

2020 ACF Winter

Packet B by Florida B, Princeton B, UNC A

Edited by William Golden, Ganon Evans, Nick Jensen, Vishwa Shanmugam, Bryanna Shao, Chris Sims, Jaskaran Singh, Andrew Wang, and Chandler West

Tossups

1. This film ends as its protagonist imagines himself naked in the snow during a photoshoot with a minister. In this film, the *William Tell* Overture accompanies a sped-up threesome. A character in this film is beaten and drowned in a trough as a vocoder-sung version of Henry Purcell's ("PUR-sull's") *Music for the Funeral March of Queen Mary* plays. Wendy Carlos's synthesizer-heavy soundtrack accompanies this film's opening scene, in which its protagonist drinks milk. Gene Kelly shunned this film's lead actor after he sang "Singin' in the Rain" during a violent home invasion. Music by "Good Ole' Ludwig Van" plays in this film as Alex's eyes are held open as he undergoes the Ludovico Technique. For 10 points, name this Stanley Kubrick film adaptation of an Anthony Burgess novel.

ANSWER: *A Clockwork Orange*

<Other Arts>

2. In a story by this author, the "girl from Berkeley" runs away from her marriage to the owner of a silver mine before being sacrificially killed by Indians. This author wrote about a woman who counts twelve shoes in Mrs. Rigley's dirty kitchen and believes her husband is at the "Prince of Wales" bar. This author of "The Woman who Rode Away" created the gardener Bassett, who partners with a boy who screams "I am lucky!" and "Malabar! It's Malabar" before dying. In that story by this author, Paul predicts the outcomes of races by riding a toy. This author of "The Odour of Chrysanthemums" and "The Rocking-Horse Winner" wrote a novel in which Constance cheats on her paralysed husband with the gamekeeper Oliver Mellors. For 10 points, name this author of *Lady Chatterley's Lover*.

ANSWER: D. H. Lawrence [or David Herbert Lawrence]

<British Literature>

3. J. A. Yelling's history of this movement documented its initial legal codification through the first English statute, the Statute of Merton, in 1235. A rebel against this movement was known for carrying around a pouch whose secretive contents were revealed to be a piece of green cheese. The Duke of Somerset's enthusiasm for this movement inspired Robert Kett to lead rebels in besieging Norwich. It's not religious, but the terms "leveller" and "digger" were originally applied to opponents of this policy, which gained momentum after an invention by Jethro Tull. Thomas More denounced this movement by condemning sheep as "great devourers." For 10 points, name this movement, the consolidation of land ownership in England by wealthy nobles at the expense of local farmers.

ANSWER: enclosure movement [prompt on descriptions similar to the last sentence until read]

<Other History>

4. Dennis Rasmussen's *The Infidel and the Professor* discusses this thinker's deathbed analogy between the afterlife and an unburning piece of coal on a fire. This thinker claimed that the uniqueness of the universe and our partial experience of it invalidates a possible analogy between God and the builder of a house in a work featuring the "experimental theist" Cleanthes and the skeptic Philo. This thinker claimed that all our ideas are products of impressions in his "copy principle." This thinker argued against believing in violations of the laws of nature in a chapter titled "Of Miracles." This thinker's best-known thought experiment concerns a "missing shade of blue." For 10 points, name this author of *An Enquiry Concerning Human Understanding*, a Scottish empiricist philosopher.

ANSWER: David Hume

<Philosophy>

5. Manufacturers of these devices may be able to exploit a recent breakthrough in the synthesis of tin monosulfide crystals. Copper indium gallium diselenide, or CIGS, is used in the absorber layer of some of these devices. Michael Grätzel pioneered the cheap dye-sensitized variant of these devices, whose basic types are quickly approaching their theoretical maximum efficiency of about 33.16 percent, known as the Shockley–Queisser limit. A rapidly-improving class of these devices contains a perovskite layer that can be manufactured by an inkjet printer. Almost all of these devices use a single silicon p–n junction whose charge carriers are excited by photons. For 10 points, name these devices that produce electricity when exposed to sunlight.

ANSWER: **solar cells** [or **photovoltaic** cells or **pv** cells; accept single-junction **solar cells**; accept **solar panels**; accept **photodetectors**; prompt on **photoelectric** cell; do not accept or prompt on “photocells”]

<Other Science>

6. *Description acceptable.* During this event, the 42 “negative confessions” listed in a document named for Ani are stated after addressing 42 deities by their *ren*; each of those deities represents a different nome. This event must occur before entrance to Aaru, or the land of reeds. This event takes place in the Hall of Two Truths and may involve a terrifying deity with body parts of a lion, a crocodile, and a hippopotamus, known as Ammit, who sends some of its subjects to Du’at. This event employs a single feather of Ma’at set against a certain body part on divine scales. For 10 points, name this event overseen by either Anubis or Osiris, which determines the subject’s afterlife after their physical body is mummified.

ANSWER: **weighing** of the **heart** ceremony [accept **deciding where souls go** after death or similar; accept the **heart** being put on **scales** or similar; accept the **judgment** of Anubis or the **judgment** of Osiris; accept the **judgment** of souls in the Egyptian afterlife; prompt on the Egyptian **afterlife** or on **Duat** until read; prompt on **death** or **mummification** by asking “what event follows that during the afterlife?”]

