

2022 ACF Fall

Packet N by Editors

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Tossups

1. This present-day country celebrates Timkat on Epiphany. Nine years before leaving for Medina, some of Muhammad's followers migrated to this present-day country in the "first hijra." Shashamane ("shah-shah-mayn") is a religious site located in this present-day country, which was legendarily led by a king born after Makeda's conversion to Judaism. That king of this present-day country obtained the Ark of the Covenant with help from an angel in a story as recorded in this country's epic, the *Kebrä Nagast*. From 1930 to 1974, this country was ruled by a man considered divine by some Rastafarians. For 10 points, Haile Selassie ruled what country on the Horn of Africa?

ANSWER: **Ethiopia** [or Federal Democratic Republic of **Ethiopia**; or **Ītyōpp̄yā** or **Ītiyop'iya** or **Itoobiya**; accept **Eritrea** or State of **Eritrea**; prompt on Abyssinia; prompt on Axum]

<Religion>

2. A supporter of this event criticized the actions of the KSC during the leadup to it in a manifesto of "Two Thousand Words." During this event, a leader introduced a set of reforms known as the "Action Programme." A period of "normalization" occurred after this event when Gustáv Husák ("HOO-sock") was installed to power. In the aftermath of this event, the student Jan Palach ("pollock") set himself on fire in Wenceslas Square to protest the Soviet invasion that ended it. During this event, Alexander Dubček ("DOOB-check") attempted to implement "socialism with a human face." For 10 points, name this 1968 period of political liberalization in Czechoslovakia.

ANSWER: **Prague Spring** [or **Pražské jaro** or **Pražská jar**]

<European History>

3. A now-retracted 2020 paper claimed to have found one of these materials made of carbonaceous ("carbon-AY-shuss") sulfur hydride that exists under gigapascal pressure. A class of these materials known as rare-earth barium copper oxides includes one containing yttrium ("IH-tree-um"). These materials exhibit perfect diamagnetism by expelling magnetic fields when cooled below their critical temperature. Couplets of electrons and holes known as Cooper pairs are present in these materials according to BCS theory. A major breakthrough in electronics would be discovering one of these materials at room temperature. For 10 points, name these materials in which electrons experience no resistance.

ANSWER: **superconductors** [or **superconducting** materials]

<Physics>

4. Eva has an affair with Karim's father while he grows up in this city in Hanif Kureishi's novel *The Buddha of Suburbia*. In a novel set in this city, Marcus Chalfen's FutureMouse demonstration is protested by the radical groups FATE and KEVIN. Archie Jones attempts to commit suicide on New Year's Day in this city at the beginning of Zadie Smith's *White Teeth*. After revealing Monks' plan to Miss Maylie, Nancy is beaten to death in this city by Bill Sykes. The title character of a novel is recruited into a gang based in this city whose members are trained by Fagin and include the Artful Dodger. For 10 points, name this capital city whose poorhouses are the setting of Charles Dickens's novel *Oliver Twist*.

ANSWER: **London**

<British Literature>

5. It's not in South America, but a leader of this country was advised by a group of economists nicknamed the "Berkeley Mafia." Six of this country's generals were killed during an aborted coup by the 30th of September movement. This country's first leader implemented its foundational ideology of Pancasila ("PAHN-chah-SEE-lah") using the system of "Guided Democracy." During the Cold War, the Non-Aligned Movement was founded after a conference held in this country's city of Bandung. Under the "New Order" policy, this country's government suppressed the practices of the world's largest Muslim population. For 10 points each, Sukarno ("soo-KARN-oh") was the first president of what Southeast Asian country, whose capital is Jakarta?

ANSWER: **Indonesia** [or Republic of **Indonesia** or Republik **Indonesia**]

<World History>

6. An escape attempt in this novel is facilitated by passing around a bear disguise to fool a guard. A character in this novel holds a grudge from getting encouraged to drink whiskey, which led to his public whipping. In this novel, a group besieged in a fortress is fooled into surrendering with an offer of safe passage, resulting in a massacre by 2,000 surrounding warriors. The central love triangle in this novel ends in tragedy after Uncas is killed, Cora is stabbed by a Huron, and Magua is killed by a shot from Hawkeye's signature rifle Killdeer. For 10 points, Uncas's death leaves Chingachgook as the title representative of his tribe in what novel by James Fenimore Cooper?

