

## 2021 ACF Regionals

Packet B by UC Davis, UBC B, Purdue A, MSU A, GWU A

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### Tossups

1. In a story, a man's adoption of one of these creatures causes him to throw lozenges ("LOZZ-un-jizz") at a woman in church and to attack a snoring pianist. One of these creatures kills a parrot in that story, "The Remoulding of Groby Lington," in a possible allusion to its author's pen name. A story partly titled for one of these creatures ends as a woman's "loud wail of disappointment and misery" gives her husband the courage to look out at a "quiet and deserted road." In that story, a man sees the face of one of these creatures in a fire, from which he had earlier retrieved an item thrown in by Sergeant-Major Morris. An object named for one of these creatures grants Mr. White 200 pounds by causing his son Herbert's death in an accident. For 10 points, a W. W. Jacobs story is titled for a wish-granting paw of what animal?

ANSWER: **monkey** [accept "The **Monkey**'s Paw"; prompt on simian or primate; do not accept or prompt on "chimpanzee" or "ape"] ("The Remoulding of Groby Lington" is by Saki, whose pen name may in part reference the saki monkeys of South America.)

<British Literature>

2. A composer from this modern-day country originally included percussion in his second string quartet, subtitled "In the Monkey Mountains." A man from this country, who only achieved fame as a composer past age 60, titled his second string quartet for the more than 700 letters he wrote. An orchestral piece by a composer from this country borrows the tune of the Italian madrigal *La Mantovana*, and is in a set of six tone poems that represent aspects of this country. This country was home to a composer who titled a string quartet after *The Kreutzer Sonata* and used nine extra trumpets in the first and last movements of his *Sinfonietta*. For 10 points, name this modern-day country, the birthplace of Pavel Haas, Leoš Janáček ("LEH-ohsh YAH-naw-check"), and Bedřich Smetana, who depicted the Moldau River in *Ma Vlast*.

ANSWER: **Czech** Republic [or **Czechia**; prompt on Bohemia, Moravia, or Czechoslovakia by asking "what modern-day country?"]

<Classical Music>

3. A philosopher argued for his "postmodernist bourgeois" form of this position using the differing views about dignity held by "Kantians" and "Hegelians" ("huh-GAIL-ee-ins"). This position should seek to prevent the "summum malum" of cruelty in Judith Shklar's "fear"-based version of it. A book titled for this ideology developed the idea of "overlapping consensus" from an earlier work. That book was criticized in a book about this position "and the Limits of Justice" by Michael Sandel, which was one salvo in the debate between this position and communitarianism. This political stance is argued for in Richard Rorty's *Contingency, Irony, and Solidarity* and John Rawls's sequel to *Theory of Justice*. John Locke is an exemplar of the "classical" version of this stance. For 10 points, name this ideology contrasted with conservatism.

ANSWER: **liberalism** [accept postmodernist bourgeois **liberalism**, **liberalism** of fear, *Political Liberalism*, or classical **liberalism**]

<Philosophy>

4. Jeffrey Herf claimed that this country distinguished between Arab "moderate" and "extremist" terrorists in a book about this country's "undeclared wars" against Israel. Guinea's first-ever international treaty allowed this country to establish a trade mission in Conakry, one of its several alliances with African countries. Before being identified by Swedish police, a spy from this country was only known as the "man without a face." That spymaster from this

country, who pioneered using “Romeo” agents to extract information, was Markus Wolf. Isolating this country internationally was the goal of the Hallstein Doctrine, which was later replaced by *Ostpolitik*. For 10 points, name this former country that was formally recognized by its western neighbor’s leader, Willy Brandt (“VILL-ee bront”).  
ANSWER: **East Germany** [or the **German Democratic Republic** or **GDR**; or the **Deutsche Demokratische Republik** or **DDR**; prompt on **Germany**; do not accept or prompt on other names]

<European History>

5. The properties of two of these things define the Lagrange invariant, which is likely the only quantity denoted with the Cyrillic letter *zhe* (“zheh”). A path for one of these things is found and then locally mutated in a Monte Carlo-based “Metropolis transport” technique. A simulation involving these things is accelerated by ignoring them if they do not intersect a bounding volume. An angle  $U$  and a transverse distance  $Q$  define a meridional (“muh-RID-ee-OH-null”) one of these things, while a collection of them define a curve called a caustic. These things remain close to the system axis in the paraxial approximation. At the boundary between two media, these things are refracted in a direction predicted by Snell’s law. For 10 points, computer graphics may be rendered by “tracing” what objects that represent the directional propagation of light?

ANSWER: light **rays** [accept **ray** tracing or **ray** casting; prompt on **light**, light **beams**, or Metropolis **light** transport]  
<Physics>

6. A Haida monster named Wasco wraps its tail around one of these animals in one sculptural motif. The Tlingit believe these animals were created from a yellow cedar carving by Natsilane. Akhlut takes the form of a wolf and one of these animals in Inuit legend. The Makah hunt one of these sacred animals each year. In another Inuit story, one of these creatures swallows Raven, who kills it from the inside. According to peoples of the Pacific Northwest, one of these “Sea-Wolves” does battle with Thunderbird. Joseph Campbell titled a chapter of *The Hero with a Thousand Faces* for the bellies of these animals. Seals, walruses, and these animals are born from Sedna’s chopped-off fingers. For 10 points, popular legend says that what large marine animal swallowed Jonah?

