

2016 Terrapin XXIX: Lead Can't Penetrate Steele

Packet 3

Edited by Jordan Brownstein and Billy Busse

Questions by Jordan Brownstein, Billy Busse, Weijia Cheng, Naveed Chowdhury, Justin Hawkins, Will Kunkel, Ophir Lifshitz, Ani Perumalla, Sam Rombro, Jason Shi, Emma Stevens, Tanay Wakhare, and Sarang Yeola

Tossups

1. **This poem describes a person that “put out her hand / Among the harp-like morning-glory strings, / Taut with the dew from the garden bed to eaves.” That character in this poem relates how she knows “just how it feels / To think of the right thing to say too late.” This poem mentions a boy who is now “teaching in his college” and “studied Latin like the violin,” named (*) Harold Wilson. This poem provides “something you somehow don’t have to deserve” and “a place where, when you have to go there, They have to take you in” as definitions of “home.” In this poem, Mary tries to convince her husband to give the title character his job as a haymaker back. For 10 points, name this Robert Frost poem that ends with Warren finding the corpse of his ex-employee Silas, the title character.**

ANSWER: “The Death of the Hired Man”

<ES American Literature>

2. **The inverse of this process follows Arrhenius-like kinetics according to the Polanyi–Wigner equation. This process occurs indirectly via a “precursor state” according to a kinetic theory of it put forth by Kisliuk. Packed beds used to perform purifications via this process are often operated using a “pressure-swing.” One model of this process states that θ equals K times pressure over $1 + K$ times pressure. The multi-layer (*) BET model of this process assumes that each layer can be modeled independently by the Langmuir isotherm. Zeolites and silica gel are often used to perform this process due to their high surface areas. This process occurs between hydrogen gas and a metal during catalytic hydrogenation. For 10 points, name this process in which molecules adhere to a solid surface.**

ANSWER: adsorption [do not accept or prompt on “absorption”]

<SR Chemistry>

3. **According to this thinker, things that endure long enough to be experienced have “worldliness.” This thinker called the irreducible differences between humans “plurality” in a book that claims that all actions are rooted in the “new beginning inherent at birth,” natality. This thinker defined labor as activity needed to sustain life, defined work as the creation of artificial things, and defined (*) action as activity between people, three categories that make up a type of life that Western thought has subordinated to the “vita contemplativa.” This philosopher examined antisemitism and imperialism as precursors to Nazism and Stalinism. This philosopher was struck by the “thoughtlessness” of a war criminal she covered for the *New Yorker*. For 10 points, name this author of *The Human Condition* and *The Origins of Totalitarianism*, who wrote about the banality of evil in *Eichmann in Jerusalem*.**

ANSWER: Hannah Arendt

<ES Philosophy>

4. During this event, a man sent out a letter reminding its recipient that he had two dead brothers and was the guardian of Rolland's children; that letter is addressed to "my friend Robert." A demand issued during this event was the reinstatement of the Lapalme postal truck drivers. During this event, a politician dismissed "bleeding hearts" who "don't like to see people with helmets and guns" before declaring to Tim Ralfe (*) "just watch me" when asked how far he would go to keep law and order. Days later, that politician suspended civil liberties by imposing the War Measures Act. The kidnappings of James Cross and Pierre Laporte, and the latter's murder, occurred in this event. For 10 points, Pierre Trudeau faced what 1970 crisis started by the Front de libération du Québec?

ANSWER: October Crisis [or *La crise d'Octobre*; or FLO crisis; prompt on descriptive answers mentioning a crisis in Québec]

<WC European History>

5. In one poem addressed to these objects, the speaker claims "We die / As your hours do, and dry / Away / Like to the summer's rain." That speaker commands these objects to "Stay, stay / Until the hasting day / Has run" and weeps to see them "haste away so soon." Poems addressed to these objects include one by Robert Herrick and one in which the speaker thinks about them when he (*) lies on his couch "in vacant or in pensive mood." That poem describes these objects as "continuous as the stars that shine" and the speaker can see them on his "inward eye," but first sees these flowers "Beside the lake, beneath the trees, / Fluttering and dancing in the breeze." For 10 points, name this kind of flower that William Wordsworth wrote about in "I wandered lonely as a cloud."

