

ACF Fall 2019

Packet by the Editors (1)

Edited by Rahul Keyal, Ganon Evans, Justin French, Halle Friedman, Katherine Lei, Caroline Mao, Ben Miller, Tracy Mirkin, Clark Smith, Kevin Yu

Tossups

1. The development of these cells is guided by semaphorins and netrins, and parts of these cells are regulated by actin-supported growth cones. The disease SMA is caused by a lack of these cells, whose behavior is affected by EPSP's and IPSP's. Pyramidal cells and Purkinje ("pur-KIN-jee") cells are subtypes of these cells, which have a hillock that leads to a soma. Long-term potentiation contributes to the "plasticity" of these cells. The efflux of potassium ions through channels in these cells causes their hyperpolarization, which occurs after these cells "fire" during an action potential. For 10 points, name these cells with dendrites and axons that conduct signals in the nervous system.

ANSWER: neurons [accept nerve cells]

<Biology>

2. One person may subsume another's rights and obligations through this practice under the doctrine of coverture. Oaths about this practice, which can produce affinities for third parties, were the subject of breach of promise torts. Even if this practice never takes place, its result may be codified by "habit and repute" in common law. *Loving v. Virginia*'s defense of one kind of this practice was cited in 2015's *Obergefell v. Hodges*; the former case centered on a type this practice derided as "miscegenation." Before engaging in this practice, participants may create a prenup. For 10 points, name this legal practice that creates conjugal bonds between members of a couple.

ANSWER: marriage [or such equivalents as having a wedding, eloping, or being married]

<Social Science>

3. In Montreal during the 1950s, global studies of a man of this name resurged at Canada's largest church, which is named for this man. Matthias was chosen over a man of this first name to replace Judas as one of the Apostles. In Britain, one figure of this name was mythologized as the first keeper of the Holy Grail. According to Matthew, a "rich man" of this name wrapped the body of Christ in a linen cloth, before laying it in his own tomb. In a dream, an angel told a man of this name to embark on the "Flight into Egypt" to save his newborn son from King Herod. For 10 points, give this name shared by a man from Arimathea, as well as by the husband of Mary, Jesus's legal father.

ANSWER: Joseph [accept Saint Joseph, Joseph Barsabbas, or Joseph of Arimathea; accept Yosef; accept Justus; prompt on Barsabbas with "what was his first name?"] (The field referenced in the first sentence is Josephology.)

<Religion>

4. In her poem "The Fish," Elizabeth Bishop says that "everything" was this word, which she repeats three times before stating, "And I let the fish go." This word titles a novel that features Ursula's failed affair with Anton Skrebensky; that novel is the prequel to D. H. Lawrence's *Women in Love*. This is the [emphasize] *last word* in the title of a novel in which Roger Mexico studies Poisson distributions and Gottfried climbs into a device with the serial number "00000." In that novel whose title ends with this word, Tyrone Slothrop's sexual encounters correlate to V-2 rocket strikes. For 10 points, what word is preceded by "gravity" in the title of a Thomas Pynchon novel?

ANSWER: rainbows [accept *Gravity's* Rainbow]

<World/Other Literature>

5. This composition's opening quotes Handel's *The ways of Zion do mourn*, and its second movement uses Handel's chorus "And with his stripes we are healed" for the theme of a double fugue. The second violin and viola play quarters under the first violins' offbeat eighths in a 12/8 *Larghetto* in this piece. A solo bass echoes the B-flat major melody played by solo trombone to open this work's *Tuba mirum*. Franz von Walsegg commissioned this D minor

sacred work, and probably would have passed it off as his own if not for the composer's widow Constanze Weber ("kon-STAHNT-suh VAY-bur"). Its *Sanctus* and *Agnus Dei* were written by Franz Süssmayr, who completed its *Lacrimosa*. For 10 points, name this funeral mass by Mozart.