ANSWER: *The **Last of the Mohicans*** [or *The **Last of the Mohicans: A Narrative of 1757***]

<American Literature>

7. This thinker included a Socrates quote about the arrogance of the artist in an essay that argues that China suffered moral decline as a result of its focus on science. In opposition to Grotius, this thinker argued that because war is waged between states, it cannot generate a moral basis for slavery. A book by this thinker argues that property originated with the first man to fence his land. A book by this author of *Discourse on Inequality* argues that robust dialogue is necessary to make sovereign the general will. For 10 points, name this Swiss thinker who wrote that "man is born free, and everywhere he is in chains" in *The Social Contract*.

ANSWER: Jean-Jacques **Rousseau** (The book in the first line is *Discourse on Arts and Sciences*.)

<Philosophy>

8. Mercury acetate is used to convert this functional group into an alcohol in a common two-step reaction. A base reacts with an alkyl halide to remove two substituents and create this functional group in both uni- and bimolecular elimination reactions. The positions of substituents around this functional group are denoted "E" and "Z." Lipids with only one example of this functional group are termed "monounsaturated." This functional group contains a sigma bond and pi bond between two atoms of the same element. Hydrogenating this group forms an alkane ("AL-kayn"). For 10 points, name this functional group that consists of a double bond between two carbons.

ANSWER: **alkene** ("AL-keen") [prompt on carbon-carbon double bond until read; reject "alkanes" or "alkynes"]

<Chemistry>

9. This work begins with a fugue on a [read slowly] "long D, C-sharp D E F" motif, first played in stretto by a bassoon and a basset horn on D and A. A section of this D minor work begins with a B-flat major arpeggio and trombone solo and is the "Tuba Mirum," whose text is part of the "Dies Irae" ("DEE-ayss EE-ray") hymn. This work was commissioned anonymously by Count von Walsegg for his wife, but during his final illness, its composer claimed it was for his own funeral. At the bidding of its composer's wife Constanze, Franz Sussmayr completed this work in 1791 using sketches by its composer, including the first eight bars of its "Lacrimosa." For 10 points, name this last work by Mozart, a mass for the dead.

ANSWER: **Mozart's Requiem** [prompt on requiem by asking "by what composer?"; accept **Requiem** after "Mozart"; accept Mozart's **K. 626**]

<Classical Music>

10. This team won a playoff game after undrafted rookie Sterling Moore broke up a pass intended for Lee Evans, which led to a missed field goal by Billy Cundiff. In Week 2 of the 2020 season, this team lost when L. J. Collier stuffed a quarterback power at the goal line. During the first overtime Super Bowl, this team's James White scored a walk-off touchdown after it came back from a 28-to-3 deficit. In a 2022 win against the division rival Buffalo Bills, this team only attempted three passes with quarterback Mac Jones. For 10 points, name this NFL team that won six Super Bowls after 2000 with coach Bill Belichick and former quarterback Tom Brady.

ANSWER: **New England** Patriots [or New England **Patriots** or **Pats**] (The game in the first line is the 2012 AFC Championship Game.)

<Pop Culture>

11. It's not Greece, but the "linear" script of a culture based in this modern-day country was declared to be deciphered by François Desset's team in August 2022. The Guti briefly overran that culture based in this country, Elam. Cyaxares ("kai-ax-AIR-ees"), who ruled from this country's city of Ecbatana, conquered Urartu and destroyed Nineveh to expand his Median Empire. The Behistun Inscription in this country is sometimes called the "Rosetta Stone" of cuneiform and was made by a ruler from this country with the title "King of Kings." The Achaemenids ruled their empire from this country while led by Darius the Great and Cyrus the Great. For 10 points, name this country that contained the core of the Persian Empire.

ANSWER: **Iran** [or the Islamic Republic of **Iran** or Jomhuri-ye Eslâmi-ye **Irân**; accept **Persia** until read]

<Other History>

12. Two gallery buildings in this city are connected by Leo Villareal's light sculpture *Multiverse*. Willem de Kooning's bronze cast *Clamdigger* is on permanent display in this city's Hirshhorn Sculpture Garden. I.M. Pei designed this city's East Building, whose roof displays Katharina Frisch's *Hahn/Cock* sculpture. Until 2021, a building in this city kept Frederic Remington's *Bronco Buster*. A 30-foot tall Daniel Chester French sculpture in this city depicts its subject seated in a Parthenon-like building. In this city, Maya Lin sculpted a V-shaped black granite wall into the ground for the Vietnam Veterans Memorial. For 10 points, what city contains the world's largest obelisk, which honors the first U.S. president?

