

1. An article by Henry Labouchere in *Truth* accused the instigator of this event of using it to increase stock value. After this event, John Hammond and other members of the Reform Committee were hanged. It was triggered by an attempt to stop the under-utilization of a railway by blocking wagon routes in the Drifts Crisis. Joseph Chamberlain implored Hercules Robinson to stop it. The participants in this event gathered at Pitsani, but later surrendered to (*) Piet Cronje at Doornkop. After it was put down, Kaiser Wilhem II sent a congratulatory telegram to Paul Kruger. It was partly responsible for igniting the Second Boer War. For 10 points, name this military action, supported by Cecil Rhodes, in which guerrillas from Cape Colony attempted to seize the Transvaal.

ANSWER: Jameson raid

<Mukherjee>

2. For a saturated liquid, this value is approximated using the Rackett equation. Powers of the reciprocal of this quantity are the terms of the virial equation of state. At a constant value of this quantity, the heat capacity of a monatomic ideal gas is equal to n times the ideal gas constant times three-halves. The change in this value in response to a mean stress is given by the compressibility factor. Internal energy plus (*) pressure times this quantity is equal to enthalpy, and isochoric processes keep it constant. This value is inversely proportional to pressure and directly proportional to temperature according to the combined gas law. For 10 points, identify this quantity, the amount of space that an object takes up.

ANSWER: volume [or V]

<Mukherjee>

3. In Baroque music, this key was known as the "trumpet key," since most Baroque trumpet concertos were written for it. Handel used this key to compose his coronation anthem *Zadok the Priest* and the *Hallelujah Chorus*. Brahms, Beethoven, and Tchaikovsky all composed their violin concertos in this key, whose beginning note is the lower middle string on a (*) violin. This key is the relative major of B minor, as well as the key of Pachelbel's *Canon*. For 10 points, name this major key which has two sharps, and is one whole step above C major.

ANSWER: D major

<Magin>

4. The title character of one of this man's plays asks a Pagan Old Woman "Why am I dry?" and admits that she loved the worker Victor but not her husband Juan. In another of his plays, Angustias is beaten for wearing makeup and a purple dress, while Adela hangs herself after her sisters discover that she's been having an affair with Pepe el Romano. Those plays, the latter of which contains no male characters, make up this man's (*) "rural trilogy" with a play in which the Mother fears that her last remaining son will be killed by the Felix family. In that play by this man, the Groom kills Leonardo after the latter runs away with The Bride. For 10 points, name this Spanish playwright of *Yerma*, *The House of Bernarda Alba*, and *Blood Wedding*.

ANSWER: Federico Garcia Lorca

<Bentley>

5. Tertullian distinguished between the kind of this practice that happens before baptism and the more traditional form. It is performed daily by the monks on Mount Athos. Leviticus 16:21 provides the basis for this action by describing how Aaron did it while holding the head of a live goat. It's not Communion, but the Council of Trent declared that Jesus's instruction to (*) "Receive ye the Holy Ghost" changed it into a sacrament. The words spoken during it are protected by a "seal." Contrition and satisfaction are two elements of this practice, which begins with a speaker saying how long it has been since this practice was last performed. For 10 points, name this sacrament in which people enter a booth and say, "Forgive me Father, for I have sinned."

ANSWER: confession [or penance; or reconciliation; or alternate word forms of those three words, such as penitent; reconciling; or confessing]

<Gupta>

6. This author won a National Book Award for his collection *A Crown of Feathers*. Many of his works, like the novel *The Slave* and the story "The Slaughterer", advocate vegetarianism. He wrote about Hermann Broder's accidental bigamy and about the many loves of the stage magician Yasha Mazur in his works *Enemies: A Love Story* and *The Magician of Lublin*, respectively. The messianic cult of (*) Shabbatai Zevi sweeps the title town in another work by this author. His most famous short story is about a man who marries the unfaithful Elka, is mocked by Rietze the Candle-Dipper, and is told by the Spirit of Evil to use urine in his baking. For 10 points, name this Jewish-American author of *Satan in Goray* and "Gimpel the Fool."