<Mythology>

7. This empire’s historian Abdul Qadir Badauni helped popularize a hadith which claimed that leadership from women, boys, or eunuchs (“YOO-nucks”) was a sign of doom. This empire’s early female biographer Gulbadan inspired its later scholar Abul Fazl. Biographies of Moinuddin Chishti and Mullah Shah were written by a Sufi princess of this empire named Jahanara Begum. The Nine Jewels served in the court of a ruler of this empire who promoted the syncretic religion Din-i Ilahi. The Afsharid Emperor Nader Shah raided this empire’s Red Fort and stole the Peacock Throne. This empire’s decline may have been catalyzed by the religious fervor of Aurangzeb. For 10 points, name this empire ruled by Akbar, and where Shah Jahan memorialized his wife Mumtaz with the Taj Mahal.

ANSWER: **Mughal** Empire [or **Moghul** Empire; prompt on the **Timurids**]

<World History>

8. A character in this novel gives a tress of her hair to a man whom she calls her “master” after he almost kills her with an antique sword. In this novel, a mayor is tricked into overpaying for a tutor for his children and is fooled into thinking that his wife is faithful by an anonymous letter supposedly from his political rival. A character in this novel rejects Fouqué’s offer to become wealthy by joining the lumber business and pretends to be religious in hopes of recreating Napoleon’s success. Abbé Pirard recommends the protagonist of this novel to the Marquis, whose daughter he impregnates. In this novel, the protagonist’s head is buried by Mathilde de la Mole after he shoots Madame de Renal. For 10 points, name this novel about the power-hungry Julian Sorel by Stendhal.

ANSWER: *The **Red and the Black*** [or ***Scarlet and Black***; or ***Red and Black***; or *Le **Rouge et le Noir***]

<European Literature>

9. The Ashmolean Museum contains a painting by an artist from this city that has flecks of gold in the canopy of its trees and depicts a nighttime hunt. An artist from this city created a horizontal *Last Supper* in which Judas sits alone on the side of the table closest to the viewer. In a fresco in this city, a sword-wielding angel dressed in pink flies above a despairing Adam and Eve. Andrea del Castagno and Paolo Uccello (“oo-CHELL-oh”) worked in this city, whose Brancacci chapel contains a fresco in which a tax collector appears twice after St. Peter fetches money from the mouth of a fish. Linear perspective was pioneered in this city’s *Holy Trinity* fresco by the native artist Masaccio. For 10 points, name this city, home to the Uffizi (“oo-FEET-see”) Gallery, whose artists were patronized by the Medici family.

ANSWER: **Florence** [or **Firenze**] (The painting in the first sentence is Uccello’s *The Hunt in the Forest*; the third is Masaccio’s *Expulsion from the Garden of Eden*.)

<Painting/Sculpture>

10. This technique uses tributyl phosphate when applied to spent nuclear fuel. Natural products often undergo an “ultrasound-assisted” variant of this technique run in batches in a Soxhlet (“SOX-let”) device. Tisanes (“tih-ZANS”) and tinctures are made in a doubled form of this technique called “decoction.” Introductory labs often use this technique to obtain DNA from strawberries and isolate wintergreen as an essential oil. Post-reaction work-ups often feature the “acid–base” form of this technique, which can purify nucleic acids using phenol and chloroform. During this technique, shaking a glass apparatus with a stopcock forms an interface between two distinct, immiscible organic and aqueous layers. For 10 points, what technique uses a separatory funnel to pull an analyte into a new phase in its “liquid–liquid” form?

ANSWER: **extraction** [accept solvent **extraction** or liquid–liquid **extraction** or acid–base **extraction**; accept ultrasound-assisted **extraction** or **UAE**; accept Soxhlet **extractor**; accept **partitioning**; prompt on **separation** or **isolation** or **purification** or word forms until they are read; accept **decoction** until read; accept **PUREX** or plutonium uranium reduction **extraction**]

<Chemistry>

11. A separatist “nation” named for this event tried to take over Alpine County, California, under Don Jackson and Morris Kight. This event and Barbara Gittings co-name ALA book awards whose winners include Michael Bronski, Lillian Faderman, and David France. In the decade after this event, the GAA led “zaps” targeting politicians like Mayor John Lindsay. Patrons at the site of this event were blackmailed by the front boss “Fat Tony” Salerno of the Genovese mafia. Although Sylvia Rivera likely wasn’t present, she co-founded STAR with this event’s participant Marsha P. Johnson on its first anniversary, Christopher Street Liberation Day. Judy Garland’s death apocryphally incited this two-night uprising. For 10 points, what 1969 riot at a Greenwich Village bar galvanized the LGBT rights movement?

