**ACF Regionals 2018**

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Tossups

1. Nancy Stokey found that an intertemporal form of this practice is unprofitable in the absence of production costs. A 1933 book by Joan Robinson created the categories of “strong” and “weak” markets to gauge the effects of this practice. Arthur Pigou distinguished between “complete,” “direct,” and “indirect” types of this practice in his *Economics of Welfare*. When there are no transaction costs, arbitrage is a possible risk involved with this practice. The Robinson–Patman Act was an early attempt to prohibit anti-competitive forms of this practice. Student discounts are an example of the third-degree type of this practice in which different consumer groups are offered different rates. For 10 points, name this economic strategy in which the same goods are sold at different prices in different markets.

ANSWER: **price discrimination** [accept more specific forms, such as third-degree **price discrimination**; prompt on discrimination]

<Social Science>

2. One structure in this building frames a rotating wireframe installation in the shape of a cloud titled *Flare II*. In this building, four vertical screens each show people soundlessly succumbing to one of the four elements. Bill Viola’s *Martyrs* was commissioned for this building, which features metalwork by Jean Tijou and a chapel memorializing Americans who died in Britain during World War II. The two spires and dome of this building are visible above a thick band of smoke in a 1940 photograph taken by Herbert Mason during the Blitz. Below that dome, the interior of this building contains a Whispering Gallery. For 10 points, name this Anglican cathedral on Ludgate Hill that was rebuilt by Christopher Wren after the Great Fire of London.

ANSWER: **St. Paul’s** Cathedral

<Other Art (Architecture)>

3. This author set a poem where “the wind falls in like stones / from the whitehearted water and when we touch / we enter touch entirely.” In another poem, this author described a type of death that leaves “the page of the book carelessly open,” the “phone off the hook,” and “the love, whatever it was, an infection.” This poet declared: “Whether you are pretty or not, I outlive you, / bend down my strange face to yours and forgive you,” at the end of an elegy cataloging the possessions left behind by her deceased father. This author of “All My Pretty Ones” and “Wanting to Die” included a poem about menstruating at the age of forty in her Pulitzer-winning collection *Live or Die*. For 10 points, name this Confessional poet whose collection *The Awful Rowing Towards God* was posthumously published following her 1974 suicide by carbon monoxide poisoning.

ANSWER: Anne **Sexton**

<Non-Epic Poetry>

4. Though evolutionarily selected for, the 7-repeat allele of a gene that encodes one of this compound’s receptors is markedly almost totally absent in East Asian populations. The transporter for this neurotransmitter unusually contains an extracellular high affinity zinc binding domain. Cell groups containing this compound can be found in areas A8 through A14. Because it shares a common precursor with neuromelanin, the cell bodies that secrete this compound in the pars compacta are identifiable by their black pigmentation. The mesolimbic and mesocortical pathways transmit this neurotransmitter from the ventral tegmental area. The death of neurons that secrete this compound in the substantia nigra is characteristic of Parkinson’s disease. For 10 points, name this neurotransmitter that is released as part of the body’s reward system.

ANSWER: **dopamine**

<Biology>

5. A “record” titled for this time period gives the first account of tribute sent from abroad by the shaman queen Pimiko. A type of steamed bun whose name means “barbarian’s head” may be named for a “southern campaign” during this period to quell rebellion by the Southern Barbarians, or Nanman. Chen Shou (“chun shoh”) is best known for writing about this period, which is when the man traditionally held to have invented the repeating crossbow lived. Late in this period, a coup d’état was carried out at Gaoping Tombs by Sima Yi. This period is often said to begin after a rebellion led by followers of the Way of the Supreme Peace. This period began after the Yellow Turban Rebellion caused the Eastern Han to disintegrate. For 10 points, name this period of Chinese history, whose notables such as Cao Cao (“tsow tsow”) of Wei appear in Luo Guanzhong’s “Romance” about it.

ANSWER: **Three Kingdom**s period [or **Sanguo** period or **Sanguozhi**; accept *Record of the* ***Three Kingdoms*** or *Romance of the* ***Three Kingdoms***; accept other literal translations such as **Three Countries** period]

<Other History>

6. A Robert Rauschenberg combine named after one of these people is made of a pillow under a box, which is itself under a chicken. A 1920s painting that partially shares its title with its artist’s earlier *The Dessert: Harmony in Red* depicts one of these people reclining. While living on the French Riviera, Henri Matisse made several paintings of these people, including one “with Gray Trousers” and one “with Raised Arms.” One of these people holds a fan made of peacock feathers in a painting commissioned by Napoleon’s sister. That one of these people reclines and looks over her shoulder at the viewer, and is anatomically inaccurately depicted with extra vertebrae. For 10 points, name these attendants in an Ottoman seraglio, a “Grande” one of which was painted by Jean-Auguste-Dominique Ingres (“ANG”).