ANSWER: daffodils [prompt on flowers until read]

<ES British Literature>

6. This opera's second scene ends as parts of the male chorus trade short remarks like "Look!" "Where?" "A warrior arrives!" "A wonder!" The key of A-flat major in its first act represents the innocence of the main character. The music modulates up a semitone to A major when that character kneels and the title character gives a second warning. This opera was its composer's last before his exile after the (*) Dresden uprising, his first through-composed opera, and his first to have a prelude. An F-sharp diminished seventh motif in this opera represents the witch Ortrud, who turns Prince Gottfried into a swan. After asking the Forbidden Question of the knight, Elsa of Brabant dies heart-broken. This opera's Bridal Chorus is commonly known as "Here Comes the Bride." For 10 points, name this Wagner opera whose title character is the son of Parzival.

ANSWER: Lohengrin

<OL Other Arts (Opera)>

7. The Marcinkiewicz theorem concerns this task for nonlinear operators. The Whittaker–Shannon formula for this process uses a sum of sinc functions to perform this task for an infinite number of points. A method of performing this task using a Gaussian process is known as Kriging ("crigg-ing"). It doesn't involve finding areas of polygons, but Brahmagupta's formula for this task incorporates second-order differences, while the (*) nearest-neighbor method for performing this task uses piecewise constant functions. Oscillatory behavior at the endpoints of an interval occurs if this procedure is performed using polynomials; that is Runge's ("ROON-guh's") phenomenon, which can be avoided by using splines. For 10 points, name this technique that constructs new data points within a set of known points.

ANSWER: interpolation

<SR Other Science (Math)>

8. Along with his consort, this god inscribed the length of each king's reign on the leaves of the sacred *Ished* tree. This god and Shu persuaded Ra's Eye to return to Ra's realm. This god is served by Astennu, one of four monkeys that guard a lake of fire. After Horus accidentally beheaded Isis, this god gave Isis a cow's head. Ra's boat was guarded by this god and his consort (*) Seshat. When Isis assembled Osiris's body parts, this god restored Osiris to life. To help Nut bear children, this god gambled with Khonsu for five extra days to the calendar. Horus's lost eye was restored by this god, who in one telling laid the golden egg that hatched Ra. This god weighs dead souls against his consort, the feather of truth Ma'at. For 10 points, name this ibis-headed Egyptian god of scribes.

ANSWER: Thoth [or Djehuty or Tahuti]

<AP Mythology>

9. An essay titled for this concept closes by discussing Kafka's story about a man riding a coal bucket into the Icy Mountains. A novel partly titled for it illustrates this quality with a story about Yakov Stalin smearing shit in a POW camp latrine, then throwing himself on an electric fence. The first of Italo Calvino's *Six Memos for the New Millennium* discusses this concept. In a novel partly titled for this concept, its opposite is exemplified by the words "Es muss sein!" from a (*) Beethoven string quartet. That novel begins by discussing how our lives take on this quality if Nietzsche's concept of eternal return is false. This word is the first title noun of a novel in which Sabina is the mistress of Tereza's husband Tomáš. For 10 points, name this "unbearable" quality attributed to "being" by the title of a Milan Kundera novel.

ANSWER: lightness [or leggerezza; or lehkost; or légèreté]

<JB European Literature>

10. In the early 1980s, Texas congressman Henry B. González asked for the impeachment of a leader of this institution during every congressional session for three years. A leader of this institution described its duty as "removing the punch bowl just as the party is warming up." The structure of this institution, which publishes the *Beige Book*, was secretly planned during a meeting disguised as a "duck hunt" at the Jekyll Island Club in Georgia. Robert (*) Owen and Carter Glass sponsored the bill that established this institution. This institution's structure was based on findings of a committee led by Nelson Aldrich after the Panic of 1907. Former leaders of this institution have included Paul Volcker and Alan Greenspan. For 10 points, name this central banking system of the United States that determines interest rates.