ANSWER: **whale** [accept killer **whale** or **orca** or gray **whale**; accept Sea **Wolf** until “wolf” is read; prompt on **fish**; prompt on **beast** after “bellies” is read] (Jonah was technically swallowed up by a “large fish.”)

<Mythology>

7. To explain the outcome of this election, Walter Burnham analyzed the “Metropole” and “internal colonies.” During this election, one man compared his opponent to Napoleon and quoted Thomas Benton to compare Andrew Jackson to Cicero. In this election, which featured the first widespread use of campaign buttons, multiple parties nominated the losing candidate with different vice presidents, Arthur Sewall and Thomas Watson. This election’s winner stayed in Canton, Ohio, in a campaign managed by Mark Hanna, while the loser toured the country by rail to promote the issue of “free silver.” This election’s winner used a “Front Porch Campaign” to defeat William Jennings Bryan, who gave the “Cross of Gold” speech. For 10 points, name this election in which William McKinley won his first term.

ANSWER: **1896** United States presidential election

<American History>

8. Humboldt recites an awkwardly-translated poem by this author, in lieu of telling his crewmates a story, in a scene from Daniel Kehlmann’s novel *Measuring the World*. That poem, which this author wrote on a cabin wall, describes how “in all the treetops / hearest thou / hardly a breath” and ends by noting that, like the birds, soon “thou too shalt rest.” In a ballad by this author, a man thrice responds with lines like “’tis the aged grey willows deceiving thy sight” when his son claims to hear the title creature chasing them. This author of two poems titled “Wanderer’s Nightsong” wrote a poem in which a magic broom is instructed to fetch pails of water and floods a workshop. For 10 points, the poems “Der Erlkönig” and “The Sorcerer’s Apprentice” are by what German author of *Faust*?

ANSWER: Johann Wolfgang von **Goethe** (“GUR-tuh”)

<European Literature>

9. Pierre Rosenberg argued that an artist with this surname, not her husband, painted miniatures including a boy in pale clothing with a black-feathered hat. Similar to Houdon (“oo-DON”), an anatomist with this surname created a flayed horse and rider for a veterinary school in Maisons-Alfort (“may-ZON-al-FOR”). An artist with this surname painted a series of subjects in vaguely Spanish clothing for his *portraits de fantaisie*, which include a woman in a white-collared yellow dress with an open book, *Young Girl Reading*. The Frick Collection houses a series by an artist with this surname on “four ages” of courtship. Madame du Barry commissioned *The Progress of Love* from that artist, who also painted a Cupid holding a finger to its lips as a man in the bushes looks up a woman’s dress. For 10 points, give this surname of the artist of *The Swing*.

ANSWER: **Fragonard** [accept Marie-Anne **Fragonard** or Honoré **Fragonard** or Jean-Honoré **Fragonard**]  
<Painting/Sculpture>

10. Cancers in cells that secrete this substance can cause pseudomyxoma (“pseudo-mix-oma”) peritonei, a condition characterized by ascites (“ass-SITE-eez”) of this substance. This substance is contained in the “finger holes” of signet ring cells. Darkly-staining serous cells are contrasted with “empty”-looking cells that release this substance. A heavily-glycosylated protein component of this substance containing serine and threonine tandem repeats has a bottlebrush structure that enables its pH-tunable hydration. This substance’s shrinkage upon acidification leads to colonization by *S. aureus* and *P. aeruginosa* in people with delta-F508 mutations. Goblet cells secrete this substance to replenish the layer of it in the respiratory and GI tracts. For 10 points, name this lubricant substance that is abnormally viscous in patients with cystic fibrosis.

ANSWER: **mucus** [accept **phlegm**; prompt on **mucins**]  
<Biology>

11. A dead language used by this ethnicity recorded the [emphasize] *first* Buranji chronicles. In 1833, a royal monk of this ethnicity discovered a possibly-fake siltstone stele (“STEE-lee”), which was attributed to a 13th-century king who created an alphabet for these people. A prince of this people founded the Ahom kingdom in present-day Assam. Near the end of the 1700s, a king of these people defended his country from nine armies from the foreign Konbaung (“kohn-baong”) dynasty. Constantine Phaulkon advised a ruler of these people named Narai, while a “great” king of these people founded the short-lived Thonburi Kingdom. These people relied heavily on wet rice cultivation around the Chao Phraya River and were ruled by the Chakri dynasty. For 10 points, what people name a country currently ruled by Rama X (“the tenth”)?