ANSWER: Isaac Bashevis Singer

<Carson>

7. Proteins with a CAAX box are anchored to this structure by prenylation. One method of studying the dynamics of this structure is Fluorescence Recovery After Photobleaching, or FRAP. The polarity of this structure is maintained by flippases and scramblases. Constituents of it are used to synthesize prostaglandins and IP3. Singer and Nicholson modeled this structure as a two-dimensional liquid crystal within which (*) proteins freely diffuse, known as the fluid mosaic model. Its constituents contain polar head groups and hydrophobic tails, which form a bilayer. In plants, this phospholipid-laden structure lies just inside the cell wall. For 10 points, name this structure that protects cells from the outside world.

ANSWER: cell membrane [or plasma membrane or phospholipid bilayer; prompt on "membrane"]

<Mukherjee>

8. One battle that was fought over this city featured a successful night attack by Swiss mercenaries on a French camp, which prompted La Trémoille to flee. That battle, Novara, was fought when the Swiss were hired by Emperor Maximilian I to restore a duke here. That duke, who was later deposed by Francis I after the 1515 battle of Marignano, came from a family that included (*) Ludovico and Francesco, who had ruled it by betraying the Golden Ambrosian Republic. This city led a league against Barbarossa and was the capital of the Cisalpine Republic. During the Renaissance, it was famously ruled by the Sforzas. For 10 points, name this Italian city that has historically been the capital of Lombardy.

ANSWER: Milan [accept Novara before mention]

<Liao>

9. One inadequacy of this idea is exposed by considering the Tower Argument in conjunction with a thought experiment in which two friends play catch on a moving ship. This procedure was termed "true induction" in a work that argues that the four idols interfered with its proper execution. One philosopher argued that this technique's starting point must be refutable in order to satisfy falsifiability, a criterion expanded upon by Karl Popper. Paul Feyerabend wrote a book (*) "against" this idea, which was theorized by Roger Bacon and refined in the *Novum Organum* of Francis Bacon. For 10 points, name this technique in which evidence is measured to test and modify a hypothesis, which underpins disciplines like physics or biology.

ANSWER: scientific method [accept true induction until mentioned; prompt on "method"; prompt on word forms of "science"; prompt on "induction"; prompt on "deduction"]

<Gupta>

10. A counter holding a vase of flowers in the background of this work was painted in a "tender Louis XV green." This depiction of a place "where one can ruin oneself, go mad, commit a crime" contains a mustachioed man in a white suit who is the proprietor of the titular location. On its right, two inconsolable-appearing men (*) stare down at a table. The artist himself summarized this piece as containing "four lemon-yellow lamps" in a letter to his brother Theo. A clock in the background of this painting reads 12:15, while the center is dominated by a slanting pool table. For 10 points, name this painting of an after-hours restaurant by Vincent Van Gogh.

ANSWER: *The Night Cafe* [or *Le Café de nuit*]

<Bentley>

11. The 1861 Crown Land Acts allowed "selectors" to establish homesteads in this country. Hovenden Hely led an expedition to search for the Prussian-born explorer Ludwig Leichhardt, who got lost while exploring this country. It passed an immigration restriction act in 1901, part of a campaign to keep this country "white." The (*) Ballarat Reform League was formed by men angry at regulations on gold mining in this country. Many members of that league went on to fight in the Eureka Stockade. The Stolen Generations in this country were offered an apology by Prime Minister Kevin Rudd in 2008. For 10 points, name this modern-day country where Governor William Bligh was once targeted by the Rum Rebellion, a former British prison colony.

ANSWER: Australia

<Bentley>

12. These entities can change due to rules applied in counter-bleeding, bleeding, or feeding order. They are composed of subunits marked with plus or minus signs within square brackets, known as "distinctive features", in a theory posed by Roman Jakobson. Their underlying representation is often shown between forward-slashes, while two segments in complementary distribution can be shown to be just one of these entities rather than a (*) minimal pair. The mental representation of one of these ignores site-specific changes such as de-aspiration or de-voicing. Divergent sounds corresponding to a single one of these are known as allophones. For 10 points, name these smallest contrastive units of linguistic sound.

ANSWER: phonemes [accept phones or language sounds until "forward" is read; prompt thereafter]

<Jackson>

13. Languages that support continuation often employ the “spaghetti” form of these entities. Entities of this name can use canaries to check for unexpected values. Attacks on those entities employ smashing, and they can be both wound and unwound. Those entities of this name contain data like the (*) return address and a function's local variables. A data structure of this name was used to store data in calculators that used reverse Polish notation. Along with the heap, it's where data is stored. This is also the name of a data structure that supports push and pop operations. For 10 points, give this name for a data structure that, unlike a queue, operates on a “last in, first out” principle.