ANSWER: Federal Reserve System [or the Fed]

<AP American History>

11. A power series solution to this scientist's equation converges in the Laplace limit. Given a solution to this scientist's equation at a given time, the solution at future times can be calculated simply using the F and G functions, which are sometimes called the Lagrange coefficients. That equation named for this scientist is a transcendental equation that relates mean anomaly to eccentric anomaly. A vector equal to p cross L minus $m k \hat{r}$ is conserved in this scientist's namesake (*) problems, which involve two bodies interacting via a central and inverse-square force. One of his laws states that the square of the period is proportional to the cube of the semi-major axis, while another of his laws states that the radius vector of an orbit sweeps out "equal areas in equal times." For 10 points, name this scientist who proposed three laws of planetary motion.

ANSWER: Johannes Kepler

<SY Physics>

12. This visual element makes up John Baldessari's *I Will Not Make Any More Boring Art*. LEDs were used to render this visual element for the *Survival* series of Jenny Holzer, who also depicted it in her *Truisms*. Much of Barbara Kruger's work consists of this element overlaid on black-and-white photographs. This visual element appears on a white panel to the right of a chair and a photograph of a chair in Joseph Kosuth's *One and Three Chairs*. This visual element is arranged in a (*) square in a print by Robert Indiana that was copied for dozens of *LOVE* sculptures. Another artist placed this visual element in white circles above a crying woman in *Drowning Girl* and above Donald Duck hooking himself with a fishing rod in *Look Mickey!* For 10 points, Roy Lichtenstein's *Whaam!* features what symbols inside of speech bubbles?

ANSWER: text [accept writing, words, letters, characters, captions, type, or equivalents; accept answers such as speech bubbles, speech balloons, thought bubbles, dialogue, or talking until "speech bubbles" is read]

<JB Painting>

13. This letter plus the suffix "linked" refers to interrogatives like "which person" that solicit a choice from a familiar set. In the 1980s, Abney moved NPs into the complement of phrases headed by a functional category abbreviated by this letter, which expresses definiteness, quantity, or possession. This letter names the abstract syntactic structure that exists before movement takes place and produces S-structure. This letter represents the sound that was added to the word (*) "thunder" in a process called excrescence. This letter represents the sound that, in Grimm's law, shifted to /t/ ("tee"), its voiceless counterpart. The sound represented by this letter is the default allomorph for the English past tense. For 10 points, name this letter that represents a voiced alveolar stop, the letter that remains of "had" or "would" when those words appear in contractions.

ANSWER: d [accept d-linked, discourse-linked, D-structure, deep structure, DP, or determiner phrase]

<OL Social Science>

14. This man came to power after his predecessor allegedly went insane and, despite being put in stocks, took a knife from a slave and mutilated his own legs. This man's wife solved a code sent to him by Demartus by scraping the wax off a tablet and, as a child, convinced her father to not support Aristagoras of Miletus. Simonides commemorated a group led by this man with an epitaph addressed to a (*) "stranger passing by."

This successor of Cleomenes I and husband of Gorgo responded "come and take them" to a request to surrender arms at a battle where his troops were outflanked thanks to the treachery of Ephialtes, who showed the enemy troops a secret mountain path. For 10 points, name this Spartan king who died fighting Xerxes's forces at Thermopylae.

ANSWER: Leonidas I [or Leōnídēs I]

<JB European History>

15. In this city, a woman finds worms in her pot of milk at the exact moment that a man attempts suicide by firing a bullet through an iodine circle on his chest. A story set in this city centers on Isabel's father's promise to bury a recently deceased doctor. A character from this city wakes up in a train car full of dead bodies after 3,000 workers are massacred here. In a novel, a girl carrying a bag of her (*) parents' bones arrives in this city, causing a plague of amnesia and insomnia. *Leaf Storm* is set in this city. Seventeen men with permanent Ash Wednesday crosses on their foreheads are assassinated in this city in a novel that opens with a colonel remembering when ice was brought to this city by the gypsy Melquíades. For 10 points, name this city founded by José Arcadio Buendía, the setting of Gabriel García Márquez's *One Hundred Years of Solitude*.