ANSWER: **Thai** people [or **Tai** peoples; or **Siamese**; accept **Thailand** or **Siam**; accept Tai **Lü** or Dǎi **lè**; accept **Samsenthai**; accept **Shan** or **Dai** or **Tai** Yai; accept **Tai** Yuan; accept Tai **Ahom** until read; accept **Isan**; accept Tai **Khamti**; accept Tai **Phake**; accept **Kra**-Dai; prompt on **Lao** or **Laotians** by asking “what larger group of peoples do they belong to?”] (The rulers are Chaolung Sukapha, Ram Khamhaeng, Taksin the Great, and Rama I.)  
<World History>

12. Tauber et al. used a “growth-augmented” version of this model to predict outcomes of the COVID-19 recession, based on an “anchored” variant of this model by Ball and Mazumder. A scenario with many islands, each inhabited by one person, shows that this model is compatible with the policy ineffectiveness proposition in a Robert Lucas paper. Robert Gordon integrated the “rational expectations” hypothesis into this model and added a supply shock term. The NAIRU (“NYE-roo”) is included in an extension to this curve, which was popularized by Solow and Samuelson. Phelps and Friedman posited that, because workers care about “real wages,” this curve only applies in the short term, explaining early 1970s “stagflation.” For 10 points, name this curve which predicts that inflation increases as unemployment decreases.

ANSWER: **Phillips** curve  
<Social Science>

13. Russians mocked Cossacks for creating asymmetric works in this medium called oseledets (“oh-seh-LED-ets”). Léonard Autié (“oat-YAY”) and Rose Bertin (“bair-TAN”) combined feathers with this medium to produce the “ques-à-co” for a patron who placed a model ship in one of these works. This medium displays characteristic “wings” in Japanese shimada, and was collected in “rats” in Edwardian England. Josef Mayer and Marjorie Joyner perfected the croquignole (“cro-keen-YOLE”) method to form spirals in this medium, influenced by earlier works using heated rods. Raymond Bessone introduced bold pink coloration to this medium and formed it into bouffants. Madam C. J. Walker sold products for this medium, which is straightened by relaxers or a perm. For 10 points, what medium can be styled into a beehive, Jheri (“jerry”) curl, or afro?

ANSWER: human **hair** [accept **hair** styles or **hair** dos or **hair** cuts; accept **hair** dye; accept **coiffure**; prompt on the human **body**, human **head**, or similar] (Marie Antoinette placed a model ship in a towering hairdo.)

<Other Arts (Visual)>

14. A man in this novel stares at a framed text reading “Vengeance is Mine” while describing how he walked several hours to see his father, who threw an inkstand at him. Late in this novel, a red dress reminds the protagonist of a goodbye kiss from her half-brother Sandi, with whom she is implied to have had an incestuous relationship. The maid Amélie sings a song calling this novel’s protagonist a “white cockroach” after being told to fetch the nurse Christophine. In this novel, the protagonist’s brother Pierre is killed when freed slaves set fire to her family’s estate in Coulibri. The main character of this novel is named Antoinette Cosway, but shortly before leaving the Caribbean for England, her husband renames her Bertha Mason. For 10 points, name this prequel to *Jane Eyre* by Jean Rhys (“jeen reese”).

ANSWER: ***Wide Sargasso Sea***

<World/Other Literature>

15. A 1931 paper modeling this general process featured a numerical error that is preserved on a blackboard in Oxford’s Museum of the History of Science. The Gödel (“GUR-tle”) metric experiences rotation, but not this process. This process obeyed a power law with a power of two-thirds until the end of the matter-dominated era 4 billion years ago, at which point it became exponential. The Friedmann equations provided the first quantitative model of this process, whose acceleration is accounted for by Albert Einstein’s cosmological constant. More distant objects have greater redshift due to recessional velocity, which results from this process as explained by Hubble’s law. For 10 points, distant galaxies continually recede from our own due to what trend in the size of outer space?

ANSWER: **expansion** of the **universe** [accept answers indicating that the **universe** or **space** is **expanding** or getting **larger**; accept accelerating **expansion** of the **universe**; do not accept or prompt on “inflation”]

<Other Science (Astronomy)>

16. A J. R. R. Tolkien essay named for this trait comments on the first work in the Katherine Group. In one story, ships blown off course to Germany contained eleven thousand people with this trait. Pope Pius XII revived the consecration of people with this trait in an Apostolic Constitution issued on Candlemas. Five people bring enough oil for lamps, while five people do not, in a parable named for “wise and foolish” people with this trait. Early martyrs with this trait included Saints Demiana and Ursula, and this trait inspired the title Aeiparthenos for the Theotokos. Medieval allegories taught that unicorns could only be tamed by women with this virtue, which is opposite to lust. For 10 points, the Catholic Church holds that what trait is “perpetual” for Mary despite her conception of Jesus?

ANSWER: **virginity** [accept consecrated **virgins** or vestal **virgins** or **chastity** or **castitas** or **abstinence** or **maidenhood** or equivalents; prompt on **purity** or **celibacy** or word forms; prompt on **women** or being **female** or equivalents; accept the **Virgin** Mary; accept *Speculum* **Virginum**; accept *Ancrene Wisse* and *Hali Meiodhad*; prompt on **Sponsa Christi** or **bridal theology** or **bride of Christ** or similar by asking “what earthly trait do they maintain in order to acquire that status?”]