ANSWER: stacks

<Bentley>

14. This composer's first symphony synthesizes the four movements of classical symphonies into one movement. One of his pieces begins with a soprano singing, "It has become that time of evening when people sit on their porches." This composer destroyed the score to his *Second Symphony* after reworking its second movement as *Night Flight*. The life partner of (*) Gian-Carlo Menotti, this composer wrote a one-movement instrumental work that opens with the violins softly holding a sustained B-flat. This composer used a prose poem by James Agee as the text of his *Knoxville: Summer of 1915*, and wrote a piece played at the funerals of Franklin Roosevelt and John F. Kennedy. For 10 points, name this American composer of *Adagio for Strings*.

ANSWER: Samuel Barber

<Thompson>

15. When this man retires from the battlefield, his infant child weeps in terror of his plumed helmet, at which this man laughs and takes it off. Alexander the Great, Julius Caesar, and this man are the three pagans of the "Nine Worthies." His army is routed after his opponent, aided by Poseidon, knocks him unconscious with a boulder. Athena takes on the form of his brother, Deiphobus, to trick this man into his (*) last stand. After the death of this "breaker of horses," this man's corpse is dragged by a chariot around his home city in revenge for his mistaken killing of Patroclus. For 10 points, name this rival of Achilles, the greatest champion of the Trojans in the *Iliad*.

ANSWER: Hector [or Hektor]

<Bollinger>

16. One politician in this country claimed he got beat up to cover up a nose job. Another was disqualified from running for president of this country because his mother held dual citizenship, a rule implemented to harm former members of the National Democratic Party. The April 6 Movement in this country is a labor movement involved in the September 2011 attack on a foreign embassy, while the Freedom and Justice Party has been most successful in recent elections. (*) Amr Moussa was a frontrunner in its presidential race, but lost support to a man who had worked for a former president given a life sentence in June 2012. For 10 points, name this country whose presidential runoff features a candidate of the Muslim Brotherhood and one who worked for Hosni Mubarak.

ANSWER: Arab Republic of Egypt [or al-Jumhuriyya al-Arabiyya al-Misriyya]

<Haddad-Fonda>

17. The “bodyless,” or Ananga, reincarnation of Kama emerged after one of these objects destroyed him. Another mythical object of this kind is depicted in blue glass ornaments called *nazar*. A slingshot hit one of these objects at the second battle of Magh Tuiredh, where Balor was using it to paralyze the Tuatha de Danaan. The two or three (*) Graeae were made to talk by Perseus after he stole the one of these objects shared among all of them. The *wedjat* amulet of the ancient Egyptians portrayed one of these. A guardian lured to sleep by Hermes, Argos, had up to a thousand of them. In a fight Set stole one of these body parts belonging to Horus. For 10 points, name this body part of which Odin and Polyphemus the Cyclops only have one.

ANSWER: eyeballs [accept evil eye]

<Jackson>

18. The protagonist of one of this author's novels goes to Central America to paint ruins after his love interest marries Sir Percival. Another of his novels features a dreamy-eyed opium addict with two-toned hair named Ezra Jennings, as well as Drusilla Clack, who idolizes the religious huckster Godfrey Ablewhite. Walter Hartright defeats the evil Count Fosco in one of his novels, in which Marian (*) Halcombe investigates the similarity between Anne Catherick and Laura Fairlie. *Robinson Crusoe* devotee Gabriel Betteredge narrates most of this man's most famous novel, in which Sergeant Cuff and Franklin Blake, who marries Rachel Verinder, solve the mystery surrounding a stolen diamond. For 10 points, name this author of *The Woman in White* and *The Moonstone*.

ANSWER: Wilkie Collins [or William Wilkie Collins]

<Bentley>

19. This man's vice-president was grilled by Congress for financing a nasty biography of Arthur Goldberg. One of this president's most controversial acts prompted the resignation of his press secretary, Jerald terHorst. This man denied a federal bailout to Abraham Beame, prompting a newspaper headline where this man told New York City to “drop dead.” Forty-one Marines died in an operation ordered by this President to retake the (*) *Mayaguez*. In one presidential debate, this man infamously declared, “There is no Soviet domination of Eastern Europe.” This man gained a position vacated by Spiro Agnew, and as president, he controversially pardoned his predecessor. For 10 points, name this president who came to power after the resignation of Richard Nixon.