ANSWER: **Washington**, D.C. [or Washington, **D.C.**; accept **District of Columbia**]

<Painting/Sculpture>

13. A book by this thinker that ends with the short story "The Comet" weaves together sociology and poetry and is titled *Darkwater*. A book by this thinker ends with an essay about spirituals titled "The Sorrow Songs." A book by this thinker challenges the Dunning School and theorizes that Black people started a general strike after the Civil War. This thinker used the metaphor of a veil separating white and Black people in a book that referred to the way Black people see themselves through the eyes of white society as "double consciousness." This thinker helped found the NAACP. For 10 points, name this activist and author of *Black Reconstruction in America* and *The Souls of Black Folk*.

ANSWER: W.E.B. **Du Bois** [or William Edward Burghardt **Du Bois**]

<Social Science>

14. In a scene in this play, a character watches a cloud split into two parts, one eastward and one upward. An order to remove an old hut and chapel in this play accidentally leads to the deaths of an old couple. In this play, a character decides against suicide after hearing the sound of nearby Easter celebrations, after which he is followed home by a black poodle. In the prologue of this play, God makes a bet with an agent of the devil who later helps a character seduce Gretchen and Helen of Troy. For 10 points, Mephistopheles (“meff-iss-TOFF-ill-eez”) makes a deal with the title scholar in what verse drama by Johann Wolfgang von Goethe (“GER-tuh”)?

ANSWER: **Faust** [accept **Faust, Part One** or **Faust, Eine Tragödie**; accept **Faust, Part Two** or **Faust: The Second Part of the Tragedy** or **Faust, Der Tragödie zweiter Teil in fünf Akten**; reject “Doctor Faustus”]
<European Literature>

15. A “hemi-” analogue of this compound bridges together this compound’s microfibrils, which are loosened by expansin (“ex-PAN-sin”) enzymes in the acid growth hypothesis. This compound is reinforced with lignin (“LIG-nin”) in hard tissues such as vessel elements. Though it shares the same subunit with glycogen (“GLAI-kuh-jen”), this compound has beta-1,4 glycosidic (“glai-kuh-SID-ick”) linkages that give it a straight-chain structure. Ruminants and termites harbor symbiotic archaea (“ar-KEE-uh”) to break down this compound through fermentation. This most common biological polymer, ahead of chitin (“KAI-tin”), consists of repeated glucose subunits. For 10 points, name this compound that makes up plant cell walls.

ANSWER: **cellulose** [accept **cellulose** microfibrils; accept hemic**cellulose**]
<Biology>

16. This deity prevented Polyphonte (“pahl-ee-FON-tee”) from becoming a priestess by cursing her to bear the twins Agrius and Oreius. In a Homeric Hymn, this deity visits a boastful shepherd who is punished with a lame foot. Out of spite, this deity cursed Hippolytus’s mother Phaedra, causing her to commit suicide. Hippomenes (“hip-AH-men-eez”) desecrated a temple of Cybele after forgetting this deity, who gave him three fruits from the garden of the Hesperides (“hess-PAIR-ih-dees”). As punishment for killing Erymanthus, Apollo sent a boar to kill a beautiful lover of Persephone and this goddess, who married Hephaestus after he trapped Hera in a golden throne. For 10 points, name this lover of Adonis, the Greek goddess of love.

ANSWER: **Aphrodite** [accept **Venus**]
<Mythology>

17. Several “counter currents” named after this location flow in the opposite direction of neighboring ocean gyres. This location’s namesake upwelling occurs due to convergence of east-to-west trade winds here. This location is the widest part of the reference ellipsoid used by GPS satellites to measure height. The magnitude of the Coriolis force approaches zero at this location, where the centrifugal force from Earth rotating has its greatest value. At this location on the spring or fall equinox, the sun lies directly overhead. For 10 points, name this imaginary boundary that separates the northern and southern hemispheres.

