

2021 ACF Nationals

Packet by Berkeley A

Edited by Matt Bollinger, Jordan Brownstein, Andrew Hart, Ike Jose, Jack Mehr, Eric Mukherjee, Derek So, Jerry Vinokurov, Ryan Westbrook, and Jennie Yang

Tossups

1. A national hero of this country is revered as an incarnation of the Holy Spirit by the small Church of the Banner of the Race. A monotheistic religious minority in this country gives prayers to spirits called *diwatas*. Barefoot worshippers pull a huge cart over a four-mile route in the “procession of the Black Nazarene” observed by millions in this country. The Charismatic “El Shaddai” movement and “Prophet Felix’s” “Church of Christ” began in this country, which is often said to have the world’s longest Christmas season, lasting from October to January. A carpenter from this country, Ruben Enaje, has been crucified for thirty-three consecutive years in its bloody reenactments of Good Friday. A longtime dictator of this country was brought down partly due to pressure from its Archbishop Jaime Sin. The Moro Islamic minority resides in, for 10 points, what largest majority-Catholic country in Asia?

ANSWER: Republic of the **Philippines**

2. *Two answers required.* Bonds between these two elements can form "staple" motifs. Venkataraman et al. used the STM-break junction technique to show the bond between these two elements has a physisorbed, rather than chemisorbed, character. 102 atoms of one of these two elements forms a nanocluster stabilized by 44 atoms of the other found in the compound p-MBA. One structure stabilized by the bond between these two elements transitions from "lying down" to "standing up" as fractional coverage increases. Capping agents that rely on the strong bond between these two elements drastically stabilizes the product of the Brust method. Alkyl chains that terminate with one of these two elements can spontaneously adsorb to the (111) (“one one one”) plane of the other to form a self-assembled monolayer. For 10 points, name these two elements, one a nonmetal found in thiols, the other a metal that forms reddish solutions in nanoparticle form.

ANSWER: **gold** AND **sulfur** [or **Au** AND**S**; accept in either order]

3. In a letter to his brother Theo, Vincent van Gogh wrote that Delacroix would have “adored” a painting by this artist for juxtaposing “orange and blue” as “poles of electricity.” This artist may have referenced the parable of the Good Samaritan by including a shadowy landscape painting of a hilly path on the wall behind a group of women in one portrait. This destitute artist’s namesake museum was established in the building whose trustees he depicted in the portraits *Regents* and *Regentesses of the Old Men’s Almshouse*. Pieter Codde finished this artist’s painting of the militia of Reinier Reael whose strikingly thin subjects led it to be nicknamed the “Meagre Company.” A jacket brocaded with symbols of love like arrows and knots appears in a portrait by this artist whose subject slightly smiles at the viewer. For 10 points, name this Flemish artist of *The Laughing Cavalier*.

ANSWER: Frans **Hals**

4. An executive in this industry influenced Prime Minister Amintore Fanfani to pursue his “Mediterranean vocation” foreign policy; that executive challenged a set of incumbents in this industry he called the “Seven Sisters” by promoting a namesake “75/25” formula to developing nations. The journalist Mauro de Mauro was killed investigating a mysterious plane explosion that killed a prominent leader in this industry, Enrico Mattei. Giacomo Matteotti was murdered soon after exposing bribes made to high-ranking Fascist leaders by a company in this industry. The Po River Valley was industrialized by a state-owned company in this industry, ENI. Interests in this industry led Italian officials to provide another country with advance notice of Operation El Dorado Canyon. For 10 points, name this industry, whose interests led Italy to build closer ties to countries like Libya and Iraq.

ANSWER: oil industry [or fossil fuels; or natural gas; or petroleum; or nonrenewables; accept products of oil such as gasoline or diesel fuel; prompt on energy industry; prompt on fuel industry with “fuels made from what source?”; prompt on chemical industry by asking “chemicals made from what source?”]

5. In this novel, the protagonist’s face exhibits a “beauty...overrun by its parasite, thought,” proving that “thought is a disease of flesh.” A mother in this novel curses a woman by throwing her wax effigy in the fire and reciting the Lord’s Prayer three times backwards. In this novel, Charley gives a woman his role as the Turkish Knight in a mummies’ play in exchange for letting him hold her hand for fifteen minutes. Near the beginning of this novel, the narrator praises the “Promethean rebelliousness” of characters lighting bonfires on top of Rainbarrow on Guy Fawkes Night. The title character of this novel goes half-blind from studying and works as a furze-cutter, despite already possessing a fortune from his career as a Paris diamond merchant. The passionate Eustasia Vye enters a disastrous marriage with the burnt-out gifted kid Clym Yeobright in, for 10 points, what Thomas Hardy novel set in Egdon Heath?