ANSWER: Gerald Rudolph “Jerry” Ford, Jr. [or Leslie Lynch King, Jr.]

<Bentley>

20. An apparatus that allows this technique to be applied to air-sensitive substances uses three Teflon taps and is called the Perkin Triangle. One variant of this technique uses a Vigreux column, which separates the mixture into several trays with different temperatures. A cold finger or a jacket condenser can be used in one arm of this technique's apparatus, and this technique commonly employs reflux to increase yield. (*) Entrainers allow the breaking of azeotropes in this procedure. This technique separates a mixture of compounds that differ in boiling point and takes that evaporate and condenses it in a separate container. For 10 points, name this chemical separation technique, which is often applied to fermented solutions to create alcoholic beverages.

ANSWER: distillation

<Mukherjee>

21. This author wrote a thrilling novel in which two characters are convicted for the murder of Grandmorin. That novel centers on the murderous driver of the engine "La Lison". The title character of another of his novels marries her sickly cousin Camille but begins a torrid affair with his friend Laurent. In another of his novels, the protagonist is trapped with Catherine and Chaval in a (*) pit in Montsou by the anarchist Souvarine. This author of *La Bete Humaine* wrote a novel in which Etienne Lantier embraces socialism due to the squalor of his coal mining job; that novel is named for a French Revolutionary month. For 10 points, name this naturalist whose novels *Therese Raquin* and *Germinal* are part of his *Rougon-Macquart* cycle.

ANSWER: Emile Francois Zola

<Gupta>

22. Patients with this disease often have chronic Burkholderia cepacia infections. The protein central to this disease contains an ATP-binding cassette motif and a PDZ domain. Its earliest symptom is neonatal intestinal blockage. It is associated with male infertility due to agenesis of the vas deferens. Sufferers are unable to secrete pancreatic enzymes, leading to those enzymes damaging the pancreas itself. The sweat test was used to diagnose this condition before (*) genetic testing, and it results in the inability to pass chloride ions through cell membranes. Percussive vests are a common treatment, and it is the most common autosomal recessive disease among Europeans. For 10 points, name this genetic disease in which mucus builds up in the lungs.

ANSWER: cystic fibrosis [or CF]

<Mukherjee>

23. A group sometimes called the 3 October Organization agitates for these people to have a country whose borders align with those proposed by Woodrow Wilson. Mesrop Mashtots developed an alphabet for these people in the fifth century AD, which ushered in a golden age during which Eznik Koghbatsi wrote *Refutation of the Sects*. Following the Council of Chalcedon, these people split with the West and formed the (*) Gregorian Church. These people broke free from Seleucid control after winning the Battle of Magnesia under the ruler Tigranes the Great. About 1.5 million of these people were force-marched to the Syrian desert beginning in 1915. For 10 points, name these people who underwent a genocide at the hands of the Turks during World War I.

ANSWER: Armenians [or Hay; or Hayq; or Hayk]

<Bentley>

24. This author's review of a work of technological utopianism by John Adolphus Etzler served as the basis for his essay "Paradise (to be) Regained". He described Mount Wachusett as "the observatory of the state" in one work, and he claimed that "the preservation of the world" lies in "wildness" in another. In one of his works, the section "Higher Laws" is preceded by an episode involving a visit to John Farmer's hut. That work by this man opens with the chapters "Economy" and (*) "Where I Lived, and What I Lived For". He asserted "that government is best which governs least" in a work that was partly inspired by his refusal to pay a poll tax that indirectly supported slavery. For 10 points, name this American author of "Civil Disobedience" and *Walden*.

ANSWER: Henry David Thoreau [or David Henry Thoreau]

<Carson>

1. Materials of this type have a depletion region in which charge carriers have diffused away, and commonly used types of these materials are made of silicon, germanium, or gallium arsenide. For 10 points each:

[10] Name these materials that are able to carry electrons better than insulators but not as well as conducting metals.

ANSWER: **semiconductors**

[10] This is the process of adding impurities to a semiconductor in order to alter their properties in useful ways.