ANSWER: Macondo

<ES Other Literature>

16. The SNO residue on the beta-93 cysteine of this protein helps transfer nitric oxide to the cell membrane. One conformation of this protein is stabilized by an ion pair between His-146 and Asp-94 as well as ion pairs formed by carbamates formed from this protein's N-terminal residues. A version of this protein containing tightly-packed gamma subunits is known as its "fetal" type. When hydrogen ions react with this protein, it is converted from the "relaxed" state to the "tense" state in the (*) Bohr effect. 2,3-bisphosphoglycerate lowers the affinity of this tetrameric protein, which is the classic example of cooperative binding. This protein contains 4 porphyrin rings surrounding 4 atoms of iron. For 10 points, sickle-cell anemia occurs due to a mutation in what protein that transports oxygen in the blood?

ANSWER: hemoglobin [or Hb]

<SY Biology>

17. This book states that its author learned what it meant to covet through the commandment "You shall not covet," because sin deceived him through the commandment. This book describes how after men began worshipping idols, God gave them up to "dishonorable passions," causing them to perform homosexual acts. This book states that a Jew is one inwardly, and that (*) circumcision is a matter of the heart, not the letter. A commentary on this book, described as "a bombshell in the playground of the theologians," was written by the Swiss Protestant theologian Karl Barth. The word "alone" was added to a verse in a German translation of this book by Martin Luther. For 10 points, name this longest Pauline epistle that is addressed to inhabitants of an empire's capital.

ANSWER: Epistle to the Romans [or Letter to the Romans]

<WC Religion>

18. While this leader was a communications officer, he was arrested for assisting the German spies Eppler and Sandstede in a non-South American Operation Condor. This non-Syrian leader expelled Soviet advisers from his country after dismissing his Minister of the Interior Sharawy Gomaa and his Vice President Ali Sabri as part of his Corrective Revolution. Food rioters mocked this leader with the chant, "O hero of the (*) crossing, where is our breakfast?" after he launched an economic liberalization program called the *infitah*. He launched Operation Badr, causing the collapse of the Bar-Lev Line during the Yom Kippur War. For 10 points, name this Egyptian president who succeeded Gamal Abdel Nasser and was assassinated in 1981 after he negotiated peace with Israel under Menachem Begin in the Camp David Accords.

ANSWER: Muhammad Anwar el-Sadat

<WC World History>

19. The somber finale of this composer's trumpet sonata ends with the chorale "All men must die." One of his symphonies ends with an Alleluia for brass after "Lauda Sion Salvatorem" plays on woodwinds. A retrograde inversion of the Preludium closes a piece by this composer made of 12 fugues and 11 modulating interludes. His orchestral work for BBC Radio after George V's death, composed in six hours, exemplifies his idea of (*) "utility music." A piece by this composer repeats a melody that another composer took from Rousseau's *Dictionary of Music* for his incidental music to Gozzi's *Turandot*. This composer of *Trauermusik* depicted an "Angelic Concert" in a symphony inspired by the Isenheim altarpiece. For 10 points, name this German composer of *Ludus Tonalis*, *Symphonic Metamorphosis of Themes by Carl Maria von Weber*, and the *Mathis der Maler* symphony.

ANSWER: Paul Hindemith

<JB Music>

20. A plant operated in Maywood, New Jersey, by the Stepan Company is responsible for processing this crop after it is imported into the United States. Pope Leo XIII granted a gold medal to Angelo Mariani for inventing a drink produced by marinating this crop in Bordeaux wine. This crop is often combined with *ilucta*, the ashes of the quinoa plant, before it is (*) chewed. Before becoming president, an ethnically-Aymara leader was the head of a union of growers of this crop. That leader, Evo Morales, held up this crop as he gave a speech at the United Nations calling for its legalization. The production and processing of this crop provides revenue for FARC rebels. For 10 points, name this crop, which John Pemberton included in a soft drink along with kola nuts.
ANSWER: coca leaves [do not accept or prompt on “cocaine,” since cocaine is not a crop]
<WC Other (Academic)>

Bonuses

1. A dictator of this country claimed to have personally assassinated its first prime minister, Sylvanus Olympio, in a 1963 coup d'état. For 10 points each:

[10] Name this African country led by Gnassingbé ("nah-sing-BAY") Eyadéma from 1967 until his 2005 death, after which a military government appointed his son Faure ("for") as PM.

ANSWER: **Togo** [or the **Togolese** Republic]

[10] Calling him a "black imperialist," Sylvanus Olympio broke from an alliance with this first Ghanaian Prime Minister after a dispute over the geographic split of Olympio's ethnic group, the Ewe ("ay-way") people.