ANSWER: *The Return of the Native*

6. In 2015, this country’s government entered into a disastrous deal with the Azerbaijan-based company SOCAR, which has resulted in its paying exorbitant rates for natural gas. This country’s government has been accused of effectively selling citizenship through its “Individual Investor Program.” An academic from this country who was once president of a Slovenian university, Joseph Mifsud, was a person of interest in the Mueller Investigation. After exposing corrupt politicians through the Panama Papers, the journalist Daphne Caruana Galizia was murdered with a car bomb in this country, protests over which resulted in the resignation of this country’s prime minister, Joseph Muscat. A Gramsci scholar originally from this country is the father of the former South Bend mayor Pete Buttigieg. For 10 points, identify this European island country with its capital at Valletta.

ANSWER: Republic of Malta

7. In an early book, this critic interpreted anxieties around procreation in texts like *The Waste Land* to argue that modernism represented a transition from “filiation” to “affiliation;” a related book by this author praises Erich Auerbach as the exemplary “secular critic.” Playing on the different meanings of the word “canon,” this thinker called for a “contrapuntal” reading of the “cultural archive” to counter the “politics of blame.” This author of *Beginnings* and *The World, the Text, and the Critic* wrote an essay collection that interprets W.B. Yeats’ poetry as a project analogous to those of Leopold Senghor and Aime Cesaire. In a controversial essay, this critic cited references to Thomas Bertram’s plantation on Antigua to link *Mansfield Park* to imperialist expansion. For 10 points, name this Palestinian-American critic, the author of *Culture and Imperialism*, as well as *Orientalism*.

ANSWER: Edward Said

8. Functional profiling of these systems is done using Tax4Fun or PICRUSt (“pie crust”). UniFrac is a distance metric between these systems, which are divided into “core” and “variable” parts based on persistent characteristics. The iChip and other microfluidic methods are used to solve the “Great Plate Count Anomaly” caused by poor sampling of these systems. When QIIME or mothur is used to analyze these systems, they are sorted into OTUs, whose alpha and beta diversity are measured. An NIH multi-omics project has sorted one set of these systems into CSTs and associated some with preterm birth. These systems are studied using 16S rRNA sequencing. During atopic dermatitis flares, one of these systems becomes dominated by *S. aureus*. *C. difficile*-induced diarrhea is caused by imbalances in this system in the gut. For 10 points, give this term for all the microorganisms in a particular environment.

ANSWER: **microbiome** [or normal **flora**; or **microbial community**; or **microbiota**; or **metagenome**; accept more specific answers like the gut **microbiome**, skin **microbiome**, vaginal **microbiome**, skin **flora**, gut **flora**, vaginal **flora**; prompt on anything implying a collection of microbes or bacteria]

9. An essay by Honey Meconi titled for this composer begins by noting how the first note of Ludwig Schneider’s transcription of this composer is incorrect. A choral work by this composer traverses nearly two octaves during the phrase “sudano sudan balsamum” and includes a 14-note melisma on the phrase “aromata irigavit;” that piece was written for the feast of St. Maximinus. Modern interest in the music of this composer of *Columba aspexit* was revitalized by an album featuring Emma Kirkby, *A Feather on the Breath of God*. The only male voice in a musical drama by this composer portrays the Devil, who grunts and yells instead of singing. This composer collected liturgical songs in *Symphonia armoniae celestium revelationum* and wrote the music morality play *Ordo Virtutum*. For 10 points, name this composer who described 26 religious visions in *Scivias*, an abbess at Eibingen.

ANSWER: **Hildegard** von Bingen

10. In this conflict, one general proposed a south-to-north movement to “roll the map up” on his opponents. The Ferret Force coined the phrase “search and destroy” during this conflict, which saw 2.6 million people granted citizenship in an effort to “win hearts and minds” formulated by Gerald Templer. A precursor to Agent Orange was used during this conflict, marking the first wartime use of defoliants. The leader of one side resigned after the failure of the Baling Talks. During this conflict, thousands of ethnic Chinese were resettled in “New Villages” constructed by the Briggs Plan. Many participants in this conflict were veterans of the Peoples’ Anti-Japanese Army trained by the British Army before joining a communist insurgency led by Chin Peng. For 10 points, name this guerilla insurgency in a former British colony with its capital at Kuala Lumpur.

