



ACADEMIC  
COMPETITION  
FEDERATION

# ACF NATIONALS 2019

## PLAYOFFS 5

Packet by

## The Editors (5)

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## Tossups

1. This tribe believed that the Great Spirit Maiyun gave their culture hero Sweet Medicine four Sacred Arrows, which they gathered to ritually renew after a murder. Chiefs from ten bands of these people made up the Council of Forty-Four, which exerted control over their military societies, such as the backwards-riding Contrary Society. Under Dull Knife and Little Wolf, a group of these people broke out of confinement in Fort Robinson. George Custer massacred a band of these people for no reason at the Washita River. During wars with American settlers, leadership over this tribe passed to aggressive factions like the Dog Soldiers. While staying with a group of Arapaho at Fort Lyon, a band of these American Indians under Black Kettle was slaughtered by soldiers under John Chivington in the Sand Creek Massacre. For 10 points, name this Plains Indian tribe that lend their name to the capital of Wyoming.

ANSWER: Cheyenne Indians [or the Northern Cheyenne; or the Southern Cheyenne; or the Suhtai; or the Tsitsistas] <American History>

2. In a paper about a “puzzle” in the ethics of this tradition, Rachel Barney explores this school’s approach to things that are “preferred” or “dispreferred.” This tradition classifies health and wealth as being neither good nor bad but instead having “selective value.” The ethics of this tradition is rooted in the “orientation” or “familiarization” of things to one’s self, which one of its adherent argued should encompass all of humanity through a “contraction of circles.” This school holds that while ordinary people cannot perform *katorthomata*, or “perfect action,” they *can* perform *kathekonta*, or “appropriate action.” This school, which holds that virtue is the only good, is contrasted with the Peripatetics and the Epicureans in Cicero’s *De finibus*. For 10 points, name this philosophical tradition that claims only the sage is happy, whose proponents included Chrysippus and Zeno of Citium.

ANSWER: Stoicism <Philosophy>

3. A G-minor work in this form attributed to Tomaso Antonio Vitali is sometimes thought to be a hoax because of its unusual modulations, such as to the key of D-sharp minor. This form is combined with a rondeau in an unusually duple meter movement called “La Favorite” from Couperin’s first book of harpsichord pieces. Benjamin Britten edited a work for four strings by Henry Purcell in this continuous variations form, which is also in G-minor. A particularly long *movement* in this form has three- and four-voiced chords in the theme’s first statement, which by the 9th variation thins to 32nd-note D-minor scales. A 16th-century Spanish dance in triple meter gave rise to this form, which is used in the last movement of J.S. Bach’s *Partita for Violin No. 2*. For 10 points, name this form of variations upon a common harmonic line, which is related to the passacaglia.

ANSWER: chaconne [or chacony; or ciaccona] <Music>

4. An author’s extensive reading of Charles Dickens during his time in this place inspired the character of the epileptic young prostitute Nellie in one of his novels. A novel set in this place includes a famously-Dantesque scene in which steam turns red as it rises off the backs of men taking a Christmas bath. Mikhail Bakhtin objected to the “conventionally monologic” nature of a section set in this place in which the protagonist has a dream about microbes that causes those they infect to believe that they alone know the truth. An author who spent four years in this place after undergoing a mock execution based his novel *The House of the Dead* on that experience, and ended one novel with an epilogue in which the protagonist is followed to this place by Sonia. For 10 points, Raskolnikov is exiled to a prison camp in what region at the end of Dostoevsky’s *Crime and Punishment*?

ANSWER: Siberia [accept descriptive answers indicating the prison camp or katorga that Dostoevsky or Raskolnikov were sent to; accept Omsk prison or the katorga system; prompt on prison camp; do not accept or prompt on “the gulag”] <European Literature>

5. Forces experienced by systems in this situation in two-dimensions may be easily superimposed according to the Ciavarella–Jäger [chah-vuh-RELL-uh YAY-guh] theorem. The volume lost by a system in this situation can be estimated by Archard’s equation. The dimensionless Tabor coefficient estimates whether a system in this situation is better modeled by DMT or JKR theory. Systems in this situation experience a form of stress named for Heinrich Hertz, who modeled a pair of axisymmetric bodies in this situation as fully elastic “half-spaces.” Asperity causes the loss of material at the microscopic scale from systems in this situation. Regions of systems in this situation are divided into areas of slip and areas of stick. Solid bodies in this situation experience a normal force. For 10 points, dry friction often occurs between bodies in what situation?

