

2025 ACF Regionals

Packet A by Liberty A, Rutgers A, Toronto C, UBC, Waterloo B

Edited and written by Jeremy Cummings, Ani Perumalla, Erik Christensen, Henry Goff, Taylor Harvey, Amogh Kulkarni, Tim Morrison, Noah Sheidlower, Munir Siddiqui, Abigail Tan, Maxwell Ye, JinAh Kim, Ophir Lifshitz, and Abhinav Rachakonda

Tossups

1. One in four patients who have this organ removed to treat one disease may experience hyperpigmentation from [emphasize] *another* organ's growth in Nelson's syndrome. Surgical removal of an adenoma of this organ can prevent its overactivity in Conn's syndrome. A failure to decrease the levels of one hormone is used to diagnose a condition of this organ in the dexamethasone suppression test. The organ of Zuckerkandl may be the origin of neoplasms of this organ called pheochromocytomas. The enzyme PNMT is primarily found in this organ's chromaffin cells. This organ exhibits overactivity in Cushing's disease, and it produces hormones like aldosterone and cortisol. For 10 points, name this paired organ that produces the main hormone found in an Epipen.

ANSWER: **adrenal** glands [accept **adrenal** medulla]

<UBC, Biology>

2. In an epilogue set in a movie theater in this city, a man loses his wedding ring, watch, and cufflinks between the legs of a woman he fondles. A novel set in this city that retells the killing of Trotsky in multiple styles also includes the wordplay-heavy dialogue of Bustrófedon. The gay poet José Cemí ("say-MEE") grows up in this city in the 1977 novel *Paradiso*. An author who was an exile to London wrote about his sexual exploits in this city in a novel published in English as [his name]'s *Inferno*, and used this city's dialects in his Joycean novel *Three Trapped Tigers*. A poet born in this capital city wrote the collection *Versos sencillos* ("sen-SEE-yohs"), which includes the poems "I Cultivate a White Rose" and "Guantanamo." For 10 points, what capital city was the birthplace of José Martí?

ANSWER: **Havana** [or La **Habana**] (José Lezama Lima wrote *Paradiso*. Guillermo Cabrera Infante wrote *Infante's Inferno* and *Three Trapped Tigers*.)

<TH, World Literature>

3. A hall named for this country built in Victorian-era Piccadilly became a popular venue for spiritualists and magic shows. Ritual costumes inspired by this country's history were worn by the non-Greek Order of the Golden Dawn, drawing on the work of Karl Richard Lepsius. While staying in this country, Aleister Crowley ("AL-uh-stir KROH-lee") wrote *The Book of the Law*, launching his Thelema movement centered on deities from this country. Parties themed around bodies illegally imported from this country were organized by the surgeon Thomas Pettigrew, who unwrapped them for Victorian audiences. Lord Carnarvon's death was the first to be blamed on a curse caused by an excavation in this country. For 10 points, name this country where a team led by Howard Carter was supposedly cursed by opening the tomb of King Tut.

ANSWER: **Egypt** [or **Misr**; or Arab Republic of **Egypt**; accept Jumhūriyyat **Misr** al-‘Arabiyyah; accept **Egyptian Hall**]

<EC, European History>

4. A poem attributed to this figure ends each stanza by mentioning a journey taken by three boatloads of men, of whom only seven return. This figure intimidates a king by making the men of his court sing a song that consists solely of a nonsense word. This figure once won a horse race by laying holly in front of his opponent's horses, causing them to dance. This figure foiled a plan to give inspiration to Morfran by accidentally drinking three drops from a cauldron, after which he hid by transforming into a piece of wheat that was eaten by his master Cerridwen ("keh-RID-wen"). After this figure was found as a baby by Elphin, he changed his name from Gwion Bach to one meaning "radiant brow." For 10 points, a Frank Lloyd Wright studio is named for what semi-legendary Welsh bard?

ANSWER: **Taliesin** ("tal-YES-in") [accept **Gwion Bach** until read] (The poem in the first line is *The Spoils of Annwn*.)

<Rutgers A, Mythology>

5. A type of "writing" named for this concept titles a Man Ray photograph in which his signature appears in penlight over a self-portrait, often called the first light painting. The "White Manifesto" prefigured a movement named for this concept that was led by the canvas-slashing Italian painter Lucio Fontana. This concept and "light" provide an alternate title for the "Light Prop for an Electric Stage," a rotating kinetic "modulator" by László Moholy-Nagy ("LOSS-low MOH-ho-lee-NAHJ"). This is the last word in the title of a sculpture of the "Development of a Bottle" and of another sculpture by the same artist that depicts a body in motion; that bronze Futurist sculpture by Umberto Boccioni is titled for "Unique Forms of Continuity in" this concept. For 10 points, empty parts of a canvas are called what concept's "negative" form?