ANSWER: **Malayan Emergency** [prompt on an answer of Malaysia or Malay; prompt on just the Emergency by asking “where?”]

11. This book’s subject is compared to the myopic Mr. Magoo in a book about the French reception of its author, Judith Butler’s *Subjects of Desire*. A lengthy analysis of how this book’s last chapter points to the ideal of the “wise man” occupies much of a text that was compiled by Raymond Queneau and edited by Allan Bloom. This book was reintroduced to French thought with Jean Wahl’s 1929 book on its concept of “unhappy consciousness.” *The Second Sex* offers the dictum “in oppressing, one becomes oppressed,” as “the most concrete application” of a concept from this book, which was read as a *bildungsroman* by Jean Hippolyte. Thinkers like Sartre Fanon were influenced by a Alexandre Kojève lecture series that focuses on the “fight for recognition” in this book. The terms “herr” and “knecht” are rendered as “maître” and “esclave” in French translations of, for 10 points, what book by Hegel?

ANSWER: *The **Phenomenology of Spirit*** [or *The **Phenomenology of Mind***; or ***Phänomenologie des Geistes***]

12. During one battle, this mythological figure was injured tripping on a vine controlled by Dionysus. Nireus killed this figure's wife, the Amazon Hiera, while his son Eurypylus was killed by Neoptolemus. After traveling to Argos, this figure kidnapped an infant Orestes. This figure was suckled by a deer before he was discovered by King Corythus. This man and his mother were exiled by his grandfather Aleus due to a prophecy that he would kill his sons. He was adopted by Teuthras, whom he succeeded as king of Mysia. The Attalid dynasty claimed descent from this figure, whose life is depicted in a frieze in the Pergamon altar, since he founded Pergamon. This figure received the oracle's prophecy "he that wounded shall heal," so rust was scraped off the spear of Achilles to heal him, and then he sent the Greeks on their way to Troy. For 10 points, name this son of Auge and Heracles.

ANSWER: **Telephus**

13. One founder of this group went on a hunger strike at Stillwater prison after being denied the right to get an engineer's license, until another of its founders, Eddie Benton-Banai, persuaded him to quit. This group encouraged its members to engage in "shopping," which meant stealing things from stores, during a march where they drafted their manifesto, the "Twenty Points." The book *Like a Hurricane* by Paul Chaat Smith chronicles this group's protests after a man was forced to dance naked and then murdered in Gordon, Nebraska. A private militia called the GOONs opposed this group, who likely ordered the killing of its own member Anna Mae Aquash. Another of this group's members allegedly shot two FBI agents after being pulled over at Pine Ridge, and is the subject of the "Free Leonard Peltier" campaign. This group, led by Russell Means, organized the 1973 Wounded Knee Occupation. For 10 points, name this group that supports Native American rights in the US.

ANSWER: **American Indian Movement**

14. A choreographer with this surname outfitted the cast in Coco Chanel apparel for a production titled after a railroad from Calais to the Riviera, *The Blue Train*. That artist with this surname choreographed a ballet set at a flapper's house party, where one of three athletes in rowing gear dances with the androgynous "girl in blue." In her teen years, Maria Tallchief studied under a ballerina of this surname, who choreographed Francois Poulenc's *Les Biches* ("poo-LONC's lay BEESH"). A dancer with this surname performed the title role of a ballet set to Weber's *Invitation to the Dance*, which ends with him leaping out a window. In another role, that star of *The Spectre of the Rose*, who had this surname, chased around some nymphs in a Leon Bakst costume inspired by Greek paintings of satyrs. For 10 points, give this surname of the Ballet Russes star who choreographed *The Afternoon of a Faun* and *The Rite of Spring*.

ANSWER: **Nijinsky** [or **Nijinska**; accept Vaslav Fomich **Nijinsky**; accept Bronislava Fomichina **Nijinska**]

15. An extinction during this geologic time period is theorized to have been caused by an impact that formed the Siljan Ring in Sweden. A key evolutionary transition during this period is studied using fossils of elpistostegalians. Numerous fossils of the plant genus *Horneophyton* are found in a lagerstätte from this time period called the Rhynie chert. A rapid fall in sea level during this period caused an anoxic extinction called the Hangenberg event, which killed most placoderms. The Bakken formation was formed during this period. A mass extinction called the Kellwasser event occurred during the "Late" stage of this period, at the Frasnian-Framennian boundary. The introduction of ammonites and the first radiation of terrestrial life, including the first seed plants, occurred during this period. For 10 points, name this period between the Silurian and Carboniferous, also called the "Age of Fishes."