ANSWER: **odalisque**s [or **odalik**; prompt on chambermaids, attendants, prostitutes, or other synonyms; prompt on nudes; prompt on women]

<Painting/Sculpture>

7. This man is exiled in the fragmentary Lille Stesichorus, which was only published in 1976. Allies assembled by this man took an oath over a bull that they slaughtered on a black shield. A comparison to two dueling bulls used in the *Aeneid* was borrowed by Statius to describe this man’s duel with a king defending his *polis*. Amphiaraus joined this man’s cause, and later slew Melanippus, after this man gave Amphiaurus’s wife Eriphyle the necklace of Harmonia. This man agreed to take turns with his brother as king, but his brother took the first turn and refused to give up the throne. This man and his friend Tydeus recruited five other warriors to march on Thebes, leading Creon to forbid his burial. For 10 points, name this man who was buried by his sister Antigone after warring with his brother Eteocles.

ANSWER: **Polynices** [or **Polyneikes**]

<Mythology>

8. In a novel by this author, an aging man neurotically pulls out his gray hairs, but suddenly dies upon removing the last one. This author declared “however alienated one may be from the world, suicide is not a form of enlightenment” in his Nobel lecture, which he titled for his home country, “the Beautiful, and Myself.” A novel by this author ends with the image of the Milky Way in the sky above a fire that engulfs a silkworm cocoon warehouse. In a novel by this author, an elderly businessman forgives his daughter-in-law Kikuko for aborting her pregnancy in protest of her husband Shuichi’s affair with a war widow. In his best-known novel, a writer sees the disembodied face of the girl Yoko in the window of a train that he takes to a remote hot spring town, where he sleeps with the geisha Komako. For 10 points, name this Japanese author of *The Sound of the Mountain* and *Snow Country*.

ANSWER: Yasunari **Kawabata**

<Long Fiction>

9. These features can be morphologically classified by their RDP to DP ratio, which is defined only above the threshold shear velocity. The *nabkha*, or coppice, type of these features are anchored by shrubs or other plants. Ecologist Henry C. Cowles wrote his dissertation on the rapid plant succession that he observed in these features in Indiana. The presence of vegetation facilitates the parabolic type of these features, which point in the opposite direction from the crescent-shaped barchan (“bar-can”) type. These features migrate as material from their stoss side moves to the steeper slip face on the lee side, which sits at the angle of repose. These features, which are found in large numbers in ergs, form when saltating particles are deposited in the wind shadow behind an obstacle. For 10 points, name these hill-like accumulations of material often found in deserts.

ANSWER: sand **dune**s [anti-prompt (ask “can you be less specific?”) on specific types of dunes such as nabkha, draa, or ergs]

<Other Science (Earth Science)>

10. This dynasty’s rise and rule is the subject of the thesis and best-known works of conservative historian David Starkey, including a BBC documentary. Historians generally credit this dynasty with ending “bastard feudalism” by requiring a royal license to have armed retainers. The first king of this dynasty established trade with Spain through the Treaty of Medina del Campo and ordered the beheading of a 14-year-old for backing the pretender Perkin Warbeck. That first king from this dynasty [emphasize] *created* an institution for trying people of high rank called the Court of the Star Chamber. Another of its kings employed the advisor who organized the Field of the Cloth of Gold, Cardinal Wolsey. For 10 points, name this dynasty whose first member to rule England was the winner at Bosworth Field, Henry VII.

ANSWER: **Tudor** dynasty

<British/CW History>

11. This material was key to the economy of the ghost town of Wittenoom, Australia, which was removed from maps and road signs in 2007. Jean Marchand led a 1949 strike in an industry centered on this material, which was covered by a book edited by a young Pierre Trudeau. During the Middle Ages, this material was widely believed to be the fur of a salamander. This material was used in the Scarecrow’s costume, the Wicked Witch’s broom, and the fake snow in *The Wizard of Oz*. Thousands of New Yorkers were exposed to small fibers of this substance due to the September 11 attacks, which is predicted to cause a later spike in cancer diagnoses. Public awareness of mesothelioma led to a sharp decline in the use of, for 10 points, what material used in construction?