ANSWER: **equator** [accept **equatorial** upwelling; accept **equatorial** counter currents; accept **0 degrees latitude**]
<Other Science>

18. This instrument is played by the husband and wife duo Abigail Washburn and Béla Fleck. A performer of this instrument covered Florence Reese’s union song “Which Side Are You On?” and co-wrote “The Hammer Song” with Lee Hays for his group, The Weavers. Two characters play a song titled for a “dueling” set of these instruments in the film *Deliverance*. Styles of playing this instrument include “clawhammer” and one named for its pioneer Earl Scruggs. This five-string instrument was originally developed by enslaved Africans and later gained popularity through its use in minstrel shows. For 10 points, Pete Seeger played what round-ended plucked string instrument that is common in bluegrass music?

ANSWER: **banjo** [accept “Dueling **Banjos**”]
<Other Fine Arts>

19. During this war, Black members of the Port Chicago 50 were charged and acquitted with mutiny for refusing to load unsafe ammunition. The 99th Fighter Squadron and the 332nd Fighter Group in this war were led by Benjamin O. Davis Jr. During this war, Josephine Baker served as a spy. During this war, Executive Order 8802 banned discrimination in the defense industry after A. Philip Randolph threatened a march on Washington D.C.. Black troops' experiences overseas during this war led to the desegregation of the army afterwards. For 10 points, the Tuskegee Airmen fought during what war in which Black troops participated in the D-Day invasion of Normandy?

ANSWER: **World War II** [or **WWII**; or **Second World War**]

<American History>

20. A novel written in this language ends with the protagonist drowning during a storm after being rejected by a flock of geese. It's not French, but in a novel in this language, the downfall of Henri-Christophe is chronicled by the enslaved man Ti Noel. After his affair is exposed, a character in a novel in this language has three fingers cut off with an ax by his lover's father. This language was used to write *The Kingdom of This World* and a novel in which poisoned brandy kills the green-haired Rosa the Beautiful, causing her sister Clara the Clairvoyant to stop speaking for nine years. For 10 points, *The House of the Spirits* was written in what language used by Alejo Carpentier and Isabel Allende?

ANSWER: **Spanish** [or **Español**]

<World/Other Literature>

Bonuses

1. In this year, Parson Weems published the first edition of his laudatory biography of George Washington weeks after Washington's death. For 10 points each:

[10e] Name this year when the incumbent John Adams lost the first contested presidential election to Thomas Jefferson.

ANSWER: **1800** [accept the Election of **1800** or **1800** United States presidential election]

[10h] The election of 1800 led to the adoption of this legislation, which created separate ballots for the president and vice president.

ANSWER: **Twelfth** Amendment [or Amendment **XII**]

[10m] The Convention of 1800 put an end to this naval conflict. An earlier resolution to this conflict failed when three officials designated X, Y, and Z demanded a bribe for foreign minister Talleyrand.

ANSWER: **Quasi-War** [or **Quasi-Guerre**]

<American History>

2. With its unprecedented graphic violence, Arthur Penn's 1967 film *Bonnie and Clyde* pioneered a "new" movement named for this industry that repopularized the gangster genre. For 10 points each:

[10e] Name this Los Angeles film industry whose Hays Code restricted glorifying portrayals of criminals for much of the 20th century.

ANSWER: **Hollywood** [accept New **Hollywood**]

[10m] During the New Hollywood movement, Brian de Palma cast this actor as the mobster Tony Montana in a 1983 remake. In another film, this actor's character attends a baptism while the dons of the Five Families are killed.

ANSWER: Al **Pacino** [or Alfredo James **Pacino**]

[10h] In this film, inspired by New Hollywood films, "Layla" is played over a scene of dead bodies. This film's ending draws from *The Great Train Robbery* by cutting in shots of a gun being fired at the camera.

ANSWER: **Goodfellas**

<Other Fine Arts>

3. This country was home to the headquarters of musical.ly, a video sharing app inspired by its founder's observations of teenagers on a train in California. For 10 points each:

[10m] Name this country where musical.ly's acquiring company ByteDance is also based. This country's Tencent company operates several social media platforms.

ANSWER: **China** [or **Zhōngguó**; or People's Republic of **China** or **PRC** or **Zhōnghuá** Rénmín Gònghéguó]

[10e] ByteDance incorporated musical.ly into this video sharing app, which curates videos on its For You Page. This app was targeted by the Trump administration, which led to a failed acquisition of this app by Microsoft.