ANSWER: **Stonewall** riots [or **Stonewall** uprising; or **Stonewall** rebellion; accept the **Stonewall** Inn or **Stonewall** Colony or **Stonewall** Nation; accept the **Stonewall** Book Awards]

<American History>

12. “Time-inconsistency” causes these institutions to fail in their “discretionary” approach according to Kydland and Prescott. Three of these institutions operate TARGET2, a real-time gross settlement system. The GMT index and Alesina indicator measure these institutions’ independence, which has no correlation with real performance. These institutions cannot act autonomously if there is free capital flow and a fixed exchange rate, per the impossible trinity. These institutions may follow the Taylor rule or a “dual mandate.” Until 2019, Mario Draghi led one of these institutions, which buy and sell securities in open market operations. These “lenders of last resort” control the money supply and interest rate. For 10 points, what institutions that set monetary policy include the ECB and Federal Reserve?

ANSWER: **central banks** [or **reserve banks**; accept **monetary authority**; prompt on **banks** or **financial** institutions or other generic answers; accept European **Central Bank** or **Eurosystem** or European System of **Central** Banks; prompt on specific central banks such as the **Federal Reserve** by asking “what general type of institution is that?”]
<Social Science>

13. A late chamber work by this composer ends with an “Adagio in Memory of Beethoven” that quotes from all of his symphonies in order. This composer included a “Romance” for solo violin and orchestra in his film score for *The Gadfly*. A xylophone introduces the melody sung on the lyrics “tea for two” in a song orchestration that this composer wrote in just 45 minutes, called *Tahiti Trot*. This composer quoted an earlier Jewish-inspired theme often likened to a “Dance of Death” in his Eighth String Quartet, which was dedicated to the “victims of fascism and war” and quotes the “DSCH” motif. This composer’s Fifth Symphony was written after an official denunciation of his opera *Lady Macbeth of the Mtsensk District*. For 10 points, name this Soviet composer of the *Leningrad* symphony.

ANSWER: Dmitri **Shostakovich**
<Classical Music>

14. The narrator of a book by this author explains how his decision to kill a kitten represented his “first triumph” over his father. That book by this author begins with the narrator setting fire to his grandmother’s house. The protagonist of a novel by this author looks at the floor while a girl makes fun of her father over his wealth because he’s ashamed not to know what a “capitalist” is. The protagonist of that novel by this author flees a crime scene when bones and an earring are discovered in the furnace. This author’s memoir recounts his involvement with the Communist Party in Chicago. In a novel by this author, Mary Dalton’s death leads to the imprisonment of Bigger Thomas. For 10 points, name this African-American author of the memoir *Black Boy* and the novel *Native Son*.

ANSWER: Richard **Wright**
<American Literature>

15. By Wick rotating i times this variable into the thermodynamic beta, you can construct partition functions from path integrals. Wheeler–Feynman absorber theory assumes that the electromagnetic field equations are invariant under this variable’s inversion. For a one-dimensional particle, the exponential of negative i times energy times this quantity over \hbar is multiplied by the stationary state wavefunction. The propagator describes how a system evolves with respect to this quantity. The uncertainty principle can be written with respect to energy and this variable, and energy is conserved for systems in which this quantity is cyclic. The Schrödinger equation states that $H\psi = E\psi$ in its form named for being independent of this variable. For 10 points, name this quantity whose directionality is often analogized to an arrow.

ANSWER: **time** [prompt on t]
<Physics>

16. *Note to moderator: Read the answerline carefully.* This event names an anti-Ishmaelite Syriac text that identifies an Ethiopian princess as Alexander the Great's mother, written by Pseudo-Methodius. Iberian illuminated manuscripts preserved an 8th-century commentary on this event by Beatus of Liébana. The parables of the "Olivet Discourse" describe this event, which names apocryphal books attributed to Abraham and Zerubbabel. The "katechon" ("CAT-uh-con") restrains this event in Second Thessalonians. "Preterism" holds that this event occurred in the 1st century. The Seven Churches of Asia hear of this event, which the star Wormwood heralds. A Jewish prophetic genre names this event, when a "Great Tribulation" occurs according to futurist eschatology. For 10 points, the Rapture occurs during what event, the focus of the Book of Revelation?

ANSWER: **apocalypse** [or the **end times** or **end of the world** or equivalents; accept **Armageddon**; accept Great **Tribulation** or **thlipsis** megale or **Rapture** until they are read; accept the coming of the **Antichrist**; accept the **Second Coming** of Christ; accept **eschatology** or word forms until read; prompt on the **destruction of the Second Temple** in Jerusalem or equivalents by asking "what other event is that supposed to prefigure in the Olivet Discourse?"; prompt on the Book of **Revelation** until read]

<Religion>

17. A dictator of this country who took the title "First Peasant" undermined internal dissent by publishing a fake Communist newspaper to compete with the real one. Eric Hobsbawm's study of social bandits included this country's klephts, who were conscripted into imperial militias. Ohi ("OH-hee") Day commemorates a leader of this country who stood up to an invasion during World War II; that leader controlled the 4th of August regime. This country's independence war was led by the secret society Filiki Eteria under Alexander Ypsilantis. Otto from the Bavarian Wittelsbach house was appointed the first king of this country after it won independence at the Battle of Navarino. For 10 points, name this country that gained independence from the Ottomans through the efforts of Ioannis Kapodistrias.