ANSWER: **asbestos** [or **chrysotile**]

<Other Academic>

12. In a book about this politician’s “intimate world,” gender researcher Clarence A. Tripp claimed that he had homosexual encounters throughout his life. This politician’s approval of the largest mass execution in American history, a hanging of 38 Dakota Indians, has generated controversy from Native American groups. Dale Carnegie’s biography of this president claims that he intentionally spent a few months a year away from his wife as a lawyer on a faraway circuit. John Hay, who had served as this president’s private secretary, wrote a ten-volume account of his life. The differing opinions and personalities of this president’s cabinet are described in Doris Kearns Goodwin’s book *Team of Rivals*. For 10 points, name this US President who spoke of “the better angels of our nature” in his inaugural address of 1861.

ANSWER: Abraham **Lincoln** [accept ***Lincoln*** *the Unknown*; accept *Abraham* ***Lincoln****: A History*; accept *Team of Rivals: the Political Genius of Abraham* ***Lincoln***]

<US History>

13. This property inversely correlates with the intensity of the pre-edge transition region in k-edge spectroscopy. In molecules with this property, normal modes cannot be both infrared and Raman active, according to the rule of mutual exclusion. In molecules with this property, only transitions from *ungerade* (“oon-geh-RAH-duh”) to *gerade* (“geh-RAH-duh”), or vice versa, are permitted by the Laporte rule. Rows of ones and negative ones make up character tables, which provide information about the operations named for this property. This word follows the prefix “centro” to describe point groups with this property about an inversion center. Polar molecules must lack this property so that their bond dipoles don’t cancel each other out. For 10 points, name this property that ensures that molecules will remain the same after a rotation or internal reflection.

ANSWER: inversion **symmetry** [accept ***gerade*** until read; accept **centrosymmetric**; accept “having an **inversion center**”]

<Chemistry>

14. Most of the text of these works is preserved by Papyrus 46, which was given “Category I” (“category one”) classification by Kurt and Barbara Aland. The Epimenides paradox is referenced in one of these works when it refers to Cretans as “liars, evil beasts, slow bellies.” A passage from one of these works opens by comparing a piece of dough to the roots of an olive tree before analogizing new members of a community to branches “broken off so that I might be grafted in.” Fake examples of these texts were written for Seneca the Younger. A concept of “self-emptying” called *kenosis* is introduced in one of these works, three of which are grouped as “pastoral” ones. One of these works was used as textual evidence for the doctrine of *sola fide*, or justification by faith alone, by Martin Luther. For 10 points, name this group of books of the New Testament, including one to the Romans.

ANSWER: **Paul**ine **epistle**s [accept equivalents, such as **Letter**s of **Paul**; prompt on epistles or pastoral epistles; prompt on books of the Bible or books of the New Testament]

<Religion>

15. Resistivity due to electron–electron scattering varies with this power of temperature according to the Bloch–Gruneisen (“block GROON-eye-zin”) formula. The log of this number appears in Landauer’s formula for the energy needed to erase one bit of information. This is the largest dimension in which continuous symmetries [emphasize] *cannot* be broken by short-range interactions, according to the Mermin–Wagner theorem. The probability of a diabatic (“DYE-uh-BAT-ik”) transition in a system with this many energy levels is given by the Landau–Zener formula. Transitions in a system with this many energy levels are described by the Einstein coefficients. A beam of silver atoms split to form this number of spots on a screen in the Stern–Gerlach experiment. For 10 points, give the number of spin states possessed by an electron, which is also the mass number of deuterium.

ANSWER: **two** [accept **two**-dimensional or **two**-level system or **two**-state system]

<Physics>

16. In a string quartet by this composer, the opening viola solo starts with [read slowly] an eighth note B, a whole note B, then drops down to E, then plays an eighth note F-sharp, a whole note G, then down to B. The motif [read slowly] B-flat, E-flat, D, B-flat appears in an orchestral piece by this composer that opens with a harp solo, followed by a brass chorale. In a piece by this composer, the theme [read slowly] B, E, F-sharp, G, A, B, B appears after an opening in which two flutes play undulating E minor sixteenth note figures to represent waters; that piece appears in a cycle after one depicting the castle Vyšehrad (“VISH-eh-raht”). In a string quartet by this man, a violin plays a high sustained E representing his tinnitus and oncoming deafness. For 10 points, name this composer of the “From My Life” quartet and *The Moldau*, which is among the six tone poems of his *Má Vlast*.