ANSWER: **space** [or word forms like **spatial**; accept **spazio**; accept **Space Writing** or **Spatialism** or **Spazialismo**; accept **Light-Space Modulator**; accept **Development of a Bottle in Space** or **Bird in Space**; accept negative **space**]

<TM, Painting and Sculpture>

6. In this novel, a cook prepares asparagus nearly every night for a whole summer in order to induce asthma attacks in a kitchen maid nicknamed "Giotto's Charity." A man in this novel uses the euphemism "making cattleyas ("CAT-lee-yuhs")" for his trysts with a woman whom he likens to a painting of Zipporah. During a carriage ride, this novel's narrator writes an impromptu passage on the image of three church steeples against the sky. A boy in this novel watches the projections of a magic lantern in his room while waiting for a good-night kiss from his mother. The title character of this novel's first volume associates a "little phrase" from a sonata with his love for Odette de Crecy. For 10 points, a tea-soaked madeleine induces the narrator's memories of Combray in what novel by Marcel Proust?

ANSWER: ***In Search of Lost Time*** [or ***À la recherche du temps perdu***; accept ***Remembrance of Things Past***; accept ***Swann's Way*** or ***Du côté de chez Swann***]

<HG, European Literature>

7. This thinker cited a Galton board to argue that an event that is determined must arise from a set of possibilities that narrow to one. In that paper, this thinker defined a "non-necessitating cause" via the example of a bomb linked to a Geiger counter. This thinker often used the example of paying a grocer for potatoes, as in a paper whose title concepts were contrasted with "institutional" ones by John Searle ("surl"). A book by this author of "Causality and Determination" and "On Brute Facts" introduced the idea of acting "under a description." The title concept of that book holds if the performer of an action can say why they chose to do it. This author of *Intention* coined the term "consequentialism." For 10 points, what philosopher revived virtue ethics in her paper "Modern Moral Philosophy"?

ANSWER: G. E. M. **Anscombe** [or Gertrude Elizabeth Margaret **Anscombe**]

<Waterloo B, Philosophy>

8. This reaction is the basis for a modification that uses electron-deficient reagents in a mixture of KHMDS and 18-crown-6. Semi-stabilized aryl reagents in this reaction do not achieve stereoselectivity, unlike stabilized ester or unstabilized alkyl reagents. Maryanoff and Reitz coined the term “stereochemical drift” to describe the interconversion of betaine intermediates in this reaction, which can be controlled using the Schlosser modification. A modification of this reaction that uses carbanion reagents to preferentially synthesize *E* products was proposed by Leopold Horner. In lithium-free conditions, this reaction proceeds via a four-atom oxaphosphetane intermediate. For 10 points, name this reaction that uses a triphenyl phosphonium ylide (“ILL-id”) reagent to convert a carbonyl group into an alkene.

ANSWER: **Wittig** (“VIT-ig”) reaction [or **Wittig** olefination; prompt on **Horner**–Wadsworth–Emmons reaction until “Horner” is read]
<UBC, Chemistry>

9. *Description acceptable.* This government reserved seats in its parliament for military officials through a policy often translated as “dual function.” This government’s Aspri group of advisors was disbanded after a riot reacting to a state visit by the Japanese prime minister, known as the Malari incident. This government held the “Act of Free Choice” plebiscite to circumvent the New York Agreement and annex an eastern region. The Supersemar granted this government’s eventual leader authority to suppress the PKI. This government developed free-market economic policies under the guidance of the “Berkeley Mafia.” The Petition of Fifty protested this government’s abuse of their “single principle” of Pancasila. For 10 points, give the common term for the Indonesian government that followed Sukarno’s “Guided Democracy” period.

ANSWER: **New Order** [or **Orde Baru**; accept **Orba**; accept **Suharto**’s government; prompt on **Indonesian** government until read by asking “under what leader?”]
<AK, World History>

10. In this song’s music video, the artist C-walks down a hopscotch court after delivering one of its punchlines. After the release of this song, fans created fake Google locations in the Bridle Path neighborhood. The music video for this song teased a snippet of “squabble up” that notes “woke up, lookin’ for the broccoli.” An artist sued his own label, UMG, claiming they artificially boosted the popularity of this song. DeMar DeRozan joined a performance of this song that concluded The Pop Out concert in Inglewood. This song claims a man is “not a colleague,” but a “colonizer.” This song, which begins with the artist whispering “I see dead people,” was released just a day after “Meet the Grahams” and “Family Matters.” For 10 points, what hit from Kendrick Lamar’s feud with Drake repeats its title after the word “they?”

ANSWER: “**Not Like Us**”
<EC, Pop Culture>

11. David Matthews completed a fragment of a cello concerto by this composer for the piece *Dark Pastoral*. A *Concerto Grosso* by this composer splits the orchestra into three sections based on skill. The soloist enters on the rapid notes “C, E-flat, F, E-flat, sustained F” at the start of a concerto written by this composer for Philip Catelinet. This composer used biblical verses from the Song of Solomon to title the movements of a piece for viola, wordless chorus, and orchestra. The first tuba concerto in the standard repertoire is by this composer, who also wrote the six-movement orchestral suite *Flos Campi*. A solo violin plays ascending trills to imitate the title animal in a short romance by this composer inspired by a George Meredith poem. For 10 points, name this composer of *The Lark Ascending*.