ANSWER: **Mozart's Requiem** in D minor [accept **Requiem** after "Mozart" is read, but prompt before by asking "by what composer?"; do not accept or prompt on answers using "mass" in place of "Requiem"]

<Classical Music>

6. During this event, Marsha P. Johnson supposedly threw "the shot glass heard round the world." Bob Dylan's mentor Dave Van Ronk was one of 13 people arrested during this event. The demand "Why don't you guys do something?" was yelled by a woman, possibly Stormé DeLarverie, during this event. Contrary to popular rumor, it was not triggered by the recent death of Judy Garland. This event broke out after patrons resisted a police raid on a mob-controlled establishment in Greenwich Village. For 10 points, name these 1969 riots that began at a bar in New York City and helped start the gay liberation movement.

ANSWER: **Stonewall** riots

<American History>

7. The Bouguer ("boo-GAY") correction is applied in the study of this phenomenon, whose other anomalies include mascons. This phenomenon balances radiation pressure at the Eddington limit. A geoid is the shape the Earth would have if it were only under the influence of rotation and this force. This phenomenon is described using the metric tensor and Ricci tensor, and can form an Einstein ring through its namesake "lensing." The curvature of spacetime explains this force in general relativity. Objects accelerate at 9.8 meters per second-squared due to, for 10 points, what fundamental force described by Isaac Newton?

ANSWER: **gravity** [or **gravitation**; or **gravitational** force; accept **gravitational** lensing]

<Physics>

8. One book on this philosophy opens by lamenting the lack of progress in a certain field ever since "the youth Socrates" defended this theory against "old Protagoras." A sociobiological underpinning for this system is advanced in *The Expanding Circle* by animal-rights advocate Peter Singer. Versions of this philosophy named for emphasizing individual "acts" are less popular than "indirect" versions, which focus on general "rules." This consequentialist philosophy uses a "felicific calculus" to determine what choices are ethical. For 10 points, name this ethical philosophy based on the "greatest happiness principle" and espoused by John Stuart Mill.

ANSWER: **utilitarianism** [prompt on **consequentialism**]

<Philosophy>

9. In a novel by this author, a midwife named M'Dear heals Aunt Jimmy's illness, only for her to die after eating some peach cobbler. In that novel by this author, Velma's departure is compared to "the way people leave a hotel room" in a letter to God written by Soaphead Church. Amy helps the protagonist of a novel by this author give birth on a river, and she is later ferried across that river by Stamp Paid. The MacTeer sisters befriend Pecola Breedlove in a novel by this author. A novel by this author begins with Paul D's arrival at 124 Bluestone Road. For 10 points, name this author of *The Bluest Eye* who wrote about Sethe and the daughter she killed in *Beloved*.

ANSWER: Toni **Morrison** [or Chloe Ardelia **Wofford**]

<American Literature>

10. This man's wife created a so-called "United Football Club" named for him that committed several murders, including that of Stompie Seipei ("say-pay"). This man organized a series of bombings on Dingane's Day in 1961 after he and allies like Walter Sisulu broke away from exclusive non-violence. Percy Yutar oversaw this man's prosecution in the Rivonia Trial, in which he was convicted for his leadership of Spear of the Nation. After spending 27 years in prison, including on Robben Island, this man was released by F. W. de Klerk and led the ANC to victory in his country's first multiracial election. For 10 points, name this first post-Apartheid president of South Africa.

ANSWER: Nelson **Mandela** [or Nelson Rolihlahla **Mandela**]

<World History>

11. This director appears in one of his own films as a man who points out another character to the police. A film by this director ends with a man painting his face blue and blowing himself up, while another follows the secret agent Lemmy Caution. A film by this director opens with a jump cut-heavy car chase that ends with the protagonist killing a policeman. Anna Karina starred in many of this man's films, including *Pierrot le Fou* ("p'yair-OH luh FOO") and *Alphaville*. The protagonist of a film by this man imitates Humphrey Bogart and dates a newspaper seller played by Jean Seberg ("jeen see-berg"). For 10 points, name this French New Wave director of *Breathless*.