ANSWER: **Greece** [or **Hellada**; or **Hellas**; or the **Hellenic Republic**; or the Kingdom of **Greece**]

<European History>

18. A character in this play is described as "the kind of person who you feel should be a poet munching rose petals" by a woman who tells her husband to retract his statement that "holy water [is] nonsense." In this play, a sergeant is repeatedly called a "Moslem" before leaving a message in a notebook. A character in this play claims to be bitterly offended before being brought fine clothing and asks the "Mother of the Market" for a bride. This play's protagonist tells the story of the "Not-I" bird to the Praise-Singer. The medical student Olunde's body is found near the end of this play, causing his father to commit suicide despite efforts to stop him by Simon Pilkings. Elesin's attempt at ritual suicide is central to, for 10 points, what play by Nigerian author Wole Soyinka?

ANSWER: ***Death and the King's Horseman***

<World/Other Literature>

19. A trio of rookies on this team uses an upwards pinkie finger as a gesture for the "Baby Goat Gang." A player on this team started a business charging 20 dollars for coffee in the NBA Bubble. While in college, a current rookie for this team spray-painted his house blood-red after switching from Wisconsin to Kentucky. A player who spent most of his career with this team gave Aaron Gordon a score of nine in the second tiebreaker round of the 2020 Slam Dunk Contest, resulting in this team's small forward Derrick Jones Jr. winning. This team beat the Boston Celtics in the 2020 Eastern Conference Finals. For 10 points, Tyler Herro and Jimmy Butler play on what NBA team that lost the 2020 Finals to the Lakers, where Dwyane Wade spent 13 seasons playing in Florida?

ANSWER: **Miami Heat** [or Miami **Heat**]

<CE/Geo/Other/Pop Culture>

20. During prophase, a namesake “bouquet” of these structures partially controls the meiotic spindle. Defects in a protein that acts on these structures can cause dyskeratosis congenita. To protect parts of these structures from being targeted by non-homologous end joining, a protein in the shelterin complex known as TRF2 creates their characteristic t-loops. A protein that acts on these structures carries around its own RNA in template form, and includes hTERT (“h-tert”) in its reverse transcriptase complex. These structures contain many TTAGGG base pair repeats. These structures usually only survive around 50 to 70 cell divisions, which is known as the Hayflick limit. For 10 points, name these structures that protect the ends of chromosomes, and whose shortening is linked to aging.
ANSWER: **telomeres** [accept **telomere** bouquets or **telomerase**; prompt on chromosomes]
<Biology>

21. This man’s wife Dianthe Lusk ran their Crawford County tannery and had 20 children, who farmed their plots in North Elba after the failure of the “Timbuctoo” colony. Mary Ellen Pleasant financed this man, who holds up his hand next to a flag he designed in a photograph by the Liberian colonist Augustus Washington. Around 50 newspapers printed this man’s last speech after his trial in Charles Town. In the mural *Tragic Prelude*, this man brandishes a Bible and a “Beecher’s Bible” rifle. Gerrit Smith funded this man’s “Secret Six.” A Union marching song about this man’s body “mouldering in the grave” inspired the “Battle Hymn of the Republic” after he was hanged for attacking a West Virginia armory. For 10 points, what militant abolitionist led a raid on Harpers Ferry?
ANSWER: John **Brown** [accept “John **Brown**’s Body”] (Brown designed the flag for the “Subterranean Pass Way,” his planned expansion to the Underground Railroad.)
<American History>

Bonuses

1. Although almost completely forgotten today, E. D. E. N. Southworth was possibly the most widely read author in America in the latter half of the 19th century. For 10 points each:

[10] In Southworth's novel *The Hidden Hand*, Major Ira Warfield has a nickname referencing one of these events. Tea Cake is bitten by a rabid dog during one of these events in the novel *Their Eyes Were Watching God*.

ANSWER: **hurricanes** [accept Old **Hurricane**; prompt on **floods** or **thunderstorms**]

[10] Southworth's favorite of her own novels is titled for a successful Maryland lawyer with this first name. Another character with this first name encounters a Black preacher giving a sermon on "the blackness of darkness" and describes feeling a "damp, drizzly November in [his] soul."

ANSWER: **Ishmael** (The Southworth novel is *Ishmael*.)

[10] Southworth may have helped convince her friend Harriet Beecher Stowe to write this bestselling novel that galvanized the anti-slavery movement.

ANSWER: **Uncle Tom's Cabin** [or **Uncle Tom's Cabin**; or *Life Among the Lowly*]

<American Literature>

2. Dirichlet ("DEE-ree-klet") and Neumann ("NOY-mahn") name examples of these entities. For 10 points each:

[10] Name these constraints on a function's values at its extremes. The ones named for Neumann constrain a function's derivatives.

ANSWER: **boundary** constraints [or **boundary** conditions; accept **boundary value** constraints or **boundary value** problems]

[10] According to this statement for Poisson's ("pwa-SAWN's") equation, under certain boundary conditions, while multiple solutions may exist, their gradients are always the same.

ANSWER: **uniqueness** theorem

[10] The implication of the uniqueness theorem for Poisson's equation is that a unique one of these entities exists from any potential function satisfying Poisson's equation in the appropriate boundary conditions. These fields exert attractive or repulsive forces on charges depending on their sign.