ANSWER: Ralph **Vaughan Williams** (“rafe von Williams”) [accept **RVW**; prompt on **Williams**]
<JC, Classical Music>

12. These visual elements were drawn on an artist's body and face in the 1998 piece *1/2* ("one-half") and the 2000 piece *Family Tree*. Four of these visual elements make up the rightmost section of the painting *The Remaining Mountain*. A goose-loving artist drew these elements using a set of "eight principles." These elements make up an artwork that immortalizes a drinking contest at the "Orchard Pavilion." In the 1980s, an artist made 4,000 carvings that resemble these elements for his installation *A Book From the Sky*. Artists often train by copying a thousand of these elements that comprise a "classic" set drawn by Wang Xizhi ("wong shee-jurr"), who used the "four treasures of study" to draw them in styles like "regular" and "semi-cursive." For 10 points, name these symbols stroked with ink in Chinese calligraphy.

ANSWER: Chinese **characters** [or Chinese **letters**; accept Chinese **words** or Chinese **names**; accept **zì** or **Hànzì** or **kanji** or **Hanja** or **Hancha** or **Hán tự**; accept **sinograms** or Chinese **logograms**; accept Chinese **calligraphy** until read; accept **Chinese text** or **Chinese writing**; prompt on **text**, **writing**, or **scripts**; prompt on **scrolls** by asking "what was drawn on the scrolls?"] (The two performance pieces are by Zhang Huan. *The Remaining Mountain* is the first half of the painting *Dwelling in the Fuchun Mountains*. Wang Xizhi drew on the "Eight Principles of Yong" and is sometimes credited with composing the *Thousand Character Classic*. *A Book From the Sky* is by Xu Bing.)

<AP, Other Fine Arts>

13. A resolution introduced by a senator from this family created the Pujo ("poo-ZHO") Committee to investigate a "money trust." A coast-to-coast mail route between Los Angeles and New York was frequented by a member of this family who was a postal worker after World War I. A woman who married into this family wrote the pro-fascist text *The Wave of the Future* to support her husband's lobbying for a US-German peace treaty. A politician from this family was compared to Goebbels by FDR in a speech blaming Jews for endorsing war against Germany at an America First Committee rally. In 1932, a member of this family was the victim of Bruno Hauptmann's "Crime of the Century." For 10 points, name this family of that kidnapped baby and his father, who flew the *Spirit of St. Louis*.

ANSWER: **Lindbergh** [accept Charles Augustus **Lindbergh**; accept the **Lindbergh** baby; accept Carl **Månsson**; accept Anne Morrow **Lindbergh**]

<Rutgers A, American History>

14. In a fully ionized plasma, this phenomenon is proportional to ion velocity times the square of the Larmor radius, which produces a one-half-power dependence on electron temperature. The KPP equation is a one-dimensional form of a system in which this phenomenon is represented by a diagonal matrix multiplying a Laplacian term that is paired with a local reaction term. A term representing this phenomenon is added to an advective flux term in an equation named for drift and this phenomenon. This phenomenon's coefficient is proportional to temperature and mobility, as identified by Einstein. The flux of this phenomenon is proportional to a concentration gradient by Fick's laws. For 10 points, name this phenomenon in which particles move from high to low concentrations.

ANSWER: **diffusion** [accept **diffusivity** or **diffusive** flux; accept reaction-**diffusion** system; accept convection-**diffusion** equation or drift-**diffusion** equation]

<MY, Physics>

15. This economist wrote that the case for government intervention "cannot become more than a *prima facie* one" until agencies "intervene advantageously," presaging public choice arguments. John Maynard Keynes argued against a work by this economist, whose title *Theory of Unemployment* is frictional or voluntary. A phenomenon named for this economist, in which consumption rises because deflation increases real wealth, is also called the "real balance effect." The optimal value of a policy named for this economist occurs when marginal social cost intersects marginal social benefit. This Cambridge economist names a policy used to correct outcomes from water pollution and carbon emissions. For 10 points, name this economist whose namesake taxes mitigate negative externalities.

ANSWER: A. C. **Pigou** ("PIG-oo") [or Arthur Cecil **Pigou**; accept **Pigou** effect; accept **Pigouvian** taxes]

<Waterloo B, Social Science>

16. A poem by this author describes a “man and woman daunsinge (“DAWN-sing”), signifying matrimonie,” quoting an ancestor’s work, *The Boke Named The Governour*. Another poem by this author moves from an empty pool in a rose garden to a “place of disaffection,” the London Underground. A personal motto of Mary, Queen of Scots ends a poem by this author titled for a village that now holds his ashes. This author drew on his upbringing in St. Louis in a poem that evokes the Mississippi River as a “strong brown god.” A set of poems by this author includes the opening lines, “time present and time past / are both perhaps present in time future” and “in my beginning is my end.” For 10 points, name this poet who included “The Dry Salvages (“sal-VAY-jiz”)” and “Burnt Norton” in the collection *Four Quartets*.

ANSWER: T. S. **Eliot** [or Thomas Stearns **Eliot**] (*The Boke Named the Governour* is by Thomas Elyot, a distant ancestor of Eliot.)