ANSWER: Kwame **Nkrumah**

[10] Eyadéma changed his name from Étienne after falsely claiming to be the sole survivor of one of these events. One of these accidents killed Dag Hammarskjöld ("dog HA-mar-hweld") as he was traveling to Zambia.

ANSWER: **plane crashes** [or equivalents]

<AP World History>

2. Josquin des Prez ("joe-SCAN deh PRAY") combined the chanson with this type of composition, whose name means "little word." For 10 points each:

[10] Name these polyphonic compositions that often have isorhythm, no accompaniment, and a sacred Latin text, unlike madrigals. Dufay's piece of this type, *Nuper rosarum flores*, was for the newly-domed Florence Cathedral.

ANSWER: **motet**

[10] Guillaume de Machaut composed one of the last standalone pieces of this type, partially titled for David; it has arrangements by Birtwistle and Davies. In this effect, a fast melody's notes are alternately distributed among voices.

ANSWER: **hocket** [accept **hoquet**, **hocquet**, or **hoquetus**; accept **Hoquetus David**]

[10] This Second Viennese School composer's sparse œuvre features Klang·farben·melodie, a technique like hocket or pointillism. His Opus 21 Symphony's second movement has 7 palindromic 11-bar variations on a symmetrical tone row.

ANSWER: Anton **Webern**

<OL Music>

3. In "Sea Oak," this author wrote about a man who works as a "pilot" at a plane-themed strip club called Joysticks. For 10 points each:

[10] Name this contemporary author of *The Tenth of December*, known for short stories set in theme parks such as "The Wavemaker Stops" and "CivilWarLand in Bad Decline."

ANSWER: George **Saunders**

[10] In Saunders's upcoming first novel, this person encounters ghosts while mourning his son Willie in a cemetery. Walt Whitman lamented the death of this politician in the poem "O Captain! My Captain!"

ANSWER: Abraham **Lincoln**

[10] In Saunders's story "CommComm," a station of this organization paradoxically kills beavers to save a beaver habitat. A novel set at a camp of this organization opens with the protagonist falling "in love" with a chaplain while in the hospital for alleged liver pain.

ANSWER: United States **Air Force** [or United States Army **Air Forces**; prompt on the army, military, the armed forces, or government; anti-prompt, i.e. ask "can you be less specific?" on 265th Squadron]

<JB Other Literature>

4. A rare example of an organic molecule with this property is 5-dehydro-*m*-xylylene (“ZYE-lil-een”). For 10 points each:

[10] Name this type of magnetism in which neighboring spins align and cancel each other out. It exists at or below the Néel (“nay-ELL”) temperature.

ANSWER: antiferromagnetism [do not accept or prompt on “ferromagnetism” or other forms of magnetism]

[10] Antiferromagnetic lattices can exhibit this property, in which it is impossible to minimize the energy of all interactions simultaneously. For example, in a triangle of spins where spin 1 is up and spin 2 is down, the system has equal energy whether spin 3 is up or down. Extending the lattice thus leads to complex interactions.

ANSWER: geometrical frustration [accept frustrated interactions]

[10] The Néel temperature of an antiferromagnet is analogous to this temperature for a ferromagnet. It is named for the husband of a physicist who won the 1903 Nobel Prize along with Becquerel for her studies of radioactivity.

ANSWER: Curie temperature [accept Pierre Curie or Marie Curie]

<SR Physics>

5. This economist advocated controlling the location of industry and organizing the movement of labor to achieve full employment in his report *Full Employment in a Free Society*. For 10 points each:

[10] Name this economist who may be better known for identifying Want, Disease, Ignorance, Squalor, and Idleness as the “five giants on the road to reconstruction” in a namesake report titled *Social Insurance and Allied Services*.

ANSWER: William Henry Beveridge

[10] The Beveridge Report provided an outline for the establishment of a welfare state in this country following World War II. Beveridge himself was from this country, as was the economist John Maynard Keynes.

ANSWER: United Kingdom [or UK; or Great Britain; accept England]

[10] Though he never actually developed it, Beveridge names a curve that plots this quantity against unemployment rate. Changes in the amount of friction in the labor market cause that curve to shift left and right.