ANSWER: **electric** field [or **E field**]

<Physics>

3. *Note to moderator (do not read out loud): Please do not pronounce any of the names with clicks.* Laurens van der Post's documentary about the "Lost World" around this desert's Tsodilo Hills draws on folklore collected in *The Mantis and His Friends*. For 10 points each:

[10] Name this desert whose hunter-gatherers once had an integrated political economy according to Edwin Wilmsen's *Land Filled with Flies*. John Marshall's ethnographic films of this desert show melon foraging and giraffe hunting.

ANSWER: **Kalahari** Desert [accept **Kgalagadi**; accept *The Lost World of the Kalahari*]

[10] Richard B. Lee's fieldwork with these "harmless people" of the Kalahari inspired the film *The Gods Must Be Crazy*. Marshall Sahlins questionably used this modern group of people to claim that hunter-gatherers were the "original affluent society."

ANSWER: **!Kung** ("kung") [or **!Xun**; accept **San** or **Sho** or **Sǎkhoen** or **Sonqua** or **Saake**; accept **Bushmen** or **Boesmans** or **Boschjesmens** or **Basarwa** or **Mosarwa**; accept **Ju**'hoan or **Ju**'Hoansi or **Ju**/wasi or **Ju**/twasi; accept **Nyae** Nyae or **Dobe**; prompt on **Khoisan** or **Khoe-Sǎn**; do not accept or prompt on "Khoi" or "Khoekhoe"]

[10] Like the Khoekhoe ("koy-koy"), the !Kung and most other San people speak with these airstream consonants produced by sucking or smacking. An hourglass represents these sounds in the Zulu Ditema tsa Dinoko syllabary.

ANSWER: **click** consonants [accept specific types of **clicks**; accept **lingual ingressive** or **velar ingressive** consonants; prompt on **ingressive** sounds]

<Social Science>

4. Michael Jones argues that this man was not responsible for the sack of Limoges (“lee-MUZH”), positing that the French carried out the massacre as punishment for letting this man into the city. For 10 points each:

[10] Name this English soldier and the first Prince of Wales, nicknamed “the Black Prince.”

ANSWER: **Edward** the Black Prince [accept **Edward** Of Woodstock, Prince d’Aquitaine, Prince of Wales, Duke of Cornwall, Earl of Chester]

[10] Edward the Black Prince legendarily knighted John Hawkwood, one of these Italian mercenaries. These soldiers contracted out their private armies to various city-states vying for control in 14th-century Italy.

ANSWER: **condottieri** [accept **condottiero** or **condottiere**]

[10] Edward the Black Prince fought at the Battle of Nájera (“NAH-hay-rah”) during a civil war in this kingdom. Another celebrated mercenary, Bertrand du Guesclin (“bair-TRAWN due gay-CLAN”), or the “Black Dog of Brocéliande,” fought in that civil war in this kingdom.

ANSWER: **Castile** [accept **Castilian** Civil War]

<European History>

5. A painting from this country depicts cheeses, almonds and pretzels. For 10 points each:

[10] Name this modern-day country. Another artist from this modern-day country depicted an old woman with an owl on her shoulder in *Malle Babbe* (“MAH-luh BAH-beh”) and a man with an upward-curling moustache in *The Laughing Cavalier*.

ANSWER: **Netherlands** [or the **Dutch** Republic; or **Holland**] (The artists are Clara Peeters and Frans Hals.)

[10] Many Dutch Golden Age artists including Clara Peeters and Rachel Ruysch (“rouse”) worked extensively in this genre, which depicts inanimate objects such as flowers and foods.

ANSWER: **still lifes**

[10] This term refers to Spanish paintings that depict subjects with food and drink, or sometimes depict only food. Examples of this subgenre include Velázquez’s paintings *Woman Cooking Eggs* and *Waterseller of Seville*.

ANSWER: **bodegón** [or **bodegon**es]

<Painting/Sculpture>

6. This country defines its offshore waters as “blue national soil,” and built Sansha City to administer its farthest claims. For 10 points each:

[10] Name this country that has used the “nine-dash line” to justify its territorial claims over the Scarborough Shoal and Spratly Islands.

ANSWER: **China** [or People’s Republic of **China**; or **PRC**; or **Zhōngguó** do not accept or prompt on “Republic of China”]

[10] In 2016, this country’s then-president Benigno Aquino III brought an arbitral tribunal against China’s nine-dash line, but criticism has been relaxed under this country’s current President Rodrigo Duterte.

ANSWER: **Philippines** [or Republic of the **Philippines**; or **Pilipinas**; or **Filipinas**]

[10] The Philippines has argued that because the Spratly Islands can’t support human activity, they do not count as part of one of these areas that stretch 200 nautical miles out from a country’s coast. These areas are different from territorial waters as military action in these areas is generally prohibited.

ANSWER: **exclusive economic zones** [or **EEZ**]

<CE/Geo/Other/Pop Culture>

7. Karim lands a role in a soap opera and his father becomes engaged to the social climber Eva in this city, the setting of the semi-autobiographical novel *The Buddha of Suburbia*. For 10 points each:

[10] Name this city where Tracey meets a character who later works as an assistant for the pop diva Aimee. After the narrator of that novel returns to this city from Africa, Tracey releases a provocative childhood video of the two former friends.