<HG, American Literature>

17. A five-stage archaeological sequence of styles composed primarily of objects from this polity was proposed by Max Loehr (“lurr”). A royal consort from this polity, whose head was later hung from a white flag to indicate that she had led to its downfall, supposedly prompted her husband to create a torture method involving walking over a greased metal beam heated with coal. After losing a battle, this polity’s final ruler committed suicide at the Deer Terrace Pavilion, which was legendarily home to excesses of meat and wine. The tomb of Fù Hǎo (“foo how”), a queen and general from this polity, was excavated in Ānyáng (“ahn-yahng”). The Hòumǔwù (“HO-moo-woo”) *dǐng* bronze vessel was found at this dynasty’s last capital, Yīn. This dynasty fell after the Battle of Mùyě (“moo-yeh”) in 1046 BCE. For 10 points, name this Chinese dynasty preceded by the Xià (“sh’yah”) and succeeded by the Zhōu (“joe”).

ANSWER: **Shāng** dynasty [or **Shāng** cháo; accept **Yīn** dynasty or **Yīn** dài until “Yīn” is read; prompt on **Èrlítóu** or **Èrlǐgǎng** by asking “what dynasty?”] (Max Loehr presented a sequence of bronze styles. Dǎjǐ was the consort of Zhòu of Shāng.)

<UBC, Other History>

18. Changes in this quantity are associated with changes in radar reflectivity in a form of interferometry whose control variables are “persistent scatterers.” Measurements of this quantity standardized to the GTOPO30 (“G-topo-thirty”) system have since been improved by the ASTER instrument. Techniques like IfSAR (“IF-sar”) and InSAR (“IN-sar”) are used to obtain image representations of this quantity called DEMs (“D-E-M’s”). Temperature gradients relative to this quantity in dry and moist air parcels define the adiabatic lapse rate. High values of latitude and this quantity form the “tree line” of a habitat. Constant values of this quantity are represented by contour lines on topographic maps. For 10 points, what quantity is defined as zero at sea level?

ANSWER: **elevation** [accept **altitude** or **height**]

<Waterloo B, Other Science>

19. *Description acceptable.* A variant of this tradition that places its central figure as the highest of the “fourteen gods” was founded in the same region as an ancient site associated with this tradition, Unakoti. This tradition historically developed from two paths, the “outer path” and the “path of mantras.” Lakulisha (“luh-koo-LEE-shuh”) founded a variant of this tradition whose adherents engage in odd behavior to attract public disapproval, called the Pāshupata (“PAH-shoo-puh-tuh”) school. It’s not *bhakti* (“BUCK-tee”), but the *Tirumurai* hymns were composed by 63 saints of this tradition known as the Nayanars. Adherents of this tradition wear the *tripundra*, which consists of three [emphasize] *horizontal* lines of ash on the forehead. This tradition’s central figure is represented by a pillar-like symbol called a *lingam*. For 10 points, name this tradition that worships the “Destroyer” of the Hindu Trimurti.

ANSWER: **Shaivism** [or word forms like **Shaivites**; accept answers describing worship of **Shiva**; accept Pāshupata **Shaivism**; prompt on **Hinduism** until “Hindu” is read] (The “fourteen gods” refer to Chaturdasa Devata in Tripura. The paths in the second line refer to *atimarga* and *mantramarga*.)

<AK, Religion>

20. In a Thomas Kinsella poem titled for one of these objects, the speaker feels a chattering “at my ear” upon visiting his grandmother’s deathbed. The narrator notes parenthetically that he heard some of these objects in the last line of Dante Gabriel Rossetti’s “The Blessed Damozel.” These objects title a poem that mentions periods “Dear as remember’d kisses after death.” In the last stanza of Dylan Thomas’s “Do not go gentle into that good night,” the speaker asks his father to “curse, bless, me now” with “fierce” objects of this type. In a poem excerpted from the longer poem *The Princess*, the speaker says “I know not what [these objects] mean” before repeatedly invoking “the days that are no more.” For 10 points, name these objects that are “idle” in the title of a mournful Tennyson poem.

ANSWER: **tear**s [or **teardrops**; accept “**Tears, Idle Tears**”]

<Waterloo B, British Literature>

Bonuses

1. Coins from this island dating from the mid-6th century BCE feature a central row of five so-called “buttons” evoking stylized segments. For 10 points each:

[10h] Name this island that minted coins depicting a turtle, and later a tortoise. Many Cycladic (“SICK-la-dik”) mints adopted this Greek island’s weight standard in the late Archaic period.

ANSWER: **Aegina** (“ih-JYE-nuh”)

[10m] One Aegean island that notably did not use the standard of Aegina was Melos, which instead used that of this Ionian city. This home city of the tyrant Aristagoras had close connections with Sybaris (“SIB-uh-riss”).

ANSWER: **Miletus** [or **Milētos**; accept Aristagoras of **Miletus**]

[10e] The decades after the Persian invasions of Greece saw a slow economic recovery for Aegina, which after a 457 BCE conflict was forced to pay tribute to this league led by Athens.