ANSWER: **contact** [accept descriptive answers indicating that things are **touching** or **rubbing**]

<Physics>

6. The majority population of this territory won some autonomy in the 1878 Pact of Halepa, whose abrogation contributed to the revolt that sparked the Thirty Days’ War. During another uprising by people in this region, over a thousand of Mustafa Pasha’s soldiers were killed besieging Arkadi Monastery when its defenders blew up its stock of gunpowder instead of surrendering. During World War II, W. Stanley Moss and Patrick Leigh Fermor abducted the commander of German forces occupying this territory, Heinrich Kreipe. Nazi Germany conquered this territory in Operation Mercury, the first primarily airborne invasion in military history. In 1910, with leadership from Eleftherios Venizelos, it was united with Greece. For 10 points, name this Greek island, the site of the ancient Minoan civilization.

ANSWER: **Crete** [prompt on Greece until it is read]

<European History>

7. A film named after this type of work begins with a shot of calmly flowing water and then superimposes rapidly moving geometric shapes on it, before a match cut to a pair of railroad barriers being lowered. That film named after this type of work is divided into five acts and represented a break from its director’s purely abstract “absolute films.” A Walter Ruttmann documentary about Berlin pioneered a genre of abstract documentaries about city life, which are named after these works. A series named after this genre includes *Flowers and Trees*, which was the first commercial film to use three-strip Technicolor. The 1929 short film *The Skeleton Dance* was the first entry in a series named for these works, which includes the first film appearance of Donald Duck. The subtitle of *Nosferatu* describes it as one of these works “of horror.” For 10 points, a series of Disney animated shorts is named for “silly” examples of what type of musical composition?

ANSWER: **symphonies** [accept city **symphony** or Silly **Symphonies**]

<Other Fine Arts>

8. After she was given the divine gift of understanding Latin, St. Lutgarde traded it back and was given this thing instead. A proponent of devotion to this thing started the practice of meditating for an Holy Hour each Thursday night. Pius IX made it obligatory for the whole Church to observe a feast of this thing, which takes place on a Friday, nineteen days after Pentecost. This object appears next to a similar one belonging to the Virgin Mary on the reverse of the Miraculous Medal. Pope Leo XIII consecrated the entire world to this object, whose devotion took its modern form after a series of visions experienced by St. Margaret Mary Alacoque in the 17th century. In Christian iconography, this object is usually depicted surrounded by a circle of thorns and topped with a cross and flames. For 10 points, name this body part of a Christian savior that names a basilica on the top of a hill in Montmartre, Paris.

ANSWER: Most **Sacred Heart** of Jesus [or the **heart of Jesus**; or the **heart of Christ**; accept **Sacratissimum Cor** Iesu or **Sacre Coeur**; prompt on heart]

<Religion>

9. Most of this novel's chapters have florid, double-barreled titles, such as "In Elf Land Disporting: The Grim World Without." In a scene from this novel, an ex-soldier called "the captain" solicits money to provide beds for the night for dozens of beggars, and then marches them in a line down the street to their lodging. After reading in the newspaper about a trolley strike, a character in this novel decides to work as a driver but is attacked on his first day by strikers calling him a scab. After traveling from Columbia City at the beginning of this novel, its protagonist stays with her dour sister Minnie and Minnie's money-minded husband Sven. Charles Drouet introduces this novel's title character to the married George Hurstwood, who drags her to New York with the promise of marrying her. For 10 points, Caroline Meeber's rise from poor factory worker to successful actress is charted in what Theodore Dreiser novel?

ANSWER: Sister Carrie

<American Literature>

10. In 2011, a purported proof of this problem by Gerhard Opfer was retracted for not proving that the set of all vertices  $(2n, 1)$  ["two N comma L"] in all levels of an annihilation graph will contain all even numbers of a certain form exactly once. John Conway developed a "generalized" form of this problem and recast it using modular congruences to show that the generalized form of it is undecidable. "Proofs" of this problem often work by generating a "map" from this problem's namesake function, and checking for the existence of large graph cycles corresponding to very long repeated sequences. As of 2017, it has been verified that approximately the first 2 to the 66 whole numbers satisfy this problem, since they eventually produce a sequence of "hailstone numbers." For 10 points, name this conjecture holding that any input into a certain function will always produce a repeating sequence of 4, 2, and 1.

ANSWER: Collatz conjecture [accept  $3n+1$  conjecture or Syracuse problem; or Hasse's algorithm; or Kakustani's problem, or Ulam's problem]

<Other Science>

11. Jorie Graham's anthology *Earth Took of Earth* takes its title from a poem in this language. An ambiguous five-line poem written in this language pairs the speaker's abrupt declaration that he might go mad with sorrow with the image of birds in the trees and "fishes in the flood." A poem in this language describes a bird who makes the speaker rise early and perches in his lady's chamber every night; that bird, which is pretty clearly the speaker's penis, is the title "gentle cock." This language was used to write a poem that describes how the cow is "lowing after her calf; / The bullock is prancing, / The billy-goat farting." This language of a poem that begins "I sing of a maiden / That is matchless" was used for a poem which instructs the listener to "Lhude [LOO-duh] sing cuccu! [cuckoo]" For 10 points, anonymous lyrics such as "Sumer [SOO-mer] Is Icumen [ih-KOO-min] In" were written in what language used by Geoffrey Chaucer?