ANSWER: Jean-Luc **Godard**

<Other Arts>

12. This character lusts after Silenus after drunkenly mistaking him for Ganymede in the only completely surviving satyr play. After this character bellows a prayer to the "god of the sea-blue mane," a hero sacrifices this character's favorite ram to Zeus. In *The Metamorphoses*, this son of Thoosa ("tho-OH-sah") crushes the shepherd Acis ("AY-siss") with a boulder because they both love the nereid Galatea. In an epic, a man calling himself "Outis," which means "Nobody," gets this monster drunk and then blinds him with a sharpened stake. For 10 points, name this one-eyed giant that terrorizes Odysseus and his crew in Book IX of *The Odyssey*.

ANSWER: **Polyphemus** [prompt on the Cyclops or the Kyklops]

<Mythology>

13. Increasing the associativity of these components can reduce thrashing, which is common in their "direct-mapped" variants. These components are initially "cold," leading to "compulsory misses." They're not pages, but replacement policies for these components include LRU and FIFO. These components vary in speed and size between their L1, L2, and L3 types. Ordering nested loops to exhibit good temporal and spatial locality can help prevent these components from accessing main memory. For 10 points, name these components that store data to be accessed quickly by future requests, such as those for recently visited web page data.

ANSWER: **caches** [accept direct-mapped **caches**; accept L1 or L2 or L3 **caches**]

<Other Science>

14. Lines of poetry in this language are classified using five patterns of "lifts" and "dips" in the Sievers scansion ("SCAN-shin") system. Ezra Pound preserved the meter of this language's alliterative verse in his translation of "The Seafarer." The hero of an epic in this language is killed after a thief steals a golden cup from a dragon's hoard. The sea is referred to as "whale-road" in a common example of compound metaphors in this language called kennings. The Nowell Codex contains an epic in this language about a prince of the Geats who travels to Heorot to protect King Hrothgar from a "descendant of Cain," the monster Grendel. For 10 points, name this language used to write *Beowulf*.

ANSWER: **Old English** [or Anglo-**Saxon**; or **Ænglisc**; do not accept or prompt on "English" or "Middle English"]

<British Literature>

15. During its Neopalatial Period, this civilization produced many red, blue, black, and white frescoes, including one of five jumping dolphins as well as one depicting the "Prince of the Lilies." While excavating a site from this civilization, Luigi Pernier discovered a clay disc covered in still-undeciphered stamped hieroglyphs that may be distantly related to this civilization's Linear A script. This civilization, which celebrated the bull-leaping ritual at sites such as Phaistos, likely collapsed soon after a volcanic eruption on the island of Thera, serving as possible inspiration for the legend of Atlantis. Knossos was the capital of, for 10 points, which Bronze Age civilization centered on Crete that preceded the Mycenaeans?

ANSWER: **Minoan** Civilization

<European History>

16. In March 2019, this politician claimed “you don’t run for second place,” squashing rumors of a VP run with Joe Biden. This politician, who was criticized for financing her firm NOW Account with government contracts, delivered the 2019 Democratic Response to the State of the Union. This politician filed a 2018 lawsuit claiming that Brian Kemp committed voter fraud for not resigning as chief elections officer in 2018. This politician was the first African American Georgia House Minority Leader. For 10 points, name this politician who founded the voter advocacy group Fair Fight Georgia after losing the controversial 2018 Georgia gubernatorial election.

ANSWER: Stacey **Abrams**

<CE/Geo/Other/Pop Culture>

17. A painting of a red-haired woman leaning over a man’s neck by this artist was originally given the title *Love and Pain*. This artist made woodcut versions of many of his paintings, including one featuring a crowd of people on a bridge. That painting, titled *Anxiety*, has a background closely resembling that of his most famous painting. A series by this artist includes paintings such as *Vampire*, *Ashes*, and *Death in the Sickroom*. This painter of *The Frieze of Life* included a vivid orange-and-red sky in the background of his most famous work, which centers on a man pressing his hands to either side of his distorted face. For 10 points, name this Norwegian painter of *The Scream*.

ANSWER: Edvard **Munch** (“moonk”)

<Painting/Sculpture>

18. The speaker of a poem by this author says, “Many stars waited for you to see them” and describes “a wave that had broken long ago swelled toward you.” The speaker asks, “But tell me, who are they, these troupers” in a poem by this author that was inspired by Picasso’s *Family of Saltimbanques*. This author wrote about an object “still suffused with brilliance” in a poem that concludes, “You must change your life.” A collection by this author of “Archaic Torso of Apollo” notes, “Every angel is terror” and begins by asking “Who, if I cried out, would hear me among the angelic orders?” For 10 points, name this German-language poet of *The Duino Elegies*.