ANSWER: **doping** [or word forms like **doped**]

[10] When an electron crosses the bandgap in a semiconductor, it leaves one of these fictional entities behind, which represents a space in the atomic lattice which could be occupied by an electron.

ANSWER: electron **hole**

<Mukherjee>

2. Answer some questions about the history of Oceania, for 10 points each:

[10] Jared Diamond claimed that this island's inhabitants, the Rapa Nui, may have adopted cannibalism after extreme deforestation led to its ecosystem collapsing. It's known for its giant stone heads called *moai*.

ANSWER: **Easter Island**

[10] This island was the center of the Tu'i empire from the fifth century AD to the mid-1800s. It has been ruled by five kings named George Tupou.

ANSWER: **Tonga**

[10] This nation in Oceania was the site of the Kokoda Track Campaign in World War II. It gained independence from Australia in 1975 and had to fend off a secessionist crisis on Bougainville Island.

ANSWER: **Papua New Guinea**

<Mukherjee>

3. Answer the following about Pillars of Islam, for 10 points each.

[10] The third pillar is this form of charity, a 2.5 to 20 percent rate required for any Muslim capable of payment. Proceeds go to eight categories of people, including those living in absolute poverty.

ANSWER: **zakat** [or **zakah**; prompt on "almsgiving" and synonyms; do not accept "tithing"]

[10] The fourth pillar is sawm, or fasting in this ninth month of the Islamic calendar, during which Muslims may not eat or drink from sunrise to sunset.

ANSWER: **Ramadan**

[10] The first of the five pillars is this creed, the declaration that there is no God but Allah, and Muhammad is his messenger. Non-Muslims can convert to Islam by repeating it.

ANSWER: **shahada**

<McNamara>

4. In this opera's final scene, the title character kisses the severed head of John the Baptist. For 10 points each:

[10] Name this opera by Richard Strauss, whose title character convinces her father Herod to behead John the Baptist by performing the "Dance of the Seven Veils."

ANSWER: Salome

[10] The title character of this other Strauss opera joyously dances herself to death after learning of the deaths of her mother and her mother's new husband, Aegisth.

ANSWER: Elektra

[10] The three leading female vocalists of this Strauss opera are intertwined in a love triangle. It ends with the Marschallin deciding to support Sophie's love for Octavian, who is played by a mezzo-soprano in a "breeches role."

ANSWER: *Der Rosenkavalier* [or *The Knight of the Rose*]

<Thompson>

5. This author contrasted Western and Eastern senses of aesthetics in his essay "In Praise of Shadows" and examined the obsession with "modan garu," or modern girls, in his novel *Naomi*. For 10 points each:

[10] Identify this Japanese author who wrote about the affairs of a declining Osakan family in his masterpiece, *The Makioka Sisters*.

ANSWER: Jun'ichiro Tanizaki [accept names in either order]

[10] Kaname becomes disillusioned with his modern wife Misako and becomes obsessed with adopting a more traditional life, leading him to conduct an affair with his father-in-law's mistress O-hisa, in this Tanizaki novel.

ANSWER: Some Prefer Nettles [or Tade kuu mushi]

[10] Tanizaki's 1959 novella *The Bridge of Dreams* is named for the final chapter of this eleventh-century classic about the court intrigues of a character who marries Lady Aoi. Tanizaki also translated this novel, written by Lady Murasaki, into modern Japanese.

ANSWER: *The Tale of Genji* [or *Genji Monogatari*]

<Carson>

6. Carl Woese classified these organisms into a domain apart from bacteria and eukaryotes, and they have ether-linked lipids in their cell membranes. For 10 points each:

[10] Name this domain of single-celled organisms that often live in very extreme environments.

ANSWER: archaea [or archaebacteria from people with old textbooks]

[10] All organisms were sorted into the three domains by analyzing the sequence of the RNA component of this organelle, which in eukaryotes have 40S and 60S components.

ANSWER: ribosome

[10] This particular type of archaea is named for its ability to live in environments with very high salt content.

ANSWER: halophile [or halobacterium; or halobacteria]

<Mukherjee>

7. This politician served as Resident Minister in the Mediterranean during World War II, building rapport with Eisenhower. For 10 points each:

[10] Name this British prime minister who delivered the Winds of Change speech about African decolonization.