ANSWER: **London**

[10] This British author of *Swing Time* wrote another novel set in London detailing the lives of World War II veterans Samad Iqbal and Archie Jones.

ANSWER: Zadie **Smith**

[10] In Zadie Smith's *White Teeth*, Samad's son Millat participates in protests against this British-Indian author who was targeted by a fatwa for his novel *The Satanic Verses*.

ANSWER: Salman **Rushdie**

<British Literature>

8. In 1797, Tennessee's territorial governor William Blount conspired to attack a colony named for this state, where Andrew Turnbull and his wife Gracia Dura Bin founded "New Smyrna." For 10 points each:

[10] Name this state whose "East" section was attacked by George Mathews in the 1812 "Patriot War." British "cracker" cowmen settled this state, which named a short-lived "republic" annexed by James Madison in 1810.

ANSWER: **Florida** [or **FL**; accept East **Florida** or **Florida** Oriental; accept (Republic of) West **Florida** or **Florida** Occidental; accept **Florida** Crackers; prompt on Louisiana by asking "what other state named that republic?"]

[10] William Bartram's bestselling *Travels* recounted his trips through Florida to harvest plants for his father John's botanic garden in this city's Kingsessing quarter. Benjamin Rush treated this city's 1793 yellow fever epidemic.

ANSWER: **Philadelphia** [or **Philly**]

[10] Besides fighting Philadelphia's yellow fever outbreak, the Elgin Botanic Garden founder David Hosack tended to Alexander Hamilton after his duel with Aaron Burr in this state and founded its Rutgers Medical College.

ANSWER: **New Jersey** [or **NJ**]

<American History>

9. The feces of these animals can create a type of "pump" that moves nutrients on a large scale. For 10 points each:

[10] Name these ecosystem engineers whose carcasses can decompose into a nutrient-rich snow-like substance. Those carcasses form namesake "falls" that are inhabited by the "zombie worms" of genus *Osedax*.

ANSWER: **whales** [accept **whale** falls; prompt on cetaceans] (Whale carcasses can decay into marine snow.)

[10] Whale pumps can bring nutrients to these human-made sustainable systems, which carefully harvest below the maximum sustainable yield. These systems harvest organisms like tuna and salmon for food.

ANSWER: **fisheries** [or **fish farms**]

[10] Whales can act as ecosystem engineers by filter-feeding. Whales of the suborder Mysticeti filter their prey using a structure made of this keratinous substance, and are contrasted with toothed whales.

ANSWER: **baleen** [accept **baleen** whales; prompt on whalebone, but do not accept or prompt on "bone"]

<Biology>

10. The Kamakura-period sculptor Kaikei depicted these features with rock crystal in his sculpture of Fudō Myōō (“foo-DOH m’YO-oh”), or Acala. For 10 points each:

[10] Identify these features painted on all four sides of Kathmandu’s Boudhanath and Swayambhunath stūpas, which symbolize wisdom in Nepal. The urna mark represents a mystical example of these features corresponding to the Hindu Ājñā (“AHG-n’yuh”) chakra, which can be awakened by meditation.

ANSWER: **eyes** of the Buddha [accept third **eye** or mind’s **eye** or inner **eye**; accept **eyes** of Gautama Buddha or **eyes** of Siddhārtha Gautama or equivalents; prompt on **eyebrows** of the Buddha or **face** of the Buddha]

[10] The all-seeing eyes of the Buddha looking down from the Bayon Temple’s “face tower” promoted this empire’s idea of divine kingship, devarāja. Jayavarman VII patronized Mahāyāna Buddhism in this empire, which built an iconic Hindu-Buddhist wat in its Cambodian capital.

ANSWER: **Angkor** Empire [or **Khmer** Empire; or Anachak **Angkor**; or Chakrphup **Khmer**; or Anachak **Khmer**]

[10] The Angkor Empire preserved Funan’s ancient Royal Ploughing Ceremony, which often coincides with Vesak (“vay-SAHK”), the day honoring this woman giving birth to the Buddha in the Lumbini Grove. This woman was the Queen of Shakya.

ANSWER: Queen **Māyā** of Shakya [or Mahamāyādevī]

<Religion>

11. A piece of this type was originally titled 8’37” in reference to its approximate length, and its composer said he intended to “develop a new musical language” with it. For 10 points each:

[10] Name this uncommon type of piece whose best-known example is scored for 52 string instruments and extensively uses sustained tone clusters. The full title of that piece by Krzysztof Penderecki (“k’SHISH-toff pen-duh-RETS-kee”) refers to a major 1945 event.

ANSWER: **threnody** [accept ***Threnody to the Victims of Hiroshima*** or ***Threnody for the Victims of Hiroshima***]

[10] Penderecki was a prominent avant-garde classical composer from this country. Penderecki added a movement to his requiem named for this country to commemorate the death of Pope John Paul II, who also hailed from this country.

ANSWER: **Poland** [or **Polska**]

[10] Penderecki snubbed Communist officials by composing this Christian choral work, whose frequent use of the “B-A-C-H” motif pays homage to two similarly-named Baroque oratorios that depict the same sequence of events.