ANSWER: **Devonian** period

16. Alice Walker's essay "The Dummy in the Window" examines the "invention" of a character with this title whom she called "no friend of mine" for "stealing a good part of my heritage." A character with this title describes how Henry is not affected by Peggy's witchcraft while eating on Mars Dugal's property. In a story from a collection titled for one of these people, Mann steals Mr. Heartfield's boat in a failed attempt to save his wife Lulu during a flood. One of these people entertains the white couple John and Annie with stories adapted from Ovid's *Metamorphoses*. A former slave with this title named Julius McAdoo narrates stories like "The Goopherd Grapevine" in Charles W. Chesnutt's *The Conjure Woman*. "Down by the Riverside" and "Big Boy Leaves Home" are included in a collection titled for the "children" of a person of this relation, written by Richard Wright. For 10 points, tales about Br'er Rabbit are told by a person of what familial relation named Remus?

ANSWER: **uncles** [accept **Uncle** Julius McAdoo; accept **Uncle** Remus; accept **Uncle Tom's Children**]

17. In a 2003 article titled for the "Chinese" form of this practice, John Graham and Mark Lam stressed the cultural importance of *zhengti guannian* (zhung-tee gwah-nee-ahn), or "holistic thinking." A 1998 book often used to teach this process is titled for a practitioner's "mind and heart" and is by Leigh Thompson. A "principled" form of this process, which begins with separating "the people from the problem," was advocated in a 1981 bestseller titled for "getting to" this process's endpoint. This process, which can be divided into "distributive" and "integrative" types, is the subject of a Harvard "project" led by Roger Fisher and William Ury. Theoretical descriptions of this process describe a "zone" known as the ZOPA (ZOH-pah) and involve evaluations of a "best alternative" known as BATNA ("BAT"-nuh). For 10 points, what process, which can be aided by a third-party mediator, involves businesspeople attempting to come to an agreement?

ANSWER: business **negotiations** [or **negotiating**; or **bargaining**; or **dealmaking**; accept answers indicating **negotiating** or making a business **deal**; do not accept or prompt on answers indicating "agreeing" or "agreement"]

18. Colonists originally from this island created an inscription that read right-to-left and suggested the reader would be seized with desire for "beautifully-crowned Aphrodite." That inscription on "Nestor's cup" was discovered at Pithekoussai, or modern Ischia, a settlement founded by colonists from this island. The Phoenician alphabet may have been introduced to this island through the Syrian trading port of Al-Mina. A monumental building with a wooden peristyle controversially named the *herōon* or "hero's grave" is found on this island's village of Lefkandi, which was destroyed during the Lelantine War fought between the two main powers on this island, Chalcis and Eritria. This island was captured after the Battle of Artemisium by Xerxes I. For 10 points, name this center of civilization during the Greek Dark Ages, the second-largest Greek island in the Aegean after Crete.

ANSWER: **Euboea** [or **Evia**]

19. The decay of this particle can result in the formation of the exotic X(3872) particle, whose quantum numbers were only determined a decade after it was first observed in 2003. In 2018 the ATLAS collaboration at the LHC detected the decay of the Higgs boson into two of these particles, which was difficult to measure because of their high background rate of production. The relatively high mass of these particles results in a high transverse momentum and their lifetime allows for a secondary vertex, phenomena which are used by algorithms such as DeepFlavour to identify, or "tag" them. The third column of the CKM matrix represents the contribution of this particle. The PEP-II accelerator at SLAC is the site of a namesake "factory" for producing these particles, whose long-lived mesons, like kaons, undergo neutral flavor oscillations and are therefore used for studying CP-violations. Initially discovered by Leon Lederman as comprising the upson meson, for 10 points, identify this third-generation quark, the second-heaviest.

