

**Chicago Open 2020 2021:** “We probably needed the extra year to finish it anyways.”

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## TOSSUPS

1. The discovery of a K·27·M mutation in one of these proteins in diffuse pontine glioma has led to the finding that other mutations in these proteins' Sin-minus or acidic patches can drive cancer. One variant of these proteins contains an extra arginine and glycine at position 80 in its loop 1 and forms rosette arrays nucleated by H·J·U·R·P, which like A·S·F·1 and Nap1 serves as a chaperone for these proteins. The 3-prime end of their m·R·N·A binds S·L·B·P, which recruits the U·7 snRNP (“snurp”), FLASH, L·s·m·11, and symplekin (“sym-**PLEK-in**”) in their namesake locus bodies. One variant of these proteins has a C-terminal macro domain that binds the XIST (“exist”) non-coding (\*) R·N·A. CENP-A (“senp-A”) is a variant of these proteins localizing to centromeres. Their tails undergo a variety of post-translational modifications as part of their namesake “code” to control gene expression. For 10 points, name these positively charged proteins that form octamers called nucleosomes, around which D·N·A wraps to form chromatin.

ANSWER: **histones**

<Biology, Eric Mukherjee>

2. A story set in this character's garden ends with a “sexless” shriek that startles a widow bird from its perch. This character organizes an event at which the shy woman Sasha considers the achievements of humanity while mostly ignoring her incredibly boring companion Bertram. A party-goer insecure about wearing the title “pale yellow” article of clothing bids this character farewell in “The New Dress.” This character recalls arguing with Phil about the Dark Lady and distastefully notes that her own husband never (\*) read any Shakespeare in a story which opens as Big Ben strikes 11. That story, in which this character watches the elderly Mrs. Anstruther shop for a pair of silk gloves as a car violently backfires in the street outside, is set on “Bond Street,” and was expanded into a full-length novel which opens with this woman buying flowers. For 10 points, what woman's party is preceded by Septimus Smith's suicide in a Virginia Woolf novel?

ANSWER: **Clarissa Dalloway** [accept either; accept “Mrs. **Dalloway**”]

<Short Fiction, Itamar Naveh-Benjamin>

3. Foreknowledge among some of these people that “our extirpation is decreed” is recorded in the letters of Henricus Justellus. A Christian chapel built by these people today survives as the Brick Lane Mosque, as many of them once lived on Brick Lane. A summer festival dedicated to these people features a walk through the district of Spitalfields in East London, where these people established a thriving silk industry. The dialect spoken by these people in Britain was called “refugee style,” as the word “refugee” was first used in English to refer to them. (\*) Charles I sent a British expedition to aid these people commanded by the Duke of Buckingham. Critics of Nigel Farage's immigration policy often note that his ancestors were among the 50,000 of these people who fled to England after the 1689 Revocation Edict was signed at Fontainebleau. For 10 points, name these people who defended the fortress of La Rochelle, a group of French Protestants.

ANSWER: **Huguenots** [prompt on French people or Protestants before “French Protestants”; prompt on refugees or immigrants before “refugees”]

<Euro History, Will Alston>

4. A house owned by this family contains a barren landscape of three saguaros against a bleak gray sky, titled *Cactus on the Plains*, as well as Cezanne's *Bouilloire (“BOO-you-are”) et Fruits*. A member of this family

defended an artist as “trying to express his idea of the spirit” of one city in response to a furor stoked by the American Citizens League. A project sponsored by this family and supervised by Wilhelm Valentiner includes a depiction of the three wise men as Catholic, Protestant, and Jewish scientists, who sit behind a scene of a child being (\*) vaccinated that resembles the Nativity. That series sponsored by this family includes a painting of a giant stamping press resembling Coatlicue. Six images, including a disembodied pelvic bone and a floating dead baby, are connected by veins to a bedridden woman in a painting titled partly for this family which was inspired by Frida Kahlo’s miscarriage. For 10 points, what family’s member Edsel patronized Diego Rivera’s *Detroit Industry* murals?

ANSWER: Ford family [accept Henry Ford or Edsel Ford; accept *Henry Ford Hospital*]  
<Painting/Sculpture, Will Alston>

5. This river is called “the world’s most beautifully landscaped cesspool” in a 1965 documentary narrated by Katharine Hepburn that calls for its preservation. The headwaters of this river pass through four namesake numbered lakes in northern Coös (“KO-ahss”) County. The Central Lowlands formed by this river’s valley include a conurbation often called the “Knowledge Corridor.” In the 1930s, much of this river’s watershed was diverted to flow into the (\*) Quabbin Reservoir. A series of dams along this river proposed by governor Abraham Ribicoff were defeated thanks to a protest movement centered on Old Saybrook, which is where this river enters Long Island Sound. Most of the Vermont-New Hampshire border is formed by, for 10 points, what longest river in New England, which passes through Hartford in its namesake state?