ANSWER: **TikTok**

[10h] In 2022, a cake that resembled a tank led to the apparent social media silencing of Lǐ Jiāqí, an influencer best known for selling these products. A type of this product called "black honey" became popular on TikTok in 2022.

ANSWER: **lipstick** [accept **lip balm**; accept **lip gloss**; accept Clinique Almost **Lipstick** Black Honey; prompt on **beauty** products; prompt on **makeup**; prompt on **cosmetics**]

<Current Events>

4. Empress Eugenie's revival of this style in Second Empire dresses can be seen with the floral chintz design worn in Ingres's ("ahn-GRUH's") *Portrait of Madame Moitessier*. For 10 points each:

[10m] Name this ornamental style of 18th-century art. Floral themes feature prominently in paintings from this style, such as Jean-Honoré Fragonard's *The Swing*.

ANSWER: **Rococo**

[10e] Rococo Revival started in the 19th century as a reaction to this ruler's Empire Style. This ruler's reign favored Neoclassical art, as seen in Ingres and David's portraits of him "on his Imperial Throne" and "Crossing the Alps."

ANSWER: **Napoleon** Bonaparte [or **Napoleon** I; accept **Napoleon** on his *Imperial Throne*; accept **Napoleon** *Crossing the Alps*; prompt on **Bonaparte**]

[10h] The initial transition from Rococo to Neoclassical art can be seen in this building's portraits by Élisabeth Vigée Le Brun. A ceiling painting in this building by Vigée Le Brun's cousin Charles depicts his patron "governing himself."

ANSWER: Palace of **Versailles** [or Château de **Versailles**]

<Painting/Sculpture>

5. This author created a character who gives an "approving speech" after receiving a "bough of cherries from some officious fool." For 10 points each:

[10h] Name this poet who wrote the line "all smiles stopped together" to imply a character's murder. In a poem by this author, a discussion abruptly ends with the narrator noticing a bronze statue of Neptune by Claus of Innsbruck.

ANSWER: **Robert Browning** [prompt on **Browning**; reject "Elizabeth Barrett Browning"]

[10e] "My Last Duchess" is one of many poems that Robert Browning wrote in this form, in which a single character speaks throughout the entire poem. Soliloquies are examples of this dramatic form.

ANSWER: dramatic **monologue**

[10m] Another murderous Browning narrator describes killing his lover using this substance in the poem "Porphyria's Lover." The Baron steals some of this substance from Belinda in a mock-epic by Alexander Pope.

ANSWER: **hair** [or a **lock** of hair; accept *The Rape of the Lock*]

<British Literature>

6. An inequality named for this mathematician bounds the probability that the value of a nonnegative random variable is at least some constant. For 10 points each:

[10h] The Metropolis–Hastings algorithm combines a Monte Carlo method with a class of models named for what mathematician?

ANSWER: Andrey **Markov** [or Andrey Andreyevich **Markov**; accept **Markov** models; accept **Markov** chain Monte Carlo method]

[10m] Markov chain states have this property if they recur after a multiple of some constant number of transitions. This term also describes functions for which "f of the quantity x plus t" [pause] equals "f of x" for some time t.

ANSWER: **periodic** [accept **periodic** function]

[10e] The transition probabilities of Markov chains can be encoded by one of these objects. These objects have a determinant if they have an equal number of rows and columns.

ANSWER: **matrix** [or **matrices**]

<Other Science>

7. In a play by this author, the heavenly apsara Urvashi is allowed to live on earth with her lover King Paurava. For 10 points each:

[10h] Name this author of a play in which Shakuntalā is not recognized by her lover Dushyanta after losing her signet ring in a river.

ANSWER: **Kālidāsa**

[10e] Kālidāsa wrote in this ancient Indian language that was also used to write the *Mahābhārata*.

ANSWER: **Sanskrit** [or **Samskritam**]

[10m] In a Kālidāsa poem, a *yaksha* asks one of these objects to carry messages to his wife. Socrates and the Thinkery are satirized in an Aristophanes play titled for these objects.