ANSWER: **Delian** League

<AT, Other History>

2. This tradition likens God’s divine influence to beams of light in its use of the term *Ohr*. For 10 points each:

[10e] Name this mystical Jewish tradition followed by Isaac Luria whose foundational text is the *Zohar*.

ANSWER: **Kabbalah**

[10m] In Kabbalistic tradition, these things are emanations of the *Ohr Ein Sof* (“or ane SOHF”) that are revealed in the world. These things are the nodes on Kabbalah’s tree of life diagram.

ANSWER: **sefirot** [or **sephiroth**]

[10h] The order in which the sefirot were created is known as the path of this object in Kabbalah. It’s not a bucket, but the Third Secret of Fátima describes seeing an angel holding this object and yelling the word “penance!”

ANSWER: **flaming sword** [or **lahat chereb**; accept answers indicating a **sword** on **fire**; accept the path of the **flaming sword**; prompt on **swords**; prompt on **sword** of Michael]

<Rutgers A, Religion>

3. This concept’s development involves moving away from the pleasure principle and towards the reality principle in governing its actions. For 10 points each:

[10e] Name this concept in Freudian psychology that mediates conflict between reality, the id, and a concept with the prefix “super-.”

ANSWER: **ego** [or **ich**]

[10m] In *The Ego and the Id*, Freud used one of these animals to introduce the ego-id relationship. Wilhelm von Osten did not actually teach a “Clever” one of these animals to spell, instead prompting it with body language.

ANSWER: **horses** [or **stallions**]

[10h] A Freud essay titled for this trait introduced the “ego ideal,” a person’s image of what they want to become. A test for this trait was devised by Raskin and Hall.

ANSWER: **narcissism** [or *On **Narcissism***]

<Rutgers A, Social Science>

4. Apocryphally, this symphony's composer declared "Beethoven won't object!" when he chose to write it in D minor. For 10 points each:

[10h] Name this symphony whose "heavenly finale" was left incomplete at its composer's death, despite its dedication to "the beloved God." This symphony's third movement Adagio was described as a "farewell to life" and contains the entire chromatic scale in its main theme.

ANSWER: **Bruckner's** Symphony No. **9** [or **Bruckner's Ninth**; or Anton **Bruckner's** Symphony No. **9** in D minor; or **WAB 109**]

[10m] Performances of Bruckner's Ninth often use his C major setting of this Latin hymn as a final movement. A setting of this hymn by Marc-Antoine Charpentier provides the opening theme for Eurovision.

ANSWER: **Te Deum** [accept **Te Deum laudamus**]

[10e] While early drafts of Bruckner's Ninth quote his *Te Deum*, later drafts instead quote the "Hallelujah" chorus from this oratorio by Handel.

ANSWER: **Messiah** [or **HWV 56**]

<MY, Classical Music>

5. A set of mystical texts called the *Chaldean Oracles* influenced the metaphysics of thinkers in this tradition, such as Proclus and Iamblichus. For 10 points each:

[10e] Plotinus belonged to what philosophical tradition that interpreted, and was named for, the author of the dialogues *Crito* and *Euthyphro*?

ANSWER: **Neoplatonism** [accept word forms like **Neoplatonic**; prompt on **Platonism**]

[10m] This Neoplatonic philosopher from Tyre produced the first known exegesis of the *Chaldean Oracles* and also wrote *Philosophy from Oracles*. This author of the *Isagoge* edited and published the *Enneads* of his teacher Plotinus.

ANSWER: **Porphyry** of Tyre [or **Porphyrios**]

[10h] The *Chaldean Oracles* are usually credited to a writer named Julian whose epithet references this practice. Iamblichus and Porphyry feuded over this branch of magic, which is contrasted with the practical thaumaturgy.

ANSWER: **theurgy** [accept **Theurgia**; accept Julian the **Theurgist**; prompt on **divine** magic or **divine**-working]

<Liberty A, Philosophy>

6. Pierre-Gilles de Gennes's ("pee-air ZHEEL duh zhen's") 1991 Nobel Prize-winning work studied order phenomena in materials described by this adjective. For 10 points each:

[10m] Give this adjective that describes entropy-dominated materials that readily deform, such as polymers and gels. Low-energy ionization in mass spectrometry, such as electrospray, is described by this adjective.

ANSWER: **soft** [accept **soft** ionization or **soft** matter or **soft** condensed matter]

[10e] Soft matter includes these materials, with which de Genne worked. These materials consist of parallel-aligned rods and are used in namesake electronic displays.

ANSWER: **liquid crystals** [or **LC**; accept **liquid crystal** displays or **LCDs**]

[10h] A hallmark property of some soft matter is the ability to undergo this process, which underlies "4D printing" and can be "template-guided." Gold nanoparticles undergo this process due to the formation of metallophilic bonds.

ANSWER: **self-assembly** [accept **self-organization**; or word forms like **self-assembled**]

<Toronto C, Chemistry>

7. Franziska Feifalik's elaborate hair care routine for this woman included a wash with egg yolk and cognac every two weeks to create her "crown braid." For 10 points each:

[10h] Name this woman who commissioned a palace named after Achilles on Corfu as a summer refuge after a family tragedy. This woman was assassinated in Geneva by the anarchist Luigi Lucheni ("loo-KAY-nee").