ANSWER: **bottom** quark [or **beauty** quark; or **b** quark]

20. The protagonist of a novel by this author invents a fairy tale in which he visits an octagonal tower in the woods, where he sleeps in a vault filled with a million blind angels. This author's essay "From the Unconscious Life of the Mind" called for novels to attend to "the whisper of the blood, the pleading of the bone." In a novel by this author, the protagonist drowns trying to retrieve the mysterious iron ring he threw into the sea, shortly after berating his doppelganger, the Midget, for being secretly evil. Another novel by this author is a pastoral quasi-romance about a hunter who lives alone with his dog Aesop, Thomas Glahn. In a novel by this author of *Mysteries*, an unnamed young journalist gives the name "Ylajali" ("ee-lah-JALL-ee") to a woman he meets while wandering the streets of Kristiania suffering from the title malady. For 10 points, name this pro-Axis Norwegian author of *Pan* and *Hunger*.
ANSWER: Knut Hamsun [or Knud Pedersen]

Bonuses

1. The mob that invaded this man's house was led by shoemaker Ebenezer Mackintosh, who had been recruited by the Loyal Nine and carried an effigy of Andrew Oliver. For 10 points each:

[10] Name this Lieutenant Governor whose mansion was ransacked, destroying the final volume of his book, the *History of the Province of Massachusetts Bay*.

ANSWER: Thomas **Hutchinson**

[10] The attack on Thomas Hutchinson's house was carried out by a mob protesting this 1765 piece of legislation, which imposed a tax on paper goods and printed materials in the American colonies.

ANSWER: **Stamp Act** of 1765

[10] This man, the founder of the American Academy of Arts and Sciences, was a fierce opponent of Hutchinson and wrote a "Short Narrative" of the Boston Massacre. Later, while serving as Governor of Massachusetts, he issued warrants to try to put down Shays Rebellion.

ANSWER: James **Bowdoin**

2. Most of the characters in this play are traditionally played by black actors wearing white masks. For 10 points each:

[10] Name this play that represents Sarah's inner selves as characters like Queen Victoria and a hunchbacked Jesus. This play is the best known work by Black Arts Movement playwright Adrienne Kennedy.

ANSWER: ***Funnyhouse of a Negro***

[10] *Funnyhouse of a Negro* split the Obie Award for Best Play with *Dutchman*, which was written by this founder of the Black Arts Movement who was born as LeRoi Jones.

ANSWER: Amiri **Baraka**

[10] Baraka's Black Arts manifesto "The Revolutionary Theatre" concludes by listing heroes like Crazy Horse, Denmark Vesey, and this leader who had been murdered shortly before its publication. This politician represents Sarah's dead father in *Funnyhouse of a Negro* and is the subject of an Aime Cesaire play titled *A Season in [his home country]*.

ANSWER: Patrice **Lumumba**

3. AWS's Greengrass service is used to set up devices for this sort of computing. For 10 points each:

[10] Name this form of computing that relies on placing devices closer to customers and data sources, allowing for better real-time responses. This kind of computing is a bridge between fog and cloud computing.

ANSWER: **edge** computing

[10] Fog, edge, and cloud computing would help support this idea with a catchy three word name. It hypothesizes that everyday objects like cars or microwaves would be embedded with digital devices to interconnect them.

ANSWER: **Internet of Things** [or **IoT**]

[10] Some have speculated IoT may become a reality with the emergence of 5G, the fifth generation of this technology. The name for this type of network comes from the way individual regions are each serviced by a base station, or "tower."

ANSWER: **cellular** network

4. An artist from this family designed the façade for the *Maison Cubiste*. For 10 points each:

[10] Name this family of that artist of *The Large Horse*, a machine-like bronze sculpture of a horse's head. To distinguish himself from his siblings, that artist compounded his surname with that of a medieval French poet.

ANSWER: **Duchamp** [accept Raymond **Duchamp-Villon**; prompt on Villon]

[10] Raymond Duchamp-Villon's *Maison Cubiste* was displayed in the Cubist Room, alongside his brother's *Nude Descending a Staircase*, at this landmark 1913 exhibition in New York.

ANSWER: **Armory Show** [or the **International Exhibition of Modern Art**]

[10] The *Maison Cubiste*'s interior featured decorations by this Cubist artist known for using muted pinks and grays in her paintings of groups of women. She painted *The Spanish Dancers* after the end of her relationship with Guillaume Apollinaire, whom she is depicted alongside in Henri Rousseau's *The Muse Inspiring the Poet*.

ANSWER: Marie **Laurencin**

5. Answer the following about the Kinaaldá, for 10 points each.

[10] The Kinaaldá is a part of the Blessing Way, a female coming of age ritual for these people indigenous to the Southwestern United States who refer to themselves as the *Diné*.

ANSWER: **Navajo**

[10] Girls undergoing the Kinaaldá are believed to transform into this goddess, who was the daughter of the first two humans of the current Navajo world. She lives alone in a house floating on the western waters, where the sun stops each day.