ANSWER: Harold **Macmillan**

[10] Macmillan was a member of this political party, also that of John Major and David Cameron.

ANSWER: The **Conservative** and Unionist Party [or **Tory** Party; or **Tories**]

[10] Macmillan's sacking of seven cabinet members in 1962 is referred to by this name. It is also another name for Operation Hummingbird.

ANSWER: **Night of the Long Knives**

<Ueda>

8. This thinker borrowed Brentano's description of intentionality for his descriptions of the mind, which stressed the "intersubjectivity" of people and the importance of categories. For 10 points each:

[10] Name this Austrian who conceived of *epoché*, or "bracketing," to examine thoughts in first-person consciousness as part of a break from empiricism. He also founded the school of phenomenology.

ANSWER: Edmund Gustav Albrecht **Husserl**

[10] Husserl's phenomenology holds that this mental component is, and is always in, the stream of a person's acts and thoughts. Freud grouped it with the id and its overriding "super-" variant.

ANSWER: the **ego** [or das **Ich**; prompt on "I"]

[10] This contemporary of Husserl discussed "duration" in his *Time and Free Will* and a life force behind the emergent complexity of life in *Creative Evolution*.

ANSWER: Henri-Louis **Bergson**

<Jackson>

9. Souls of the damned try to grab onto the boat of the two central figures in this artist's *The Barque of Dante*. For 10 points each:

[10] Identify this French Romantic artist of works like *Liberty Leading the People*.

ANSWER: Ferdinand Eugene Victor **Delacroix**

[10] An 1846 political cartoon satirized the tensions between the Colorists, led by Delacroix, and the Linearists, led by this man. This artist reused his *Valpinçon Bather* in *The Turkish Bath* and also painted *The Grand Odalisque*.

ANSWER: Jean-Auguste-Dominique **Ingres**

[10] A dark-skinned woman turns her head to look at the three other women in this 1834 Delacroix work which depicts one of the title figures holding a hookah.

ANSWER: *The **Women of Algiers** In Their Apartment*

<Bentley>

10. In the twenty-second section of this work, the title character gets so mad that he turns into a snake. For 10 points each:

[10] Identify this epistolary novel whose title character advises Wormwood on how best to secure the damnation of a British man referred to as "the Patient."

ANSWER: *The Screwtape Letters*

[10] *The Screwtape Letters* was written by this British author, a Christian apologist who created the incredibly obvious Christ-figure Aslan in his *Chronicles of Narnia*.

ANSWER: Clive Staples Lewis

[10] Lewis's position *contra* E.M.W. Tillyard in *The Personal Heresy* was an oblique argument against this literary concept, the name of which was popularized in an essay by Wimsatt and Beardsley. It is generally defined as an attempt to divine the author's aims from a text or to use those aims in analyzing a text.

ANSWER: the intentional fallacy

<Thompson>

11. The nucleosynthesis that followed this event depended only on the baryon-to-photon ratio, and those two particles decoupled from each other a few hundred thousand years after this event. For 10 points each:

[10] Identify this event that occurred 13.7 billion years ago, in which a small singularity exploded into the universe. Fred Hoyle coined the term as a perjorative.

ANSWER: Big Bang

[10] This process, which occurred between 10 to the negative 36th and 10 to the negative 33rd seconds after the Big Bang, was a phase of faster-than-light expansion of the universe driven by vacuum energy.

ANSWER: cosmic inflation [do NOT accept synonyms, the theory is specifically called inflation]

[10] This MIT cosmologist posited the theory of cosmic inflation along with Andrei Linde. He's also looking into a method for using inflation to create a universe in a laboratory.

ANSWER: Alan Harvey Guth

<Mukherjee>

12. Answer some questions about Roman Britain, for 10 points each:

[10] This governor of Britannia and commander of the Valeria Victrix legion defeated the Caledonians at the Battle of Mons Graupius. He was recalled from Britain by Domitian.

ANSWER: Gnaeus Julius Agricola

[10] This historian wrote a biography of Agricola, who was his father-in-law. The reigns of Nero and Tiberius are extensively covered in his *Annals*.

ANSWER: Publius Cornelius Tacitus

[10] This queen of the Iceni and widow of Prasutagus led a revolt against Gaius Suetonius Paulinus in AD 60. Her forces were badly defeated at the Battle of Watling Street.