ANSWER: Empress **Elisabeth** of Austria [accept Duchess **Elisabeth** Amalie Eugenie; accept **Elisabeth** of Bavaria; accept **Sisi** or **Sissi**]

[10m] Empress Elisabeth built the Achilleion ("ah-KILL-ee-on") after this event. This event was named after the hunting lodge where her son Rudolf died, after the Habsburg family learned of his affair with the young Baroness Mary Vetsera.

ANSWER: **Mayerling** incident

[10e] The Mayerling incident led to this man becoming the heir to the Austrian throne, though this man never inherited due to his assassination by Gavrilo Princip.

ANSWER: **Franz Ferdinand** [or Archduke **Franz Ferdinand** of Austria; or Archduke **Franz Ferdinand** Carl Ludwig Joseph Maria of Austria]

<Toronto C, European History>

8. The cast sings "Awake, you who are asleep! / We are winnowing right from wrong!" in this language at the end of Hassan Sheikh Mumin's play *Leopard Among the Women*. For 10 points each:

[10h] Name this language whose long oral tradition influenced the 1905 poem "Afbakayle." An exiled author who grew up speaking this language wrote the novels *Maps* and *From a Crooked Rib*.

ANSWER: **Somali** [or **Soomaali**; or Af **Soomaali**]

[10m] Coercion into performing this action is central to Nuruddin Farah's novel *From a Crooked Rib* and Faarax M. J. Cawl's Somali novel *Ignorance Is the Enemy of Love*. A Kikuyu-language play is titled in English for doing this "When I Want."

ANSWER: arranged **marriage** [or **marrying** or having a **wedding** or **matrimony**; accept *I Will **Marry** When I Want*] (*I Will Marry When I Want* is by Ngũgĩ wa Thiong'o and Ngũgĩ wa Mirii.)

[10e] Farah also wrote a trilogy about an "African" leader of this type. One of these people known as The Ruler assumes control of the setting of Ngũgĩ's *Wizard of the Crow*, part of a genre more common in Latin American fiction.

ANSWER: **dictators** [accept **dictator** novel; accept *Variations on the Theme of an African **Dictatorship***]

<Toronto C, World Literature>

9. The Box–Jenkins method can be used to select the parameters of an ARIMA ("uh-REE-muh") model for data indexed by this variable. For 10 points each:

[10e] Name this variable plotted on the x -axis of namesake "series" of data. Stochastic processes like Brownian motion and stock market returns are often indexed by this variable.

ANSWER: **time** [prompt on t]

[10h] The Box–Jenkins method uses a variant of correlation denoted by this adjective, which first regresses off data at shorter lags. Similarly, this adjective denotes a regression diagnostics method that plots the response against the added variable, after regressing off all other variables.

ANSWER: **partial** [accept **partial** correlation or **partial** autocorrelation function; accept **partial** regression]

[10m] An early step of the Box–Jenkins method is to transform or apply differencing to better attain this property. A time series with this property has the same joint probability at any point in time.

ANSWER: **stationary** [or **stationarity**]

<Rutgers A, Other Science>

10. The story from Vasari's *Lives of the Artist* in which Giotto draws a perfect circle for the pope was likely inspired by Pliny the Elder's anecdote in which this painter impressed Protogenes with a single fine line. For 10 points each: [10m] Name this Ancient Greek painter of *Aphrodite Anadyomene* ("an-uh-dy-OM-uh-nee"). Botticelli painted a "Calumny" modeled on a lost work by this painter from Kos.

ANSWER: **Apelles** of Kos [accept *The Calumny of Apelles*]

[10h] A challenge posed by this author led many Renaissance artists to create versions of *The Calumny of Apelles*. This author devised geometric ideas on perspective in *De pictura* and built on Vitruvius in *On the Art of Building*.

ANSWER: Leon Battista **Alberti**

[10e] Raphael may have modeled his depiction of himself in this painting on Apelles, next to a man modeled on Protogenes. Plato points toward the sky in this painting.

ANSWER: *The School of Athens* [or *Scuola di Atene*]

<Rutgers A, Painting and Sculpture>

11. Though predecessors in other languages included *La secchia rapita* ("la SECK-yah ra-PEE-ta") by Alessandro Tassoni, the first work of this type in English is usually said to be Samuel Butler's *Hudibras*. For 10 points each:

[10m] Name this type of long poem that satirizes a trivial subject using elevated diction and epithets. English examples of poems in this two-word style include John Gay's *Trivia* and *The Dunciad*.

ANSWER: **mock-epic** [or **mock-heroic**; accept **heroi-comic**]

[10e] This mock-epic opens by describing a "dire offence [which] from am'rous causes springs." Sylphs led by Ariel fail to prevent the removal of Belinda's hair in this poem by Alexander Pope.