ANSWER: Middle English

<British Literature>

12. The first-known thermo-chemi-luminescent crystal contained one of these compounds bound to lophine. It is uncertain whether a concerted or biradical mechanism is responsible for the thermal decomposition of a cyclic variety of these compounds; that decomposition produces an excited carbonyl compound. Diphenyl oxalate reacts with the simplest of these compounds to form an intermediate whose decomposition into carbon dioxide is used to excite a dye molecule. The simplest of these compounds is used to activate luminol. Firefly luciferin is oxidized into a cyclic example of these compounds called a 1,2 dioxetane. Enhanced chemiluminescence protocols conjugate antibodies to an enzyme that acts on these compounds; that enzyme is derived from horseradish roots. For 10 points name this class of compounds containing an oxygen-oxygen single bond, such as  $H_2O_2$ .

ANSWER: peroxides [accept dioxetanes before mention]

<Chemistry>

13. Over a decade before van Gogh first became famous, this artist purchased his *Portrait of Pere Tanguy* for his personal collection. After being told during a meeting with this artist to put more detail into his drawings, Matisse bitterly modified *The Serf* to be less like this man's work. This artist's string of joint exhibitions with Monet culminated in their 1889 show together at the Galerie Georges Petit, in which this man unveiled a work contrasting the expression of a bald man burying his deeply bowed head in his enlarged hands with the poise of Jean d'Aire, who holds a massive key. This artist purposefully chose a monumental scale for his *St. John the Baptist Preaching* after his first major piece, depicting a nude male in the pose of Michelangelo's *Dying Slave*, was accused of having been cast from a live model. For 10 points, name this French sculptor of *The Age of Bronze* and *The Burghers of Calais*.

ANSWER: Auguste **Rodin** [or François Auguste René **Rodin**]

<Painting and Sculpture>

14. The lawyer Cantone Sacco advised a member of this family to win naval battles by launching pots full of poisonous snakes onto enemy ships in the treatise *Semideus* [seh-mee-day-oos]. An exiled noble from this family assembled Swiss and German adventurers into the St. George's Mercenaries, which were allegedly routed by a cloud-borne saint at the Battle of Parabiago. This family's primary residence was a namesake castle designed by Bartolino da Novara, whose hunting preserve was later the site of the 1525 Battle of Pavia. Its founding ruler was installed as archbishop by Urban IV to oppose the Della Torre family, against whom he personally led troops at the Battle of Desio. This family's coat of arms displayed the *biscione* [bee-SHOH-nay], a coiled viper devouring a child. After the death of its last ruler, Filippo Maria, citizens angry at their heavy taxes formed the Golden Ambrosian Republic. For 10 points, name this family of Dukes of Milan who dominated medieval northern Italy and were succeeded by the Sforzas.

ANSWER: **Visconti** Family

<European History>

15. An unsigned 1988 *New York Times* op-ed that called this technology a "dracula" that has "sucked \$240 million" from the public was secretly written by the man who killed federal funding for them, Claude Lenfant. In 2018, *ProPublica* reported on the violation of federal research rules and ethical guidelines of a pioneer of this technology, Bud Frazier. In the 1960s, Houston resident Michael DeBakey lost out to cross-town rival Denton Cooley in being the first to achieve a feat with one of these devices. An early example of these devices required a fridge-sized external compressor, and was used on retired Seattle dentist Barney Clark for 112 days. Tetsuzo Akutsu and Willem Kolff were the first to successfully use them on an animal. An improvement upon the LVAD called the Jarvik-7 was the first example of, for 10 points, what type of replacement organ to be implanted in a patient suffering cardiovascular disease?

ANSWER: **artificial hearts** [or total **artificial heart**; prompt on **LVAD** or left **ventricular assist devices** before "LVAD" is read]

<Other Academic>

16. At the opening of one work, this character is inspired to go on a journey after a knight describes a far-off land which features a black giant who has both a single eye on his forehead and a giant single foot. In another story, this character defeats two "demi-goblins" that employ 300 female weavers who harass any visitor to Castle Pesme Venture. This character marries after he ventures to a silver bowl attached to a silver chain and fills it, summoning a hailstorm that nearly kills him. This character meets a helpful all-white companion after cleaving a giant snake in the cleft of a cliff into two pieces. At the conclusion of a poem, this character avenges his cousin Calogreant by defeating the red knight Sir Escalados, allowing him to marry the widow Laudine. This character, who is the son of Urien in Welsh texts, is depicted visiting the magical forest of Broceliande and rescuing a certain animal in a medieval French poem. A story by Chretien de Troyes details the devotion of, for 10 points, what "knight of the lion?"