<Religion>

17. In this modern-day country, a three-story mausoleum tower with a bilingual inscription to Atban survives at the town of Dougga. Mosaics from this country's House of Amphitrite in Bulla Regia are shown in its Bardo National Museum. The massive Antonine Baths, perhaps the largest *thermae* outside Rome, are found in this modern-day country. In this modern-day country, child sacrifice may have been conducted at tophets ("TOH-fets"), such as the so-called "Tophet of Salammbô," that honored Tanit. A hill in this modern-day country called "Byrsa" was a walled citadel in ancient times. Popular legend holds that Scipio Aemilianus salted the fields of a city in this modern-day country after the Third Punic War. For 10 points, what North African country contains the ruins of Carthage?

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

<Other History>

18. Lucy and Sam transport their father's corpse amid this event in a 2020 novel by C. Pam Zhang. In a story set in this event, a man cancels a mock sermon and repeatedly marvels that "the damned little cuss" "rastled with my finger." A poem set during this event that parodied Swinburne's *Atalanta in Calydon* accidentally fueled the racist attitudes that it meant to satirize by describing Ah Sin cheating at cards. Eliza Sommers meets Dr. Tao Chien while following Joaquin ("wah-KEEN") to this event in Allende's ("ah-YEN-day's") *Daughter of Fortune*. In a story set in this event, a flood washes away Kentuck as he holds Cherokee Sal's newborn baby, who reformed the title area. For 10 points, what historical event provides the backdrop for "The Outcasts of Poker Flat" and "The Luck of Roaring Camp" by Bret Harte?

ANSWER: California **gold rush** [or 1849 **gold rush**; accept **forty-niners**; or equivalents; prompt on western expansion, migration to the west, settling California, or similar; prompt on the Great Flood of 1862 until "flood" is read; prompt on *How Much of These Hills is Gold*; do not accept or prompt on other gold rushes like "Klondike gold rush" or "Alaska gold rush"] (The poem set during the event is "Plain Language from Truthful James.")

<American Literature>

19. The prefix "Meta" is added to the title of an album by this artist in a Sturgill Simpson album. A song by this artist, whose second part includes a moaning call-and-response, starts with a syncopated 12-bar blues riff on a Wurlitzer electric piano. A song by this artist laments "whoa, woman, oh, woman, don't treat me so mean." A Hoagy Carmichael song popularized by this artist contrasts its title place with "other arms" that "reach out to me" and "other eyes" that "smile tenderly"; that song is now the official song of this man's home state. In Kanye West's song "Gold Digger," this man's voice is mimicked by Jamie Foxx, who played this man in a 2004 biopic ("bio-pick"). For 10 points, name this blind soul and R&B musician whose hits include "What'd I Say" and "Georgia On My Mind."

ANSWER: Ray **Charles** [or Ray Charles **Robinson**] (Sturgill Simpson's album is titled *Metamodern Sounds in Country Music*, a reference to Charles's album *Modern Sounds in Country and Western Music*.)

<CE/Geo/Other/Pop Culture>

20. The TOMS spectrometer measures the "total column" abundance of this molecule, which is consumed in reactions proposed by Paul Crutzen and Susan Solomon. This molecule's C<sub>2v</sub> ("C-two-V") symmetry is preserved by absorption in the low-energy Chappuis ("sha-PWEE") and Wulf bands, but is broken by its 255-nanometer peak in the Hartley band. Trace amounts of this molecule damage strained rubber in "cracking." The lower of the two permanent atmospheric inversions is driven by heat released from the formation of this molecule, which is the largest of the molecules that interconvert in the Chapman cycle. This molecule's polar abundance drops below 220 Dobson units each spring as CFCs catalyze its breakdown. For 10 points, name this triatomic molecule that blocks incoming UV radiation in the stratosphere.

ANSWER: **ozone** [or **O<sub>3</sub>** or **trioxygen**; do not accept or prompt on "oxygen" or "O" or "O<sub>2</sub>"]

<Chemistry>

## Bonuses

1. For two independent random variables  $X$  and  $Y$ , the density of  $X$  plus  $Y$  is given by this operation applied to their individual densities. For 10 points each:

[10m] Name this operation symbolized by a star, which outputs the integral of the product of one function with a reversed version of a second function.

ANSWER: **convolution** [or word forms like **convolve**]

[10h] In a linear time-invariant system, convolution of an input signal with *what thing* yields the output? This is the output of the system when the Dirac delta function is the input.

ANSWER: **impulse response** [or **response** to an **impulse**; or equivalents; accept “*h*-sub-tau of *t*”; prompt on **Green’s function** with “what is the term specific to linear time-invariant systems?”]

[10e] The “low-pass” or “high-pass” form of this operation removes unwanted frequencies from a signal by convolving it with a kernel. In a circuit, a resistor and capacitor in series make up an example of one of these things.