ANSWER: **clouds** [accept “The **Cloud** Messenger” or *Meghadūta*; accept *The Clouds* or *Nephelai*]

<World/Other Literature>

8. Myths about the Fon rainbow serpent influenced this religion’s creation story, in which the serpent Damballah is aided by his rainbow goddess wife, Ayida-Weddo. For 10 points each:

[10m] Papa Legba wears a red and black hat to demonstrate multi-faceted truth in a story from what African diaspora religion?

ANSWER: Haitian **Vodou** [or Haitian **Voodoo**; or **Vodun** or **Vodoun** or variants]

[10h] The Vodou spirit Papa Legba is often equated with Èshù (“esh-oo”), one of these Yoruba deities who serve Olódūmarè (“oh-LOH-doo-mar-ay”). Patakí tales credit Èshù or the peacock Ọshun as the chief messenger of these deities.

ANSWER: **orishas** [or **òrìsà** or **orixás**]

[10e] In the Yoruba creation myth, Èshù acts as a messenger after Olókun massacres humans with this type of event. In Genesis, God saved Noah’s family and two of every creature from one of these events.

ANSWER: **flood** [or **deluge** or inundation or equivalents; prompt on **storm** or **rain**]

<Mythology>

9. In 2021, NOAA (“NO-uh”) biologists described a new species of cetacean (“suh-TAY-shun”) known as Rice’s whale. For 10 points each:

[10m] Like most other large whales, Rice’s whales possess these brush-like structures in their mouths to filter out fish and krill from seawater.

ANSWER: **baleen** [accept **baleen** whales]

[10e] Rice’s whale is native to this body of water, an offshoot of the Atlantic Ocean where many whales were killed by the 2010 Deepwater Horizon oil spill.

ANSWER: **Gulf of Mexico** [or **Golfo de México**]

[10h] A major cause of mortality in the critically endangered Rice’s whale is this type of event, which may affect whales after they are disoriented by sound pollution. A description is acceptable.

ANSWER: **boat strike** [accept answers describing a **strike** or **collision** or **impact** with a **boat** or **ship** or **watercraft** or **vessel**; accept answers describing a deadly **injury** or **wound** caused by a **boat** or **ship** or **watercraft** or **vessel** or by its **hull** or **bow** or **propeller**]

<Biology>

10. For decades, this skeleton from the species *Australopithecus afarensis* was the earliest known hominin. For 10 points each:

[10h] Give the common name for this partial skeleton of an adult *A. afarensis* from 3.2 million years ago. It was discovered at Hadar, Ethiopia by a team led by Donald Johanssen in 1974.

ANSWER: "**Lucy**" [accept "**Dinkinesh**" or **AL 288-1**]

[10m] Soon after, in 1976, Mary Leakey's team discovered these things made by *A. afarensis* at Laetoli, showing that the species was bipedal. The Laetoli examples of these things had been preserved in volcanic ash.

ANSWER: **footprints** [accept **footsteps**; accept Laetoli **footprints**]

[10e] *A. afarensis* was the earliest known hominin for decades, but the oldest one known today, *Sahelanthropus tchadensis*, was found in this desert. It is named for its discovery in the Sahel of Chad within this largest hot desert.

ANSWER: **Sahara** Desert [or Aṣ-**sahrā' al-kubrā**]

<Other History>

11. Answer the following about classical influences on the modern study of international relations, for 10 points each.

[10m] This historian names a "trap" that is potentially applicable to U.S.–China relations, in which conflict arises between an emerging power and a declining hegemon. This historian wrote the *History of the Peloponnesian War*.

ANSWER: **Thucydides** [accept **Thucydides' Trap**]

[10e] The realist position that states seek to maximize their self-interest in an anarchic system was heavily inspired by this Italian philosopher's treatise *The Prince*.

ANSWER: Niccolò **Machiavelli** [or Niccolò di Bernardo dei **Machiavelli** or Nicholas **Machiavel**]

[10h] Realism in India is inspired by this Maurya-era book on statecraft, which differs from *The Prince* by prioritizing the well-being of the citizenry. Its author, Kauṭilya, is usually identified as Cāṇakya.

ANSWER: **Arthashastra** [or **Arthśāstram**]

<Philosophy>

12. A common lab technique purifies solids by precipitating these structures from solution. For 10 points each:

[10e] Name these solids that possess a repeating lattice and are contrasted with amorphous solids.

