

2020 Terrapin Open

Packet 10

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Tossups

1. **While going “a-begging from door to door,” the narrator of a poem by this author places “the least little grain of corn” into a figure’s open palm. A poem by this author asks a figure what “divine drink” they would choose from “this overflowing cup of my life.” In one poem, this writer pines for a place where “the clear stream of reason has not lost its way into the dreary desert sand of dead habit.” This poet asked “Have you not heard his silent steps?” before repeating a line about how God (*) “comes, comes, ever comes.” The narrator of a poem by this author declares “I know not how thou singest, my master!” This author, who asked “my Father, let my country awake” in “a place in which the mind is without fear,” opened a collection by proclaiming “thou hast made me endless.” For 10 points, name this author who frequently addressed God in his collection *Gitanjali*.**

ANSWER: Rabindranath **Tagore**

<AP, World/Other Literature>

2. **Phil Baran’s psychotrimine synthesis used an oxidized form of ortho-iodoaniline as a surrogate cation of this compound. The dimethyl acetal (“ASS-uh-tal”) of DMF and pyrrolidine react with an o-nitrotoluene to give an intermediate that is reductively cyclized to form this compound. The alkaloid gramine can be prepared by Mannich reaction of dimethylamine and formaldehyde at this compound’s (*) C3 carbon, its most susceptible position to electrophilic aromatic substitution. The [3,3]-sigmatropic rearrangement of an ene-hydrazine is the key step in a reaction that generates derivatives of this compound from a phenylhydrazine and a carbonyl (“car-bo-NEEL”) under acidic conditions. The Leimgruber–Batcho and Fischer syntheses prepare this compound. For 10 points, name this aromatic heterocycle that consists of fused pyrrole and benzene rings and is found in the side chain of tryptophan.**

ANSWER: **indole** [accept **tryptamine** until “gramine” is read]

<EM, Chemistry>

3. **Ramsey Muñiz twice ran for governor in this state as the Raza Unida Party candidate, losing both times to a man whose candidacy was helped by his predecessor’s Sharpstown stock fraud scandal. Errol Morris’s documentary *The Thin Blue Line* campaigned for the exoneration of Randall Dale Adams, a man wrongly convicted of killing a cop in this state, whose death sentence was commuted by Bill Clement. A 1960s governor from this state served as Secretary of the Treasury during the removal of the (*) US dollar from the gold standard. A governor from this state orchestrated a pay-to-play program that resulted in the NCAA’s (“N-C-double-A’s”) only death penalty given to a football program. A Governor of this state quipped that George H. W. Bush was “born with a silver foot in his mouth” during a 1988 DNC keynote address; Karl Rove later helped unseat her. For 10 points, Ann Richards was succeeded by George W. Bush as governor of what state?**

ANSWER: **Texas**

<AE, American History>

4. **A sculpture housed in this building depicts a woman whose foot rests above England on a globe. That monument depicts four women symbolizing the cardinal virtues and a bronze skeleton emerging from a door while holding a gilded hourglass. Four arched ribs support a golden globe with a tall cross standing on it at the top of a sculpture held in this building; that sculpture is adorned with many putti, olive sprigs, and bees. A key-shaped piazza outside of this building has a trapezoidal entrance and contains (*) colonnades that trace**

out an oval shape, representing maternal arms. Beams from the Pantheon were melted down for the bronze used in a sculpture housed in this building. The Barberini's coat of arms are found on the four twisting Solomonic columns of a sculpture found in this building. For 10 points, name this church that houses a baldachin ("BALL-duh-kin") by Gianlorenzo Bernini, which marks the location of the first pope's tomb.