ANSWER: Bedřich **Smetana**

<Music>

17. This member of the nobility was rumored to be behind the poisoning of Joanna, the reigning queen of Navarre, because Joanna died after putting on a pair of gloves this person sent. This person hired a retinue of spies that included Charlotte de Sauve and Isabelle de Limeuil, and which was nicknamed the “flying squadron.” This person adopted a broken lance as her emblem after her husband’s untimely death in a jousting accident. This queen often sought the services of Nostradamus and, according to a persistent legend, brought the fork to France. After the attempt on the life of Gaspard de Coligny, this wife of Henry II stood with her son Charles IX in instigating an anti-Huguenot wave of violence. For 10 points, name this queen who supported the St. Bartholomew’s Day Massacre, a member of a prominent Florentine family.

ANSWER: **Catherine de Medici** [or **Caterina de Medici**; prompt on Catherine or Caterina]

<European History post-600>

18. In this novel, a dark-haired girl in the “Golden Country” flings off all her clothes with a single sweep of the arm that “seemed to annihilate a whole culture,” in a dream from which the protagonist awakens “with the word ‘Shakespeare’ on his lips.” After the protagonist of this novel helps up a girl with her arm in a sling who has stumbled and fallen, she passes him a note that reads: “I love you.” A couple in this novel conducts trysts at a series of odd locations, like a forest clearing, a noisy street market, a ruined church tower, and finally the rented room above Mr. Charrington’s shop. A woman in this novel publicly wears a scarlet sash signaling her membership in the Junior Anti-Sex League, while privately conducting affairs with members of the Inner Party. For 10 points, name this novel in which O’Brien forces Julia and Winston to betray one another, written by George Orwell.

ANSWER: ***Nineteen Eighty-Four***

<Long Fiction>

19. This work argues that scientific laws are used as “inference-tickets” between factual statements as part of its argument that not all indicative sentences report facts. A. J. Ayer argued that rather than rejecting a certain concept, this work defends an “honest” version of it that “does not command the stage of a private theatre.” This work critiques one perspective’s dependence on “yet another interior process of planning to plan,” as part of showing how the “intellectualist legend” leads to an infinite regress. To solve that problem, this work articulates a distinction between “knowing how” and “knowing that.” This work argues that to conjoin or disjoin “there occur mental processes” with “there occur physical processes” is to make a category mistake. For 10 points, name this book that attacks Cartesian dualism as “the ghost in the machine,” written by Gilbert Ryle.

ANSWER: *The* ***Concept of Mind***

<Philosophy>

20. The literary scene in this country was shocked at the frank sexuality of a story whose protagonist drowns himself in shame right after spending an evening at a brothel. An essay describing how its author quit medical school to address the spiritual sickness of this country prefaces a collection that includes a story about a disgraced scholar who copies manuscripts while stealing from his employers. This country itself is symbolized by a character who is preoccupied with drawing the perfect circle as he awaits execution, and who believes that every fight he loses is a “spiritual victory.” This country’s New Culture, or May Fourth, movement was galvanized by the collection *Call to Arms*, which includes the novella *The True Story of Ah Q*. For 10 points, name this country where early 20th-century authors like Lu Xun (“loo shwin”) pushed back against Confucianism.

ANSWER: **China** [or **Zhongguo**; accept People’s **Republic of China**]

<Short Fiction>

Bonuses

1. This leader established order among various warring tribes including the Chuds, Slavs, and Krivichi and established his base of power at Holmgard. For 10 points each:

[10] Name this man who is often conflated with a warrior from Dorestad who served Louis the German, since the only other account of him is Nestor’s *Primary Chronicle*. He names a line of rulers that included Yaroslav the Wise.

ANSWER: **Rurik** [or **Riurik**; or **Rorik**; accept **Rurikid** dynasty]

[10] The Rurikid dynasty established a federation of Slavic states centered on this city until an invasion by Batu Khan caused its collapse. This city is now the capital of Ukraine.

ANSWER: **Kiev** [or **Kyiv**; accept **Kievan Rus**]

[10] The “Codex” named for this Southern Ukrainian monastery is the most valuable source on the history of the Southern Rus, as it contains the *Primary*, *Kiev*, and *Galician-Volhynian* chronicles. Mikhail Romanov was hiding in this monastery when he was proclaimed *tsar* by the Zemsky Sobor.

