

2022 ACF Regionals

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TOSSUPS

1. In this novel, a character claims that space can be expanded by the fifth dimension or housing scams, before inviting a woman to an event where she is washed in blood and rubbed in leaves. In this novel, a poisoner in a green scarf and a Spanish boot attends an event where a woman rests her hand on an amethyst pillar and wears a picture of a poodle. After an event based on a real-life one held by William C. Bullitt, a woman in this novel uses a favor to free Frieda from being haunted by a handkerchief that she used to kill her baby. At a party in Apartment 50, a man in this novel drinks from the skull of Berlioz. In this novel, a woman flies naked to attend the Spring Ball on Walpurgis (“vall-PER-giss”) Night with Koroviev and Behemoth. For 10 points, Woland comes to Moscow in what novel by Mikhail Bulgakov?

ANSWER: *The **Master and Margarita*** [or ***Master i Margarita***]

<European Literature>

2. During this conflict, shipmen bribed with wine and barley managed to spare the populace of a city after overtaking another ship carrying a message to destroy that city. A history of this conflict was described as “a possession forever” by the “first revisionist historian” according to Donald Kagan. During this conflict, a general noted that “honor is the delight of men when they are old and useless” as part of a set of remarks that are sometimes attributed to his consort. The phrase, “The strong do what they can and the weak suffer what they must” appears in a dialogue concerning the fate of Melos during this conflict, which was effectively ended by Lysander’s victory at the Battle of Aegospotami (“ay-goh-SPOH-tah-mee”). For 10 points, name this subject of a Thucydides (“thoo-SID-id-eez”) history, a conflict between an Athenian alliance and Sparta.

ANSWER: **Peloponnesian** War [or Second **Peloponnesian** War; accept *History of the **Peloponnesian** War*; reject “First Peloponnesian War”]

<Other History>

3. The Bakairi people believe one of these animals keeps the sun in a jar at night, as represented by the goddess Evaki. Flowers are created after one of these animals bites Xochiquetzal’s genitals. One of these animals facilitates a trade whereby humans agree to have their hearts removed “through their sides, under their arms,” in exchange for fire from Tohil. They’re not birds but, because they refused to honor him, Dionysus turned the Minyades into these animals. A figure who takes shelter from a swarm of these animals in a blowgun is decapitated and has his head used for a ballgame in Xibalba (“shee-BAHL-bah”); that incident occurs in a “house” named for these animals in the *Popul Vuh*. For 10 points, the Mayan death god Camazotz appears as what mammal, which resides in caves and drinks blood?

ANSWER: **bats** [or **chiropterans**; or **nychterída**; or **tzinacan**; or **zotz**; or **bigidiri** beela; or **bigidiri** zinia; or **ticuchi lehle**; or **thut**; or **huasteco**; or **nitsoasts**; or **otomi**; or **otomipame**; accept specific species like vampire **bats**; accept **Bat** House]

<Mythology>

4. It's not IMS, but the electron capture variant of this technique often uses Nickel-63 beta radiation and is highly sensitive to halogenated molecules. In a form of this technique, the sample is introduced via syringe through a rubber septum that can introduce ghost peaks if not purged. This technique can use a thermal conductivity detector, though flame ionization is more sensitive to hydrocarbons in the analyte. A version of this technique with a mass spectrometer as the detector is the "gold standard" in forensic analysis of mixtures. In this technique, the column packing or an adsorbed liquid serves as the stationary phase, and its mobile phase is often helium. For 10 points, name this technique that separates the volatile components of a sample by their retention time after vaporization.

ANSWER: **gas chromatography** [or **GC**; accept **gas** liquid **chromatography** or **GLC**; accept **gas** solid **chromatography** or **GSC**; prompt on column **chromatography**]

<Chemistry>

5. In this opera, two offstage voices shout about finding "more corpses in the canal" during a final act that takes place in a dilapidated offshore palace. A character in this opera changes her attitude toward a rival after seeing a rosary belonging to a blind street singer; that character in this opera stabs herself instead of marrying the baritone Barnaba during the aria "Suicidio" ("soo-ee-CHEE-dee-oh"). While on a ship, Enzo sings this opera's most famous aria, "Cielo e mar" ("CHAY-lo ay mar"). In an oft-excerpted scene from this opera, guests at a feast watch a ballet performed by dancers who represent divisions of the day; that excerpt from this opera is danced to by ostriches and hippos in *Fantasia* and provides the melody of the song "Hello Muddah, Hello Faddah." For 10 points, name this opera by Amilcare Ponchielli ("ah-MEEL-cah-ray pone-k'YELL-ee") that features "The Dance of the Hours."

ANSWER: *La Gioconda* ("lah jo-CONE-dah") [or *The Joyful Girl* or *The Joyful Woman* or *The Joyful Lady* or *The Joyful One* or *The Happy Woman* or *The Ballad Singer*]

<Other Fine Arts>

6. Alfred L. Roca used nitrogen-15 data to find the sources of this good from the 16th-century wreck of the *Bom Jesus* ("bone zhay-ZEUS"). Before the 1870s, beeswax and this good led to the expansion of the Chokwe. Arab trade in this main good among the Ngonde led to the 1887 Karonga War. The Yao and the Chikunda armies of prazeros ("prah-ZAIR-ooos") mainly enslaved porters to haul this good in the lower Zambezi valley. A caravan route for trading slaves and this good via Tabora led to the Stokes Affair and the Congo–Arab War and enriched Nyamwezi and Swahili merchants like Tippu Tip. Loango and Kongo artists carved this material like scrimshaw. 19th-century Europeans imported this African material for cutlery handles and billiard balls. For 10 points, what material was hunted on a namesake coast south of modern Bouaké, Abidjan, and Yamoussoukro?