ANSWER: Rainer Maria **Rilke** (“RYE-ner muh-REE-uh RIL-kuh”)

<European Literature>

19. For molecules that react with these substances, the Wolff–Kishner reduction is typically performed rather than the Clemmensen reduction. One of these molecules, mCPBA, is commonly used in the Prilezhaev (“pree-lih-JAH-ih”) epoxidation. George Olah developed one of these substances that stabilizes carbocations; that substance contains antimony pentafluoride and is called “magic.” Boron trifluoride is one of these substances, according to a definition that they accept a pair of electrons. In contrast, Brønsted–Lowry theory defines this class of substances as proton donors. For 10 points, name these substances whose pH is under 7, which are contrasted with bases.

ANSWER: **acids** [accept hydrochloric **acid**, peroxy**acids**, magic **acid**, super**acid**, Lewis **acid**, etc.]

<Chemistry>

20. Shortly after the outset of his most famous journey, this man, in fear of a potential mutiny, ordered his obviously functional boats to be burned under the pretext that they weren’t seaworthy. This man led his band of *rodeleros* to a close victory at the Battle of Otumba. The Florentine Codex details how this man’s subordinate, Pedro de Alvarado, massacred most of the people at a festival in the Templo Mayor, leading to the retaliatory murder of this man’s soldiers during *La Noche Triste*. Vast gifts of gold didn’t prevent this European from kidnapping Moctezuma II and besieging his capital, Tenochtitlan. For 10 points, name this conquistador who overthrew the Aztec Empire.

ANSWER: Hernán **Cortés**

<European History>

Bonuses

1. In the early 20th century, this country's rising movement for Macedonian independence was stifled by the far-right *Zveno* faction until *Zveno* transitioned to communism to resist the Axis in 1943. For 10 points each:

[10] Name this country, the fourth outsider to join the original Tripartite Pact members after Hungary, Romania, and Slovakia. During World War II, this country was led by Tsar Boris III, until his possible death by poisoning.

ANSWER: **Bulgaria** [or Republic of **Bulgaria**; accept Kingdom or Tsardom of **Bulgaria**; accept Third **Bulgarian** Tsardom]

[10] *Description acceptable.* After Theodor Dannecker visited Bulgaria, protests led by Dimitar Peshev inspired Boris III to try and attain this general goal, which he did via a number of unnecessary road maintenance projects.

ANSWER: **save** Bulgaria's **Jews** [accept **protect**, **shelter**, **shield**, or synonyms in place of "save"; accept answers like **refusing to deport Jews** to concentration camps; prompt on **resisting Hitler**, **resisting Germany**, or similar answers by asking "in what way did he resist?"] (Boris vigorously claimed to Hitler that the Jews were necessary as labor for road-building projects.)

[10] Bulgaria's original goal in entering the war was to reclaim territories lost in two wars fought over this southeastern European peninsula, which includes Bulgaria, Serbia, Albania, and Bosnia, among other countries.

ANSWER: **Balkan** Peninsula [or The **Balkans**]

<European History>

2. This artist's *Henry Ford Hospital* is one of many paintings inspired by her miscarriage. For 10 points each:

[10] Name this Mexican painter who included her unibrow in her many self-portraits, such as one *with Cropped Hair*.

ANSWER: Frida **Kahlo**

[10] A black cat and one of these animals sit on Kahlo's shoulders in *Self-Portrait with Thorn Necklace and Hummingbird*. It's not a dog, but one of these animals is shown on a leash in *A Sunday Afternoon on the Island of La Grande Jatte*.

ANSWER: **monkeys**

[10] This self-portrait by Kahlo was painted after she underwent spinal surgery. She appears in a medical corset with nails piercing her skin, and her body is split open to show this painting's title object in the place of her spine.