ANSWER: **filter** [or word forms like **filtering**; accept low-pass **filter** or high-pass **filter**]

<Other Science (Math)>

2. Mohja Kahf analyzed Muslim characters like the sorceress Armida and the warrior Clorinda from a Torquato Tasso poem named for [this city] *Delivered*. For 10 points each:

[10e] Name this city that titles a poem set “within the ancient walls.” A William Blake poem named for this city begins “And did those feet in ancient time” and proclaims “Bring me my chariot of fire.”

ANSWER: **Jerusalem** [accept **Jerusalem Delivered** or “In **Jerusalem**”]

[10m] This author tells a soldier “You killed me... and I forgot, like you, to die” in his poem “In Jerusalem.” A poem by this author repeats “Write down: / I am an Arab!” and warns “beware of my hunger / and my anger.”

ANSWER: Mahmoud **Darwish** (The poem is “Identity Card.”)

[10h] This Darwish prose poem, set on Hiroshima Day, describes the bombing of Beirut. The narrator of this poem claims “Coffee is geography” and describes the sea, ending “I don’t see a shore. / I don’t see a dove.”

ANSWER: **Memory for Forgetfulness** [accept *The **Time: Beirut / The Place: August***; accept **Dhākira lil-nisyān**]

<World/Other Literature>

3. In a dubious passage, this woman was said to enjoy exposing herself on stage and having geese eat grains off her body. For 10 points each:

[10m] Name this woman who declared “royal purple is the noblest shroud” when her husband was preparing to flee their palace after the “Blues” and “Greens” erupted in revolt at a hippodrome.

ANSWER: **Theodora**

[10e] That far-fetched depiction was from Procopius’s *Secret History*, which contained bizarre allegations against Theodora and her husband, Justinian I, who ruled this empire.

ANSWER: **Byzantine** Empire [or **Eastern Roman** Empire; or **Byzantium**; prompt on **Rome** or **Roman** Empire; do not accept or prompt on “Holy Roman Empire”]

[10h] Unlike the *Secret History*, this work by Procopius praises Theodora heavily for her beauty. This panegyric (“pan-uh-JEER-ick”) lauds Justinian’s public works program, but credits him for things he did not do, such as repairing Edessa’s walls.

ANSWER: *The **Buildings*** [or *On (The) **Buildings***; or *Peri **Ktismaton*** or *De **Aedificiis***]

<Other History>

4. This concept is exemplified by corporations relying primarily on indigenous lands to dump toxic waste. For 10 points each:

[10m] Give this term coined by Benjamin Chavis (“CHAY-viss”) to describe how communities of color are barred from, and targeted for disproportionate harm by, ecological policy-making.

ANSWER: **environmental racism** [accept **environmental discrimination**; prompt on partial answer; prompt on **environmental justice** by asking “what is the environmental justice movement trying to remedy?”]

[10e] One case study of environmental racism is in Flint, Michigan, where switching the source of this resource to a historical industrial waste dumping ground left the city’s supply of it contaminated by dangerous levels of lead.

ANSWER: drinking **water** [or potable **water**; or tap **water**; or public **water**]

[10h] This feminist organization issued a landmark report on environmental and reproductive racism in 1980. The report detailed links between uranium mining, water pollution, and reproductive health problems in Lakota women.

ANSWER: **Women of All Red Nations** [or **WARN**]

<Social Science>

5. Congolese artist Bodys Isek Kingelez used blue paper cutouts for a model of one of these places “La Belle.” For 10 points each:

[10m] Name these places that feature in Kingelez’s fantastical “extreme maquettes.” Le Corbusier published a book titled for a never-realized radiant one of these places.

ANSWER: **cities** [or **urban** areas or equivalents; accept *Metropolis II* or the Radiant **City** or Le **Ville** Radieuse]

[10h] This other Congolese artist parodied Escher in *J’aime la couleur* (“zhem la koo-LURR”), a self-portrait with a spiraling ribbon for a head. This artist captioned his *Problème d’eau* (“pro-BLEM DOH”) with a paragraph beginning “Life is priceless.”

ANSWER: Chéri **Samba** [or **Samba** wa Mimba N’zingo Nuni Masi Ndo Mbasi]

[10e] The multilingual text frequently accompanying Samba’s work draws from his experience in this medium. Roy Lichtenstein borrowed speech bubbles and Ben-Day dots from this medium for works like *Whaam!*.

ANSWER: **comic** books [or **comic** strips; or **comics**; accept **cartoons**]

<Painting/Sculpture>

6. The *Therīgāthā*, or *Verses of the Elder Nuns*, documents the lives of early Buddhist women, including a version of Kisa Gotami’s quest for one of these objects for the Buddha to bring her son back to life. For 10 points each:

[10m] Name these objects that she seeks from a house never visited by death. Matthew 17:20 states that faith the size of one of these objects moves mountains.

ANSWER: **mustard seeds** [or **sāsapa**; prompt on **seeds**]

[10h] With former beggars and courtesans from *Verses of the Elder Nuns*, Kisa Gotami became one of these figures. This state is the final *phala* along the *lokuttara magga*, or supramundane path.

ANSWER: **arhats** [or **arahants** or **Arahatta** phala]

[10e] Another elder nun, Mahāpakāpaṭī, successfully petitioned the Buddha for female ordination, though he allegedly imposed this many additional rules upon nuns. The Buddha preached a path of this many practices.