ANSWER: **crystals** [or **crystalline** solids; accept **recrystallization**]

[10m] During recrystallization, the sample is purified by dissolving it in hot solvent, then cooling the solution so that it has this property. Crystals precipitate out once a "seed" is added to a solution in this state.

ANSWER: **supersaturated** [or word forms like **supersaturation**; prompt on **metastable**]

[10h] Recrystallization is most effective on samples that have already been purified by other methods, such as this technique that separates compounds by their differing solubilities in two immiscible ("ih-MISS-uh-bull") fluids.

ANSWER: **extraction** [accept liquid–liquid **extraction**]

<Chemistry>

13. The Ruhr valley's abundance of this resource led to France's occupation of it in 1923 to collect reparations payments. For 10 points each:

[10m] In the aftermath of World War II, Robert Schuman proposed the creation of a "common market" steel and what resource? The resulting organization was the precursor of the European Union.

ANSWER: **coal** [accept European **Coal** and Steel Community; accept **bitumen** or **bituminous** coal or **lignite**; prompt on fossil fuels or sedimentary **rocks**; prompt on **ECSC** by asking "what does that stand for?"]

[10h] This Social Democratic Party politician advocated for reducing pollution in the Ruhr in the 1960s. This Nobel Peace Prize winner resigned as chancellor in 1974 after the aide Günter Guillaume was exposed as a Stasi agent.

ANSWER: Willy **Brandt** [or Herbert Ernst Karl **Frahm**]

[10e] During Brandt's tenure, proposals to build one of these facilities at Wyhl ("veal") prompted fierce local opposition that has since spread nationally. German opposition to these facilities increased after the Chernobyl disaster.

ANSWER: **nuclear** power plants [or **nuclear** reactors; or **nuclear** facilities; accept **fission reactors**; prompt on **reactors**; prompt on **power** plants]

<European History>

14. Answer the following about Guido of Arezzo, a Benedictine monk who was also a great musical scholar, for 10 points each.

[10e] Guido was the first to introduce this thing into Western music. Today, it consists of 5 parallel horizontal lines and 4 spaces between them, each of which denotes a different musical note name.

ANSWER: **staff** [or **stave**]

[10m] Guido also created the precursor for this system that assigns each musical note a different syllable. The original syllables in this system derived from the hymn "ut queant laxis" and were ut, re, mi, fa, sol, and la.

ANSWER: **solfège** [or **solfeccio**; prompt on **solmization**]

[10h] Guido's *Micrologus* teaches this contrapuntal texture, in which a chant is supported by a voice in parallel intervals. The medieval Notre-Dame school's work is preserved in a book titled "great book of [this texture]."

ANSWER: **organum** [accept *Great Book of **Organum*** or *Magnus liber **organum***]

<Classical Music>

15. A poem by this poet conveys the changing of the seasons by listing them in different lines in different orders. For 10 points each:

[10m] Name this poet who wrote "up so floating many bells down" in "anyone lived in a pretty how town."

ANSWER: e. e. **cummings** [or Edward Estlin **Cummings**]

[10h] A poem by cummings describes how a figure of this type "moved through dooms of love." A poem by Theodore Roethke describes a figure of this type who "beat time on my head."

ANSWER: **father** [or equivalents like **papa** or **daddy**; accept "my **father** moved through dooms of love"; accept "My **Papa's** Waltz"]

[10e] In "Buffalo Bill's," cummings asks this personification "how do you like your blue-eyed boy?" An Emily Dickinson poem describes how because "I could not stop" for this personification, "he kindly stopped for me."

ANSWER: **Death** [accept Mister **Death**; accept "Because I could not stop for **Death**"]

<American Literature>

16. Some historians have accused this country's general Julio Roca of genocide for his actions during the Conquest of the Desert. For 10 points each:

[10m] Name this country whose history of conflict with its Indigenous population includes Juan Manuel de Rosas's campaign against natives in its Pampas region.

ANSWER: **Argentina** [or **Argentine** Republic or República **Argentina**]

[10h] These native people of the Pampas and Patagonia were targeted by the Conquest of the Desert. Today, they make up the majority of Chile's indigenous population.