ANSWER: *The **Broken Column***

<Painting/Sculpture>

3. One of these creatures uses Moneybags' teleportation stations to collect light gems and defeat Red in a game subtitled "A Hero's Tail." For 10 points each:

[10] Name these creatures, which include the purple Spyro. "Inquisition" is the third game in a BioWare RPG series titled for the "Age" of these creatures.

ANSWER: **dragons** [or **draco** or **drakes**; accept **Dragon Age**; prompt on **serpents**, **snake**, or other synonyms for **reptile**]

[10] Defeating the Ender Dragon concludes this blocky Mojang game in which players battle mobs like Zombies and Creepers while using a pickaxe to harvest materials like diamonds.

ANSWER: **Minecraft**

[10] In *Skyrim*, this "World Eater" dragon was betrayed by his brother Paarthurnax and sent forward in time by the Elder Scroll so that he could be slain by the Dovahkiin ("doh-va-KEEN"). This dragon burns down Helgen Keep in *Skyrim*'s introduction.

ANSWER: **Alduin**

<CE/Geo/Other/Pop Culture>

4. In a hymn by Callimachus, Erysichthon ("air-ih-SICK-thon") is cursed to become so hungry that he eats his own body after he destroys one of these things sacred to Demeter. For 10 points each:

[10] Name these things. Nymphs called dryads and hamadryads were associated with these things.

ANSWER: **trees** [accept specific types of trees such as **poplar**]

[10] An oak tree sacred to Zeus grew at one of these sites at Dodona. That one of these sites was later eclipsed in importance by the one at Delphi.

ANSWER: **oracle**

[10] This villain was known as the “pine-bender” because he would ask travellers to help him bend a pine tree but then let go and launch them into the air. He was killed by Theseus.

ANSWER: **Sinis**

<Mythology>

5. This author described a marionette with a “who-the-devil-are-you stare” in his poem “Humoresque,” which is subtitled as “after” Jules LaForgue. For 10 points each:

[10] Name this author. Jules LaForgue influenced the colloquial language and self-deprecation in this author’s early poetry, which includes a poem that declares “No! I am not Prince Hamlet” to begin a stanza.

ANSWER: T. S. **Eliot** [or Thomas Stearns **Eliot**] (That passage is from “The Love Song of J. Alfred Prufrock.”)

[10] In addition to LaForgue, Eliot was also influenced by this earlier French poet. “The Waste Land” quotes this author’s line “Hypocrite lecteur – mon semblable – mon frère” from his collection *Les Fleurs du Mal*.

ANSWER: Charles **Baudelaire**

[10] Eliot described “Sunday: this satisfied procession / Of definite Sunday faces” to begin a poem titled for this thing. A section of *Les Fleurs du Mal* is titled for this thing “and Ideal.”

ANSWER: **spleen** [accept “**Spleen and Ideal**” or “**Spleen et Idéal**”]

<European Literature>

6. The efficiency of harnessing this form of energy is bounded by the Shockley–Queisser (“KWY-sir”) limit. For 10 points each:

[10] Name this form of energy that is converted to electricity by photovoltaic cells.

ANSWER: **solar** energy

[10] Another method of harnessing solar energy is through an artificial form of this process, which seeks to generate fuel by imitating the natural action of light-harvesting complexes and splitting water through photocatalysts.

ANSWER: **photosynthesis**

[10] To imitate pigments like chlorophylls, artificial photosynthesis uses polypyridine complexes of this inert metal as photosensitizers. This metal is common in catalysts, such as the Grubbs catalyst.

ANSWER: **ruthenium** [prompt on **Ru**]

<Other Science>

7. Camille Saint-Saëns’s (“kuh-MEE san-SAWNS’s”) *Allegro appassionato* is for piano and this instrument. For 10 points each:

[10] Name this instrument for which Saint-Saëns wrote an A minor concerto in one continuous movement. This instrument is the soloist for Saint-Saëns’s “Le cygne” (“luh SEEN”), or “The Swan.”

ANSWER: **cello** [or violon**cello**]

[10] “Le cygne” is the penultimate movement of this Saint-Saëns suite. Its other movements include “The Elephant,” “Kangaroos,” and “Aquarium.”

