar incite the brothers Ferrex and Porrex to war against each other. This play by Thomas Norton and Thomas Sackville was the first English-language blank-verse tragedy.

ANSWER: **Gorboduc** [or *The Tragedie of Gorboduc*; prompt on *The Tragedy of Ferrex and Porrex*]

[e] *Gorboduc*’s depiction of a British king dividing his realm among fractious children was an obvious influence on this tragedy, in which Cordelia is disinherited due to her refusal to flatter her father.

ANSWER: **King Lear**

[m] The Duke of Albany’s speech in *Gorboduc* inspired this character’s promise to “never rest” until he reaches “the sweet fruition of an earthly crown.” This character asks “Know ye not yet the argument of arms?” before killing his son.

ANSWER: **Tamburlaine** [accept **Tamerlane** or **Timur** the Lame]

<Rob Carson, British Literature>

13. The three main types of these devices are axial flow, centrifugal, and positive displacement. For 10 points each:

[e] Name these devices that mechanically move or transfer energy to a fluid. Homeowners prevent basement flooding during rainstorms by using these devices to transfer water out of a sump basin.

ANSWER: **pumps** [accept sump **pumps**]

[m] A principle cause of routine wear-and-tear to pumps is this phenomenon in which a sudden large pressure drop below the vapor pressure is followed by energy release via shock waves when the pressure is increased.

ANSWER: **cavitation** [prompt on, but DO NOT REVEAL, **head loss**]

[h] This quantity measures the tendency of a pump to resist cavitation. This value is the difference between the suction-side and vapor values of a quantity calculated as pressure over the product of fluid density and little *g*.

ANSWER: **net positive suction head** [or **NPSH**; prompt on partial answers that include “**head**”]

<Billy Busse, Physics>

14. This model, which is based on memory and perceptual-motor modules, is more focused on human capacities than the machine AI approach of the rival Soar model. For 10 points each:

[h] What influential cognitive architecture model was developed by John Anderson as a general model of human cognitive behavior?

ANSWER: **ACT-R** (“act R”) [or **Adaptive Control of Thought**—Rational]

[m] Both Anderson’s ACT-R and John Laird’s Soar were developed at this university in the eastern US, whose influential multidisciplinary computer science department was co-founded in the 1960s by AI pioneer Allen Newell.

ANSWER: **Carnegie Mellon** University [accept **CMU** or **Carnegie** Institute of Technology]

[e] Another founding professor of CMU’s CS department was this multidisciplinary scholar, whose work with bounded rationality and satisficing made him the first non-economist to win the Nobel Prize in Economics.

ANSWER: Herbert **Simon** [or Herbert Alexander **Simon**]

<Andrew Hart, Social Science>

15. The first title fight in *Raging Bull* was inspired by a scene in this film, in which the camera exits into the snowy night at the start of a duel between the protagonist and a German played by Anton Walbrook. For 10 points each:

[h] Name this 1943 film that opens with a scuffle in a bath during which Roger Livesey’s protagonist remarks “40 years ago,” ushering in a series of flashbacks to his life as a soldier during three British wars.

ANSWER: *The **Life and Death of Colonel Blimp***

[e] *The Life and Death of Colonel Blimp* is among many films for which Powell and Pressburger used this three-strip color process. This process thrived during Hollywood’s Golden Age and produced highly saturated colors.

ANSWER: **Technicolor**

[m] Anton Walbrook also starred as Lermontov in this Powell and Pressburger Technicolor film. This film contains a virtuosic 17-minute ballet sequence featuring Moira Shearer, who plays the protagonist Vicky Page.

ANSWER: *The **Red Shoes***

<Tim Morrison, Other Fine Arts>

16. A speech in which this character declares, “So slender is / The boundary that divideth life’s two paths,” introduced to one language a “winged word” that literally means “eternal yesterday.” For 10 points each:

[m] Name this character whom the Irishmen Gordon and Butler murder at the end of a play. A trilogy of plays about this character opens with a one-act prologue titled for their “Camp.”

ANSWER: Albrecht von **Wallenstein** [or Albrecht Wenzel Eusebius von **Wallenstein** or Albrecht von **Waldstein**; accept *The Death of **Wallenstein*** or ***Wallenstein**’s Death* or ***Wallenstein**’s Tod*; accept ***Wallenstein**’s Camp* or ***Wallenstein**’s Lager*] (“Ewig gestrige” literally means “eternal yesterday,” and in adjectival form is used as something of a synonym for the English word “die-hard.”)