ANSWER: **Changing Woman** [or **Whiteshell Woman**; or **Turquoise Woman**; or **Abalone Woman**; or **Jet Woman**; or **Asdzaa Nádleché**]

[10] Changing Woman is impregnated by a beam of sunlight and gives birth to figures known by this collective name. In a different myth system, figures by this collective name defeat a god of earthquakes by feeding him a gypsum and plaster bird.

ANSWER: **Hero Twins** [prompt on twins or siblings or brothers; prompt on Hunahpu and Xbalanque]

6. Answer the following about the Crisis of the Seventeenth Century, for 10 points each.

[10] This Marxist historian coined the Crisis of the Seventeenth Century. He used a term coined by Ilya Ehrenburg for a trilogy of books about the "long nineteenth century," and its sequel on the "short twentieth century" called *The Age of Extremes*.

ANSWER: Eric **Hobsbawm**

[10] Germany's population was reduced by as much as thirty percent by this conflict early in the 17th century, which saw fighting at White Mountain and was resolved by the Peace of Westphalia.

ANSWER: **Thirty Years War**

[10] Hugh Trevor-Roper and Eric Hobsbawm reconciled their differences to collaborate on this collection, which Hobsbawm edited with Terence Ranger. Trevor-Roper's essay for this collection examines pseudo-historical Scottish clan symbolism in the 19th century to exemplify the title phenomenon.

ANSWER: *The **Invention of Tradition***

7. In 2017, New Directions published a “Complete Edition” of this text translated by Margaret Jull Costa; it was first published in 1982, nearly fifty years after its author’s death. For 10 points each:

[10] Name this text. Jull Costa’s introduction to her translation notes that it is “two different books separated by about ten years,” the second of which contains many meditations from the assistant bookkeeper Bernardo Soares.

ANSWER: *The **Book of Disquiet*** [or ***Livro do Desassossego***]

[10] *The Book of Disquiet* is the magnum opus of Fernando Pessoa, a major poet from this country, whose national epic is the *Lusiads*.

ANSWER: **Portugal** [or the **Portuguese** Republic]

[10] This Italian author and translator of Pessoa was often considered a contender for the Nobel Prize until his 2012 death. He wrote about a journalist radicalized against the Salazar regime in his 1994 novel *Pereira Declares*.

ANSWER: Antonio **Tabucchi**

8. Stephen Toulmin and Albert Jonsen wrote a history on the “Abuse” of this method. For 10 points each:

[10] Name this method sometimes used in medical ethics which involves moral reasoning based on paradigm examples rather than overarching principles.

ANSWER: **casuistry** [accept word-forms like **casuistic** reasoning; prompt on **case**-based reasoning; prompt on the method of **cases**]

[10] Toulmin’s chapter on perjury discusses how you can say something out loud but mentally add a clause that changes its meaning as part of the “mental restriction” theories of Domenico Soto and Navarrus, who were members of this Spanish school of scholastic philosophy founded by Francisco de Vitoria.

ANSWER: School of **Salamanca**

[10] Jesuit casuistry was harshly criticized in the *Provincial Letters* by this Jansenist philosopher, who compared man to a “thinking reed” in his *Pensées*.

ANSWER: Blaise **Pascal**

9. First observed by Ewen and Purcell, this spectral feature can be used to map the presence of neutral hydrogen. For 10 points each:

[10] Identify this spectral feature which results from a “spin-flip” transition in hydrogen, generating a signal of 1420 MHz.

ANSWER: **21 centimeter** line

[10] The 21 cm line is an example of this general type of transition that results when hydrogen levels split due to the coupling between the nuclear magnetic moment and the spin of the electron. It is several orders of magnitude smaller than the fine structure splitting.

ANSWER: **hyperfine** structure

[10] The 21 cm line is astronomically important because it allows for the mapping of power spectra during the Dark Ages, a period of time which began with this event, roughly 380,000 years after the Big Bang, when the universe became transparent.

ANSWER: epoch of **recombination** [do NOT accept “reionization”]

10. This technique is used to represent a perpetual motion machine in Jean-Claude Risset's *Trois moments newtoniens*. For 10 points each:

[10] Name this auditory illusion in which a looping series of pitches appears to ascend or descend continuously.

ANSWER: **Shepard tone** [accept **Shepard**-Risset **Glissando**]

[10] In Act 3 of this opera, the orchestra plays an approximate Shepard tone as the Captain and the Doctor walking under a blood-red moon, hear the cries of the title character.

ANSWER: **Wozzeck**

[10] A pair of Shepard tones separated by this interval can be heard as rising or falling, a phenomenon called this interval's "paradox." This interval, an example of which represents the conflict between Wozzeck and Marie, has been nicknamed "the devil in music."