ANSWER: **Yvain** [or **Owein**]

<Mythology>

17. The first book-length sociological study of these institutions, which compared their forms in the U.S. and Scotland, analyzed their its bureaucratization in America through a reading of O. W. Wilson's handbook on their "administration." That book by Michael Banton about these institutions "in the community" was built upon by Egon Bittner, who extended Max Weber's definition of the state to theorize that these institutions act in a "non-negotiable" manner "in accordance with the dictates of an intuitive grasp of situational exigencies." Contemporary studies, such as one by Michael Siegel, use Hubert Blalock's "conflict" or "power threat hypothesis" and the "community violence hypothesis" to analyze the racial distribution of these civic institutions' use of force. In the 1990s, the work of sociologists James Q. Wilson and George L. Kelling informed the actions of, for 10 points, what civic institutions that, in New York, adopted the "broken windows theory" to guide a "stop and frisk" program?

ANSWER: **police** forces [accept words forms such as **policing**; accept **law enforcement** or other synonyms such as **cops**; accept New York **Police** Department or **NYPD**]

<Social Science>

18. This structure expands into "whorls" that are imported into vacuoles in a form of Atg-independent autophagy. Sel1L ["sell one L"] scaffolds several substrate recognition factors within this structure and links them to the Hrd1 ["H-R-D-one"] complex, which uses the p97 ATPase [A-T-P-"ace"] to pump those substrates into the cytoplasm. Within this structure, the sensors ATF6, PERK, and Ire1 are activated in response to stress, triggering the unfolded protein response as well as this organelle's "associated degradation." Within the membrane of this organelle, the stop-transfer anchor sequence moves laterally through the heterotrimeric Sec61 protein, which forms the translocon. Before being fully translated, proteins are brought to this organelle by the signal recognition particle. For 10 points, name this organelle that coordinates with the Golgi apparatus to target proteins to their destinations.

ANSWER: **endoplasmic reticulum** [or **ER**]

<Biology>

19. In this country, a Jewish woman named Gabriele Sirota had swastikas tattooed on her breasts after she was kidnapped by the neo-fascist Tacuara Movement. A popular front called The Hour of the People formed in this country after a series of riots in response to austerity imposed in the Krieger Vasena Plan and a crackdown on university autonomy in the Night of the Long Truncheons. Juan Carlos Onganía established a military government in this country, whose transitional replacement, Hector Campora, fell from power after snipers fired on gathered crowds at an airport in the Ezeiza [eh-SAY-sah] Massacre. In this country, "Triple A" death squads killed over a thousand people, including many linked to the Montoneros, under a government whose actions were protested in Thursday marches by the Mothers of the Plaza de Mayo. For 10 points, name this country where the Videla regime "disappeared" tens of thousands of citizens during the "Dirty War."

ANSWER: **Argentina**

<World History>

20. Irving Leonard's study *Books of the Brave* follows a shipment of first editions of this author's work as it crossed the Atlantic and shaped a colonial literary culture. The preface to Alejo Carpentier's *The Kingdom of this World* cites, as an example of the "marvelous real," Rutilio's description of men who turn into wolves from a posthumously-published work by this author. In a 20th century story, a passage by this earlier author that begins "truth, whose mother is history, rival of time, depository of deeds" is dismissed as being "mere rhetorical praise," before the story then exactly repeats the passage and praises it. Miguel de Unamuno rebuked this author for mistreating the protagonist of his best-known novel, in an essay that imagines a gravestone with a glowing epitaph for that protagonist being erected by Samson Carrasco. An annual prize for Spanish-language literature is named after, for 10 points, what author, whose masterpiece is re-created by the title character of Borges's story "Pierre Menard, Author of the *Quixote*?"

ANSWER: Miguel **Cervantes** [or Miguel de **Cervantes** Saavedra]

<World Literature>

## Bonuses

1. This member of the Artaxiad Dynasty married Mithridates VI's daughter Cleopatra to seal an alliance with Pontus, and called himself "king of kings" after conquering the remnants of the Seleucid Empire. For 10 points each:

[10] Name this eastern king who deported the residents of twelve Greek towns in Asia to his new capital, named after himself, where they got revenge by opening the gates to Lucullus' invading army in 69 B.C.