ANSWER: **St. Luke Passion** [or ***Passio et mors Domini nostri Jesu Christi secundum Lucam***; or the ***Passion and Death of Our Lord Jesus Christ According to St Luke***]

<Classical Music>

12. An explorer from this city killed and flayed three gorillas that he thought were “women with shaggy bodies” during a journey to modern-day Cameroon. For 10 points each:

[10] Name this city home to Hanno the Navigator and Hannibal Barca.

ANSWER: **Carthage** [or **Carthago**; or **Qart-Hadasht**]

[10] Hanno recorded his journey in one of these Greek documents that recorded sailing routes and ports along a coastline. An ancient one of these documents named for the Erythraean Sea was commonly used for navigation.

ANSWER: **periplus** [accept ***Periplus of the Erythraean Sea***]

[10] The explorer Himilco may have journeyed to this island, called Albion in his records. This island was Carthage’s main source of tin.

ANSWER: Great **Britain** [accept **Britannia**; do not accept or prompt on “England”]

<Other History>

13. This poet repeatedly tells the “Children of the world” to “Lower your voice” in “Spain, Take This Cup From Me.” For 10 points each:

[10] Name this Peruvian poet of the modernist collection *Trilce* (“TREEL-say”) who included cries of “I don’t know” and proclaimed “There are blows in life, so powerful” in *The Black Heralds*.

ANSWER: Cesar **Vallejo** (“va-YAY-ho”)

[10] Vallejo wrote a poem for this occasion for his brother Miguel, reminding him that “Mama might worry.” Gabriela Mistral wrote “we must dream on the same pillow” in a collection of sonnets commemorating one of these events.

ANSWER: **death** [accept **death** of Miguel Vallejo or **death** of Romelio Ureta or **suicide** of Romelio Ureta or *Sonnets of **Death*** or *Sonetos de la **Muerte***; prompt on “To My Brother Miguel In Memoriam” or “A mi hermano Miguel”]

[10] In the poem “Black Stone on Top of a White Stone,” Vallejo predicts “It will be a Thursday” when he dies in this city “in a rainstorm.” Vallejo fled from Peru to this city, the setting of *The Hunchback of Notre Dame*.

ANSWER: **Paris**

<World/Other Literature>

14. This text’s section “Maxims and Arrows” is the origin of the phrase “what does not kill me makes me stronger.” For 10 points each:

[10] Name this text, punningly titled in reference to a Wagner opera, which criticizes many sources of “decadence” and affirms the importance of the project of “transvaluation.”

ANSWER: ***Twilight of the Idols*** [or ***Twilight of the Idols***, or, *How to Philosophize with a Hammer*; or ***Götzen-Dämmerung***, oder, *Wie man mit dem Hammer philosophiert*] (The Wagner opera is *Götterdämmerung*, or *Twilight of the Gods*.)

[10] In *Twilight of the Idols*, Nietzsche (“NEE-chuh”) writes that this figure made a “tyrant out of reason.” Nietzsche also disparages this figure, whom he claims belongs to “the lowest of the low,” for formulating a dialectic that allows “the mob [to come] on top.”

ANSWER: **Socrates**

[10] The section “The ‘Improvers’ of Mankind” re-affirms Nietzsche’s view that facts about this subject do not exist. Nietzsche had earlier written about the genealogy of this subject in a book that introduced its “slave” form.

ANSWER: **morality** [accept **morals**; prompt on **ethics**]

<Philosophy>

15. The smallest one of these things consisting only of sets in which every continuous function is measurable is named for Baire. For 10 points each:

[10] Name these collections of measurable subsets of a set, which are closed under complement and countable unions. For a space M , one of these sets named for Borel is generated by a topology on M .

ANSWER: **sigma algebras** [accept **sigma-field**; accept Borel **sigma algebras**; prompt on Borel **algebras**]

[10] Sigma algebras are fundamental in measure theory, which underpins Henri Lebesgue’s (“luh-BEG’s”) definition of this operation. This operation might be thought of as taking the area under a curve, or as the inverse of differentiation.

ANSWER: **integration** [or **integral**; accept Lebesgue **integration**]

[10] Lebesgue integrals are useful because sequences of functions only need this property pointwise to be able to take the limits of their integrals, while Riemann (“REE-mon”) integrals require the “uniform” variety of this property. In complete metric spaces, Cauchy (“ko-SHEE”) sequences always have this property.

ANSWER: **convergence** [or word forms like **convergent**; accept pointwise **convergence** or uniform **convergence**]

<Other Science>

16. Answer the following about 1970s music influenced by Afrofuturism, for 10 points each.

[10] This jazz pianist and composer claimed to be from Saturn. He recorded the album *Space is the Place* with the “Arkestra,” a visionary ensemble now led by 96-year-old Marshall Allen.

ANSWER: Sun **Ra** [or Le Sony’r **Ra**; or Herman Poole **Blount**; accept the Sun **Ra** Arkestra]

[10] A UFO belonging to Dr. Funkenstein, an alter ego of George Clinton, would land on stage in many of the Afrofuturism-inspired concerts that this band played with Funkadelic.

ANSWER: **Parliament** [or **Parliament-Funkadelic**]

[10] Tadanori Yokoo (“yo-KO”) drew on Afrofuturism when designing the cover of this artist’s album *Agharta*. Before his jazz fusion phase, this trumpeter released the albums *The Birth of the Cool* and *Kind of Blue*.