ANSWER: **Hypatian** Monastery [or **Ipatievsky** Monastery or **Ipatievsky** Monasteri; accept **Hypatian** Codex]

<European History post-600>

2. Answer the following about the English word “a” in linguistics. For 10 points each:

[10] The unstressed version of “a” makes this most common vowel sound in English, phonetically described as a mid central vowel. This sound is represented by an upside-down “e” in the International Phonetic Alphabet.

ANSWER: **schwa**

[10] The word “a” belongs to this lexical category, which precedes nouns in English. Words in this lexical category include articles like “the,” demonstratives like “this,” and quantifiers like “every.”

ANSWER: **determiner** [accept **determinative**]

[10] In truth-conditional semantics, the denotation of “a” can be analyzed as this kind of mathematical object, a subset of the Cartesian product of two sets. For example, “A cat is eating” is true if and only if the ordered pair of the set of cats and the set of eaters is an element of this kind of object.

ANSWER: binary **relation**

<Social Science>

3. Answer the following about Neo-Riemannian (“neo-ree-MAH-nee-in”) music theory, which bases harmony on transformations between major and minor triads, for 10 points each.

[10] The three basic transformations are L, for leading-tone, R, for relative, and P, which refers to this term for major and minor keys that share a tonic. Thus, the P transformation changes G major to G minor and vice versa.

ANSWER: **parallel** keys [or **parallel** major or **parallel** minor]

[10] Neo-Riemannian transformations can be visualized on an infinite grid called the Tonnetz (“TONE-nets”). The Tonnetz can be folded into a torus when analyzing equal temperament because notes like F-sharp and G-flat have this type of equivalence, meaning that they’re spelled differently but have the same pitch.

ANSWER: **enharmonic**

[10] Neo-Riemannian theory can analyze this concept, related to counterpoint, in which smoothly moving melodic lines are combined to form a harmonic progression and create polyphonic textures. Conventions relating to this concept include the avoidance of large leaps and parallel fifths.

ANSWER: **voice leading** [or **part writing**; prompt on partial answer]

<Music>

4. A symbol from *The Great Gatsby* was inspired by this poem’s reference to “gaz[ing] forever / On that green light that lingers in the west.” For 10 points each:

[10] Name this “conversation poem” whose speaker hopes that the omen of the new moon with “the old Moon in her lap” from the “Ballad of Sir Patrick Spens” might “startle this dull pain, and make it move and live!”

ANSWER: “**Dejection: An Ode**”

[10] This Romantic poet of “Dejection: An Ode” contributed “The Rime of the Ancient Mariner” to the collaborative volume *Lyrical Ballads*.

ANSWER: Samuel Taylor **Coleridge**

[10] Later in the poem, Coleridge recalls a time when “all misfortunes were but as the stuff / Whence” this faculty “made me dreams of happiness.” In *Biographia Literaria*, Coleridge distinguishes this artificial association of memories and emotions from the higher creative ability of Imagination.

ANSWER: **fancy**

<Non-Epic Poetry>

5. People of this profession from the Kōga school depleted the supplies of Hara Castle during the Shimabara Rebellion. For 10 points each:

[10] Name these feudal Japanese spies and mercenaries, famed for their stealth. They used concealed blades called *shuriken*.

ANSWER: **ninja**s [or ***shinobi***]

[10] A militia called the Ninjas supported president Pascal Lissouba in a late 1990s civil war in this country, which earlier became a one-party Communist state in the 1970s under Marien Ngouabi (“un-GWAH-bee”).

ANSWER: **Republic** of the **Congo** [or **Congo-Brazzaville**; or **République du Congo**; prompt on Congo; do not accept or prompt on “Democratic Republic of the Congo”]

[10] Unauthorized Mongolian workers in this industry are known as “ninjas” because they resemble the Teenage Mutant Ninja Turtles when carrying their green bowls on their backs. Peter Lalor led an 1854 rebellion of workers in this industry in Ballarat, Australia.

ANSWER: **gold mining** [accept word forms; accept **gold prospecting** or any reasonable answer referring to **digging** for **gold** in the ground; prompt on mining or prospecting]

<Other History>

6. Examples of these texts include one written by al-Zamakhshari in the Mu’tazili tradition, and one by al-Tabari that was extended by ibn Kathir. For 10 points each:

[10] Give this Arabic term, derived from the root for “interpret,” that refers to a Qur’anic exegesis.