ANSWER: **Tigranes the Great** [or **Tigranes II**; or **Tigran II**; or **Dikran II**; prompt on **Tigranes**]

[10] Under Tigranes the Great, this state between Rome and Persia temporarily became the most powerful in the Near East. In the 4th century A.D., it became the first state to make Christianity its official religion.

ANSWER: Kingdom of **Armenia**

[10] Tigranes the Great's sphere of influence extended over this Greco-Iranian kingdom in southeastern Anatolia. This state's king Antiochus I Theos built a sanctuary at Mount Nemrut with huge statues of syncretized gods such as Zeus-Ohrmuzd and Apollo-Mithras-Helios-Hermes.

ANSWER: Kingdom of **Commagene**

<World History>

2. Answer the following about novels set during the Great Depression, for 10 points each.

[10] This author's wordless novel *Vertigo* follows "The Boy," "The Girl," and a wealthy factory owner called "The Elderly Gentleman." His style was inspired by German Expressionist novels like *The Sun*.

ANSWER: Lynd **Ward**

[10] In a Depression-era novel by this other author, Dove Linkhorn leaves his job at a condom factory and finds work in a brothel "deflowering virgins." He wrote about Frankie Machine in *The Man with the Golden Arm*.

ANSWER: Nelson **Algren**

[10] One of the "rules of life" in Algren's *A Walk on the Wild Side* warns "never play cards with a man" with this name. In *Cannery Row*, Mack tries to throw a party for a marine biologist with this name.

ANSWER: **Doc**

<American Literature>

3. Efstathios Stamatatos's survey of the methods for this linguistic task divides it into instance-based and profile-based approaches, the latter following the pioneering work of Frederick Mosteller and David Wallace. For 10 points each:

[10] Moshe Koppel is a leading scholar in the computational linguistics field of stylometry, which attempts to accomplish what linguistic task, often by comparing lists of "function words" to pick out one of several candidates?

ANSWER: **authorship attribution** [or **authorship analysis**; accept any answer indicating **figuring out who the author of a particular text is**; accept **author profiling** or answers indicating **determining features (such as sex) of the author of a text**]

[10] Authorship attribution can also proceed via semantic comparison, as in the model developed by Shlomo Argamon based on the "systemic functional linguistic" model developed by this English-born linguist who taught at the University of Sydney.

ANSWER: Michael **Halliday** [or Michael Alexander Kirkwood **Halliday**; or M. A. K. **Halliday**]

[10] Other methods of analyzing authorial style and attribution follow the "Closing Statement" of Roman Jakobson, who with Nikolai Trubetskoy led a linguistic "school" named for this Central European capital.

ANSWER: **Prague** [or **Praha**; accept **Prague** school or **Prague** (linguistic) circle]

<Social Science>

4. This denomination's patriarch Shimun XXI Eshai was shot dead in front of his home in San Jose two years after convening a synod to abolish hereditary succession to his office. For 10 points each:

[10] Name this sect whose patriarchs have had to headquarter the church in a variety of locations, such as Chicago and Erbil, Iraq in order to escape persecution, wars, and ethnically motivated massacres.

ANSWER: Holy Apostolic Catholic **Assyrian Church** of the East

[10] In the Assyrian Church, this part of the Divine Liturgy has a longer-than-usual sursum corda. During this part of the liturgy, which is known by a Greek word, offerings of bread and wine are consecrated as the body and blood of Christ.

ANSWER: **anaphora**

[10] The Assyrian Church of the East subscribes to this heresy named for a 5th century patriarch of Constantinople, which states that there are two separate natures, divine and human, within Jesus Christ.

ANSWER: **Nestorianism**

<Religion>

5. *Description acceptable.* A 2007 PNAS paper co-authored by John Roth attempted to resolve "Ohno's dilemma" regarding these events by arguing that they are preceded by periods of innovation, amplification, and divergence. For 10 points each:

[10] Identify this process that produces paralogous genes. Over the course of the evolutionary history of the vertebrate lineage, this process has twice occurred to the "whole genome."

ANSWER: whole genome **uplications** [or gene **uplications**; or genes **copying** themselves]

[10] In this scenario, a duplicated ancestral gene partitions its role among the newly-created paralogs, resulting in no net adaptation.

ANSWER: **subfunctionalization** [accept word forms]

[10] In contrast, the whole genome duplication event experienced by the teleost, or "bony," lineage of these organisms resulted in a neofunctionalization of their opsin genes, enabling this largest group of vertebrates to adapt to environments with a wide range of available light.