ANSWER: job vacancy rate

<WC Social Science>

6. This play opens with a water-seller greeting three gods at a gate. For 10 points each:

[10] Name this play whose protagonist tries to better her life by buying a tobacco shop, and has increasing difficulty disguising herself as her fictional male cousin after being impregnated by a pilot.

ANSWER: *The Good Woman of Szechwan* [or *The Good Person of Szechwan*; or *Der gute Mensch von Sezuan*]

[10] In this other play by the same author, Grusha flees from the Ironshirts across the Northern Mountains and is awarded the baby Michael after refusing to pull him out of the title drawing.

ANSWER: *The Caucasian Chalk Circle* [or *Der Kaukasische Kreidekreis*]

[10] This playwright drew on Chinese theater for *The Good Woman of Szechwan*, *The Caucasian Chalk Circle*, and in his essay “Alienation Effects in Chinese Theater.” This German also wrote *Mother Courage and Her Children*.

ANSWER: Bertolt Brecht

<ES European Literature>

7. Paranoia about German spies during this battle resulted in general Omar Bradley being briefly detained when an American MP thought Chicago was the capital of Illinois. For 10 points each:

[10] Name this last major German offensive on the Western Front. Codenamed Operation Watch on the Rhine, it was named for the namesake German intrusion into Allied lines.

ANSWER: Battle of the **Bulge** [or Battle of the **Ardennes**; or the **Ardennes** Counteroffensive]

[10] During the battle, 84 members of the 285th Field Artillery Observation Battalion were murdered during the Malmedy Massacre by troops commanded by this Waffen-SS officer.

ANSWER: Joachim **Peiper**

[10] When asked to surrender Bastogne during the battle, Anthony McAuliffe sent back this one-word response.

ANSWER: "**NUTS!**"

<JH European History>

8. Mutations in this protein that lead to Ehlers–Danlos (“AY-lers don-LOHS”) syndrome cause symptoms like hypermobile joints and stretchy fragile skin. For 10 points each:

[10] Name this protein found in the extracellular matrix with a triple-helix structure, the most abundant protein in the human body.

ANSWER: **collagen**

[10] Macromolecules that comprise the extracellular matrix, like collagen, are secreted by these cells. These cells are the most common cells used in feeder cell layers for stem cell growth.

ANSWER: **fibroblasts**

[10] This glycosaminoglycan found in the extracellular matrix consists of a single long chain of non-sulfated disaccharide units. The enzyme that breaks down this molecule is secreted by the acrosome of the sperm cell during fertilization.

ANSWER: **hyaluronic acid** [accept **hyaluronan**]

<SY Biology>

9. Answer the following about the cleric Ali al-Sistani, for 10 points each.

[10] Ali al-Sistani is a spiritual leader of Shia Muslims in this country, where he heads many *hawza*, or seminaries, in its holy city of Najaf. It has the second largest population out of countries with a Shia majority after Iran.

ANSWER: **Iraq**

[10] In 1992, al-Sistani achieved this status, which is the highest level of authority in the Twelver Shia community. This informally-acquired status is only achieved by a small number of ayatollahs worldwide.

ANSWER: **marja** al-taqlid

[10] Notably, al-Sistani only supports a limited version of the “guardianship” of this class of people, which was a doctrine developed by Ayatollah Khomeini. That doctrine is used to justify Iran’s theocratic form of government.

ANSWER: **jurists** [accept **faqih**, **scholars** of **fiqh**, **scholars** of **sharia** law, **scholars** of **Islamic law**, **scholars** of **Islamic jurisprudence** or equivalents; prompt on **ulama**, **clerics**, **clergy**, or equivalents thereof]

<WC Religion>

10. An artist with this surname instructed that smudged glass panels of his piece *Do We Go Around Houses, or Do Houses Go Around Us?* never be cleaned. For 10 points each:

[10] Give this surname of Arte Povera artists Mario and Marisa. Coincidentally, Kurt Schwitters (“SHVIT-tuhs”) used this nonsense syllable to refer to his assemblages of found objects.

ANSWER: Merz

[10] Mario Merz is best known for creating steel frames resembling these structures. The title character of Robert Flaherty’s best-known film lives in one of these dwellings.