ANSWER: **Mapuche** ("mah-POO-chay")

[10e] During an earlier war, the Mapuche killed one of these people named Pedro de Valdivia. Other examples of these Spanish explorers include Hernán Cortés ("air-NAHN cor-TEZ"), who captured the Aztec Empire.

ANSWER: **conquistadores**

<World History>

17. In this novel, the protagonist's paranoia that his fiancée is secretly having trysts with other women is confirmed after her death in a riding accident. For 10 points each:

[10h] Name this novel that contrasts the protagonist's casual attitude towards male same-sex relations with his obsessively disapproving attitude toward female same-sex relations like those of his fiancée Albertine.

ANSWER: ***In Search of Lost Time*** [or ***À la recherche du temps perdu*** or ***Remembrance of Things Past*** or ***La Recherche***; prompt on *The Fugitive* or *La fugitive* or *Albertine disparue* by asking "that volume is a part of what larger novel?"]

[10m] The unnamed narrator of *In Search of Lost Time* is implied to secretly be homosexual, much like this French author who wrote *In Search of Lost Time*.

ANSWER: Marcel **Proust** [or Valentin Louis Georges Eugène Marcel **Proust**]

[10e] In a Gustave Flaubert novel, this other French character has affairs with Léon and Rodolphe despite being married to the doctor Charles.

ANSWER: Emma **Bovary** [or **Emma** Bovary; accept Madame **Bovary**]

<European Literature>

18. Answer the following about the letter sigma in physics, for 10 points each.

[10m] This quantity denoted sigma is the force per unit area that particles in a solid exert on each other when external force is applied. The "shear" type of this quantity is parallel to applied force.

ANSWER: **stress** [accept shear **stress**]

[10h] Sigma also represents the constant in this equation, which states that the power radiated by a blackbody is proportional to the fourth power of the blackbody's temperature.

ANSWER: **Stefan-Boltzmann** law [or **Stefan-Boltzmann** equation]

[10e] Sigma also denotes a "cross-section" that measures the probability of this process. Photons collide with matter in the "Rayleigh" type of this process, which causes the blue color of the sky.

ANSWER: **scattering** [accept Rayleigh **scattering**]

<Physics>

19. Valleys in the Andes like Sacred Valley contain many of these man-made structures, which are coincidentally called andenes. For 10 points each:

[10h] Name these structures that were carved by hand in the Philippines, such as those at Banaue and a UNESCO-protected site in Luzon's Cordilleras.

ANSWER: **terraces** [or **terrace** farms; accept, but DO NOT OTHERWISE REVEAL, rice **terraces**; prompt on **farms**]

[10e] The Banaue Terraces are used to grow this staple Asian crop, whose *indica* and aromatic varieties are commonly grown in paddies.

ANSWER: **rice** [or **Oryza sativa**; accept Asian **rice** or aromatic **rice**; accept **rice** paddies]

[10m] Another major rice variety is named for this Asian country. A site in this country called "1000 rice paddies" is on the largest of its four main islands, whose name means "mainland."

ANSWER: **Japan** [or **Nippon**-koku; or **Nihon**-koku; accept **Japonica** rice] (The site is Shiroyone Senmaida.)

<Geography>

20. According to legend, the Fújiàn sea goddess Māzǔ was once one of these people who entered a trance to save her father and brothers in a storm. For 10 points each:

[10m] Give this term for religious figures who interact with spirits for communal purposes such as healing. Korean variants of these people called *mu* ecstatically wield knives during *gut* rituals.

ANSWER: **shamans** [or **shamanesses**; prompt on **mediums**]

[10h] In early China, *wū* shamans worshiped ancestors by leading the *hún* and *pò* to spirit tablets and these locations, respectively. Qīngtuán ("cheeng twahn") dumplings are made for a spring sweeping festival held in these locations.

ANSWER: **graveyards** [or **cemeteries**; accept **graves**; accept **tombs** or **mausoleums**; accept **burial grounds** or **catacombs** or **sepulchers** or equivalents]

[10e] The god Fúxī ("FOO-shee") is said to be China's first shaman for creating the *I Ching*, a book on this practice. Ancient forms of this practice included burning oracle bones and interpreting the zodiac using astrology.

ANSWER: **divination** [or **predicting** the future; or **fortune**-telling; or **prophesying**; accept **cleromancy**; accept **plastromancy** or **scapulimancy**; accept **pyromancy**]

<Religion>