ANSWER: **fish** [or bony **fish**; or cartilaginous **fish**; or jawless **fish**]

<Biology>

6. Deng Xiaoping allegedly once asked this person why all "so-called China experts have blue eyes and blond hair." For 10 points each:

[10] Name this woman who passed on a message from Richard Nixon to the South Vietnamese to hold out for a better deal during negotiations of the Paris Peace Accords. She became a leading figure in the "China Lobby" after marrying the founder of the Flying Tigers.

ANSWER: **Anna Chennault** [or **Chan** Shengmai; **Chen** Xiangmei; prompt on **Chennault**]

[10] The "China Lobby" consisted mainly of right-leaning, anti-communist supporters of the KMT-governed Republic of China, based on this island.

ANSWER: **Taiwan** [or **Formosa**]

[10] This leading "China Lobby" member influenced American public opinion heavily as the owner of *Life*, *Time*, and *Fortune* magazines.

ANSWER: Henry (Robinson) **Luce**

<American History>



7. Identify the following historical figures who appear in the novels of T. C. Boyle, for 10 points each.

[10] Boyle's 2009 novel *The Women* recounts a 1914 incident in which the servant Julian Carlton axe-murdered seven people, including this architect's lover "Mamah" Borthwick, and set fire to his studio at Taliesin.

ANSWER: Frank Lloyd Wright

[10] The protagonist of Boyle's novel *The Road to Wellville* is dragged by his wife to a health resort run by this man, where patients were electrocuted in their baths. This doctor mutilated the genitals of many of his young patients to prevent them from masturbating.

ANSWER: John (Harvey) Kellogg

[10] Boyle's novel *Riven Rock* follows Stanley, the schizophrenic youngest son of this industrialist family, as well as his wife Katherine, who used this family's fortune to fund the research behind the first birth control pill and the first all-female dormitory at MIT.

ANSWER: McCormick

<Other Academic>

8. This composer wrote that "among all orchestral instruments, the viola's excellent qualities have long suffered the most neglect." For 10 points each:

[10] Name this author of *Treatise on Instrumentation* who prominently featured the viola in his symphony *Harold in Italy*.

ANSWER: Hector Berlioz

[10] In his *Treatise*, Berlioz discussed high violin harmonics that are played by not pressing the string all the way to the fingerboard, and excerpted the middle section of *this movement* of his choral symphony *Roméo et Juliette*.

ANSWER: 4. Scherzo: "Queen Mab" [accept any underlined part]

[10] Berlioz also praised this composer's use of gongs and the bassoon's middle range in the Resurrection of the Nuns scene from his opera *Robert le Diable*.

ANSWER: Giacomo Meyerbeer

<Music>

9. In harmonic analysis, these phenomena are represented as the sum of harmonic constituents that are studied using Foreman and Henry's least squares technique. For 10 points each:

[10] Name these phenomena which are also studied using an applied "spectral" method developed by Munk and Cartwright. They were mapped on a global scale by the Topex/Poseidon experiment.

ANSWER: tides

[10] Topex/Poseidon found and mapped these nodal points on the Earth, which correspond to locations which provide zero amplitude to a tidal harmonic constituent. Waves often form a namesake system around these points.

ANSWER: amphidromic points [or amphidromes]

[10] Topex/Poseidon also mapped the distribution of these types of tides, which correspond to when a tide is the weakest, since the effects of the Moon are the weakest.

ANSWER: neap tides

<Other Science>

10. In *The Book of Laughter and Forgetting*, the narrator recalls how his dying father worked on a book about this person until all he could say was “now I know!” and “that’s strange.” For 10 points each:

[10] Name this person who, unlike Parmenides, is said to have “viewed weight as something positive” in a novel in which Tomas often repeats his phrase “*es muss sein!*” [ess mooss zyne]

ANSWER: Ludwig **Beethoven**

[10] The motif of Beethoven’s phrase “*es muss sein!*” appears in this novel by the author of *The Book of Laughter and Forgetting*, Milan Kundera.

ANSWER: *The **Unbearable Lightness of Being*** [or ***Nesnesitelná lehkost bytí***]

[10] This woman’s anecdote about Beethoven upbraiding Goethe for doffing his cap to the Austrian Empress appears in Kundera’s novel *Immortality*, which follows her love for the elderly Goethe. She compiled *Des Knaben Wunderhorn* with her brother Clemens Brentano and her future husband Achim.

ANSWER: Bettina von **Arnim** [accept **Bettina** von Arnim; or **Elisabeth** Catharina Ludovica Magdalena **Brentano**; prompt on **Brentano**]

<European Literature>

11. The traditional polyphonic singing and *horo* dancing of the Shopluk region of the Balkans has been preserved by the Bistritsa Babi, an ensemble of people of this demographic. For 10 points each:

[10] Headscarves tied below the chin are sometimes called “babushkas,” a Slavic language term etymologically related to the folkloric being Baba Yaga that describes what demographic?