ANSWER: **St. Peter's** Basilica [or Papal Basilica of **St. Peter** in the Vatican; or Basilica Papale di **San Pietro** in Vaticano; accept the **Tomb of Alexander VII**, which is housed within the building, and which the first two clues refer to]

<VS, Painting/Sculpture>

5. *Description acceptable.* An artifact named for Nestor that describes "desire for beautifully-crowned Aphrodite" is evidence of the early development of this system. According to Plutarch, Agesilaus adapted this system from another precursor he discovered in Egypt, by which he was instructed to establish games in honor of the Muses. According to Hyginus, Hermes was inspired to improve this system by the shape of a flock of cranes. Palamedes invented eleven components of this system, which was imported to Italy by Evander of Pallene and his mother Carmenta. Following the (*) abduction of Europa, her brother spread this system while searching for her. This system was most famously introduced from Phoenicia by Cadmus, who adapted the shape of this system's symbols. For 10 points, the *Iliad* was committed to text with what writing system that includes the letters alpha and beta?

ANSWER: Greek **alphabet** [accept **letters** of the Greek alphabet; prompt on script or writing]

<JSH, Mythology>

6. The future son-in-law of a politician from this family was arrested while dressed in women's clothing in a society scandal called the "Dance of the Forty-One." A ruler from this family lost popularity after he protected American business interests by arresting striking workers at Cananea and Río Blanco. A politician from this family was sent to Japan in order to prevent him from ascending to the presidency per the terms of a treaty negotiated by Henry Lane Wilson, the Pact of the Embassy. A group of cadets freed (*) Bernardo Reyes and a member of this family from prison at the start of the Ten Tragic Days. José Posada created *calaveras* cartoons satirizing a politician from this family who promoted the policies of technocrats known as *científicos*. That man came to power under the motto "no reelection," a slogan his opponents would later co-opt in the Plan of San Luis Potosí. For 10 points, name this Mexican family whose best-known member presided over the Porfiriato.

ANSWER: **Díaz** [or Porfirio **Díaz**; or Félix **Díaz**]

<CK, World History>

7. The Lindhard formula for the dielectric function takes this process into account. Friedel ("free-DEL") oscillations result from the fact that particles undergoing this process are energetically limited by the Fermi momentum. This process adds a second term to the denominator of the momentum-space Green's function for Poisson's equation, and it can be described by the mass of the force-carrying field. Assuming a thermal distribution of carriers, one can derive the (*) Debye ("duh-BYE") length over which this process takes place. A decaying exponential factor accounts for this process in the Yukawa potential, which is the analog to the Coulomb potential when this process is present. For 10 points, name this process in which opposite charges partially cancel, reducing the strength of the resulting field.

ANSWER: **screening** [accept charge **screening** or electric field **screening**; accept **screened** Coulomb potential; accept charge **shielding** or Debye **shielding**]

<GR, Physics>

8. This church's liturgy includes the Book of the Cock, a gospel narrative that claims that Pontius Pilate was forced to execute Jesus against his will. Along with another church based to its north, this church venerates Pontius Pilate as a saint. Until 1951, this church usually had only one bishop, who was imported from abroad

and called the *abun*. A Biblical text named for (*) 49-year periods of history survives in full only in the language of this church; that text is the Book of Jubilees, which this church includes in its Biblical canon along with the Books of Meqabyan. Every house of worship of this church contains a symbolic representation of an object from the Old Testament. This church describes its monophysite beliefs with the term “Tewahedo.” For 10 points, name this Oriental Orthodox church that claims to possess the original Ark of the Covenant and uses the liturgical language Ge’ez (“GHEE-ezz”).

ANSWER: **Ethiopian** Orthodox Tewahedo Church [accept **Eritrean** Orthodox Tewahedo Church, since the two churches were historically one; accept **Tewahedo** until read; prompt on Orthodox]
<NC, Religion: Christianity>

9. A paper about this phenomenon argues that the rules governing it are not like the Queensberry Rules. That paper inspired a 1972 paper by Thomas Nagel, which defends a limited “absolutist” view concerning the ethicality of this phenomenon over a purely “utilitarian” one. A paper about this phenomenon imagines a Catholic schoolboy who is confused about why a certain action is “accidental,” arguing that its ethicality conflicts with the Doctrine of Double Effect. That paper’s author, (*) G. E. M. Anscombe, argued against this phenomenon’s morality in “Mr. Truman’s Degree.” Tests for its ethicality include proportionality and right intention. A 1977 book about this phenomenon with “historical illustrations” grew out of its author’s work on the “problem of dirty hands.” That Michael Walzer book divided this phenomenon into “just” and “unjust” types. For 10 points, name this phenomenon, a realist view of which was presented in the magnum opus of Claus von Clausewitz.