ANSWER: Connecticut River  
<Geography, Stephen Eltinge>

6. This philosopher’s theory of immediate experience was used as the basis of all knowledge in a dissertation that traces the origins of the meaning of “objectivity.” This philosopher rejected Hume’s association theory of inference with his “law of redintegration,” which held that inferences can only be valid when inferring from universals. This philosopher was paraphrased as saying that one concept “enters into, but is itself incapable of, evolution and progress” to illustrate the idea of pseudo-propositions in the first chapter of (\*) A. J. Ayer’s *Language Truth and Logic*. This subject of T. S. Eliot’s doctoral thesis created an argument which uses the variables “a” and “b” and the relation of respecting to illustrate the formation of another relation ad infinitum, his namesake regress. This longtime correspondent of Bertrand Russell argued that as there are limited independent reals, the Absolute is a single changless entity. For 10 points, name this British idealist, the author of *Appearance and Reality*.

ANSWER: F(rancis) H(erb)ert Bradley  
<Philosophy, Neil Gurram>

7. E. B. Banning’s paper “So Fair a House” argues that a building at this site actually consists of several houses, citing ethnographic data on peoples from the P·P·N period. A paper by Martin Sweatman’s team claimed that a relief from this site depicts a comet impact that initiated a roughly thousand-year-long ice age. This site’s diverse animal images include reliefs of: a vulture and a scorpion attacking a decapitated man, a net of snakes, the “lion-pillar building” lions, and migratory cranes and foxes from the nearby (\*) Harran plains. Most of those images are found in this site’s circle of T-shaped megalithic pillars. What may be the oldest-known worship building was found at this site in Şanlıurfa (“SON-lyor-fah”) province, prompting the quip “first came the temple, then the city” from chief excavator Klaus Schmidt. For 10 points, name this 10,000-year-old site which, like Çatalhöyük (“chuh-TALL-hoh-yook”), is found in southern Turkey.

ANSWER: Göbekli Tepe [or Gire Mirazan or Xira Breske; accept Potbelly Hill]  
<Archaeology, Neil Gurram>

8. This man’s essay arguing against the “embedded condescension” that the fantasy genre is “cognition-less” bookends an anthology on science fiction he edited with Mark Bould. The protagonist of one of his novels explains to his wife Scile “we live in the third universe” while explaining the laws of the Ariekei (“arr-ee-EH-cuh”) Language, which is spoken by beings that have two mouths, and does not allow its locutors to express

**their thoughts. Another of his novels takes place in the aftermath of the Construct War, in which workers called somaturges animate golems. This author edited the science fiction and (\*) Marxism anthology *Red Planets*. In 2017, Verso Books published his chronicle of the “strange light” of the Russian Revolution titled *October*. This author of *Embassytown* set the first novel of his Bas-Lag Trilogy in the city state of New Crobuzon. *Perdido Street Station* is by, for 10 points, what author of weird fiction who often explains in interviews that his first name is not that of an Asian country?**

ANSWER: China [Tom] Mieville (mee-AY-vahl)

<Misc. Lit, Anderson Wang / Ike Jose>

**9. The combustion of this compound is the most common standard for calibrating bomb calorimeters, a process that is refined by applying the Washburn corrections. This compound was assigned a value of “rho equals one” in a 1937 paper that derived a prototypical linear free-energy relationship. The ionization of this compound’s substituted derivatives depends on substituent and reaction constants, according to the original version of the Hammett equation. A peroxide that is reduced to oxygen and this compound upon (\*) skin contact is a common acne treatment. This compound, often in the form of its sodium or potassium salts, acts as a preservative in soft drinks, where it may be de-carboxyl-ated by ascorbic acid to form a carcinogen. Adding an *ortho* hydroxyl group to this compound yields salicylic acid. For 10 points, name this simplest aromatic carboxylic acid, whose C·O·O·H group is directly attached to a benzene ring.**

ANSWER: benzoic acid [or benzenecarboxylic acid; accept sodium benzoate or potassium benzoate]

<Chemistry, Stephen Eltinge>

**10. This anthropologist’s many applications of Georges Bataille (“bah-TYE”) include arguing that stories of “implicit pacts” exemplify the notion of *dépense* (“DAY-ponse”) or “wasting” in the essay “The Sun Gives Without Receiving.” This thinker described concepts that are widely known in society, but cannot be articulated, as “public secrets,” and used Roger Casement’s writings to examine locations of “unmeaning and un/being” called “spaces of death.” This thinker illustrated James Frazer’s notion of “sympathetic magic” by examining how images of Jack Daniels bottles and the “talking dog” Nipper were adapted into textiles made by the (\*) Cuna people. He argued that miners at Potosí (“poh-toh-SEE”) developed stories that cast Satan as the owner of capital in *The Devil and Commodity Fetishism*, one of his many works on South American peasants. For 10 points, name this Columbia University anthropologist who wrote *Mimesis and Alterity*.**

ANSWER: Michael Taussig

<Social Science: Socio/Anthro, Will Alston>

11. The Seattle Public Library houses a collection of photo portraits of members of this organization's Seattle chapter, called Stevens Post. The only two women admitted to this organization were Sarah Edmonds and the African-born Scotswoman Kady Brownwell. Members of this organization promoted its three main goals of "fraternity, charity, loyalty" and called each other "bronze button heroes." As this organization's leader, John A. Logan began its tradition of annual flower decorations in May and also became James (\*) Blaine's VP nominee. This organization, whose membership peaked at 400,000 in 1890, pressured Congress to pass a pension plan that was vetoed by Grover Cleveland. It also lobbied Congress to create an official holiday on Memorial Day, during which its members paraded in honor of their comrades. Four Republican presidents from the late 19th century were part of, for 10 points, what largest organization of Union Army veterans?