ANSWER: **eight** (The additional rules are the *Eight Garudhammas*.)

<Religion>

7. In *Brick Lane*, Chanu’s frustration with his Open University modules inspires him to say “O that I were as great / As is my grief, or lesser than my name!”, which is a quote from a man with this regnal name. For 10 points each:

[10m] Give this regnal name of a man who reflects “I wasted time, and now doth time waste me.” In a monologue, another man with this regnal name claims that, since he “cannot prove a lover,” he is “determined to prove a villain.”

ANSWER: **Richard** [accept **Richard II** or **Richard III**; or **Richard** of Bordeaux]

[10h] *Specific word required*. Richard II urges his followers to “sit upon the ground / and tell sad stories of the death of” these people. John of Gaunt calls England a “teeming womb of” these people.

ANSWER: **kings** [accept royal **kings**]

[10e] A man with this first name nicknamed Hotspur rebels against Richard II. In another play, a man with this regnal name addresses his “band of brothers” on St. Crispin’s Day before the Battle of Agincourt.

ANSWER: **Henry** [accept **Harry** or **Hal**; accept **Harry** Hotspur or **Henry** V]

<British Literature>

8. In the 1670s, Nasir al-Din crossed this river to spread Islam to states such as Futa Toro. For 10 points each:

[10m] Name this river that had earlier been settled by the Tukulor. This river and the Gambia River demarcated the northern and southern borders of the Wolof Empire, respectively.

ANSWER: **Senegal** River

[10h] This oldest school of Sufism was hugely influential in Senegal's modern history. An Algerian emir who shares his name with this school resisted the French colonization of Algeria and was called a "modern Jugurtha."

ANSWER: **Qadiriyya** [accept Abd al-**Qadir**]

[10e] Islam was brought to Senegal by these indigenous peoples of North Africa, who established the Almoravid and Almohad kingdoms in Morocco.

ANSWER: **Berbers** [or **Amazigh**; accept **Tuareg** or **Libyans** or other specific tribes; prompt on **Moors**]

<World History>

9. An acetate is substituted with this element in the pesticide 1080, which kills coyotes by producing a metabolite that blocks the Krebs cycle. For 10 points each:

[10m] Name this element, a strong leaving group in nucleophilic aromatic substitution. It is the lightest element of the group whose members are exchanged in the Finkelstein reaction.

ANSWER: **fluorine** [or **F**; accept **fluoride**]

[10h] During peptide synthesis, trifluoroacetic ("tri-fluoro-acetic") acid can remove this protecting group from amines ("uh-MEENS"). This bulky, base-stable butyl ester has the same purpose as, but orthogonal operating conditions to, the acid-stable Fmoc ("F-mock").

ANSWER: **BOC** [or t-**BOC**; or *tert*-**Butoxycarbonyl** or *tert*-**Butyloxycarbonyl**]

[10e] Fluorine's use in organic synthesis is limited, however, by its aggressive reactivity. One measure of that reactivity is fluorine's value of 3.98 on the Pauling scale for this property, an atom's tendency to attract electrons.

ANSWER: **electronegativity**

<Chemistry>

10. This park hosts an annual tournament to determine the most successful hibernating bear during Fat Bear Week. For 10 points each:

[10h] Name this Alaskan national park created after the 1912 eruption of Novarupta, which formed the Valley of Ten Thousand Smokes.

ANSWER: **Katmai** National Park and Preserve

[10m] Katmai National Park lies across the Shelikof Strait from this island, the second largest in the United States.

ANSWER: **Kodiak** Island [or **Oikertaq**]

[10e] Katmai's headquarters are in a town named for this fish. At Brooks Falls, Katmai's bears gorge themselves on the sockeye species of this fish, which migrate upstream from Bristol Bay during their namesake "runs."

ANSWER: **salmon** [accept King **Salmon** or sockeye **salmon**; accept **salmon** runs]

<CE/Geo/Other/Pop Culture>

11. Name some things related to ear-catching moments in the symphonies of Ludwig van Beethoven, for 10 points each.

[10h] In the finale of this light-hearted F major symphony, a theme marked "triple piano" is interrupted with a fortissimo C-sharp leading to a raucous restatement of that theme, and much later to an excursion to F-sharp minor.

ANSWER: Symphony No. **8** in F major [or **Eighth** Symphony]

[10e] Fast and furious notes in this Beethoven symphony's fourth movement depict a thunderstorm. The fifth movement of this symphony is subtitled "Shepherd's song. Cheerful and thankful feelings after the storm."

ANSWER: Symphony No. **6** in F major [or **Pastoral** Symphony; or **Sixth** Symphony]



[10m] In the first movement of Beethoven's "Eroica" Symphony, a horn seemingly enters early with the theme four bars before this section begins. In sonata form, this section follows the development and precedes the coda.