ANSWER: Miles **Davis** [or Miles Dewey **Davis** III]

<Other Arts>

17. In a book from this country, the doctor’s wife Albertine confesses to fantasizing about another man. For 10 points each:

[10] Name this country, the setting of *Dream Story*. A piano student watches Wertheimer deteriorate in the shadow of Glenn Gould in a novel from this country titled *The Loser*.

ANSWER: **Austria**

[10] In *The Royal Game*, a novella by Austrian author Stefan Zweig, Dr. B develops a split personality while imprisoned by this government. Elie Wiesel (“ELL-ee vee-ZELL”) describes his expulsion from Sighet and experience in a concentration camp at the hands of this government in *Night*.

ANSWER: **Nazi** Germany [accept **Third Reich** or **Grossdeutsches Reich**; prompt on **Germany**]

[10] In *The Royal Game*, Dr. B defeats Czentovic at this activity. Vladimir Nabokov included exercises in this activity in *Poems and Problems* and created Luzhin, an expert in this activity, in *The Defense*.

ANSWER: **chess**

<European Literature>

18. In a polar protic solvent, these compounds will form more E2 than SN2 products compared to equivalent thiolate anions because their basicity outweighs their nucleophilicity. For 10 points each:

[10] Name these charged groups that include the sodium compound that is used as a strong base in the Claisen condensation. These nucleophilic anions are the conjugate bases of alcohols.

ANSWER: **alkoxides** [accept **ethoxide** or **methoxide** or **tert-butoxide**]

[10] Alkoxides act as SN2 nucleophiles in the Williamson synthesis of this functional group, which links archaeal membrane fatty acids. R-O-R is the general formula for this group, exemplified by a “diethyl” anesthetic.

ANSWER: **ethers** [accept glycol **ethers** or isopranyl glycerol **ethers**; accept diethyl **ether** or ethyl **ether**; accept **furans**]

[10] These ethers are a common protecting group for carbonyl (“car-bo-NEEL”) compounds, which form them by reversibly reacting with alcohols under acidic conditions. Glycosyltransferases (“gly-CO-sil-transfer-ases”) form this group from its singly-substituted “hemi-” precursor.

ANSWER: **acetals** [accept **ketals**; accept **hemiacetals** or **hemiketals**]

<Chemistry>

19. The Oculate Being was usually shown wearing a necklace of these objects, which were frequently depicted on pottery alongside deities like the Mythical Killer Whale. For 10 points each:

[10] Identify these objects that may have held religious significance, or else were collected by hunters as a show of prestige. Many of these things were uncovered in tombs at Cahuachi, where they are identified by artificial holes used to hang them on strings.

ANSWER: trophy **heads** [accept shrunken **heads**; accept **head**hunters; accept human **skulls**]

[10] Trophy heads were collected by this South American culture centered in Ventilla. This civilization etched enormous geoglyphs of animals like hummingbirds and spiders into the desert floor.

ANSWER: **Nazca** civilization

[10] The Jivaroan people native to this country and Peru would traditionally shrink heads for feast days. Atahualpa's father Huayna Capac ruled an Inca administration out of the ruins of this modern-day country's Kingdom of Quito.

ANSWER: **Ecuador** [or Republic of **Ecuador**; or República del **Ecuador**; or **Ikwadur** Ripuwlika]

<World History>

20. In Frank Cushing's telling of Zuni mythology, the demon giant Átahsaia is most notable for engaging in this behavior, in addition to lying. For 10 points each:

[10] Identify this taboo behavior that the Algonquians said could cause humans to become wendigos, inspiring Western settlers to diagnose them with the now-debunked "wendigo psychosis."

ANSWER: **cannibalism** [or word forms; or **eating humans**; or **eating other demons**; prompt on murder or violence or similar]

[10] In Zuni mythology, the Earth was created by twins using arrows imbued with this phenomenon. In Algonquian myth, a creature named for a complementary phenomenon to this one kills Whale and controls the Upper World; you may name either phenomenon.

ANSWER: **lightning** [accept **thunder** or **Thunderbird**; prompt on storms or similar]

[10] After one of these events, the Algonquian culture hero Michabo sends out a muskrat to create a new landmass, then fires his magic arrows into the land to cause life to sprout. The Zuni and many other peoples have a story about a "great" one of these natural disasters.

ANSWER: great **floods**

<Mythology>

21. One of the four scientists who name this statement put out a depressing "anti-" version of it in his book *The Revenge of Gaia*. For 10 points each:

[10] Name this statement that describes a negative feedback loop in which more DMS is produced in response to climate forcing, reducing or negating the increase in temperature.

ANSWER: **CLAW** hypothesis

[10] The increase in DMS is due to higher temperatures heightening the activity of the phyto- variety of this group of small organisms. These ocean-dwellers are defined by their inability to swim against a current.

ANSWER: phyto**plankton**

[10] DMS is usually broken down into this triatomic molecule, which unfortunately can be a major contributor to acid rain along with nitrogen oxides due to its ability to form a strong corrosive acid.

ANSWER: **sulfur dioxide** [or **SO₂**]

<Other Science>