ANSWER: **old women** [or **elderly women**; or **grandmothers**; or **grannies**; prompt on **women**; prompt on **old people**]

[10] In some parts of Poland, a man blackens his face with soot to play an old woman named “Siuda Baba” on the day *after* this holiday. On the day *after* this holiday in many Central and Eastern European countries, boys torment girls by dousing them with cold water and whipping them.

ANSWER: **Easter** Sunday [or **Pascha**; or **Resurrection Sunday**; prompt on **Sunday**]

[10] To celebrate the arrival of an angry old woman named Baba Marta, heralding the coming of spring, Bulgarians exchange and wear these woolen ornaments, which are often shaped like a male and a female doll.

ANSWER: **martenitsa** [or **martenitsi**]

<Geography>

12. A “banquet” or “garden party” relief shows this man sitting opposite his wife, accompanied by a harpist, attendants carrying fronds, and the severed head of an enemy hanging from a tree. For 10 points each:

[10] Name this monarch who is shown in his chariot firing arrows at lions in a set of alabaster bas-reliefs [bah "reliefs"] housed at the British Museum.

ANSWER: **Ashurbanipal** [or **Assurbanipal**; or **Asenappar**]

[10] Reliefs of Ashurbanipal’s lion hunt, as well as massive sculptures of human-headed winged bulls or lions called *lamassu*, decorated this capital city of the Neo-Assyrian Empire.

ANSWER: **Nineveh**

[10] Winged male protective spirits nicknamed “genies” appear in earlier reliefs from the palace of Ashurnasirpal II in this other Assyrian city. Carvings of griffins, lions, and sphinxes decorate over a thousand namesake “ivories” that have been excavated from this city.

ANSWER: **Nimrud** [or **Calah**; or **Kalakh**; or **Kalhu**; accept **Nimrud** ivories]

<Painting and Sculpture>

13. The author of this book describes an enormous hole in the road on the way to the Nigerian city of Onitsha. For 10 points each.

[10] Name this 1998 travelogue by Polish journalist Ryszard Kapuściński [RIH-shard kah-poosh-CHIN-skee], recounting his thirty years of travel throughout several African countries.

ANSWER: *The Shadow of the Sun* [or *Heban*; or *Ebony*]

[10] Fintan and his mother Maou travel to Onitsha in a 1991 novel by this French author, who wrote about the amnesiac Adam Pollo breaking into an abandoned seaside villa in his debut novel, *The Interrogation*. He won the 2008 Nobel Prize in Literature.

ANSWER: J. M. G. Le Clézio [or Jean-Marie Gustave Le Clézio]

[10] A genre of literature characterized by didactic novellas and pamphlets developed in one of these locations in Onitsha. In a poem named for one of these places, the title creatures repeat "Come buy, come buy."

ANSWER: markets [accept Onitsha market literature or "Goblin Market"]

<World Literature>

14. Unlike hydroboration, this reaction follows Markovnikov's rule. For 10 points each:

[10] Name this reaction in which an alkene attacks a certain element's acetate and then is reduced, resulting in an anti addition of a hydroxyl group.

ANSWER: oxymercuration-demercuration

[10] A cobalt acetylacetonate complex is used to produce a Markovnikov hydration product in a reaction named for this chemist. He pioneered the use of an N-methyl-2-chloropyridinium reagent for carrying out dehydration reactions under neutral conditions.

ANSWER: Teruaki Mukaiyama

[10] Mukaiyama also pioneered the use of silyl enol ethers as protecting groups for the Michael addition and this reaction named for an intermediate containing a carbonyl and a hydroxyl group.

ANSWER: aldol reaction [or aldol condensation]

<Chemistry>

15. Members of the student activist "Commandos" in this country, such as Irena Lasota, were persecuted during its March 1968 crisis. For 10 points each:

[10] Name this country that had earlier been liberalized during its namesake "October," also called "Gomułka's [gah-MOO-kah's] Thaw."

ANSWER: Republic of Poland [or Rzeczpospolita Polska]

[10] During Poland's 1968 crisis, a government campaign nominally targeting this ideology resulted in the expulsion of two-thirds of Poland's Jews. Theodor Herzl created a "congress" for this ideology in 1897.

ANSWER: Zionism

[10] The '68 events began with Adam Michnik leading protests against the cancellation of one of these events. Organizing events of this type was the professional pursuit of the leader of the USSR's Jewish Anti-Fascist Committee, Solomon Mikhoels, until his 1948 murder.