ANSWER: **Grand Army** of the **Republic** [or **GAR**; prompt on **Grand Army**; prompt on answers referring to **Civil War veterans** by saying "what organization of veterans?"; reject "army" or "veterans"]

<American History, Will Alston>

12. The first worst-case to average-case reduction for problems on these objects was proved by Miklós Ajtai ("MEE-klosh EYE-tie") in a paper that introduced the short integer solution problem. Worst-case problems on these objects are as hard as a problem that tries to solve a system of random linear equations that each have a small additive error; that problem is called learning with errors. Lenstra, Lenstra, and Lovász developed a polynomial time approximation algorithm for a reduction problem on these objects. Carl Gentry used these objects in his construction of a fully homomorphic (\*) encryption scheme. The shortest vector problem is a computational problem on these objects. Bases ("base-eez") for these objects are keys in the GGH encryption scheme, which is secure against computers that use logic gates named for Hadamard and Pauli. For 10 points, most post-quantum cryptography schemes rely on the hardness of problems on what discrete additive subgroups of  $\mathbb{R}^n$  ("R-n")?

ANSWER: **lattices**

<Other Science: Computer Science, Anderson Wang / Jonathen Settle>

13. The critic Michael North notes that this phrase is a "historical recycling" via the translations of James Legge and argues that it was obscure until the 1930s, contradicting Peter Gay's book about the "Lure of Heresy." A collection of essays titled for this phrase includes "Notes on Elizabethan Classicists" and "Troubadours: Their Sorts and Conditions." In one poem, the exhortation "day by day [this English phrase]" is followed by the instructions "cut underbrush / pile the logs / keep it growing." That line retells an anecdote from the classic text *Great Learning*, in which this phrase is carved on the bathtub of (\*) Chen Tang, the first Shang dynasty king. The originator of this three-word dictum exemplified it by rendering the underworld scene from the *Odyssey* in the style of Anglo-Saxon verse, producing the opening line: "And then went down to the ship." For 10 points, give this Modernist adage coined by Ezra Pound which encourages novelty.

ANSWER: **make it new** [accept **renew yourself daily** or reasonable translations of the Chinese]

<Poetry, Anderson Wang>

14. **This shape was created on a stark white wall using soil from a sarcophagus-shaped block in a 2019 performance piece for The Shed by Kiyon Williams. Another artist said he executed a painting of this shape to show what is “seen and not looked at, not examined.” An artwork which almost exactly takes this shape has two portions along its bottom tucked under because the artist’s studio was only 20 feet tall and includes a depiction of Merce Cunningham dancing at top left. An artist used both a grey palette and a red, yellow, and (\*) blue palette to create paintings of this shape after being given a schematic by his partner Robert Rauschenberg. This shape is formed by the outline of an installation similar to the work *V-ramid*, which is housed at the Smithsonian and shows Charlotte Moorman playing a custom violin near its center. For 10 points, what shape is formed by the outline of Nam June Paik’s multi-media installation *Electronic Superhighway*?**

ANSWER: map of the **United States** [accept **US**, **America**, or other synonyms for the **United States**; prompt on **map** with “what is it a map of?”] (The leadin refers to *Meditation on the Making of America*, while the Jasper Johns painting in question is titled *Map*.)

<OArts: Visual, Jonathen Settle>

15. **In a book by Susan Cole, Plutarch's account of Marcellus traveling to this island is used to demonstrate how the Romans viewed this island's gods as protectors of sailors analogous to the Lidian Athena. On this island, dogs were sacrificed to honor Zerynthia, who was identified with Hecate. In some accounts, Harmonia is fostered on this island by a lost member of the Pleiades named Electra; she then meets Cadmus when he visits this island to become a *theoros*, as later done by Alexander the Great. This island’s people worshiped the mother goddess Axieros, who was chief among the mysterious (\*) Megaloi Theoi, or “Great Gods” honored at this island's chief sanctuary. A group of 7 Corybantes and 10 Dactyls on this island presided over the mysteries founded by Iasion or Dardanus which, like Lemnos, honored two chthonic sons of Hephaestus called the Cabeiri (“kah-BAY-ee”). For 10 points, name this island in the northern Aegean Sea where a headless, winged sculpture of Nike was found.**

ANSWER: **Samothrace** [or **Samothraki**; accept *Nike of Samothrace*]