ANSWER: *The **Carnival of the Animals*** [or *Le **carnaval de animaux***]

[10] Before she was incapacitated by multiple sclerosis, this cellist recorded Saint-Saëns’s first concerto with EMI under the baton of her husband Daniel Barenboim. Elgar’s concerto was largely ignored until this cellist’s 1965 recording.

ANSWER: Jacqueline **du Pré** [prompt on **Pré**]

<Classical Music>

8. The narrator thinks about two singing blind twins of St. Jerome and the dead people floating in the streets in a “Monologue of Isabel Watching It Rain In” this town. For 10 points each:

[10] Name this town whose founder befriends Melquíades and dies while tied to a chestnut tree.

ANSWER: **Macondo**

[10] This Gabriel García Márquez novel set in Macondo follows seven generations of the Buendía family.

ANSWER: **One Hundred Years of Solitude** [or **Cien años de soledad**]

[10] Macondo first appears in this García Márquez novella, in which Isabel’s father insists on burying a doctor hated by the town’s villagers.

ANSWER: **Leaf Storm** [or **La Hojarasca**]

<World/Other Literature>

9. Patrick Ferguson died leading a force of these people at the 1780 Battle of King’s Mountain. For 10 points each:

[10] Name these people, thousands of whom fled to Canada in the 1780s as promises made in the Treaty of Paris to protect their property were ignored.

ANSWER: **Loyalists** [accept **Tories**, **Royalists**, or descriptive equivalents]

[10] One member of this family served as royal governor of New Jersey and was a key Loyalist leader during the Revolution. His father served the patriot cause as a minister to France and earlier published *Poor Richard’s Almanack*.

ANSWER: **Franklin** family [accept William **Franklin** or Benjamin **Franklin**]

[10] In 1775, this royal governor of Virginia issued a namesake proclamation that promised freedom to slaves who took up arms for the Loyalist cause.

ANSWER: John Murray, Earl of **Dunmore** [or Lord **Dunmore**; accept **Dunmore**’s proclamation]

<American History>

10. The Heusler (“HOYCE-ler”) type of these systems exhibits magnetism, even though their constituents do not. For 10 points each:

[10] Name these systems that are composed of two or more metals, such as sterling silver, bronze, and brass.

ANSWER: **alloys** [or **intermetallics**]

[10] One possible crystal structure of an alloy is this system, which only differs from hexagonal close packing in the relative position of the layers. Both this structure and HCP have the highest theoretical APF of 0.74.

ANSWER: **face-centered cubic** [or **FCC**]

[10] This is the coordination number of the FCC structure, which means that each atom “touches” this many other atoms.

ANSWER: **12**

<Chemistry>

11. In the chapter “The House Beautiful,” the narrator discusses Charles Dickens’s opinion that certain objects in this location were not “magnificent” compared to the crown jewels or the Taj Mahal. For 10 points each:

[10] Name this geographical feature. A memoir titled for this location is narrated by a “cub-pilot” apprenticed to Horace Bixby.

ANSWER: **Mississippi** River [accept *Life on the Mississippi*]

[10] This character is painted blue and disguised as “the sick Arab” while he accompanies the Duke and the Dauphin (“DOFF-in”) on a raft down the Mississippi.

ANSWER: **Jim**

[10] This author, who was a steamboat pilot on the Mississippi, created Jim and Huckleberry Finn.

ANSWER: Mark **Twain** [or Samuel Langhorne **Clemens**]

<American Literature>

12. This composer used special pianos with transposing levers to change keys when writing songs, as he only ever learned to play in the key of F-sharp. For 10 points each:

[10] Name this Tin Pan Alley composer of “Cheek to Cheek,” “Puttin’ on the Ritz,” and “White Christmas.”

ANSWER: Irving **Berlin**

[10] This Berlin musical ends with a reprise of “There’s No Business Like Show Business.” Earlier in this musical, a feud between Frank Butler and the title sharpshooter erupts into the tune “Anything You Can Do (I Can Do Better).”

ANSWER: **Annie Get Your Gun** [do not accept or prompt on “Annie”]

[10] Betty Hutton replaced this singer as Annie for the MGM production after the latter’s death. She was the first woman to win an Album of the Year Grammy for her Carnegie Hall live album, which features her signature song “Over the Rainbow.”