ANSWER: **ivory** [accept elephant **tusks**; accept Côte d'**Ivoire** or **Ivory** Coast; accept rhinoceros **horn**; prompt on **teeth** or **dentine**; prompt on **elephants** or *Loxodonta*; prompt on **rhinoceroses**]

<World History>

7. A thinker from this country wrote that Rousseau's general will was finally realized in a subculture characterized as "database animals." Another thinker from this country drew on the notion of "other power" to center his philosophical method on the constant confession of one's ignorance in *Philosophy as Metanoetics*. A philosopher from this country compared the Western conception of nihilism and *shūnyatā* in the book *Religion and Nothingness*. A notion from the aesthetics of this country that translates to "the pathos of things" centers on the recognition of impermanence. An ethical code developed in this country translates as "the way of the warrior." For 10 points, name this home country of Keiji Nishitani and other philosophers of the Kyoto School.

ANSWER: **Japan** [or **Nihon** or **Nippon**] (The first clue refers to *Otaku: Japan's Database Animals* by Hiroki Azuma. The late clues refer to mono no aware and bushidō.)

<Philosophy>

8. *Two answers required.* In a poem, one of these authors addresses the other as a “moon of poets” and wonders about the lost sonnets of Raphael and paintings of Dante. These poets met after one praised the other in “Lady Geraldine’s Courtship,” and one of these poets dedicated “One Word More” to the other. A little child sings “O bella liberta” in a poem named for the windows of these poets’ house. A poem from one of these poets to the other describes how men “strive for right” and “turn from praise,” and another requests not to be loved for “her smile—her look.” Time spent by these poets in the Casa Guidi (“GWEE-dee”) inspired poems in *Men and Women* like “Andrea del Sarto.” One of these poets wrote a poem to the other that asks, “How do I love thee? Let me count the ways.” For 10 points, name these two married poets of “My Last Duchess” and *Sonnets from the Portuguese*.

ANSWER: Elizabeth Barrett Browning [or Elizabeth Barrett Moulton-Barrett] AND Robert Browning [accept the Brownings]

<British Literature>

9. The differential group delay due to this phenomenon leads to PMD, which distorts pulses and limits data rates. Twisted nematic LCDs modulate pixel opacity by electrically controlling the strength of this phenomenon with the Fréedericksz (“FREE-durr-icks”) transition. For materials exhibiting this property, the impermeability tensor defines an ellipsoid called the optical indicatrix. Waveplates have a fast and slow axis because they are made out of crystals exhibiting this phenomenon. An applied electric field induces this phenomenon to different degrees in the Kerr and Pockels effects. This phenomenon splits light into ordinary and extraordinary rays. For 10 points, name this phenomenon in which a medium has different indices of refraction for light propagating in different directions.

ANSWER: birefringence [or birefringent; accept circular birefringence; accept optical rotation; accept polarization rotation; prompt on optical activity; prompt on polarization of light before “Fréedericksz” by asking “what phenomenon is affecting the polarized light?”; prompt on double refraction by asking “what phenomenon causes double refraction?”] (PMD stands for polarization mode dispersion.)

<Physics>

10. An artist from this country depicted two elderly lovers with their younger counterparts inside the silhouette of their faces in the painting *Forever Always*; that painting inspired the album cover for Young Thug’s *Punk*. An artist who spent most of the later part of her life in this country created a green poster depicting two Eves handing each other apples and donated the sculpture *How Doth the Little Crocodile* to its capital city. After she split from Max Ernst, this country became the adopted home of Leonora Carrington. An artist from this country created a painting of a skyscraper erupting from a volcano inside a bathtub and another painting that depicts her head on the body of a wounded deer. For 10 points, name this home country of Frida Kahlo.

ANSWER: Mexico [or United Mexican States or Estados Unidos Mexicanos; reject “Estados Unidos”] (*Forever Always* is by Octavio Ocampo.)

<Painting/Sculpture>

11. The unnamed narrator is encouraged to write a biography of this author by the older woman Sadie in Andrew Palmer’s novel *The Bachelor*. The speaker of a poem by this author calls himself “the king of the pool” and “the little man who smokes and smokes” before referring to himself as “Pussy-cat!” This author described a man who “rose with his gun and went outdoors by my window / and did what was needed” in a poem reflecting on his father’s suicide. The fourteenth poem in a collection by this author begins “Life, friends, is boring. We must not say so.” This author wrote a collection of three-stanza, eighteen-line poems that depict conversations between Mr. Bones and his alter ego, Henry. For 10 points, name this American confessional poet who wrote many *Dream Songs*.

ANSWER: John Berryman [or John Allyn McAlpin Berryman; prompt on John Allyn Smith, Jr.]

<American Literature>

12. The day before she died, Pope Innocent IV (“the fourth”) approved the rule written by a nun from this city, the first monastic rule written for women by a woman. A series of three mystical encounters in a basilica in this city led Simone Weil (“vay”) to convert to Christianity. On Palm Sunday in 1212, a teenage saint snuck out of her house in this city and was tonsured by another future saint in the nearby Santa Maria degli Angeli. This city’s abbey of San Domiano was the longtime home of the founder of a “poor” order of nuns named Saint Clare. A male saint born in this city rebelled against the stability of the Benedictines by swearing his order to a life of itinerant poverty and legendarily preached to the birds. For 10 points, name this Umbrian city that was the birthplace of Saint Francis.