<Misc. Belief, Will Alston>

16. **A woman born into this family destroys a contract her husband signs with the title aging money lender, who augments his fortune from the East Indies by selling spoiled food. A member of this family drives a rival into bankruptcy after the rival tricks him into leaving the Corn Exchange by claiming his daughter was hit by a cab. That man from this family dies in “delirious joy” after receiving a locket and a chain of his dead wife’s golden hair. Its fortune is pretty much squandered when its patriarch liquidates his last (\*) silver plate into an ingot to pay his children’s debts, such as those incurred to Gobseck. That patriarch of this family suffers a fatal stroke while dining at the Vauquer (“voh-CARE”) house, after which his daughters only send empty carriages to his funeral. For 10 points, what family from Balzac’s *The Human Comedy* includes the retired vermicelli-maker Jean-Joachim, affectionately called “pere?”**

ANSWER: **Goriot** family [accept *Pere Goriot*]

<Long Fiction, Ike Jose> [Edited]

17. Outside of its country of origin, the largest society named for this instrument is based in Fairfax, VA, where it was founded by ex-IBM executive Max McCullough. This instrument comes in eight standard sizes, ranging from tiny “descant” ones to large “contrabass” ones. In a 1965 film, a leitmotif played by this instrument appears during a scene in which a man runs through an ice-palace and breaks open a window to watch a woman ride away. Orchestras which are named for these instruments typically also contain the *domra* and (\*) *gusli* to complement it in the string section. High notes on this instrument accompany the orchestra through “Lara’s Theme” from Maurice Jarre’s score to David Lean’s *Doctor Zhivago*. This instrument was revived in the late 19th century by Vasily Andreyev, who standardized its design to have a triangular base. For 10 points, name this guitar-like string instrument from Russia, with love.

ANSWER: balalaika [prompt on lute family]

<Classical/Opera, Will Alston>

18. This country’s first female president was born on the South Side of Chicago, but left Northwestern to move to this country, where she became an anti-colonial activist with the Political Affairs Committee. Sugar mills in this country produced most of the wealth of the literary prize-funding Booker family. The Wapishana people and other indigenous groups tried to secede from this country under the leadership of Valerie Hart. In the 19th century, Britain attempted to set the [emphasize] western boundary of this present-day country along the (\*) Schomburgk line, prompting Grover Cleveland’s administration to intervene. Its longtime left-wing party, the People’s Progressive Party, was founded by the husband-and-wife team of Janet and Cheddi Jagan (“JAY-gun”), who opposed the US-backed strongman Forbes Burnham (“BURN-um”). The Essequibo (“ess-eh-KEE-boh”) River drains most of, for 10 points, what South American country, the only one where English is the official language?

ANSWER: Guyana [or The Co-operative Republic of Guyana]

<World History, Will Alston>

19. The “mind” of people described by this adjective, as evoked by Baroque-era paintings of monkeys and lady-centaurs, is analyzed in a book by Serge Gruzinski. D. D. Bernal’s analysis of the “consciousness” of students described by this adjective draws on an earlier author’s proposal that such a consciousness is defined by a “tolerance of ambiguity.” That author proposed that an identity described by this adjective arises from a type of liminality termed *nepantla*, similar to an earlier theorist’s notion of the (\*) “cosmic race,” and that such an identity is synthesized by people in the “Coatlucue State.” A type of “new” woman described by this adjective is discussed in the book *Borderlands* by Gloria Anzaldúa (“ahn-sahl-doo-AH”) which analyzes the foundations of Chicana identity. For 10 points, give this Spanish-language adjective denoting people of partial indigenous and European ancestry, which literally means “mixed.”

ANSWER: mestiza [or mestizo; accept mestizaje; prompt on mixed race before “mixed”]

<Other Academic, Will Alston>

20. Reparametrization-invariant theories require this function to be zero on-shell. In formalisms that work with a 3+1 foliation, this function is written as the integral of the following: lapse times the scalar constraint all plus the product of the shift vector and the vector constraint. Approaches to general relativity based on this function, like the ADM formalism, have applications in numerical relativity. Ashtekar variables are used to write this function as a low-order polynomial. The time evolution of some quantity is equal to its (\*) Poisson bracket with this function plus the quantity’s partial time derivative. Taking the classical limit in the WKB approximation scheme yields an equation where the partial time derivative of the action plus this function equals zero. For canonical coordinates  $p$  and  $q$ , the time derivative of  $q$  equals the derivative of this function with respect to  $p$ . For 10 points, name this function that represents the total energy of a system.

ANSWER: Hamiltonian [accept Hamiltonian constraint; accept Hamiltonian density]

<Physics, Jonathon Settle>

BONUSES

1. An illustration of this book contains several versions of its artist's iconic large peacocks, including one surrounded by several flowers which appears on a chapter heading. For 10 points each:

[10h] Name this book. Aubrey Beardsley launched his career by producing hundreds of ink drawings, framed by elaborate borders of entwined plant stems, for an 1894 edition of this book published by J. M. Dent.