ANSWER: theater performances [accept obvious equivalents of theatrical productions of plays or dramas]

<European History>

16. A “holy” one of these people kneels all day on a “cushion plump” of moss on top of a “rotted old oak-stump.” For 10 points each:

[10] Identify this type of person, one of whom “singeth loud his godly hymns / That he makes in the wood.” He mans a skiff along with the Pilot and the Pilot’s boy to rescue the Ancient Mariner in Coleridge’s poem.

ANSWER: **hermits** [accept synonyms like **eremite**, **anchorite**, **recluse**, or **solitary**; prompt on **ascetics**, **monks**, **holy men**, and similar answers]

[10] Another English Romantic hermit appears in this poet's long poem “Beachy Head,” which ends with the drowning of a “hermit of the rocks.” Her *Elegiac Sonnets* helped repopularize the sonnet.

ANSWER: **Charlotte (Turner) Smith** [prompt on **Smith**]

[10] At the end of this poem’s first stanza, the speaker imagines “some Hermit's cave, where by his fire / The Hermit sits alone.” This Wordsworth poem is titled for a building on the banks of the Wye river.

ANSWER: “Lines Composed a Few Miles above **Tintern Abbey**” [or “Lines Composed a Few Miles above **Tintern Abbey**, On Revisiting the Banks of the Wye during a Tour. July 13, 1798”]

<British Literature>

17. These operators satisfy a “completeness relation” stating that for an orthonormal set of eigenstates, the sum of these operators for each state equals the identity operator. For 10 points each:

[10] Name these quantum mechanical operators, which by definition must be idempotent. In particle physics, they act on spinors to produce chiral states.

ANSWER: **projection** operators [prompt on, but DO NOT REVEAL, “**outer product**”]

[10] The projection operators can be simply written using two vertical bars and two angle brackets in this notation system which explicitly represents operators and wavefunctions as vectors and matrices.

ANSWER: **bra-ket** notation [or **Dirac** notation]

[10] In bra-ket notation, this operation can be simply represented as a bra followed by a ket.

ANSWER: **inner product**

<Physics>

18. Julius Cobbing argued that this term was an “alibi” that displaced the blame for violence caused by colonial predation onto the colonized populations themselves. For 10 points each:

[10] Give this name for the chaotic period of wars in the early 19th century in Southern Africa, where the formation of powerful states triggered waves of violence that may have claimed over a million lives.

ANSWER: **Mfecane** [or the **Difaqane**; or the **Lifaqane**; or the **Crushing**]

[10] Cobbing argued that this ruler’s conquests were a response to Portuguese imperialism. With innovations like the *iklwa* spear and the “buffalo horns” formation, this man oversaw the rise of the Zulu Empire.

ANSWER: **Shaka** Zulu

[10] In this 1818 battle, an early clash from the Mfecane period, Shaka encircled his rival Zwide’s son Nomahlanjana by unleashing reserves hidden in a depression on top of the namesake feature.

ANSWER: Battle of **Gqokli Hill**

<World History>

19. A group whose works are classified into this genre released the album *The Inner Mounting Flame* and was led by guitarist John McLaughlin. For 10 points each:

[10] Name this genre that incorporates rock and funk sounds into traditional jazz. Bands in this genre include Weather Report and the aforementioned Mahavishnu Orchestra.

ANSWER: jazz **fusion**

[10] This Jewish Brazilian singer and frequent collaborator of Chick Corea has recorded several fusion albums, including 1973's *Butterfly Dreams*.

ANSWER: Flora **Purim**

[10] Flora Purim and Chick Corea are two members of the fusion group Return to Forever, best known for this song. In its most famous recording, it opens by quoting the adagio from the *Concerto de Aranjuez*.

ANSWER: "**Spain**"

<Other Fine Arts>

20. This text claimed Victorian society was based on an ethos of "Christian self-denial," contrasting it with "Pagan self-assertion." For 10 points each:

[10] Name this philosophical text that says "it may be better to be a John Knox than an Alcibiades, but it is better to be a Pericles than either."

ANSWER: ***On Liberty*** (by John Stuart Mill)

[10] This other text compares Greco-Roman "master morality" with "Judeo-Christian "slave morality," building on its author's earlier work in *Beyond Good and Evil*.

ANSWER: *On the **Genealogy of Morals: A Polemic*** [or *On the **Genealogy of Morality***; or *Zur **Genealogie der Moral: Eine Streitschrift***] (by Friedrich Nietzsche)

[10] William James argued that the "early Greeks" should *not* be held up as models of a "joyousness" described by this phrase. James contrasted this concept with the "sick soul."

ANSWER: **healthy-minded** [accept word forms; prompt on incomplete answer]

<Philosophy>