ANSWER: **Assisi** [or **Asisium**; accept Francis of **Assisi** or Francesco d’**Assisi**; accept Clare of **Assisi**]

<Religion>

13. A 1980 Harvard Business School study centered on a supposed 1973 strike involving members of this profession taking an unplanned day off. In a Senate race, Jeff Bingaman punned on this profession to attack his opponent who previously held it, Harrison Schmitt. He isn’t John F. Kennedy, but a man at the time best known for working in this non-political profession delivered the Gold Star Mothers speech. That man who worked in this profession before becoming a senator was, along with John McCain, cleared of wrongdoing as a member of the Keating Five. A 1986 disaster that killed seven people in this profession, including the teacher Christa McAuliffe, motivated the Rogers Commission. For 10 points, name this pre-political profession of John Glenn, who was one of the Mercury Seven.

ANSWER: **astronauts** [prompt on **scientists**; prompt on **engineers**; prompt on **aviators** or; prompt on **pilots**; prompt on **geologists**; prompt on school**teachers** before read]

<American History>

14. Given a topological space (X, T) (“X-T”) and set S that is called a “sub-[one of these sets]” for X , (read slowly) if every open cover of X by members of S has a finite subcover, then X is compact (end read slowly) by a theorem of J.W. Alexander. If this set for a topological space is countable, then the space is second-countable. All vector spaces are free because one of these sets for a vector space always exists. For a vector space, one of these sets must also be a minimal generating set and a maximally linearly independent set. Given one of these sets S for a vector space, any element of the vector space can be written as a linear combination of the elements of S . For 10 points, the unit vectors “ i hat,” “ j hat,” and “ k hat” form what type of set for three-dimensional Euclidean space?

ANSWER: **basis** set [or **base** set; accept **subbasis**; prompt on **generating** set or set of **generators**; prompt on **spanning** set; prompt on **linearly independent** set] (The first line refers to the Alexander Subbasis Theorem.)

<Other Science>

15. A plywood model of the Dukes of Hazzard charger crashes into this object in the Chris Larson installation *Pause*. Scharlette Holdman paid to have this object shipped to San Francisco, and it was later exhibited in an empty warehouse at Mather Air Force Base as an argument for the insanity of its owner. This structure was built with the help of its owner’s brother David, who provided letters of its owner’s unique phrasing of “you can’t eat your cake and have it too.” Until 2019, this object was found next to an exhibit on the Boston Marathon Bombing in DC’s Newseum. For 10 points, name this object built in the woods of Lincoln, Montana, where the manifesto “Industrial Society and Its Future” was written by an anarcho-primitivist who sent multiple mail bombs to academics.

ANSWER: the **Unabomber**’s **cabin** [accept any answers indicating a **house** or **shed** owned by the **Unabomber**; accept Ted **Kaczynski** or Theodore (John) **Kaczynski** in place of “the Unabomber”; reject “bunker” or similar answers]

<Other Academic>

16. Eva Mackey analyzed how this country's ads mythologized non-political "ordinary" people in *House of Difference*. A thinker from this country used Oliver Sacks watching a soundless Reagan speech to illustrate the title "Autonomy of Affect." A nonprofit from this country taught critical thinking with a PSA about the wild "house hippo." This country's 1991 *Broadcasting Act* set quotas of culturally distinct "content" for channels that educated children about national history with *Heritage Minutes*. A theorist from this country contrasted high-participation "cool" comics with "hot" films; that author of *Understanding Media* coined the phrases "global village" and "the medium is the message." For 10 points, what homeland of Brian Massumi and Marshall McLuhan produces bilingual media in English and French?

ANSWER: **Canada** [accept **Canadian** Broadcasting Corporation; accept **Canadian** content or contenu **canadien**; prompt on **CBC** or **CanCon**]

<Social Science>

17. An F minor work dedicated to this person begins with a two-measure Mannheim rocket that is then repeated in the dominant; that opening was the first example used by Arnold Schoenberg ("SHERN-berg") to define a musical sentence. A chamber piece dedicated to this person opens with the cello sustaining a C, before being joined by other instruments holding rising A-flat, E-flat, and A. This composer's brother likely inspired the fugal finale beginning C-D-F-E in a younger composer's final symphony. This composer was supposedly called "Papa" by a composer who included "Dissonance" in a set of string quartets dedicated to him. The oldest member of the First Viennese School, for 10 points, name this brother of Michael and mentor of Mozart, who wrote the Surprise Symphony.

ANSWER: Joseph **Haydn** [or Franz Joseph **Haydn**]

<Classical Music>

18. Opponents of this industry at Wyhl and Plogoff developed manure spray hoses and illegally constructed barns full of sheep, tactics they adopted from activism against a proposed expansion of a military base in the Larzac. Chaïm Nissim's opposition to this industry caused him to participate in an attack on the "Superphénix" using bazookas supplied by the Red Army Faction. The use of dry cask storage in this industry offers an alternative to pond storage at sites like Sellafield, the setting of the 1957 Windscale fire. A logo with the text "NO THANKS" below a smiling sun symbolizes opposition to this industry, which Angela Merkel committed to phase out of Germany by 2022. For 10 points, name this energy industry that was set back by the radioactive disaster at Chernobyl.