ANSWER: *Le morte d'Arthur* [or *The Death of Arthur*]

[10m] This huge fan of *Le morte d'Arthur* got really pissed at Beardsley's illustrations of the book, claiming they were parodies of manuscripts printed by his Kelmscott Press. He depicted his wife Jane Burden as a woman from Arthurian legend in *La Belle Iseult* and also designed many stained-glass windows.

ANSWER: William **Morris**

[10e] Morris often gushed over his love of *Le morte d'Arthur* with this pre-Raphaelite, who illustrated many of Morris's publications and painted his own Arthurian scenes such as *The Beguiling of Merlin*.

ANSWER: Edward **Burne-Jones**

<Painting/Sculpture, Will Alston>

2. The title character of Isak Dinesen's "Babette's Feast" was once a chef at this restaurant. For 10 points each:

[10h] Name this Parisian restaurant brought to fame by the chef Adolphe Dugléré. During the *Exposition Universelle*, Dugléré prepared a 16-course meal for the Three Emperors Dinner at this restaurant.

ANSWER: **Café Anglais** [prompt on English Cafe]

[10m] The Three Emperors in question included this man, who was Russian prince at the time. As *tsar*, another of his meals almost ended in tragedy when the imperial train derailed in Borki with his family in the dining car.

ANSWER: **Alexander III** [or **Aleksandr III**; prompt on Alexander or Aleksandr]

[10e] The other two attendees of the dinner were Alexander II of Russia and the then-holder of this title. Later, the "Willy-Nicky letters" were a set of correspondence between a *tsar* and a holder of this title.

ANSWER: **Kaiser** of Prussia/Germany [prompt on King of Prussia or Emperor of Germany]

<Euro History, Stephen Eltinge>

3. One possible origin of the term "green room" comes from a renovation of this theater in 1662, which added a dressing room of that color. For 10 points each:

[10h] Name this venue which Christopher Beeston converted from its original violent purpose into a theater for the Queen Anne's Men. Inigo Jones used it as the model for his design of a similarly-named theater in Whitehall Palace.

ANSWER: **Cockpit** Theatre [or **Cockpit-in-Court**; accept **Phoenix** Theatre] (Originally used for cockfighting.)

[10e] The Cockpit was one of the first theaters located by this London road, though it was later forced out of business by a different theater named for this road. In a nursery rhyme, the Muffin Man lives by this road.

ANSWER: **Drury** Lane

[10m] This work's narrator often goes to the Cockpit to watch plays, including *Wit Without Money* by John Fletcher. This work was first published in two parts in 1825 since it was written in a shorthand called tachygraphy.

ANSWER: Samuel **Pepys's diary** [accept equivalents mentioning **Pepys** and his **diary** or **journal**]

<Drama, Will Alston>

4. These tumors are composed of differentiated tissue from multiple embryonic cell layers and arise from primary germ cells of the ovary. For 10 points each:

[10m] Name this most common benign ovarian neoplasm in women under 30 years old. They can be distinguished from endometriomas by signal loss on fat-suppressed M·R·I sequences, and sometimes contain hair and teeth.

ANSWER: mature **teratoma** [or **dermoid cyst** or mature cystic **teratoma**]

[10h] A paraneoplastic syndrome that occurs with ovarian teratomas is an encephalitis caused by antibodies to this receptor. That encephalitis targeting this receptor is often misdiagnosed as schizophrenia, as with Susanah Calahan.

ANSWER: **NMDA** receptor

[10e] Struma ovarii (“oh-VAYR-ee-eye”) are a subtype of ovarian tumors which are predominantly composed of tissue similar to the tissue found in this iodine-using butterfly-shaped gland in the neck.

ANSWER: **thyroid** tissue

<Biology, Bryce Hwang>

5. This man was born to a woman named Ungyeo (“OONG-yuh”), who had transformed from a bear after hiding from the sun for 21 days after a tiger could only last for 20. For 10 points each:

[10m] Name this man who went on to become the legendary first emperor of Gojoseon (“goh-joh-sun”), the oldest Korean kingdom.

ANSWER: **Dangun** Wanggeom [or **Tangun**]

[10e] The Dangun legend is often interpreted as the beginning of a historical age in Korea named for this material. Hesiod used this metallic material to describe the worst, and current, one of the four ages of man in his *Theogony*.

ANSWER: **Iron** Age

[10h] The oldest recorded version of the Dangun legend is found in this 13th century Korean text. Unlike a similarly-titled history book by Kim Busik (“boo-shik”), it mainly recalls folktales, myths, and legends from before and during its period of focus.

ANSWER: **Samguk Yusa** [or **Memorabilia** of the **Three Kingdoms**; prompt on **Memorabilia** or **Yusa**; reject “Samguk” or “Samguk Sagi” or “History of the Three Kingdoms” or “Three Kingdoms”]

<Legends, Will Alston>

6. For 10 points each, name these Asian elephants of note in the 20th and 21st centuries:

[10e] This rogue elephant killed at least 27 people while rampaging India from 2004 to 2006 before he was killed by the hunter Dipen Phukan. This elephant is named for a man who was later found to have accumulated a stash of video games such as *Final Fantasy VII* and *Resident Evil* in his compound in Abbottabad.