ANSWER: Boudicca

<Mukherjee>

13. This type of conditioning is often performed in a namesake chamber also known as a Skinner box. For 10 points each:

[10] Name this type of conditioning that, in contrast to classical conditioning, attempts to increase or decrease the frequency of a given behavior through application of consequences.

ANSWER: **operant** conditioning

[10] Skinner much preferred positive reinforcement over this type of consequence, which attempts to decrease the frequency of a behavior. It can itself be positive, when applying an aversive stimulus, or negative, when removing a desirable stimulus.

ANSWER: **punishment** [or word forms; do NOT prompt on "reinforcement" or "negative reinforcement"]

[10] This technique in operant conditioning reinforces successively closer approximations to the target behavior, until that behavior is fully realized by the subject.

ANSWER: **shaping**

<Wynne>

14. These one-breasted women kidnapped members of the Gargareans in order to reproduce with them. For 10 points each:

[10] Name these female warriors of Greek mythology, whose numbers included Penthesilea and Queen Hippolyta.

ANSWER: **Amazons**

[10] Heracles' ninth labor was to obtain this magical object from Hippolyta at the request of Eurystheus' daughter Admeta.

ANSWER: **girdle** [or **belt**]

[10] Another Amazon, Ainippe, confronted this prince from Aegina, who helped Peleus kill Phocus before marrying Periboea and fathering Ajax the Greater.

ANSWER: **Telamon**

<Mukherjee>

15. A Brazilian company is building a modern port in a "special development zone" near this country's city of Mariel. For 10 points each:

[10] Name this country, in which it has been legal to possess American dollars since 1993.

ANSWER: Republic of **Cuba** [or Republica de Cuba]

[10] Another indication of Cuba's transition to a market economy is increased foreign investment in oil exploration off Miramar, a suburb of this Cuban capital.

ANSWER: **Havana**

[10] Cuba's mining industry relies on its abundant supply of this metal, which has also dominated the economy of New Caledonia since the mid-19th century.

ANSWER: **nickel** [or **Ni**]

<Haddad-Fonda>

16. Name these conductors, for 10 points each.

[10] This exuberant American conductor music-directed the New York Philharmonic during the 1960s. He composed the music for *Candide* and *West Side Story*.

ANSWER: Leonard **Bernstein**

[10] Renowned for his photographic memory, this Italian conductor of the NBC Symphony orchestra emphasized the printed score of music as the supreme authority, establishing a standard that guides conducting to this day.

ANSWER: Arturo **Toscanini**

[10] Among the current generation of conductors, a rising star is this Venezuelan, who replaced Esa-Pekka Salonen as the conductor of the Los Angeles Philharmonic.

ANSWER: Gustavo **Dudamel**

<Rosenberg>

17. This character is described as a "genius of suffering" and displays his disgust for the bourgeoisie by insulting a portrait of Goethe and ruining a dinner with his professor. For 10 points each:

[10] Identify this protagonist of a 1927 novel who goes with a saxophonist named Pablo on a revelatory trip to the Magic Theater.

ANSWER: **Harry Haller** [accept either underlined portion; prompt on "Steppenwolf", "the Steppenwolf" or "der Steppenwolf"]

[10] This German-Swiss Nobel Laureate, who attacked the oppressiveness of conventional education in *Beneath the Wheel*, wrote about Harry Haller in *Steppenwolf* and penned *The Glass Bead Game*.

ANSWER: Hermann **Hesse**

[10] This Hesse protagonist is recruited to Waldzell by the Music Master, after which he befriends Plinio Designori and the historian Brother Jacobus. He eventually begins to lose his loyalty to Castalia despite succeeding Thomas van der Trave to the position of Magister Ludi.

ANSWER: **Joseph Knecht** [accept either underlined portion; prompt on "Magister Ludi"]

<Ueda>

18. These events are indicated by straight arrows on Jablonski diagrams, and a common reporter protein is named for the fact that it has this property and glows green. For 10 points each:

[10] Identify this type of emission, in which a molecule absorbs a photon of light and quickly emits a photon of a lower wavelength.

ANSWER: **fluorescence**

[10] The efficiency of a fluorescent process is described by the quantum form of this quantity. In general chemistry, this quantity is equal to the amount of product obtained divided by the expected amount of product.