ANSWER: Judy **Garland** (That album is *Judy at Carnegie Hall*.)

<Other Arts>

13. This scholar was forced to choose between execution and castration for defending Li Ling after Li was captured by the Xiongnu (“sh’yung-noo”). For 10 points each:

[10] Name this thinker who accepted castration in order to finish his magnum opus, *Records of the Grand Historian*, which covers 2500 years of Chinese history.

ANSWER: **Sima** Qian (“suh-mah ch’yen”) [prompt on **Qian**]

[10] After chronicling the lives of the mythical Five Emperors, the *Records of the Grand Historian* describes this legendary first Chinese dynasty that was founded by Yu the Great and was succeeded by the Shang.

ANSWER: **Xia** (“sh’yah”) dynasty

[10] Sima Qian completed his *Records* during the long reign of Emperor Wu, a ruler from this dynasty. It emerged after the collapse of the Qin and names China’s majority ethnic group.

ANSWER: **Han** dynasty

<World History>

14. A triangular pastry eaten on this holiday is often filled with fruit preserves or other sweet goodies, and is named for its resemblance to the “ears of Haman.” For 10 points each:

[10] Name this holiday on which costumes are often worn to emulate the disguised presence of God. In this holiday’s charitable *mishloach manot* (“meesh-LO-ahkh ma-NOTE”) ritual, baskets of food are sent to loved ones.

ANSWER: **Purim** [or **Festival of Lots**]

[10] Purim memorializes the story of this woman, who teamed up with Mordecai in order to prevent all Jews in Achaemenid (“uh-KEE-muh-nid”) Persia from being massacred by the vizier (“vih-ZEER”) Haman.

ANSWER: **Esther**

[10] The Book of Esther, along with four other scrolls, or *megillot* (“meg-ee-LOAT”), can be found in this third and last division of the Hebrew Bible, which accompanies the Torah and Nevi’im (“neh-vee-EEM”) in the traditional TaNaKH (“ta-NOCK”) acronym.

ANSWER: **Ketuvim** (“k’too-VEEM”) [or **Writings**]

<Religion>

15. Answer the following about eliminativism, for 10 points each.

[10] Patricia Churchland’s magnum opus combines the name of this field with philosophy, reflecting her eliminative perspective on the mind. This field studies the physical aspects of the nervous system.

ANSWER: **neuro**science [or **neurology**; accept **Neurophilosophy**; prompt on **cognitive** science]

[10] The Churchlands are often in agreement with Daniel Dennett, whose eliminativist ideas stem in part from being one of the “Four Horsemen” of this belief. Sam Harris’s first two books promoted this belief, which he has defended from criticism by William Lane Craig.

ANSWER: **atheism** [or word forms; accept **New Atheism**; accept **antitheism**; do not accept or prompt on “agnosticism”]

[10] In one paper, Dennett attempted to “quine” away these phenomena with 15 intuition pumps. Chalmers’ “hard problem of consciousness” concerns why sentient creatures have these individual units of subjective experience.

ANSWER: **qualia** [or **quales**; accept “**Quining Qualia**”]

<Philosophy>

16. The term “one minus N over this quantity” appears in the Verhulst (“fur-HOOLST”) equation. For 10 points each:

[10] Name this quantity that K-selected species tend to hover around, unlike r-selected species. A line drawn at the value for this quantity forms the horizontal asymptote of a logistic population model.

ANSWER: **carrying capacity** [prompt on **K**]

[10] Robert MacArthur and E. O. Wilson coined the terms r- and K-selection in a book titled for a theory of biogeography on these isolated locations. Darwin studied finch beaks in a group of these locations.

ANSWER: **islands** [accept **island** groups or **archipelagos**; prompt on **Galápagos** by asking “what type of location?”]

[10] Many r-selected species use this strategy only reproducing once before death. Species categorized by this strategy typically have more offspring per reproductive episode than iteroparous (“it-er-OP-uh-russ”) species.