ANSWER: **nuclear** energy industry [or **nuclear** power industry; prompt on **energy** or **power** industry; reject descriptions that mention "nuclear weapons"]

<European History>

19. The TNF homolog *dl* drives the induction of these structures from embryonic placodes by activating beta-catenin. In Dicer-knockout mice, these structures evaginate, not invaginate. Precursors of these structures cluster in condensate, germ, and bulbous peg stages. These structures degrade as effluvium while leaving "club" remnants in their maturation cycle of anagen, catagen, and telogen. In an "areata" condition, immune privilege is lost in the inner root sheath of these ectodermal structures, whose "bulge" contains melanocyte stem cells that alter their coloration. Sebaceous glands lubricate the base of these structures, which are raised by arrector pili. These structures' dermal papillae are destroyed in cosmetic electrolysis and laser removal. For 10 points, alopecia causes the loss of what keratinous structures from the scalp?

ANSWER: **hairs** [or hair **follicles**; accept club **hair**; accept laser **hair** removal; prompt on **sebaceous** glands before read; prompt on **skin** or **dermis** or **integumentary** system or **epithelium**; prompt on **cytokeratins** or dermal **papillae** or **pili** before read] (*dl* stands for *downless*.)

<Biology>

20. This character “wound the thread around the prin of night” to open a Mohja Kahf poetry collection titled “Emails from [this character].” In a short story, Atyka is killed for teaching about this character during the Algerian Civil War. This character describes a husband traveling for two weeks to bring his ill wife a rare fruit, inspiring the Assia Djebar story “Woman in Pieces.” An Assia Djebar novel is titled “A Sister to [this character],” who tells a story about three apples. Until the 2008 translation by Malcolm and Ursula Lyons, the only full English translation of the work depicting this narrator was the 1880s version by Richard Burton. When daybreak arrives, this woman cannot finish telling her sister Dunyazad stories. For 10 points, name this woman who tells Sultan Shahriyar (“SHAH-ree-ar”) the stories of the *Arabian Nights*.

ANSWER: **Scheherazade** (“shuh-HAIR-uh-zahd”) [or **Shahrazad**; accept *A Sister to Scheherazade*; accept *E-mails from Scheherazad*]

<World Literature>

Tiebreaker. *Description acceptable.* A man’s “potato-peeling face” is described in this work, whose narrator is upset when water is spilled on some genealogy charts. In this work, a child describes her mother as “‘Moms’: an imperfect ‘Mom’” and wishes she could “honor her by removing the ‘s’.” This work ends with the narrator calling herself “a bundle of contradictions” and wondering “what I could be...if only there were no other people in the world.” The narrator receives a kiss on a divan in this work, which features the cat Mouschi and the dentist Mr. Dussel. This work addressed to Kitty describes the author’s crush on Peter van Daan, and states, “I still believe, in spite of everything, that people are truly good at heart.” For 10 points, name this work written while the author was hiding from the Nazis in an attic.

ANSWER: *The Diary of a Young Girl* [or *Het Achterhuis. Dagboekbrieven 14 Juni 1942 – 1 Augustus 1944*; or *The Annex: Diary Notes 14 June 1942 – 1 August 1944*]; or the **diary** of Anne **Frank**; or the **diary** of Annelies Marie **Frank**]

<European Literature>

BONUSES

1. When he appeared on the Italian game show *Double or Nothing* in 1959, a composer shocked the audience by successfully naming 24 varieties of these things and winning 10,000 dollars as a result. For 10 points each:

[10h] Name these objects that trigger the unique musical synesthesia of the Czech composer

Václav Hálek (“VAHTS-lahf HAH-leck”). A Lied by Modest Mussorgsky (“muh-SORG-skee”) describes a girl who collects “orange, brown, and white” examples of these objects.

ANSWER: **mushrooms** [accept “Gathering **Mushrooms**” or “Po **Griby**”; prompt on fungus or fungi]

[10e] This American experimental composer won big on the aforementioned game show with his excellent mushroom knowledge. He is better known for writing *Imaginary Landscapes* and *4’33”*.

ANSWER: John **Cage** [or John Milton **Cage** Jr.]

[10m] The late Baroque player of this instrument Johann Schobert is sadly best known today for killing himself and his whole family when he made a soup out of poisonous mushrooms that he claimed were edible. *The Mysterious Barricades* is a *style brisé* (“steel-luh bree-zay”) piece written for this instrument by François Couperin.

ANSWER: **harpsichord** [or **clavecin**; or **Cembalo**; prompt on keyboard]

<Classical Music>

2. Gerhard Ertl and colleagues used Auger (“oh-ZHAY”) spectroscopy to measure adsorption of this gas on crystals of iron, allowing for the calculation of ammonia synthesis rates. For 10 points:

[10e] Name this gas that is artificially fixed in the Haber–Bosch process for ammonia synthesis.

ANSWER: **dinitrogen** gas [or **N₂** (“N-2”)]

[10m] Adsorbed nitrogen is more stable on the pure (111) (“one-one-one”) surface of iron than the (100) (“one-zero-zero”) surface, where (111) and (100) are these labels used to specify a lattice plane in crystallography.

ANSWER: **Miller indices** [prompt on indices]

[10h] Ertl also established that alkali metals can play this role when added to the iron catalyst for ammonia synthesis by donating charge to the iron surface. Like activators, these substances enhance the effectiveness of the main catalyst.

ANSWER: **promoters** [accept **cocatalyst**]

<Chemistry>

3. The Arsenites and Josephists feuded over support for this ruler, whom Patriarch Arsenios Autoreianos had excommunicated in 1261 for ordering the blinding of the eleven-year-old John IV Laskaris. For 10 points each:

[10h] Name this ruler whose policies were juxtaposed with those of his son, Andronikos II, by the contemporaneous historian George Pachymeres (“pack-ih-MEER-eez”).