ANSWER: quantum **yield**

[10] This enzyme's oxidation of certain biological pigments is what makes fireflies glow. This enzyme is a commonly used reporter protein and its name comes from the Latin for "light-bringer."

ANSWER: **luciferase**

<Mukherjee>

19. The speaker of this poem relates that for Christmas he enjoys “records - Bessie, bop or Bach”, after which he notes, "I guess being colored doesn't make me NOT like" things that people of other races like. For 10 points each:

[10] Identify this poem addressed to a man who is “older-and white-and somewhat more free” by a speaker who is tasked with “[letting] that page come out of you.”

ANSWER: “**Theme For English B**”

[10] “Theme For English B” is a poem by this Harlem Renaissance author of “The Negro Speaks of Rivers”, who asked, "What happens to a dream deferred?" in his most famous poem.

ANSWER: Langston **Hughes** [or James Mercer Langston **Hughes**]

[10] The speaker of this Hughes poem hears a piano player in a bar on Lenox Avenue "droning a drowsy syncopated tune" and singing about how he “can’t be satisfied” because he has the title condition.

ANSWER: “The **Weary Blues**”

<Bentley>

20. Colonel Vincent managed to defend Little Round Top during this battle, which also saw fighting at Devil’s Den and Culp's Hill. For 10 points each:

[10] Identify this battle.

ANSWER: Battle of **Gettysburg**

[10] The Army of the Potomac was commanded by this general, who replaced Joseph Hooker. He retained command of the army through the Overland Campaign of 1864.

ANSWER: General George Gordon **Meade**

[10] Southerners criticized this man, third-in-command behind Lee and Longstreet at Gettysburg, for his failure to attack Cemetery Hill. This replacement for his longtime superior Stonewall Jackson later wrote a condolence letter to Grant upon the assassination of Lincoln.

ANSWER: Richard Stoddert **Ewell**

<Mukherjee>

21. This leader conducted at least three Syrian campaigns and ordered the creation of the two temples at Abu Simbel after one of his great military victories. For 10 points each:

[10] Identify this Pharaoh of the 19th Dynasty, the successor of Seti I, who defeated the Hittites at the largest chariot battle in history at Kadesh.

ANSWER: **Ramses II** [accept **Ramses the Great**, prompt on partial answer]

[10] Ramses' tomb was found at this site on the west bank of the Nile. Howard Carter excavated the tomb of King Tut at this site, which contains the remains of several New Kingdom rulers.

ANSWER: **Valley of the Kings**

[10] Another important Middle Kingdom site is this Theban complex, the main site of worship of Amun located a mile north of Luxor. Thirty pharaohs contributed to this buildings here, making it one of the largest such sites.

ANSWER: **Karnak**

<Mukherjee>

22. Consider a fair coin in which heads and tails have an equal probability of appearing after the coin is flipped. For 10 points each:

[10] What is the probability of flipping three heads in a row?

ANSWER: **one-eighth** [or **1/8**; or **0.125**; or **12.5%**]

[10] Coin tosses are independent events. For calculating the probability of dependent events, this theorem is often used. It states that P of A given B is equal to P of B given A times P of A over P of B.

ANSWER: **Bayes'** theorem

[10] This problem, which concerns a game show with 3 doors and one prize, is solved using Bayes' theorem. After picking a door, the host opens the remaining door with no prize, and the contestant is given the option to change doors.

ANSWER: **Monty Hall** problem [or **three prisoners** problem]

<Mukherjee>

23. This novel is framed by a series of letters written between the polar explorer Captain Robert Walton and his sister Margaret. For 10 points each:

[10] Identify this Mary Shelley novel, subtitled "Or, the Modern Prometheus," whose title character develops a technique for reanimating dead flesh.

ANSWER: **Frankenstein**; or, *The Modern Prometheus*

[10] The Creature's threat "I will be with you on your wedding night!" is eventually fulfilled when he kills this ward of Alphonse, Dr. Frankenstein's new bride.

ANSWER: **Elizabeth Lavenza** [accept either underlined portion]

[10] Elizabeth earlier unsuccessfully attempted to exonerate this maid of the killing of William Frankenstein. This character is summarily executed despite the whole Frankenstein family being convinced of her innocence.

ANSWER: **Justine Moritz** [accept either underlined portion]

<Wynne>