ANSWER: **semelparous** (“suh-MEL-puh-russ”) [or **semelparity**]

<Biology>

17. Dan Pagenstecher searches for “etymys” (“ET-ims”) with sexual connotations in the works of Edgar Allan Poe in an Arno Schmidt novel titled for this character’s “Dream.” For 10 points each:

[10] Name this character who desires to sing a ballad about his dream in front of the Duke. After pretending to kill himself during a performance, he asks the Duke if he wants to see an epilogue or a bergamask dance.

ANSWER: **Nick Bottom** [accept either name]

[10] Titania, the queen of the fairies, falls in love with Bottom after Oberon charms her eyes with a magic flower in this play by William Shakespeare.

ANSWER: *A **Midsummer Night’s Dream***

[10] Bottom proposes that this character write the ballad that will be titled “Bottom’s Dream.” This character directs Bottom and the other “mechanicals” in performing an adaptation of Pyramus (“PEER-uh-muss”) and Thisbe (“THIZ-bee”).

ANSWER: **Peter Quince** [accept either name]

<British Literature>

18. After his sister married James I, a king of this name often visited for alcohol-soaked soirées, including one where he ruined a play by getting the actors drunk, and then collapsed after being “smeared with jelly and cream.”

For 10 points each:

[10] Give this name of ten kings who ruled the same country as part of the House of Oldenburg. A king of this name briefly and inconsequentially intervened in the Thirty Years’ War, before he withdrew under the Treaty of Lübeck.

ANSWER: **Christian** [accept **Christian IV**; accept, but DO NOT REVEAL, any numbered **Christian** of Denmark] (The sister in the lead-in is Anne of Denmark.)

[10] Christians I (“one”) through X (“ten”) all ruled from this Scandinavian country, whose cities of Roskilde (“ROSS-keel-ih”) and Copenhagen served as the capitals of the Kalmar Union throughout its existence.

ANSWER: **Denmark** [or Kingdom of **Denmark**; or *Kongeriget **Danmark***]

[10] Not all Christians are Christ-like! The tyrannical buffoon Christian II massacred this city’s nobility in its namesake “Bloodbath,” inadvertently contributing to the later rise of the Vasa (“VAW-sah”) dynasty.

ANSWER: **Stockholm**, Sweden [accept **Stockholm** Bloodbath]

<European History>

19. The earliest version of this model assumes two countries producing two commodities, and only accounted for two factors, so it was nicknamed the “ $2 \times 2 \times 2$ model.” For 10 points each:

[10] Name this Stockholm School economic model. It predicts that capital-abundant countries will export capital-intensive goods and import labor-intensive goods, while labor-abundant countries will do the opposite.

ANSWER: **Heckscher–Ohlin** model [or **H–O** model; or **Heckscher–Ohlin**–Samuelson model; or **Heckscher–Ohlin**–Vanek model]

[10] The Heckscher–Ohlin model does not explain why this capital-abundant country imports capital-intensive goods, a paradox named for Leontief. This country is the world’s largest importer, but lost the title of largest exporter to China in 2013.

ANSWER: **United States** [or **USA**; or the United States of **America**]

[10] Factors may not be substituted for one another in a function of this type named for Leontief. Cobb and Douglas name another popular example of this class of functions that relate such namesake factors as capital and labor to total output.

ANSWER: **production** functions [accept **Leontief production** function; accept **Cobb–Douglas production** function]

<Social Science>

20. Bra–ket notation was first used by this scientist. For 10 points each:

[10] Name this physicist who, along with Enrico Fermi, names statistics that describe particles with half-integer spins.

ANSWER: Paul **Dirac** [accept Fermi–**Dirac** statistics]

[10] Dirac’s equation predicted the existence of this fermion before it was experimentally discovered by Carl Anderson in 1932 using a cloud chamber to trace its path on a lead plate.

ANSWER: **positron** [accept **e-plus**; accept, but DO NOT REVEAL, **antielectron**; do not accept or prompt on “e” or “electron”]

[10] Positrons are examples of this type of substance, which has the same mass but the opposite charge of its counterpart. This type of substance annihilates with ordinary matter when the two meet.

ANSWER: **antimatter**

<Physics>