ANSWER: **tritone** [or **augmented fourth**; or **diminished fifth**; or **semidiapente**; or **semitritonus**]

11. An antique "train cemetery" in this country contains the remains of tracks built in 1888, where its president Hilarión Daza was murdered in 1894. For 10 points each:

[10] Name this country whose capital was liberated in the Chuquisaca Revolution, which was dubbed the "first cry of freedom" for this nation.

ANSWER: **Bolivia**

[10] The train graveyard is in the same Bolivian town as these massive salt flats, the world's largest, which form a giant mirror surface in the rainy season. These flats may contain seventy percent of the world's supply of lithium.

ANSWER: **Uyuni** Salt Flats [or Salar de **Uyuni**; or Salar de **Tunupa**]

[10] Bolivia lost even more territory to Paraguay in this three-year war that started in 1932, named for the "Gran" region of the Rio de la Plata basin.

ANSWER: **Chaco** War

12. The critic Pierre-Jean Grosley popularized the story of this man frequenting the Hellfire Club. For 10 points each:

[10] Name this 18th-century statesman with a reputation as an inveterate gambler. Apocryphally, he was once too busy to step away from playing cards, and ordered his servants to create a culinary invention now named for him.

ANSWER: the Earl of **Sandwich** [or John **Montagu**]

[10] The first reference to a "sandwich" as a type of food appears in the journal describing the Cocoa-Tree Club of this English writer, who is perhaps better known for his *History of the Decline and Fall of the Roman Empire*.

ANSWER: Edward **Gibbon**

[10] The Earl of Sandwich spends three years studying how to invent cheese in France in this author's absurd story "Yes, But can the Steam Engine Do This?," which is collected in the volume *Getting Even*.

ANSWER: Woody **Allen**

13. Answer the following about the concept of "Critical Regionalism," popularized by architecture critic Kenneth Frampton, for 10 points each.

[10] The concept originated in the essay "The Grid and the Pathway," regarding the architecture of this country. An architect and composer from this country designed the exterior of the Philips Pavilion for Le Corbusier.

ANSWER: **Greece** [or **Ellada**; or **Hellenic Republic**]

[10] To introduce the concept, Frampton cites this architect's Bagsvaerd Church, whose interior shell is inspired by a Chinese pagoda roof. This architect is better known for designing the Sydney Opera House.

ANSWER: Jorn **Utzon**

[10] Frampton singles out the work of Tadao Ando, who designed this building attached to the Alpha Resort Hotel on Hokkaido. This religious building consists of a glass-and-steel cube intersecting with a concrete prism.

ANSWER: the **Church on the Water** [or the **Chapel on the Water**; do not accept or prompt on "Water Temple"]

14. This anthology's title comes from a lecture by Maria W. Stewart which commands "no longer sleep or slumber, but distinguish yourselves." For 10 points each:

[10] Name this anthology of female writers of African descent compiled by Margaret Busby. Its sequel, which adds the word "new" to its title, was published in 2019.

ANSWER: **Daughters of Africa**

[10] *New Daughters of Africa* opens with a poem by Nana Asma'u, whose father founded a state in this modern-day country. It also includes an excerpt from "We Should All Be Feminists," an essay by an author born in this country.

ANSWER: Federal Republic of **Nigeria** (Asma'u was the daughter of Usman dan Fodio, the founder of the Sokoto Caliphate. "We Should All Be Feminists" is by Chimamanda Ngozi Adichie.)

[10] Other authors featured in *New Daughters of Africa* include Yvonne Bailey and this daughter of hers, who wrote *White Teeth*.

ANSWER: Zadie **Smith** [or Sadie **Smith**]

15. Each chapter of this text is represented by a thread in the Kushti, a girdle worn around the waist. For 10 points each:

[10] Name this text divided into 72 chapters. The Gathas are contained in chapters 28-53 of this text, which shares its name with the ceremony in which it is recited, the main liturgy of Zoroastrianism.

ANSWER: the **Yasna** [prompt on **Avesta**]

[10] An ancient symbol from Zoroastrianism, the *faravahar*, depicts these two creatures with a solar disk. Name both of the real-life creatures on which the *faravahar* symbol draws.

ANSWER: a **human** AND an **eagle** [or a **human** AND a **bird**; or an **old man** AND an **eagle**]

[10] The Yasna is recited to praise this god, who is the rival of Angra Mainyu and the principal object of worship in Zoroastrianism.