ANSWER: igloos

[10] Another member of Arte Povera, Michelangelo Pistoletto, placed a plaster statue of this goddess in front of a pile of rags. A statue of this goddess without any arms was unearthed on Milos in 1820.

ANSWER: Venus [or Aphrodite]

<JB Other Arts (Visual)>

11. Answer the following about the Irish phrase “Tiocfaidh ár lá” (“CHOCK-ee ahr LAH”), which means “Our day will come.” For 10 points each:

[10] The phrase is the last sentence of this man’s diary written while he was participating in the 1981 Irish Republican prison hunger strike. He never took seat as an Anti H-Block member of the House of Commons since he died on the sixty-sixth day of the strike.

ANSWER: Robert Gerard “Bobby” Sands [or Roibeárd Gearóid Ó Seachnasaigh]

[10] Patrick Magee, who attempted to kill this British Prime Minister by bombing a Brighton hotel in 1984, winked and shouted the phrase after being sentenced to prison. She was known as the “Iron Lady.”

ANSWER: Margaret Hilda Thatcher

[10] After using the phrase to pass by security personnel, Michael Stone attacked mourners of three IRA members who were killed in this territory during Operation Flavius. George Eliot prevented the capture of this territory during a siege in 1782.

ANSWER: Gibraltar

<AP European History>

12. A character of this surname develops a phobia of rats after seeing his father’s corpse mutilated by a rat on the day of his funeral. For 10 points each:

[10] Name this surname shared by Dude, who buys a Ford with his wife Sister Bessie, and his father Jeeter, who dies with his wife Ada after he accidentally burns his house down.

ANSWER: Lester

[10] This Southern author’s novel *Tobacco Road* revolves around the sharecropping Lester family. He also wrote about a farming family in his explicit novel *God’s Little Acre*.

ANSWER: Erskine Caldwell

[10] Like Caldwell, this author also wrote about Southern families such as the Compsons and the Bundrens in his novels *The Sound and the Fury* and *As I Lay Dying*.

ANSWER: William Faulkner

<AP American Literature>

13. Answer the following about buckets, for 10 points each.

[10] After the widespread abuse of sirens by non-emergency vehicles to pass through traffic, citizens in this country formed the Society of Blue Buckets, which affixes blue buckets to the tops of their cars. In 2013, protests against elections in this country were dubbed the “Snow Revolution.”

ANSWER: Russia

[10] Although German forces called the US 28th Infantry Division the “Bloody Bucket,” it is more commonly known as the “Iron Division,” a name coined by this general who led the American Expeditionary Front and pursued Pancho Villa.

ANSWER: John “Jack” Pershing

[10] Bucket-wheel excavators and bucket-chain excavators are commonly used in the open-pit form of this process, which extracts materials like coal and stone from quarries.

ANSWER: mining

<AP Other (Academic)>

14. This effect was first observed in quartz by François Arago in 1811. For 10 points each:

[10] Name this property of a molecule in which a linearly polarized light wave passing through a solution of the molecule undergoes a rotation of its plane of polarization.

ANSWER: optical activity [or optical rotation]

[10] Molecules that are optically active must have this property, which means that they cannot be superimposed onto their mirror images. Molecules with this property can be referred to as “left-handed” or “right-handed.”

ANSWER: chirality [accept word forms]

[10] *Two answers required.* For chiral organic molecules, the R/S nomenclature is used to denote the two enantiomers. The enantiomers of chiral coordination complexes are instead denoted by what two Greek letters?

ANSWER: capital lambda AND capital delta

<SR Chemistry>

15. Answer the following about ugly laws, which made it a crime for the disabled to appear in public in many US cities. For 10 points each:

[10] The first ugly law was passed in this city in 1867. Joshua Norton declared himself Emperor of the US in this city, where many immigrants were detained in cages at a station on Angel Island.

ANSWER: San Francisco

[10] This city with a *de facto* ugly law addressed the question of “What, then does the cripple want?” with a 1918 survey. Tom L. Johnson was a highly-praised mayor of this city, which names an 1872 “massacre” in which John Rockefeller bought out his competitors.

ANSWER: Cleveland

[10] Elsewhere in 19th-century American disability history, this inventor of the telephone promoted “oralist” education of the deaf, advocated his father’s Visible Speech system, and opposed the use of sign language.