ANSWER: **war** [accept **just war** theory]
<CK, Philosophy>

10. This novel’s protagonist is informed that women are like the “enchanted forest” from *Jerusalem Delivered* by a Russian doctor with a German name who fell out of favor after being accused of drawing caricatures of his patients. This novel’s protagonist sees a girl on a rooftop singing about a little barque and begins to call her his “Undine,” before she attempts to drown him for discovering her smuggling operation. In this novel, a lieutenant dies on the same night that he survives pulling the trigger on a loaded gun pointed at his own head to win a bet about (*) predestination. This novel’s protagonist helps steal the horse Karagyozy (“ka-rug-YOZE”) in exchange for Azamat’s sister Bela as a bride. The first two sections of this book consist of travel notes interspersed with Maksim Maksimych’s stories. After a captain of the dragoons helps provoke a duel caused, in part, by the protagonist’s love for Princess Mary, that protagonist kills Grushnitski. For 10 points, name this book about Pechorin written by Mikhail Lermontov.

ANSWER: *A **Hero of Our Time*** [or ***Geroy Nashego Vremeni***; or ***Geroy Nashevo Vremeni***]
<VS, European Literature>

11. This artist appears as an elongated, spectral figure with his back to the moon in a black-and-white caricature by Marius de Zayas depicting him as the “midwife to ideas.” This artist’s tightly-framed depiction of a harnessed, castrated horse inspired a controversial nude portrait with the same name by Richard Prince depicting a 10-year-old Brooke Shields nude; that work is titled *Spiritual America*. This photographer fell out with his friend Charles Scheeler over a negative review criticizing his use of platinum paper, which he used in his portrait of (*) Marsden Hartley. Wheel trails in the snow lead the eye up to a dark horse pulling a carriage in one of his winter scenes, and in another, hot steam rises from a team of horses; those works are titled *Winter*, *Fifth Avenue* and *The Terminal*. He founded Gallery 291, whose “little galleries” launched the Photo-Secession. For 10 points, what American photographer married Georgia O’Keeffe?

ANSWER: Alfred **Stieglitz**
<CK, Other Arts: Photography>

12. In *Absolute Destruction*, Isabel Hull traced atrocities committed against civilians during the occupation of this country to a pattern of violent excess adopted in earlier colonial conflicts. The cartoonist Louis Raemaekers (“RAH-mah-kers”) gained fame for his depictions of civilians living under this country’s occupation. The fear of guerrilla “franc-tireurs” (“frong-tee-RURR”) was used to justify violence in this country that was investigated in the Bryce Report. Posters asking Americans to (*) “remember this country” and buy war bonds were part of a propaganda campaign about this country’s occupation. Theobald von Bethmann-Hollweg proclaimed that the 1839 Treaty of London was a “scrap of paper” after German troops violated this country’s neutrality as part of the Schlieffen (“SHLEE-fin”) Plan. For 10 points, name this Low Nations country that was the subject of a “rape” by German troops in World War I.

ANSWER: Belgium [or Kingdom of Belgium]

<AE, European History>

13. If J is contained in the union of ideals I -sub-one to I -sub- n , and if at most two of those ideals are denoted by this term, then J is a subring of one of the ideals, by a lemma named for the “avoidance” of this property. If the product rs is inside an ideal described by this term, then either r or s must be inside the ideal. A number n has this property if it is the minimum number of times the multiplicative identity of a field can be added to itself to get the additive identity, in which case n is known as the characteristic of the field. Every group whose order has this property is cyclic, since all non-identity elements have order equal to the order of the group, by (*) Lagrange’s theorem. For a number n with this property and any integer a , a -to-the- n is congruent to a -mod- n by Fermat’s Little Theorem. For 10 points, the fundamental theorem of arithmetic states that every number can uniquely be factored into what type of numbers?