ANSWER: ***tafsir***

[10] al-Tabari inaugurated a scholarly tradition of *tafsir* in the 9th century during the reign of this caliphate, in which the Mu’tazili school thrived. It succeeded the Umayyads.

ANSWER: **Abbasid** Caliphate

[10] *Naskh* is a specialized form of *tafsir* by which commands from Islamic law can be abrogated. Those commands generally come from two sources: the Qur’an and this body of Islamic tradition based on Muhammad’s actions, which lends its name to a large sect of Islam.

ANSWER: ***sunnah*** [do not accept or prompt on “Sunni”]

<Religion>

7. Non-ideal corrections to this system can be accounted for by the centrifugal distortion constant, typically denoted *D*. For 10 points each:

[10] Name this quantum system whose energy levels are proportional to a factor *B* equal to *h*-bar squared over 2 times *I*. The eigenfunctions of this system are spherical harmonics.

ANSWER: **rigid rotor** [or **rigid rotator**]

[10] The energy of the rigid rotor is equal to *B* times *J* times *J*-plus-1, where *J* is an eigenvalue of this quantity. In classical mechanics, this quantity equals the cross product of position and its linear counterpart.

ANSWER: **angular momentum** [do not accept or prompt on “momentum”]

[10] Electronic transitions in the rigid rotor must be accompanied by a delta-*J* of plus or minus one according to one of these rules, which identify quantum transitions for which the probability amplitude is nonzero.

ANSWER: **selection** rules

<Physics>

8. Answer the following about the Argentinian woman of letters Victoria Ocampo. For 10 points each:

[10] Ocampo is best known for founding this literary journal, which carried translations of Western philosophy through José Ortega y Gasset’s *Revista de Occidente*, and published authors from across South America.

ANSWER: ***Sur***

[10] Ocampo’s close relationship with this poet following his travels to Argentina in the 1920s led her to publish a book titled for him “in the ravines of San Isidro.” This Bengali poet of the *Gitanjali* later dedicated his collection *Purabi* to Ocampo.

ANSWER: Rabindranath **Tagore**

[10] Ocampo translated this British author’s unfinished memoir *The Mint* into Spanish. After meeting this man’s widow, Sarah Junner, Ocampo wrote a literary biography of him, examining books like his *Seven Pillars of Wisdom*.

ANSWER: Thomas Edward **Lawrence** [or **Lawrence** of Arabia]

<Miscellaneous Lit>

9. Answer the following about water management in a certain region, for 10 points each.

[10] The Nurek Dam, once the world’s tallest, embanks the Vakhsh River in this country. This country’s construction of the Rogun Dam is opposed by one of its western neighbors over fears of adverse effects on its cotton industry.

ANSWER: **Tajikistan** [or Republic of **Tajikistan**]

[10] The Vakhsh River is a tributary of this river, which was called the Oxus in antiquity. This river’s water was diverted along the Karakum Canal, which by some estimates leaked half of its water.

ANSWER: **Amu Darya** [do not accept “Syr Darya”]

[10] The inefficiency of the Karakum Canal contributed to the rapid shrinking of this lake, which disrupted the livelihoods of thousands in Kazakhstan and Uzbekistan.

ANSWER: **Aral** Sea

<Geography>

10. For templates lacking this structure, random hexamers are often used for RT-PCR instead of oligo(dT) primers. For 10 points each:

[10] Name this structure that is post-transcriptionally added to the 3-prime end of a molecule to prevent its enzymatic degradation.

ANSWER: **poly(A) tail**

[10] The poly(A) tail is a modification to this molecule, which is produced from DNA during transcription.

ANSWER: **mRNA** [or **messenger RNA**; prompt on RNA]

[10] Before polyadenylation, the enzyme CPSF cleaves the 3-prime signaling portion of a newly synthesized mRNA transcript, which contains a region rich in these two nucleotides. Neither of them is inosine, but these two nucleotides form the most common wobble base pair.

ANSWER: **guanine** AND **uracil** [accept in either order; or **G** and **U**; or **GU**-rich region]

<Biology>

11. This deity was identified by both Jacob Grimm and Viktor Rydberg with Menglöd, a character who is rescued by the hero Svipdag in the *Svipdagsmál*. For 10 points each:

[10] Name this Norse deity who resides in Folkvang and is accused of incest in the *Lokasenna*.