ANSWER: Alexander Graham Bell

<JB American History>

16. G. E. M. Anscombe used this approach to ethics to protest the nuclear bombing of Japan in her essay “Mr. Truman’s Degree.” For 10 points each:

[10] Name this approach to ethics that contrasts with consequentialism by holding that we act morally when we act according to certain moral duties.

ANSWER: **deontology** [accept word forms]

[10] This German thinker’s deontological moral theory states that we should only carry out actions that we’d will to be universal law, an idea known as the categorical imperative.

ANSWER: Immanuel **Kant**

[10] Kant defines duties of this sort as exceptionless requirements, and gives not committing suicide and not making false promises as examples of duties of this sort towards oneself and others. Please give the adjective used in most English translations.

ANSWER: **perfect** duties

<JH Philosophy>

17. After a character in this play returns from Hugh’s mother’s funeral, he begins an affair with Helena. For 10 points each:

[10] Name this play in which Cliff attempts to mediate the marriage between Jimmy and Alison Porter, a work by John Osborne.

ANSWER: **Look Back in Anger**

[10] In *Look Back in Anger*, Cliff is a native of this country in the United Kingdom. The alcoholic author of “Do not go gentle into that good night,” Dylan Thomas, was from this country.

ANSWER: **Wales** [or **Cymru**]

[10] In *Look Back in Anger*, Alison is taken away by her father Redfern, who has this title. A Katherine Mansfield story opens with Josephine and Constantia wondering what to do with the top hat of their deceased father, who had this rank.

ANSWER: **colonel** [do not accept or prompt on any other military ranks like “sergeant” or “general”]

<JH British Literature>

18. Answer the following about allegories of the senses in 17th-century painting, for 10 points each.

[10] A room full of instruments is the setting of *Hearing*, part of the *Five Senses* series made by this artist and Jan Brueghel the Elder. This Flemish artist of the Marie de Medici cycle is best known for his fleshy, full-figured nudes.

ANSWER: Peter Paul **Rubens**

[10] This artist’s series on the subject depicts a blind man touching a Greek statue’s head in *Allegory of Touch*. This painter of *The Clubfoot* and *Martyrdom of Saint Philip* adopted an Italian first name after moving to Naples.

ANSWER: Jusepe de **Ribera** [or José de **Ribera**; or Lo **Spagnoletto**]

[10] In Gerard de Lairesse’s *Allegory of the Five Senses*, “Sight” is a child that points at one of these objects. One of these objects partly titles a self-portrait by a 21-year-old Parmigianino.

ANSWER: **mirror**s [or *Self-Portrait in a **Convex Mirror***]

<JB Painting>

19. A probabilistic algorithm for estimating the Jaccard (“jah-CAR”) similarity of two sets uses the minimum value for one of these functions to compare the members of the sets. For 10 points each:

[10] Name these functions that map keys to indexes in an array, which are used to implement namesake tables.

ANSWER: **hash** functions

[10] Like the MinHash algorithm, this data structure uses hash functions probabilistically. This structure is used to quickly detect whether an item is in a set, and can return false positives but not false negatives.

ANSWER: **Bloom filter**

[10] Bloom filters can return false positives due to these events. These events occur when multiple keys resolve to the same location, and can be resolved by linear probing.

ANSWER: **collisions**

<JB Other Science (Computer Science)>

20. Answer the following about mythological figures who naïvely flew too close to the sun, for 10 points each.

[10] Icarus, the son of this architect of the Minoan Labyrinth, fell into the sea after his wax wings melted due to the sun’s heat.

ANSWER: **Daedalus**

[10] In Chinese myth, the giant Kuā Fù attempted to tame the sun, but died from thirst due to the heat. As he collapsed, his walking stick became a forest of these fruits, which are eaten by the Eight Immortals.

ANSWER: **peaches** [or *pántáo* or *xiāntáo*]

[10] When this vulture flew too close to the sun in a game, his brother Sampāti shielded him with his own wings, losing them in the process. He sacrificed his life while trying to rescue Sīta from Rāvana’s chariot.

ANSWER: **Jatāyu** [or **Chatayu**]

<AP Mythology>