ANSWER: prime [accept prime ideals; accept prime avoidance lemma; prompt on characteristic until read by asking “what property does the characteristic of a field have?”]

<VS, Other Science: Mathematics>

14. This character has a dream in which his mother plants bulbs in her backyard, which grow into flowers so tall that they smother her. On a car ride as a child, this character angers his older sister by accidentally urinating on her while she is picking flowers. He discovers his ancestry after he hears a group of children singing a song describing how his great grandfather “done fly.” While hunting with Omar and King Walker, this character’s friend slips a wire around his neck and tells him, “your day has come.” This character and his friend steal a (*) bag of bones, which they mistakenly believe is a bag of gold, from his aunt, who has no navel. After he dumps her, this character’s cousin Hagar repeatedly attempts to murder him. Guitar Baines is friends with this character who received his nickname from the janitor Freddie, who discovered his mother nursing him past infancy. For 10 points, name this protagonist of Toni Morrison’s novel *Song of Solomon*.

ANSWER: Milkman Dead [or Macon Dead; prompt on Dead]

<CK, American Literature>

15. A planned city currently being built in this country will supposedly include a Jurassic-Park-style amusement park filled with robot dinosaurs, and an artificial moon. In the wake of one incident, this state’s consulate prepared a suspicious amount of barbecue meat, possibly as a way to cover up a bad smell. After this state was criticized for imprisoning a feminist blogger, its government responded in 2018 by expelling its resident Canadian ambassador. This state plans to build a futuristic megacity thirty times larger than New York called (*) Neom as part of its Vision 2030 project. In this country, the Tiger Squad carried out round-ups whose targets were imprisoned in this country’s Ritz-Carlton. A WhatsApp message sent from this country’s leader resulted in the hacking of Jeff Bezos’s phone; that occurred after this state assassinated *Washington Post* reporter Jamal Khashoggi (“ka-SHOOK-chee”). For 10 points, name this state controlled by Crown Prince Mohammad bin Salman.

ANSWER: Saudi Arabia

<CK, Modern World>

16. Because this city accepted the payment of fines as an alternative to imprisonment, members of its “Penny Mobs” were required to pay a penny per week. Willie Gallacher led a “Workers’ Committee” in this city to agitate against the Munitions Act, which would later be the origin of the Shop Stewards Movement. In this city, a series of 1915 rent strikes was supported by its namesake “Women’s Housing Association,” whose leaders included Mary Barbour. This non-Australian city was home to a handful of 1930s era (*) “razor gangs.” This city’s police were mocked as the “Serious Chimes Squad” during a period of 1980s gang warfare in it that saw rival gangs sell drugs from ice cream trucks. This city is home to two soccer teams collectively known as the “Old Firm,” one of which, Rangers, refused to sign Catholic players. This city’s shipbuilding industry rose up alongside the River Clyde. For 10 points, name this city, the most populous in Scotland.

ANSWER: Glasgow

<EL, British/Commonwealth History>

17. As a character in this profession thinks about the horse-like creature “Gytrash” that stalks solitary travelers, she is startled when her new employer falls from his horse. At the end of a novel, a character with this job walks along a beach, where she is surprised to be reunited with her beloved dog Snap, who she believed had been sold to a cruel rat-catcher. In another novel, a character with this profession responds bluntly, “No, sir,” when her employer asks whether she finds him handsome. After Uncle (*) Robson collects a brood of birds, a character in this profession crushes them underneath a stone to save them from the cruel Tom. The employer of a character in this profession disguises himself as a gypsy woman to tell her fortune. That character in this profession attributes strange occurrences, like her employer’s bedroom catching on fire, to the drunken Grace Poole. For 10 points, name this profession of Charlotte Brontë’s Jane Eyre.