ANSWER: **Freyja** [do not accept or prompt on “Frigg” or “Frigga”]

[10] The *Gylfaginning* and *Voluspa* both record that Freyja was married to this god, whom some sources give as the father of Hnoss and Gersemi. His name refers to “fury” or “frenzy.”

ANSWER: **Óðr** [or **Od** or **Oder**]

[10] Due in large part to etymological similarities, Oder is often thought to have once been an identical figure to Odin, much as Freyja is thought to have once been the same character as this wife of Odin.

ANSWER: **Frigg** [or **Frigga**]

<Mythology>

12. This musician discussed the racial connotations of the word “inventor” and noted that there are “maybe a half-dozen” musical inventors in European culture in a 1997 interview with Jacques Derrida. For 10 points each:

[10] Name this artist whose breakout 1959 album contains the song “Lonely Woman.” This musician’s unique early sound can be attributed to using an iconic white plastic alto saxophone.

ANSWER: Ornette **Coleman** [or Randolph Denard Ornette **Coleman**]

[10] Coleman’s hits include a 1968 free jazz standard titled for the “Blues” of this place. George Cohan’s musical play *Little Johnny* introduced a song titled “Give My Regards to” this place.

ANSWER: **Broadway** [accept “**Broadway** Blues” or “Give My Regards to **Broadway**”]

[10] Coleman did most of his work in this city, where he performed at such venues as the Five Spot Café. It’s also where Broadway happens to be located.

ANSWER: **New York** City [or **NY**C]

<Other Art (Jazz)>

13. This regime passed the Ilbert Bill to allow local judges to try businessmen from abroad; the businessmen lobbied fiercely against the bill to protect their ability to abuse local workers. For 10 points each:

[10] Name this regime. A set of protectionist, statist economic policies referred to as the “License” version of this regime was dismantled beginning in 1991.

ANSWER: The **Raj** [accept License **Raj**; prompt on British rule in India or Crown rule in India by asking “what is the common name of this government?”]

[10] India still retains much of the License Raj, such as wheat import duties, which many have unfavorably compared to these unpopular 19th-century British grain tariffs. They were repealed, appropriately, by Robert Peel.

ANSWER: **Corn** Laws

[10] This leader of the Anti-Corn Law League also wrote the essay “How Wars are Got Up in India,” arguing against British military expenditure in India. He signed a free trade agreement with Michel Chevalier of France.

ANSWER: Richard **Cobden** [accept **Cobden**–Chevalier Treaty]

<British/CW History>

14. Answer the following about artwork created by randomly placing squares, for 10 points each.

[10] Jean Arp, who created several collages by arranging square pieces of paper “according to the laws of chance,” was a key member of this absurdist movement alongside Marcel Duchamp.

ANSWER: **Dada**ism

[10] This artist was inspired by Arp to include similarly random arrangements in paintings like the eight entries of his *Spectrum Colors* series, and *Seine*, in which the concentration of black rectangles increases toward its center.

ANSWER: Ellsworth **Kelly**

[10] This cathedral includes a stained glass window by Gerhard Richter whose 11,500 panes were arranged randomly by a computer. This cathedral, the tallest in the world until the construction of the Eiffel Tower, took over six centuries to complete.

ANSWER: **Cologne** Cathedral [or **Kölner** Dom or **Cathedral Church of Saint Peter** or **Hohe Domkirche Sankt Petrus**]

<Painting/Sculpture>

15. In the final scene from this series, its narrator tears pages one by one out of a red notebook in which each sentence cancels out the sentence before it. For 10 points each:

[10] Name this series of novels. Its narrator follows Peter Stillman and notices that the first fifteen letters of the streets he takes spell out the phrase “The Tower of Babel.”

ANSWER: *The* ***New York Trilogy*** (by Paul Auster)

[10] A character named “Paul Auster” in Paul Auster’s *New York Trilogy* studies the authorship of this novel. In a story by Borges, a line-by-line recreation of this novel by Cervantes is judged to be superior to the original.

ANSWER: ***Don Quixote*** [or *The Ingenious Nobleman* ***Sir Quixote*** *of La Mancha*; or *El Ingenioso Hidalgo* ***Don Quijote*** *de la Mancha*]

[10] The final novel of *The New York Trilogy* is titled for this convention in detective fiction, in which it is seemingly impossible for a perpetrator to have both committed a murder and escaped the scene of the crime.