ANSWER: **recapitulation**

<Classical Music>

12. *Description acceptable.* A newspaper printed a spiral game board to advertise this event, and sponsored a match to guess when it would end. For 10 points each:

[10h] Name this goal of an 1889 event, which was the subject of *Cosmopolitan* reporter Elizabeth Bisland's memoir *In Seven Stages*. Another work about this event described a writer living in Amiens ("ah-MYEN").

ANSWER: Nellie Bly and Elizabeth Bisland's **race around the world** in 80 days [accept synonyms like **traveling** around the **world** or **circumnavigation**; prompt on **race** or **traveling**; accept ***Around the World in Seventy-Two Days***] (Bly visited Jules Verne in Amiens during her trip.)

[10e] After traveling around the world in 72 days, Nellie Bly went undercover to spend "ten days in" one of these places. Dorothea Dix was an advocate for reforming these places, which included Bellevue.

ANSWER: **asylum** [or **mental hospital**; accept *Ten Days in a **Mad-House***; prompt on **hospital** or Bellevue **Hospital**]

[10m] Nellie Bly worked for the *New York World*, a newspaper that this man bought from Jay Gould. During his term as a Democratic representative, this man used the *World* to help fund the construction of the Statue of Liberty.

ANSWER: Joseph **Pulitzer**

<American History>

13. A novella set in this place repeats the phrase "sunless sea" from "Kubla Khan," while in another work set here, scientists shoot an albatross to ensure that it isn't being impersonated by "jellylike protoplasm." For 10 points each:

[10h] Name this setting of H. P. Lovecraft's "At the Mountains of Madness" and John Campbell's "Who Goes There?" Bee finds out that the title architect has absconded to this place in *Where'd You Go, Bernadette*.

ANSWER: **Antarctica** [or the **Antarctic**; prompt on **South Pole** by asking "in which continent is the South Pole located?"]

[10e] This author described Antarcticans afraid of the color white in *The Narrative of Arthur Gordon Pym of Nantucket*. He set his poem "The Raven" in "bleak December."

ANSWER: Edgar Allan **Poe**

[10m] In this novel, Joe uses a plane patched with dog skin to escape a carbon monoxide leak on a naval base in Antarctica. Earlier in this novel, he had co-created the Escapist and based Luna Moth on the Surrealist Rosa Saks.

ANSWER: *The **Amazing Adventures of Kavalier & Clay*** (by Michael Chabon)

<American Literature>

14. Agostino Nifo defended this position against the Alexandrist school, which followed Alexander of Aphrodisias. For 10 points each:

[10h] Identify this philosophical position debated by Ferrara's Cesare ("CHEZ-ah-ray") Cremonini and Bologna's Pietro Pomponazzi. Moses Mendelssohn's magnum opus argues for this position, and is titled after an ancient work that defends it.

ANSWER: **immortality** of the **soul** [accept **mortality** of the **soul**; accept **fate** of the **soul** or **survival** of the **soul** or equivalents; prompt on **soul** or **anima** or **psychēs**; accept *De **immortalitate animae*** or *On the **Immortality of the Soul***] (Moses Mendelssohn's work is *Phaedon*, which is titled after Plato's *Phaedo*.)

[10e] Renaissance debates on the immortality of the soul drew heavily on this philosopher's treatise *De Anima*. The University of Padua emphasized this ancient Greek polymath's *Physics* over his *Metaphysics*.

ANSWER: **Aristotle** [or **Aristotélēs**; accept **Aristotelianism** or Corpus **Aristotelicum**]

[10m] Renaissance thinkers like Nifo read the commentary on Aristotle's *De Anima* by this 12th-century Muslim philosopher, whose doctrines of the "unity of the intellect" and "double truth" also influenced European writers.

ANSWER: **Ibn Rushd** [or **Averroes**; or Abū l-Walīd Muḥammad Ibn 'Aḥmad **Ibn Rušd**]

<Philosophy>

15. The deflection of these objects follows a fourth-order differential equation in Euler–Bernoulli theory, which ignores the shear deformations of the more elaborate Timoshenko theory. For 10 points each:

[10e] Name these structural elements that bend under static loads. High-strength steel examples of these structures often have a capital-I-shaped cross-section.

ANSWER: **beams** [accept I-**beams** or H-**beams** or tie **beams** or collar **beams**; or **girders**; prompt on **bars** or **rods** or **ties**]

[10m] A beam in static equilibrium balances internal and external values for both forces and these quantities. A diagram plotting the “bending” type of this quantity is often used along with a shear diagram.

ANSWER: **moments** [accept bending **moments** or **moments** of force; prompt on **torques**] (“Torque” generally refers to moments of force that produce motion, while the moment of a beam is a static quantity.)

[10h] Carlo Castigliano related beam deflections to strain energies using a theorem named for the “least” amount of this quantity. The entropy change of an irreversible process equals a “lost” form of this quantity over temperature.

ANSWER: **work** [accept principle of least **work** or lost **work**]

<Physics>

16. L. Shankar pioneered this instrument’s electric “double” variety, which has two necks and covers an orchestra’s full range. For 10 points each:

[10h] Name this instrument played by the brothers L. Shankar and L. Subramaniyan. Players of this instrument in Carnatic music sit on the floor, unlike players in the Western tradition.