ANSWER: **Michael VIII** Palaiologos [prompt on Palaiologos; prompt on Michael]

[10m] Pachymeres criticized Michael VIII’s support for this policy, which split the Arsenites and the Josephists. Pope Gregory X called the Second Council of Lyons (“lee-ohn”) after Michael VIII promised to complete this action.

ANSWER: **Union** of the Eastern Orthodox and the Roman Catholic **Churches** [or word forms; accept descriptions like **mending** the Great **Schism**; accept **East–West Schism** or **Schism of 1054** in place of “Great Schism”; reject “Western Schism” or “Papal Schism” in place of “Great Schism”]

[10e] Earlier attempts to mend the Great Schism had failed due to lingering tensions over Enrico Dandolo’s 1204 sack of Constantinople during this crusade, after which the Latin Empire was formed.

ANSWER: **Fourth** Crusade

<European History>

4. Answer the following about queer contemporary authors from California, for 10 points each.

[10h] In 2021, this Cambodian-American author's only collection of short stories was published less than a year after he died of a drug overdose. Many of the stories in this author's collection *Afterparties* describe his youth as a gay Cambo in Stockton.

ANSWER: Anthony Veasna **So**

[10e] Queer author Maggie Nelson was inspired by Joan Mitchell paintings to write a prose poetry collection meditating on this color. This primary color dominates the famous cover of *The Great Gatsby* painted by Francis Cugat.

ANSWER: **blue** [accept *Bluets*]

[10m] A queer poet with this surname co-founded the New Narrative movement in San Francisco with Bruce Boone. Another poet with this surname wrote the collection *The Wild Iris* and won the 2020 Nobel Prize in Literature.

ANSWER: **Glück** ("glick") [accept Louise **Glück** or Louise Elisabeth **Glück**; accept Robert **Glück**]

<American Literature>

5. Duranton and Puga identified sharing gains and risk, matching externalities, and learning as microfoundations of this process, which Robert B. Noland found to be high in Italy and low in Sweden. For 10 points each:

[10h] Name this localization process that provides cost-saving external economies of scale and forms development clusters within industries. Integrated conurbations form in a related process with this name.

ANSWER: **agglomeration** [accept urban **agglomeration**; accept economies of **agglomeration** or **agglomeration** economies; prompt on urban **growth** or **urbanization** or similar; prompt on increasing **returns** to scale]

[10e] Agglomeration economies might be illustrated by China's Táobǎo villages, which specialize in selling goods on one of these platforms that include B2C sites run by JD.com, Flipkart, Alibaba, and Amazon.

ANSWER: **e-commerce** [or **electronic commerce**; or **online shopping** or **online markets** or **e-tail** or equivalents; prompt on **internet** or **websites** or **online** or similar; prompt on **markets** or **stores** or similar]

[10m] B2G e-commerce firms like Citymart target this part of the economy, which forms PPPs with businesses. This area names a field of "administration" that uses management's XY theory to address the "iron triangle" that blocks implementation.

ANSWER: **government** [or **civic** sector or **public** sector or **state** sector or **civil** service; accept public **policy** or similar; accept **public** administration or **public** management; accept **public**-private partnerships; accept business to **government**; prompt on **political** science or **politics**; prompt on **bureaucracy** or similar]

<Social Science>

6. A photographer in New Brighton repeatedly assures a man who has stolen this item that he will be promoted quickly to "Chief Messenger at Feltex." For 10 points each:

[10h] Name this item, which Buntu encourages the protagonist to steal from Robert Zwelinzima's ("z'way-LIN-zee-mah's") body in Athol Fugard's play *Sizwe ("SIZ-way") Banzi Is Dead*.

ANSWER: **passbook** [accept **identity book**; accept **workers'** permit; accept **pass** or **ID** card; prompt on **book**; prompt on **permit**; reject "passport"]

[10m] This Palestinian poet engaged with the racial politics of identity documents by repeating "Write down: I am an Arab" in the poem *Identity Card*.

ANSWER: Mahmoud **Darwish**

[10e] This playwright wrote about asylum seekers in London in the radio play *Document of Identity*. This Nigerian playwright is better known for writing *Death and the King's Horseman*.

ANSWER: Wole **Soyinka** [or Akinwande Oluwole Babatunde **Soyinka**]

<World Literature>

7. These diagrams use “scri” (“sery”) or “script I” to represent future and past null infinity, which are associated with the destination of outgoing radiation and the source of incoming radiation. For 10 points each:

[10h] Name these 2D diagrams that depict infinite 4D spacetime by rescaling the metric by the conformal factor.

ANSWER: **Penrose** diagrams

[10m] The Penrose diagram for the maximal extension of this metric consists of four regions: the original spacetime, a parallel universe, a black hole, and a white hole. This metric describes spacetime under the influence of a massive body with no charge or angular momentum.

ANSWER: **Schwarzschild** (“sh’VARTS-shilt”) metric [or **Schwarzschild** solution; or **Schwarzschild** black hole; or **Schwarzschild** vacuum]

[10e] This phenomenon travels on 45-degree trajectories in Penrose diagrams. Extremely massive objects can act as lenses to distort and bend this phenomenon.

ANSWER: **light** [or electromagnetic **radiation**]

<Physics>

8. Volcanic eruptions preserved San Andrés and Joya de Cerén in this country, where the cotton-growing confederation of Cuscatlán was founded after the Toltecs spurred an 11th-century migration from Mexico. For 10 points each:

[10h] Name this modern-day country where the Poqomam briefly expelled the dominant Nawat-speaking Pipil from Tazumal. Pipil artisans in this country brought petate bedrolls and comal griddles to the cacao-trading state of Izalco.