ANSWER: *The Rape of the Lock*

[10h] This mock-epic by a different author begins with the title character, "pond'ring which of all his sons was fit / To reign, and wage immortal war with wit," soon settling on a man who is "mature in dullness" and "stands confirm'd in full stupidity."

ANSWER: **Mac Flecknoe** (by John Dryden)

<Liberty A, British Literature>

12. This city was the location of a "Ransom Room" full of gold offered by a ruler to his captor. For 10 points each:

[10m] Name this city. A battle named for this city allegedly began after that aforementioned ruler threw down a Bible presented to him by Vincente de Valverde.

ANSWER: **Cajamarca** ("ka-ha-MAR-ka") [or **Kashamarka**; accept Battle of **Cajamarca**; accept Massacre at **Cajamarca**]

[10e] This ruler was captured at the Battle of Cajamarca just months after defeating his brother Huáscar in a civil war. This final Inca ruler was executed on the orders of Francisco Pizarro.

ANSWER: **Atahualpa** [or **Atawallpa**; or **Ataw Wallpa**]

[10h] Following Atahualpa's execution, Pizarro defeated this general at the Battle of Cusco, forcing him to flee to Quito. Along with Chalcuchima, this Inca general led Atahualpa's forces during the Inca Civil War at the battles of Chimborazo and Quipaipán.

ANSWER: **Quizquiz** ("KEES-kees") [or **Quisquis**]

<Toronto C, World History>

13. The Vjetrenica (“v’yeh-TREN-eet-sa”) Cave in this mountain range was made a UNESCO World Heritage Site to protect the blind olm salamander, which has adapted to live entirely underwater. For 10 points each:

[10h] Name this mountain range that feeds the heavily dammed Trebišnjica (“TREB-ish-neet-sa”) River. The topographical word “karst” derives from a German word describing this range’s geology.

ANSWER: **Dinaric Alps** [or **Dinarides**; reject “Alps”]

[10e] The Vjetrenica Cave and Trebišnjica River are in this country at the southern end of the Dinaric Alps. The Miljacka (“mil-YAHTS-ka”) river flows through this country’s Sarajevo Valley.

ANSWER: **Bosnia** and Herzegovina [or **Bosnia**-Herzegovina; or **Bosna** i Hercegovina]

[10m] *Description acceptable.* Some stretches of the Trebišnjica River with distinct names have this unusual quality common in karst regions. Both a stretch of the Danube starting at Memmingen and Idaho’s Big Lost River have this quality.

ANSWER: **sinking** [or **disappearing** or **influent**; accept description or synonyms for going **underground** or **recharging** aquifers; accept flowing into a **sinkhole**; reject “shrinking” or “getting smaller”]

<Waterloo B, Geography>

14. In one technique, the pIII (“P-three”) protein of one of these organisms allows it to attach to the F pilus of a pathogen. For 10 points each:

[10m] Name these organisms used in a namesake “assisted continuous evolution” technique. Libraries from these organisms undergo multiple rounds of affinity selection followed by amplification in a namesake “display.”

ANSWER: bacteriophages [accept **phage** display or **phage**-assisted continuous evolution; accept lambda **phage** or M13 **phage**; prompt on **viruses**]

[10e] The M13 phage used in phage-assisted continuous evolution replicates by infecting this pathogen. Hershey and Chase used a T2 phage to infect this rod-shaped Gram-negative bacteria that can cause food poisoning.

ANSWER: **E. coli** [or **Escherichia coli**]

[10h] The M13 phage is also used in Kunkel’s method of performing this technique using mutated *E. coli* strains. Either this technique or error-prone PCR is used to generate libraries in alanine scanning.

ANSWER: **site-directed mutagenesis** [or **site-specific mutagenesis** or **oligonucleotide-directed mutagenesis**; prompt on **SDM** or **mutagenesis** or **point mutation** or **mutation** scanning or **deep mutation** scanning]

<Waterloo B, Biology>

15. In a case named for a student with this surname, the Supreme Court ruled that a high school in Columbus, Ohio, violated the Due Process Clause by suspending nine students without a hearing. For 10 points each:

[10h] Give this surname of a student who carried a concealed revolver into a school, leading to a separate case that struck down the Gun-Free School Zones Act for going beyond Congress’s power to regulate interstate commerce.

ANSWER: **Lopez** [or *Goss v. Lopez*; or *United States v. Lopez*]

[10e] *Goss v. Lopez* found that suspending students without a hearing violates this amendment’s Due Process Clause. This amendment passed after the Civil War includes the Equal Protection Clause.

ANSWER: **Fourteenth** Amendment

[10m] This justice dissented in *Goss v. Lopez* and was Chief Justice during *United States v. Lopez*. This clerk for Robert H. Jackson was Chief Justice for the 2003 *Grutter* and *Gratz* cases on affirmative action.

ANSWER: William **Rehnquist** [or William Hubbs **Rehnquist**]

<NS, American History>

16. Fall damage did indeed exist in Greco-Roman myth. For 10 points each:

[10e] Ate (“AY-tee”) fell to Phrygia after her father Zeus threw her down from this home of the gods. Hephaestus fell to Lemnos after Hera threw him down from this mountain.