ANSWER: **violin** [or **fiddle**; accept double **violin**]

[10m] In L. Shankar’s Indo-jazz band Shakti, Zakir Hussain played this North Indian percussion instrument. This instrument consists of a large and a small drum, each of which has a central dark-colored patch on its head.

ANSWER: **tabla**

[10e] On tracks such as “Within You Without You,” this English band was one of the earliest to incorporate Indian music into pop. One of this band’s members, George Harrison, learned to play the sitar from Ravi Shankar.

ANSWER: The **Beatles**

<Other Arts (Auditory)>

17. In a novel, a Paris resident originally from this country muses on the noble death of his grandfather and abruptly leaves the Salpêtrière (“sall-pet-tree-AIR”) Hospital while waiting to undergo electroshock therapy. For 10 points each:

[10h] Name this country, the hub of a naturalist movement called the “Modern Breakthrough,” which included the authors of *Pelle the Conqueror* and *The Pilgrim Kamanita*.

ANSWER: **Denmark** [or Kingdom of **Denmark**; or Kongeriget **Danmark**] (The authors are Martin Anderson Nexø and Karl Adolph Gjellerup.)

[10m] J. P. Jacobsen’s Modern Breakthrough novel *Niels Lyhne* (“LUNE-uh”) influenced this author’s *The Notebooks of Malte Laurids Brigge* (“MELT-uh LAO-rids BRIG-ih”). This author wrote of always carrying Jacobsen’s novels with him in his *Letters to a Young Poet*.

ANSWER: Rainer Maria **Rilke** (“RYE-ner muh-REE-uh RIL-kuh”) [or René Karl Wilhelm Johann Josef Maria **Rilke**]

[10e] This other German author cited Jacobsen as having had the greatest influence on his style. His novels include *The Magic Mountain*.

ANSWER: Thomas **Mann**

<European Literature>

18. Phage lambda’s commitment to lysogeny is maintained by a double negative system of this sort involving the *ci* (“C-one”) and *cro* repressors. For 10 points each:

[10m] Name these features of gene circuits in which downstream products interact with upstream genes to allow for autonomous regulation. More broadly, these cycles maintain homeostasis in biological systems.

ANSWER: **feedback loops** [accept positive **feedback loops** or negative **feedback loops**; prompt on **control loops**]

[10h] In 2000, Elowitz and Liebler engineered an early synthetic gene circuit, the repressilator. In 2012, a natural repressilator consisting of *CCA1*, *LHY*, and *TOC1* in *Arabidopsis* was discovered to regulate these phenomena.

ANSWER: **circadian rhythms** [or **circadian circuits**; or **circadian clocks**; prompt on **clock circuits** or biological **clocks**; prompt on **diurnal rhythms**; prompt on **sleep cycles** or **sleep–wake cycles** or **sleep patterns**]

[10e] Synthetic gene circuits are modelled on these biological systems that consist of a single promoter driving the expression of multiple genes. Examples of these units control *E. coli* lactose metabolism and tryptophan synthesis.

ANSWER: **operons** [accept lac **operon** or trp **operon**]

<Biology>

19. Shelley Adler studied Sudden Unexpected Nocturnal Death Syndrome in this ethnic group, which attributed such deaths to an evil spirit called a *dab tsog* (“dah cho”) that sits on victims’ chests. For 10 points each:

[10m] Name these people. In *The Spirit Catches You and You Fall Down*, Anne Fadiman traced the conflict between this people’s traditions and Western medicine.

ANSWER: **Hmong** [accept **Miao**]

[10e] *Dab tsog* (“dah cho”) are associated with sleep paralysis and this phenomenon. Fuseli painted a demon sitting on a woman’s chest during this phenomenon, also caused by hags known as *mara* riding their victims at night.

ANSWER: **nightmares** [or **bad dreams**; accept **night terrors**; prompt on **dreams**]

[10h] These people from the coastal plains of northwest Luzon blame Sudden Unexpected Death Syndrome on the obese, tree-dwelling *batibat*. These people’s *Biag ni Lam-ang* was the first Phillippine folk epic recorded in writing.

ANSWER: **Ilocano** [or Tattao nga **Iloko** or **Ilokan**]

<Mythology>

20. Answer the following about the history of Lublin, for 10 points each.

[10m] Lublin was one of the Polish towns subjected to a charter named after this city, which granted some autonomy from the crown. During the Thirty Years’ War, this German city was brutally sacked by the Count of Tilly.

ANSWER: **Magdeburg**

[10e] In 1569, the *sejm* (“saym”) met in Lublin to officially confirm the merger of Poland with this other grand duchy to the north. The seat of the Jagiellon (“yag-YELL-on”) dynasty was this duchy’s capital of Vilnius.

ANSWER: Grand Duchy of **Lithuania**

[10h] In the 16th century, Lublin’s fairs also hosted this authoritative body for Jews in Poland–Lithuania, which formed as a response to a Jewish poll tax imposed by the *sejm*.

ANSWER: **Council** of Four **Lands** [accept “three” in place of “four”]

<European History>