ANSWER: El **Salvador** [or Republic of El **Salvador** or República de El **Salvador**; accept **Salvadoran** or **salvadoreña** or **salvadoreño**]

[10e] Anastasio Aquino, a Nonualco hacienda worker growing these goods, led an 1833 rebellion in El Salvador. By 1600, New Spain’s main nonmineral exports were these products, like Oaxacan carmine from cochineal (“kotch-ih-NEEL”) and indigo.

ANSWER: **dyes** [accept **pigments**; accept **colorants**; prompt on organic **compounds** or **chemicals**; prompt on cash **crops** or similar by asking “processed into what?”]

[10m] Merchants traded hilo de caracol and achiote dyes in the Captaincy-General based in this people’s homeland, the site of a 1570s-era cacao boom. Antigua was built southeast of this people’s kingdom of Q’umarkaj in Guatemala.

ANSWER: **K’iche’** [or **Quiché**; accept **Kaqchikel** or **Uspantek** or **Tz’utujil** or **Tzutuhil** or **Sutujil** or **Sakapultek**; prompt on **Maya** or **Mayan** peoples; reject “Q’eqchi” or “Kekchi”]

<World History>

9. This city’s Cișmigiu (“CHESH-mee-GYEW”) Gardens was largely spared from the Juche-inspired “systemization” urban planning system. For 10 points each:

[10m] Name this city nicknamed “Little Paris” since its Unirii (“oo-nee-ree”) Boulevard was built to resemble the Champs-Élysées (“shohnz-eh-lee-zeh”). This city’s Palace of the Parliament is the heaviest building in the world.

ANSWER: **Bucharest** [or **București**]

[10e] To mimic the Champs-Élysées, Unirii Boulevard ends with a recreation of this monument. The French Tomb of the Unknown Soldier lies below this monument commissioned by Napoleon Bonaparte.

ANSWER: **Arc de Triomphe** [or **Arc de Triomphe** de l’Étoile; accept the **Arch of Triumph** or the **Triumphal Arch**]

[10h] Visitors to one of these locations at Bucharest’s Politehnica (“po-lee-TEKH-nee-kah”) University can see marine fossils in the marble foundations. Dogs learned to frequent one of these locations designed by Latvian artists that contains Pavel Korin’s mosaic “Peace Throughout the World.”

ANSWER: **subway** stations [or **metro** stations or equivalents; accept **underground** stations or the **tube**; prompt on railway **stations** or rapid **transit** or similar] (The other metro system is in Moscow.)

<Geography>

10. Susan Schneider argued that those who hold this position to be true must necessarily reject physicalism. For 10 points each:

[10m] Identify this specific position that holds that “the mental” emerges from the physical brain in a non-reducible manner. This form of dualism is distinct from substance dualism.

ANSWER: **property** dualism

[10h] To explain how mental processes seem to be the only emergent nonreducible properties, some property dualists also adhere to this position, which states that all matter has some mental properties. Francesco Patrizi coined the term for this position.

ANSWER: **panpsychism**

[10e] Property dualism and substance dualism both fail to explain the “downward” form of this idea. This idea is the influence by which one event or thing brings about another.

ANSWER: **causation** [or **causality**; accept **cause** and effect; accept downward **causation**]

<Philosophy>

11. During the Stanford prison experiment, Dave Eshelman earned the nickname “John Wayne” by acting out the role of a cruel warden from this film who sentences prisoners to “a night in the box,” although the warden was not actually played by John Wayne. For 10 points each:

[10m] Name this 1967 Stuart Rosenberg film that stars Paul Newman as a rebellious member of a Florida chain gang who consumes 50 hard-boiled eggs.

ANSWER: ***Cool Hand Luke***

[10h] *Cool Hand Luke* ends with a shot of one of these objects superimposed over a crossroads. A 1980 film ends with the song "Midnight, the Stars, and You" playing during a slow zoom towards one of these objects.

ANSWER: **photograph** [accept **pictures**]

[10e] This director personally airbrushed Jack Nicholson into a 1921 New Year’s Eve party photo to end his film *The Shining*.

ANSWER: Stanley **Kubrick**

<Other Fine Arts>

12. Downwearing may contribute to the zonal type of these formations, which are hypothesized to result from diverse processes like the alteration and exhumation of massif and scarp retreat. For 10 points each:

[10h] Name these prominent formations that may arise when erosion on a plain exposes the pediment around knobs of bedrock, like the granite domes of Zimbabwe’s Matobo Hills. Wilhelm Bornhardt coined the name of these isolated rock outcrops that stand out abruptly from surrounding plains.

ANSWER: **inselbergs** [or **monadnocks**; accept **kopjes** or **koppies**; prompt on **tors**; prompt on **turrets**; prompt on **nubbins**; prompt on **outcroppings** or **boulders**; prompt on **sugarloaf hills** or **whaleback hills**; prompt on remnants of **circumdenudations**]

[10e] Inselbergs are often made of this siliciclastic (“sill-ih-sih-CLAH-stick”) sedimentary rock, like South American tepuis (“teh-pwees”) and the arches of Arches National Park. This rock is composed of, and named for, tiny grains of silica that are finer than gravel.