ANSWER: Mount **Olympus** [or **Ólympos**]

[10m] While chasing a mouse, a son of Minos named Glaucus fell into a jar of this substance and died. In the *Aeneid*, the Cumaean Sibyl drugs Cerberus with a morsel of this substance and medicinal crops.

ANSWER: **honey** [or **méli**]

[10h] This youngest member of Odysseus’s crew fell to his death off Circe’s roof due to a hangover. This man was the first ghost Odysseus saw in the Underworld and begged to have a proper funeral.

ANSWER: **Elpenor** [or **Elpinor**]

<AR, Mythology>

17. A standard proof of this result uses the fact that a unitary transformation on an inner product of states must have norm one or zero. For 10 points each:

[10m] Name this result that asserts that no unitary time-evolution operator can generate an arbitrary separable quantum state. This result implies that arbitrary quantum states cannot also be “teleported” or “broadcasted.”

ANSWER: **no-cloning** theorem [reject “no-clone theorem”]

[10e] The no-cloning theorem does not preclude states with this property, such as in teleportation that is [this property]-assisted. The EPR paradox concerns states with this property that are correlated despite being separated.

ANSWER: quantum **entanglement** [accept word forms like **entangled**]

[10h] The extent to which entangled states can “bypass” the no-cloning theorem is limited by this property, which bounds the degree of entanglement between multiple states. The CKW inequality governs this property.

ANSWER: **monogamy** [accept word forms like **monogamous**]

<MY, Physics>

18. Georges Ribemont-Dessaignes’s (“ree-buh-MON deh-SEN-yuh’s”) play *Blow Your Noses* was performed at a show titled for a “Bearded” one of these objects. For 10 points each:

[10h] Name these objects, one of which is the last word in the English-language title of a play whose characters are named for body parts like Mouth, Ear, and Eyebrow.

ANSWER: **hearts** [or **cœur**; accept *The Gas **Heart*** or *The Gas-Operated **Heart*** or *Le **Cœur** à gaz*; accept *Bearded **Heart*** or *Le **Cœur** à barbe*]

[10e] Tristan Tzara performed his play *The Gas Heart* at the Bearded Heart show, which aimed to highlight this avant-garde art movement whose name supposedly derives from the French word for “hobby horse.”

ANSWER: **Dada** [or word forms like **Dadaism** or **Dadaist**]

[10m] The role of Eyebrow in *The Gas Heart* was originated by Philippe Soupault (“soo-POH”), who wrote *The Magnetic Fields* with André Breton using this technique. Breton defined Surrealism as a “pure psychic” form of this technique.

ANSWER: **automatic** writing [or **automatism**; prompt on **randomness** or **chance** or **improvisational** writing; reject “exquisite corpse”]

<Rutgers A, European Literature>

19. A soprano traveling on the steamboat *El Dorado* transforms into one of these animals at the end of a 1996 opera in which the journalist Rosalba repeatedly loses her notebook. For 10 points each:

[10e] An operatic character named after what sort of animal stabs herself after singing the aria “Con onor muore”? The soprano aria “Un bel dì, vedremo” appears in that Puccini opera, whose title character is named for this animal.

ANSWER: **butterfly** [accept *Madama Butterfly* or **Cio-Cio San**]

[10h] In a magical realist opera by Daniel Catán, this soprano transforms into a butterfly to reunite with her lover Cristóbal. This character titles that opera, which was the first in Spanish to be commissioned by an American company.

ANSWER: **Florencia** [or *Florencia en el Amazonas*; accept *Florencia in the Amazon*]

[10m] On several occasions, Puccini’s score for *Madama Butterfly* represents Cio-Cio San’s husband with a motif based on this song.

ANSWER: “The **Star-Spangled Banner**” [accept “**To Anacreon in Heaven**” or “The **Anacreontic** Song”; prompt on American national anthem or national anthem of the US] (The song was not yet the US’s national anthem at the time Puccini composed the opera.)

<JC, Other Fine Arts>

20. An essay collected in the book *String Theory* claims that viewing this activity reveals that the highest form of human beauty is “kinetic.” For 10 points each:

[10m] Name this activity that a 2006 essay compares to a “religious experience” when spectating one of its professionals. In a novel, Michael Pemulis and John “No Relation” Wayne attend a prep school centered on this activity.

ANSWER: **tennis** [accept Enfield **Tennis** Academy; prompt on athletics or sports]

[10e] This author of “Roger Federer As Religious Experience” wrote about the Enfield Tennis Academy in the lengthy novel *Infinite Jest*.

ANSWER: David Foster **Wallace**

[10h] An essay from Wallace’s collection *A Supposedly Fun Thing I’ll Never Do Again* couples “Tennis” and “Tornadoes” with a branch of this field. Wallace’s book *Everything and More* examines the history of a concept in this field.

ANSWER: **mathematics** [or **math**; accept **trigonometry**; accept **calculus** or **derivatives**; accept **infinity**; accept **set** theory or **number** theory; accept **mathematical logic**]

<Rutgers A, American Literature>