[e] This author of *Wallenstein* coined the aphorism “the axe in the house spares the carpenter” in *William Tell*.

ANSWER: Friedrich **Schiller** [or Johann Christoph Friedrich von **Schiller**] (The original aphorism is “die Axt im Haus erspart den Zimmermann.”)

[h] This Schiller poem introduced the Classical phrase “eye of the law” into German. This “thought-poem” opens with the motto “Vivos voco. Mortuos plango. Fulgura frango.”

ANSWER: “The **Song of the Bell**” [or “Das **Lied von der Glocke**”]

<Ani Perumalla, European Literature>

17. A sculpture in this country called *Survival of the Fattest* satirizes Europe's dependence on African labor by depicting an emaciated Black teenager struggling to carry an obese Lady Justice. For 10 points each:

[m] Name this continental European country home to the Louisiana Museum of Modern Art. In 2003, Tate Modern visitors laid on their backs to look up at a huge lighted sun disc installed by an artist born in this continental country.

ANSWER: **Denmark** [or **Danemark**] (The Tate Modern piece is *The Weather Project* by Danish-born artist Olafur Eliasson.)

[e] The sculptor of *Survival of the Fattest*, Jens Galschiøt (“yenz GAL-shut”), submerged it in the water right next to this landmark Copenhagen sculpture depicting a nude Hans Christian Andersen heroine.

ANSWER: *The **Little Mermaid*** [or *Den **lille Havfrue***]

[h] As founder of human rights collective The Color Orange, Galschiøt created this sculpture series of intertwined faces and skulls. In 2021, Hong Kong removed an entry in this series dedicated to Tīānānmén Square victims.

ANSWER: ***Pillars of Shame*** [or ***Pillar of Shame*** or ***Guóshāng zhī Zhù***]

<Ani Perumalla, Visual Fine Arts>

18. This quantity is computed by integrating the difference between a parcel's temperature and the temperature of the environment from the LFC to the level of neutral buoyancy. For 10 points each:

[h] Name this quantity that characterizes the instability in a given vertical slice of the atmosphere. High amounts of it indicate potential for strong thunderstorms.

ANSWER: **convective available potential energy** [or **CAPE**]

[e] The amount of CAPE controls the speed of these air currents. Supercells are characterized by rotating examples of these rising vertical air currents.

ANSWER: **updrafts**

[m] The CAPE is defined graphically as the area between a moist adiabat and the curve obtained from measurements by these devices, which measure temperature, pressure, and relative humidity, then transmit the data to the ground using low-frequency waves.

ANSWER: **radiosondes** [prompt on **balloons** or **weather balloons**]

<Billy Busse, Earth Science>

19. An academic controversy named for this position began when a philosopher wrote a response to Friedrich Karl Forberg. For 10 points each:

[m] What philosophical position names a 1790s “dispute” that involved a flurry of pamphlets and eventually resulted in Johann Gottlieb Fichte's resignation from his post at Jena?

ANSWER: **atheism** [accept **atheists**; accept **Atheismusstreit** or **atheism** dispute]

[e] The atheism dispute took place about 20 years after a similar German academic controversy over the purported “pantheism” of this much earlier Jewish thinker who wrote the *Ethics*.

ANSWER: Baruch **Spinoza** [or Baruch de **Spinoza**, Benedict **Spinoza**, or Benedictus de **Spinoza**]

[h] This philosopher, whose dialogue with Gotthold Lessing provoked the pantheism controversy, popularized the term “nihilism” as a central figure in the atheism dispute.

ANSWER: Friedrich Heinrich **Jacobi**

<Andrew Hart, Philosophy>

20. The Hand of Irulegi (“ee-roo-LAY-ghee”) has the oldest known writing of a proto-form of this language, displaying the word *zorioneku* (“soh-ree-oh-NEH-koo”) or “fortunate.” For 10 points each:

[e] Name this European language isolate thought to descend from the language of the Vascone tribe.

ANSWER: **Basque** [or **Euskara**]

[m] The bronze hand likely survived because it was in a village burned down by the Romans in a war against this general, who led Iberian tribes in a 1st-century BCE revolt against Rome after he was proscribed by Sulla.

ANSWER: Quintus **Sertorius** [accept **Sertorian** War]

[h] Until proven a forgery, pottery sherds at this site were thought to display the oldest Basque writing, as well as an early depiction of Jesus on the cross. Eliseo Gil was found guilty of fraud in 2020 for faking those findings at this site.

ANSWER: Iruña-**Veieia**

<Tejas Raje, Other History>