ANSWER: **sandstone** [accept Navajo **sandstone**; accept **quartz arenite** sandstone; prompt on **sand** grains]

[10m] Triassic lithostratigraphy (“lith-oh-strah-TIH-grah-fee”) in Europe relies on sandstone named for this variable. Liesegang rings are distinguished by this variable, which is used to classify minerals in the streak test.

ANSWER: **color** [accept **hue** or **shade** or **tint**; accept **colorful** sandstone or **Bunt**sandstein or **bunter** sandstone; accept specific colors like **red** or **orange** or **blue**; prompt on **light wavelength**; prompt on **appearance**]

<Other Science>

13. For 10 points each, answer the following about the Scottish child prodigy Marjorie Fleming, who wrote many poems and diaries before dying at age 8.

[10h] In her diary, Marjorie wrote that this author's "tails [sic] are very good." This author of the children's story "The Purple Jar" wrote about the mismanagement of the title Anglo-Irish estate in *Castle Rackrent*.

ANSWER: Maria **Edgeworth**

[10m] Marjorie Fleming's biographer, John Brown, claims that Marjorie Fleming was the protégée of this author. This author of *Guy Mannering* wrote a novel subtitled *'Tis Sixty Years Since* about the officer Edward.

ANSWER: Walter **Scott** [or Sir Walter **Scott**, 1st Baronet] (The unnamed novel is *Waverley*, which Scott allegedly wrote while he was with Fleming.)

[10e] This author called Marjorie Fleming "one of the noblest works of God." He anthologized poems for young readers in *A Child's Garden of Verses*, and wrote about the cabin boy Jim in *Treasure Island*.

ANSWER: Robert Louis **Stevenson** [or Robert Lewis Balfour **Stevenson**]

<British Literature>

14. An 1880 Senate Committee investigation into the origins of this movement referenced the influence of Henry Adams and the Colonization Council. For 10 points each:

[10h] Name this movement organized with the help of Benjamin "Pap" Singleton. Participants in this movement, who were encouraged to move to the "Great Solomon Valley," settled the town of Nicodemus.

ANSWER: **Exoduster** movement [accept the Great **Exodus** to Kansas; prompt on general answers referring to **Black migration** by asking "what was the name of the movement?"; reject the "Great Migration"]

[10e] One factor in the migration was this legislation, which promised a 160-acre allotment of land to citizens. This 1862 legislation signed by Abraham Lincoln opened up land in states like Kansas that the Exodusters migrated to.

ANSWER: **Homestead** Act of 1862

[10m] Henry Adams organized Exodusters migrating from this state, where perpetrators of the Colfax Massacre founded the White League. This state was briefly led by the first Black governor of a US state, P.B.S. Pinchback.

ANSWER: **Louisiana** [or **LA**]

<American History>

15. In Portugal, sculptors like Nicolas Chantereine decorated the Jerónimos and Santa Cruz monasteries in this style during the "Manueline" period. For 10 points each:

[10m] Name this artistic style that flourished in Bohemia under panel painters like Master Theodoric and the Master of Vyšší ("VISH-ee") Brod. Simone Martini influenced miniatures like the Wilton Diptych in this style's "International" phase.

ANSWER: **Gothic** [accept International **Gothic** or Late **Gothic** or tardo **gotico**; accept Manueline **Gothic** or **gótico** português tardio; accept **flamboyant** Gothic or gótico **flamejante**]

[10h] This artist's altarpiece depicting the *Adoration of the Magi* is considered one of the greatest International Gothic paintings. He painted scenes like the *Coronation of the Virgin* in tempera with pastiglia and gold leaf backgrounds.

ANSWER: **Gentile** da Fabriano [prompt on **da Fabriano**]

[10e] One of the predellas to Gentile's *Adoration of the Magi* depicts this scene. This scene portrays the birth of Jesus and is often displayed publicly around Christmas.

ANSWER: **nativity** of Jesus [or **nativity** of Christ; accept **crèches**]

<Painting/Sculpture>

16. In stories from this collection, a woman cuts off her hands after she learns that her brother is attracted to them, and a woman has to eat a dragon's heart in order to conceive a child. For 10 points each:

[10h] Name this 17th-century fairy tale collection by Giambattista Basile ("JAHM-bah-TEE-stah bah-ZEE-leh"), which was the inspiration for a Matteo Garrone film. In its frame story, ten storytellers are hired after the princess Zoza is cursed to never laugh.

ANSWER: **Pentamerone** ("pen-TAH-mer-OWN-ay") [or **Tale of Tales** or **Lo cunto de li cunti** or **Il racconto dei racconti**; or **Lo trattenimiento de peccerille**]

[10m] In the *Pentamerone* ("pen-TAH-mer-OWN-ay"), a woman has to marry an ogre after her father raises one of these creatures to enormous size. In a poem, one of these creatures is a "bed" and "temple" that holds "three lives in one."

ANSWER: **fleas** [or **pulce** or **pulci**; or **Siphonaptera**; prompt on **insects** or **arthropods**] (The second sentence is from "The Flea" by John Donne.)

[10e] The frame-story and style of the *Pentamerone* was patterned on this author's *Decameron*.

ANSWER: Giovanni **Boccaccio**

<European Literature>

17. The Malay hero Hang Tuah possessed one of these objects named Taming Sari, which granted its owners invincibility and ensured that they would not be defeated in battle. For 10 points each:

[10e] Name these weapons that, in a traditional Balinese dance, are directed toward the chests of performers due to a spell cast by Rangda. Sikhs carry the *kirpan*, a ceremonial example of these weapons, as one of the Five Ks.