ANSWER: **Osama bin Laden** [prompt on **Osama** or **bin Laden**]

[10m] This poor elephant was brought from Southeast Asia to join Adam Forepaugh’s circus, which fraudulently billed her as the first elephant born in America. She later died on Coney Island.

ANSWER: **Topsy** (She was killed by electrocution.)

[10h] This elephant, a decorated World War II officer in the army of the Republic of China, was relocated to Taiwan in 1945. He was the most popular animal in the Taipei Zoo until his death in 2003 at the ripe old age of 86.

ANSWER: **Lin** Wang [or **Ah Mei** or Grandpa **Lin**; prompt on **Wang**]

<CW / International History, Kirk Jing>

7. Otera's tin-containing catalyst is used to catalyze this reaction, which occurs twice in succession during R·N·A splicing. For 10 points each:

[10m] Name this addition-elimination reaction in which the alkoxide group of an ester is switched out for a different alkoxide group. This is accomplished by using an excess of a different alcohol.

ANSWER: **transesterification**

[10e] Like many addition-elimination reactions at carbonyl centers, transesterification proceeds through an intermediate with this geometry, in which four bonds are 109.4 degrees apart from each other.

ANSWER: **tetrahedral**

[10h] In the first step of acid-catalyzed transesterification, the C-O bond is activated via this chemical transformation. A description is acceptable.

ANSWER: the **oxygen is protonated** [accept equivalents mentioning that hydrogen from the acid or a proton from the acid are added to the oxygen]

<Chemistry, Eric Mukherjee>

8. In a paper titled for Peter van Inwagen and this term, Ted Sider argued that the existence of objects described by this term would weaken compositional nihilism, the idea that there are no objects with proper parts. For 10 points each:

[10m] Identify this term from mereology which refers to any object whose parts have further proper parts, or equivalently, are not made of indivisible atoms.

ANSWER: **gunk**

[10h] This Rutgers philosopher argued that just as things may be made up of more and more "gunk," things may also be able to be combined into ever larger wholes, or more and more "junk." This author of "Monism: The Priority of the Whole" also popularized the contrastivist theory of knowledge in "From Contextualism to Contrastivism."

ANSWER: Jonathan **Schaffer**

[10e] The idea of philosophical gunk can be traced back to this Greek philosopher, who argued that if time consisted of infinitely many instants of zero length, it would be impossible for objects to move.

ANSWER: **Zeno** of Elea [reject "Zeno of Citium"]

<Philosophy, Neil Gurram>

9. In an essay from *Approximations, Differences, and Other Essays*, a writer states that "all symbiosis" gives rise to this concept in Latin America. For 10 points each:

[10h] Name this concept, which was explored in a set of *General Essays* by Severo Sarduy ("sar-DOO-ee"). As an adjective, it titles a short novel in which a Mexican nobleman and his servant Filomena travel to Venice and observe the funeral procession of Richard Wagner occurring over the grave of Ivan Stravinsky.

ANSWER: **baroque** [or **barroco** or **barroca**; accept **Baroque Concerto**]

[10e] The term neo-Baroque has been used to describe the highly allusive writing style of Cuban authors, such as this author of *Baroque Concerto* and *The Kingdom of This World*.

ANSWER: Alejo **Carpentier**

[10m] Among the Cuban novels often described as "Neo-Baroque" is this one by José Lezama Lima, which depicts the coming-of-age of the protagonist José Cemí as he negotiates his homosexuality.

ANSWER: **Paradiso**

<Long Fiction, Ike Jose>

10. Because he believed that God created each soul individually at the moment of conception, Pelagius argued that this concept was insulting to God and implied that He created faulty handiwork. For 10 points each:

[10e] Name this concept which traditionally became part of human nature when Adam and Eve ate the forbidden fruit. This concept is typically conceived of as the innate tendency for humans to fail to follow God's commands.

ANSWER: **original sin** [or **sin nature**; accept **total depravity**]

[10m] The salvation of human beings from sin nature and its consequences is studied in this field, whose name comes from a Greek word meaning "savior."

ANSWER: **soteriology**

[10h] In *The Idea of Atonement in Christian Theology*, this theologian surveyed various theories of soteriology, concluding that the subjective atonement theory of Abelard was most acceptable. This Anglican priest expounded his theory of ideal utilitarianism in his *The Theory of Good and Evil*.

ANSWER: Hastings **Rashdall**

<Theology, Neil Gurrum>

11. After this character is sold to Saracen pirates, he ends up in the realm of King Hermin, where he trains as a knight for 15 years and makes the defeated giant Ascapart his squire. For 10 points each:

[10h] Name this English knight who, in a widely-circulated romance, returns from the Holy Land and kills a dragon in Cologne before claiming the land of his father Guy.