ANSWER: *The* ***Locked Room*** [or **locked room** mystery]

<Long Fiction>

16. This work’s final chapter criticizes the “world-wide decay of utterance” associated with imperial rule, which it claims has led to a degradation of its title concept. For 10 points each:

[10] Name this 1st-century study of aesthetics by Longinus, which argues that its title concept is produced by “great thoughts,” “strong emotions,” and “noble diction.”

ANSWER: ***On the Sublime*** [or *Treatise* ***On the Sublime***or ***Peri Hypsous***]

[10] In *On the Sublime*, Longinus defends the poetic qualities of this thinker, whom he writes “channeled off streams” from the “great Homeric flow.” This man attacked the societal value of poetry in his dialogue *The Republic*.

ANSWER: **Plato**

[10] In the *Phaedrus*, Socrates argues that being a poet is the sixth-best type of career, ahead of tyrants, laborers, and this profession. The statement “Man is the measure of all things” originated from a man credited with inventing this profession, Protagoras.

ANSWER: **sophist**s [or **sophism**]

<Philosophy>

17. Instead of these structures, one may draw “hybrid diagrams” in which pi bonds are pictured as curved or dotted. For 10 points each:

[10] Identify these diagrams in which the contributing Lewis structures of molecules with delocalized electrons are separated by double-headed arrows to indicate that the true structure is an intermediate between them.

ANSWER: **resonance** structures [or **canonical form**s]

[10] To further simplify its delocalized pi system, this simplest aromatic compound is drawn as a circle inside a hexagon.

ANSWER: **benzene**

[10] Either a charge or an unpaired electron is distributed in the 1 and 3 positions in resonance structures for this functional group. It consists of a –CH2 (“C-H-two”) bridge attached to a –CH=CH2 (“C-H-C-H-two”) group.

ANSWER: **allyl** group [or **allylic** group]

<Chemistry>

18. This dramatist collaborated with the composer Dominic Kanza for a play set in Mama Nadi’s brothel in the Democratic Republic of the Congo. For 10 points each:

[10] Name this contemporary American playwright who won a Pulitzer Prize in 2009 for that play, *Ruined*, as well as in 2017 for the play *Sweat*.

ANSWER: Lynn **Nottage**

[10] Nottage’s *Sweat* is set in a highly impoverished city in this American state. August Wilson set a cycle of ten plays, including *Fences* and *The Piano Lesson*, in this state.

ANSWER: **Pennsylvania** (*Sweat* is set in Reading, Pennsylvania.)

[10] This garbageman and ex-baseball player attempts to prevent his son Cory from playing pro football and has an affair with Alberta in August Wilson’s *Fences*.

ANSWER: **Troy** **Maxson** [accept either name]

<Drama>

19. A mayor of this city, Eugene Schmitz, formed an emergency Committee of Fifty in order to deal with a crisis in it. For 10 points each:

[10] Name this city that was largely destroyed by an earthquake and the fires that ensued in 1906.

ANSWER: **San Francisco**

[10] Thousands of people living in this part of San Francisco became “paper sons” who gained citizenship when their papers burned during the earthquake. This part of San Francisco was mostly populated by people who first went to Angel Island.

ANSWER: (San Francisco’s) **Chinatown** [or **Chinese neighborhood** or equivalents]

[10] San Francisco’s rebirth from the ashes was marked by a 1915 “Pacific” Exposition celebrating an achievement in this modern-day country. Its President Roberto Chiari broke relations with the US until a 1977 treaty.

ANSWER: **Panama** [accept **Panama**-Pacific Exposition] (It was the completion of the Panama Canal.)

<US History>

20. Consider a linear transformation *P* that represents a projection from a space *U* onto a subspace *V*. For 10 points each:

[10] The eigenvalues of *P* can be either of these two numbers, which are also the only values found in an identity matrix.

ANSWER: **0** AND **1**

[10] Since the eigenvalues of *P* are either 0 or 1, these two quantities for *P* must be equal because the sum of the eigenvalues is equal to the dimension of the subspace *V* onto which *P* projects.

ANSWER: **trace** AND **rank**

[10] Since *P* is a projection it also has this property, which means that applying *P* twice is the same as applying *P* once. Symbolically, this is equivalent to saying that *P*-squared equals *P*.

ANSWER: **idempotent** [or **idempotence**]

<Other Science (Math)>