ANSWER: **daggers** [or **kris**; accept **knives** or **blades** or **swords**]

[10h] The kris dance featuring those eponymous ceremonial daggers occurs as part of a larger performance named for this benevolent lion spirit, who confronts the demon queen Rangda.

ANSWER: **Barong**

[10m] At weddings, grooms carry krises garlanded in these flowers because of a prince who hung his intestines on his kris to keep fighting. A Chinese folk song praises the fragrant buds of this flower, which is used in a tea notably produced in Fúzhōu.

ANSWER: **jasmine** [accept white **jasmine** or Arabian **jasmine** or Sambac **jasmine** or **Jasminum sambac**; or **melati** putih; or **mòlihuā**]

<Mythology>

18. Journalist Martin Dillon examined mass murders perpetrated by a group of "Butchers" named for the Shankill neighborhood in this city. For 10 points each:

[10m] Name this largest city where "peace walls" were constructed in "interface areas." The Harland & Wolff Shipyard in this city built most vessels for the White Star Line that was known for operating transatlantic ocean liners in the first half of the 20th century.

ANSWER: **Belfast** [or **Béal Feirste** or **Bilfawst**] (The White Star Line also operated the *Titanic*, which was built in Belfast.)

[10e] The "peace walls" in Belfast hold together a fragile peace achieved by the 1998 Good Friday Agreement, which ended this decades-long ethnic conflict in Northern Ireland.

ANSWER: the **Troubles** [or na **Trioblóidí**]

[10h] During the Troubles, a note legendarily reading, "No milk, but leave 200 bottles" preceded a three-day "battle" supported by Radio Free Derry in this neighborhood, which provides an alternate name for events on "Bloody Sunday" in 1972.

ANSWER: **Bogside** [or "the **Bog**"; accept Battle of the **Bogside**; accept **Bogside** Massacre]

<Other History>

19. Hanahan and Weinberg's 2011 *Cell* paper "Hallmarks of Cancer: The Next Generation" described "reprogramming energy metabolism" as an emerging feature of the tumor microenvironment. For 10 points each:
[10e] In the Warburg effect, a hypoxic population of cancer cells upregulates GLUT1 to import this monosaccharide. This six-carbon sugar is the main input for glycolysis ("glai-KAHL-ih-sis").

ANSWER: **glucose** [or **D-glucose**; or **dextrose**; or **2,3,4,5,6-entahydroxyhexanal**; or **D-gluco-hexose**; prompt on **aldohexoses**]

[10h] A mutant form of this Krebs cycle enzyme produces 2-hydroxyglutarate from alpha-ketoglutarate ("kee-toh-GLOO-tuh-rate") in the tumor metabolome. ATP inhibits citrate synthase and this other rate-limiting enzyme that competes with a glyoxylate ("glai-OCK-suh-late") cycle lyase.

ANSWER: **isocitrate dehydrogenase** [or **IDH**; prompt on **isocitrate** lyase or **ICL**]

[10m] In some tumors, glucose-dependent cells may release this molecule to support a second subtype that runs the Krebs cycle. A dehydrogenase converts this molecule to pyruvate ("pai-ROO-vayt") to reverse muscle glycolysis in the Cori cycle.

ANSWER: **lactate** [or **lactic acid**; or **sarcoplactic acid**; or **2-hydroxypropanoic acid**; accept **lactate** dehydrogenase or **LDH**; prompt on $C_3H_6O_3$ ("C-3-H-6-O-3")]

<Biology>

20. Answer the following about components of the digital umma, the expansion of Islamic solidarity with the help of the internet. For 10 points each:

[10e] The Malaysian startup SalamWeb launched a browser aimed at Muslim internet users that vets web pages and labels them as either halal or as this category of topics or things considered "forbidden" by Islamic law.

ANSWER: **harām**

[10h] Increased internet usage among Muslims has bolstered halal alternatives to this practice. Arrangements called murabaha and ijara are used in halal businesses centered on this practice by companies like Al Rayan.

ANSWER: international **banking** [accept **finance**; accept money **lending** or **loans**]

[10m] Hind Makki runs a blog named for these components of contemporary mosques and critiques the disparity in quality between those used by men and women. Some mosques feature architectural elements called iwan above these components.

ANSWER: **entrances** [or **exits**; accept **doors**; accept **entranceways**; accept *Side Entrance*; accept **gateways**]

<Religion>

Tiebreaker. At the beginning of the Kurukshetra ("koo-rook-SHEY-truh") War, Krishna uses one of these objects known as Pāñchajanya that is often depicted in the upper left hand of Vishnu. For 10 points each:

[10h] Name these objects. In Buddhist iconography, Indra is represented as Shakra presenting the rare Dakshinavarti variants of these objects, one of the eight auspicious symbols, to the Buddha.

ANSWER: **conch** shells [or **shankha**; accept Dakshinavarti **Shankh**; prompt on **seashells**]

[10m] The Dakshinavarti Shankh, which has a right-handed spiral, is held to be an abode of this goddess and her husband. This goddess emerged from the Churning of the Ocean of Milk seated upon a lotus, and is frequently depicted atop Shesha with her husband.

ANSWER: **Lakshmi** [or **Laksmī**; accept **Shri Devi**; prompt on **Tridevī**] (Her husband is Vishnu.)

[10e] The *Varāha Purāṇa* relates that performing this action with a Dakshinavarti Shankh frees one from sin. The processions during the Kumbh Mela culminate in this purifying action undertaken at the holy waters of the Ganges.

ANSWER: **bathing** [or **washing**; accept **immersion** or **dipping** or **swimming**; reject "baptism"]

<Mythology>