ANSWER: Sir **Bevis** of Hampton [or **Buovo** d'Antona, or **Beuve** d'Hanstone, or **Bovo**, or **Bova** Korolevich; accept **Bovo-Bukh** or **Sir Beues of Hamtoun**]

[10e] The first non-religious book printed in this language is a romance based on the Bevis tale called the *Bovo-Bukh*, written by the scholar Elia Levita. This language was later used to write the story "Gimpel the Fool."

ANSWER: **Yiddish** [or **Idish**]

[10m] Perhaps via Yiddish, Bevis passed into Russian literature as Bova Korolevich, who is one of these figures. These knights-errant from Russian tales include Ilya Muromets and Alyosha Popovich.

ANSWER: **bogatyrs**

<Misc. Lit, Will Alston>

12. An engineer with this first name created the first computer program for synthesizing and playing back music, aptly named MUSIC. For 10 points each:

[10h] Identify the given name of that man with the surname Mathews. He lends his name to a music visual programming language developed by Cycling '74 that uses the MSP extension for real time signal processing.

ANSWER: **Max** [accept **Max** Mathews]

[10m] Max Mathews might be best known for an arrangement of this song that became the first recording sung with a synthesized voice. This song's refrain jokingly notes "it won't be a stylish marriage."

ANSWER: "**Daisy Bell** (Bicycle Built for Two)" [accept "**Daisy**, Daisy"]

[10e] After Arthur C. Clarke heard that recording when visiting Bell Labs, he subsequently suggested that this character sing "Daisy" while being deactivated in *2001: A Space Odyssey*.

ANSWER: **HAL** 9000

<OArts: Auditory, Anderson Wang>

13. Surveys of the planets orbiting within this star's habitable zone have indicated that they do not possess cloud-free hydrogen-dominated atmospheres, increasing the likelihood that they are habitable. For 10 points each:

[10h] Name this nearby star that is orbited by seven terrestrial planets. A 2017 *Nature* study led by the University of Liège's Michaël Gillon ignited interest in this star, whose name contains a Belgium-inspired backronym.

ANSWER: **TRAPPIST-1** ("trappist-one") [or **2MASS J23062928-0502285**; prompt on **TRAPPIST**] (Trappist is a Belgian beer)

[10e] Weighing in at 0.09 solar masses and having a temperature of about 2,500 kelvins, TRAPPIST-1 is an example of these small, highly abundant stars that belong to spectral class K or M. They are the coolest main-sequence stars.

ANSWER: **red dwarfs** [prompt on **dwarf** stars]

[10m] To estimate planet masses, TRAPPIST performed a standard TTV analysis after extracting transit parameters from these graphs with MCMC code. Orbital periods of eclipsing binaries are determined from dips in these graphs.

ANSWER: **light curves**

<Other Science: Astronomy, Stephen Eltinge>

14. For 10 points each, name these 19th century African leaders who gained prominence via the slave trade:

[10e] This leader gained prominence opposing "Chinese" Gordon's attempts to eliminate the slave trade in Sudan and re-legalized slavery after gaining power. His forces eventually killed Gordon during the Siege of Khartoum.

ANSWER: The **Mahdi** [or **Muhammad Ahmad** bin Abd Allah; accept **Mahdi** rebellion or **Mahdist** war / uprising; reject "Muhammad"]

[10m] This man made a fortune from slave raids into the Congo, where he allied with the kingdom of Msiri. He was later made governor of Zanzibar and got his nickname from the sounds of his troops' guns.

ANSWER: **Tippu Tip** [or **Tippu Tib** or Hamad bin Muhammad bin Juma bin Rajab el **Murjebi**]

[10h] This Islamic scholar, slave trader, and general founded the Wassoulou empire in 1874 after the collapse of the Toucouleur state in present-day Burkina Faso. His grandson was the first post-independence president of Guinea.

ANSWER: **Samori** Touré [prompt on **Touré**] (He was the grandfather of Ahmed Sékou Touré.)

<World History, Will Alston>

15. Henryk Wieniawski's ("vee-nee-AHF-skee'z") *Fantaisie Brillante* ("fahn-tye-ZEE bree-YAHNT") on this opera's themes quotes the "Dance of the Golden Calf" sung in Act II. For 10 points each:

[10h] Name this non-*Carmen* opera whose musical themes were adapted into several violin showpieces in the late 19th century, including fantasies by both Henri Vieuxtemps ("on-REE view-TAHMP") and Pablo de Sarasate.

ANSWER: **Faust** [DO NOT REVEAL OTHERWISE but accept "Charles Gounod's **Faust**" etc.]

[10m] A rendition of a piece in this genre that closes Act II of *Faust*, titled "Ainsi que la brise légère," ("ayn-SEE kuh lah BREEZ luh-ZHAIR") concludes Wieniawski's fantasy. The soundtrack to *Eyes Wide Shut* features one of these pieces which was once thought to be part of a Russian composer's jazz suite.

ANSWER: **waltzes** [or **valse**s; accept **Waltz** No. 2 by Dmitry Shostakovich; prompt on **dances**]

[10e] *Faust* is the best-known opera of this French Romantic composer, who also composed the *Marche pontificale* ("marsh poh-n-tee-fee-KAHL") that became the Vatican's national anthem.