ANSWER: **Ahura Mazda** [or **Ohrmuzd**; or **Oromasdes**]

16. This man joined David Rockefeller to form an organization to bridge North America, Western Europe, and Japan called the Trilateral Commission, serving as its first director. For 10 points each:

[10] Name this National Security Advisor who proposed the advent of the "Technetronic Era" and wrote books like *The Grand Chessboard*.

ANSWER: Zbigniew **Brzezinski**

[10] Brzezinski brought an end to détente after the Soviet Union invaded this country in 1979, prompting the Carter administration to also boycott the 1980 Summer Olympics.

ANSWER: **Afghanistan**

[10] Jimmy Carter's cabinet also included this Jewish author of *The Invisible Wall*, who participated in the Trilateral Commission, and served as Secretary of the Treasury from 1977 to 1979. In that role, he made the first visit to communist China by an American Cabinet member.

ANSWER: W. Michael **Blumenthal**

17. A definitive outline of this approach was given in a 2010 paper about its “emergence” by S. Eben Kirksey and Stefan Helmreich. For 10 points each:

[10] Identify this approach to ethnography that focuses on the connections between humans and other life forms and how all of their “livelihoods shape and are shaped by political, economic, and cultural forces.”

ANSWER: **multispecies** ethnography

[10] The landmark multispecies ethnography *The Mushroom at the End of the World* was written by this UC-Santa Cruz anthropologist.

ANSWER: Anna Lowenhaupt **Tsing**

[10] Among the key contributions of Tsing’s book is an analysis of the type of accumulation denoted by this word, which she defines as “taking advantage of value produced without capitalist control.” This word also refers to a type of ethnography pioneered by Franz Boas, which attempts to document and preserve dying cultural practices.

ANSWER: **salvage** [accept **salvage** accumulation; or **salvage** ethnography; or **salvaging**]

18. The secondary form of this tumor usually arises from pre-existing anaplastic astrocytomas, has mutations in IDH1, and occurs at a younger age than its primary counterpart. For 10 points each:

[10] Name this particularly aggressive form of brain cancer that has a butterfly appearance on brain imaging.

ANSWER: **glioblastoma** multiforme [or **GBM**]

[10] The mainstay of treatment of glioblastoma multiforme is this alkylating agent, which usually attacks N-7 or O-6 on guanine. This drug’s efficacy is diminished by the product of the MGMT gene.

ANSWER: **temozolomide** [or **Temodar**]

[10] GBMs can be a consequence of Li-Fraumeni syndrome, which is caused by mutations in this tumor suppressor. This “guardian angel of the genome” is named for its apparent size on gel electrophoresis.

ANSWER: **p53**

19. Answer the following about the “fair triumvirate of wit,” for 10 points each.

[10] One member of the triumvirate, Aphra Behn, published *Oronooko* while working in this non-literary profession. This profession is the subject of many novels by John Le Carre.

ANSWER: **spy** [or secret **agent**]

[10] All three women often wrote works in the genre of amatory fiction, exemplified by this author’s *Fantomina*; or, *Love in a Maze*. This woman also wrote a bestselling novel about the rake D’Elmont titled *Love in Excess*.

ANSWER: Eliza **Haywood**

[10] The final member of the triumvirate, Delarivier Manley, was accused of libel in the pages of this publication by her friend Richard Steele. Many articles in this publication were written under the pseudonym Isaac Bickerstaff.

ANSWER: *The **Tutler***

20. An electric field with one of these symmetries acts on a configuration of d electrons analogously to a field with the other symmetry acting on the corresponding hole configuration. For 10 points each:

[10] Name these two symmetries with similar doubly- and triply-degenerate representations. Fields with either of these symmetries produce a 2:3 ratio of displacements but with opposite signs, and the total splitting of the more symmetric is 9/4 that of the other.

ANSWER: full **octahedral** AND full **tetrahedral** [accept **O_h** (“O sub h”) AND **T_d** (“T sub d”); do not accept or prompt on “O” or “T”]

[10] Along with the trivial zero and ten, these two counts of d electrons are not given Tanabe-Sugano diagrams, as the only transition with either of these numbers of electrons is from the T_{2g} state to the E_g, or vice-versa.

ANSWER: **d¹** AND **d⁹** [“d-one” and “d-nine”; accept just **one** AND **nine**]

[10] This is the smallest number of d-electrons required for a Tanabe-Sugano diagram to have the vertical discontinuity separating high and low spin complexes. Tetrahedral complexes have this many ligands.

ANSWER: **four**