ANSWER: Charles **Gounod**

<Classical/Opera, Neil Gurrum>

16. Paul Biya has continued his country's policy of encouraging the official use of one of these two languages over the other, one of the many reasons that the region of Ambazonia declared independence in 2015. For 10 points each: [10m] Name these two main languages spoken in the city of Yaoundé ("YOWN-day"), where students attend schools in one of them or the other, and follow separate educational systems.

ANSWER: **French** AND **English**

[10e] The French-English conflict has long been a thorny issue for this African country, as it was formed from British and French colonies. It formerly disputed the Bakassi peninsula with its neighbor Nigeria.

ANSWER: **Cameroon** [or Republic of **Cameroon** or République du **Cameroun**]

[10h] Assimilation policies in pre- and post-independence Cameroon have also diminished the use of this language, whose unique script -- based on German -- was invented in the 1890s by king Ibrahim Njoya. This language shares its name with a kingdom which governed the present-day Northwest Region of Cameroon for five centuries.

ANSWER: **Bamum** language / kingdom [accept **Mbum** language / people]

<Modern World, Will Alston>

17. One of these animals visits an unnamed poetry scholar and his two sons after the death of the scholar's wife in Max Porter's 2015 prose poem *Grief is the Thing with Feathers*. For 10 points each:

[10m] Name this animal which, in a collection written after Sylvia Plath's death, responds to the question "who is stronger than death?" with the answer "me, evidently" in the poem "Examination at the Womb-Door."

ANSWER: **crows** [or **Corvus**; prompt on **ravens** or **corvids** or **birds**]

[10e] This author wrote those dark and grotesque *Crow* poems after the death of Plath, his first wife.

ANSWER: Ted **Hughes**

[10h] The *Crow* poems include "Lineage," which tells a creation myth that replaces God with this action, which in turn "begat Blood / Who begat Eye / Who begat Fear / Who begat Wing."

ANSWER: **screaming** [accept word forms of **scream**; accept "The **Scream**"; reject "shouting" or "yelling" or "talking" or other answers]

<Poetry, Anderson Wang>

18. In *Better Together*, Robert Putnam and Lewis Feldstein suggest that public libraries would serve as good examples of these locations for helping rebuild American social capital. For 10 points each:

[10h] Give this term popularized by Ray Oldenberg, which refers to locations which are distinct from home and work environments where people conduct both work and social activities.

ANSWER: **third place** [prompt on **place** or **good place** or *The Great Good Place* or anything involving **third**; reject "third space"]

[10m] This urban design theorist argued that building additional "third places" was key to help bring the "creative class" to cities, whose attractiveness he measured with a questionably-named "gay index." He recognized the consequences of the policies he advocated in his 2017 book *The New Urban Crisis*.

ANSWER: Richard **Florida**

[10e] Florida recommended building these businesses along sidewalks to serve as additional "third places." Jurgen Habermas argued that discourse in these businesses in Vienna and London gave rise to the modern "public sphere."

ANSWER: **cafés** [or **coffeeshouses**]

<Social Science: Socio/Anthro, Will Alston>

19. A man of this ethnicity named Filip Konowal (“koh-NOH-val”) was able to become a decorated officer during World War I because he mis-registered his ethnicity upon immigrating to Canada. For 10 points each:

[10h] Give this ethnicity of most of the Canadian immigrants who were placed in internment camps during World War I, as well as an additional 80,000 of them who were closely watched.

ANSWER: **Ukrainians**

[10e] Robert Borden’s government detained the Ukrainians under the authority to suspend civil liberties given by this law, passed during World War I. Pierre Trudeau invoked this law during the October Crisis.

ANSWER: **War Measures** Act

[10m] Unsurprisingly, many of the previously-detained Ukrainians took part in this city’s general strike in 1919, the largest such action in Canadian history. This city’s Ukrainian Labor Temple was a focal point of the strike.

ANSWER: **Winnipeg** [accept **Winnipeg** general strike]

<American History, Will Alston>

20. The parting line between the cavity and core plates of these objects should be flat or a simple curve to avoid burrs. For 10 points each:

[10e] Name these rigid objects used in plastic casting. Shaped plastic products are created by putting molten plastic into these objects and letting the plastic cool.

ANSWER: **molds**

[10h] Injection molds are made with electrical discharge machining or this broad type of machining. Computers guide mills, lathes, and other tools based on CAD (“cad”) or CAM (“cam”) files in this type of automated machining.

ANSWER: **CNC** machining [or computer **numerical control** machining]

[10m] Instead of injecting into a mold, plastics can be manufactured with this process that forces the plastic through a two-dimensional die opening with the desired cross section. Fused deposition modeling, also known as fused filament fabrication, uses this process to print items with ABS or other thermoplastics.

ANSWER: **extrusion**

<Other Science: Applied/Data Science/Engineering, Jonathen Settle>