ANSWER: governess [prompt on nanny or tutor] (Early clues are from Anne Brontë’s *Agnes Grey*.)

<CK, British Literature>

18. Inazuka developed a strain of this organism with B1b and D1b alleles in GA response-modulating genes. Most commercial strains of this organism have the Rht1 or 2 mutations found in that Norin 10 variety. A 200-author 2018 *Science* article presented the reference genome for a landrace of this organism called *Chinese Spring*. CIMMYT implemented the shuttle breeding technique to allow a double season of this plant. The A, B, and D subgenomes of its hexaploid common species are a hybridization of *Aegilops* (*) goatgrass and its emmer species. It’s not rice, but high-yield, disease-resistant, semi-dwarf cultivars of this cereal were developed to combat world hunger by Norman Borlaug as part of the Green Revolution. Its durum species is used to make semolina. For 10 points, name this gluten-rich grain found in bread.

ANSWER: wheat [accept durum or emmer until read; prompt on grass or cereal until read]

<JS, Biology>

19. An unusual two-movement piece of this type in E-flat minor that contains difficult high violin passages as a practical joke is nicknamed “Jacob’s Dream.” Haydn advised his student Beethoven not to publish his bold C minor third piece in this genre from his Opus 1, but it was a hit. At his last public concert, a deaf Beethoven premiered a B-flat major piece in this genre, aided by Joseph Linke and Ignaz Schuppanzigh (“EEG-nots SHOO-pont-sick”). A piece of this type in G major by Haydn has a (*) “Gypsy Rondo” finale. Mendelssohn’s two late pieces in this genre are the Opus 49 in D minor and Opus 66 in C minor. Carl Czerny (“CHAIR-nee”) nicknamed a D major piece of this type due to its eerie 2nd-movement melody. Beethoven’s Opus 97 piece in this genre was dedicated to and nicknamed for his pupil and patron, Rudolf of Austria. For 10 points, Beethoven’s *Ghost* and *Archduke* are in what chamber music genre scored for violin, cello, and keyboard?

ANSWER: piano trio [prompt on trio]

<KS, Classical Music>

20. This faculty is explained in terms of a pre-attentive mechanism called the “fingers of instantiation,” or FINST, in Zenon Pylyshyn’s indexing theory. Daniel Dennett’s *Consciousness Explained* adapts a bottom-up model originally proposed for this faculty that analogizes it to “demons” yelling at each other, called the pandemonium model. James Gibson proposed a direct realist account of this faculty known as the “ecological model.” A 1982 book about this faculty distinguishes between information processing at the (*) computational, algorithmic, and implementational levels, and was written by David Marr. The Gestalt psychologists posited that this faculty groups items according to the laws of simplicity, similarity, and proximity. Hermann von Helmholtz posited an “unconscious inference” to explain this faculty, which is used to observe the autokinetic effect and the phi phenomenon. For 10 points, name this sense that receives input from the ganglion cells of the retina.

ANSWER: vision [or visual perception; or object perception; or visual processing; prompt on perception;
anti-prompt on more specific answers by asking “can you be less specific?”]

<CK, Social Science: Psychology>

Bonuses

1. A member of this family abolished the longstanding *beylik* system in a series of westernizing reforms encouraged by his backer Catherine the Great. For 10 points each:

[10] Name this family whose founder supposedly devised a three-pronged symbol known as the Tarak Tamga. That man's son defeated the last Khan of the Golden Horde and occupied Sarai.

ANSWER: **Giray** [accept Hacı I **Giray** or Melek Haji **Giray** or Şahin **Giray**]

[10] The Girays were the ruling family of this polity, which often led raids into Muscovy as both an independent state and an Ottoman vassal. This polity was annexed to Russia after the Treaty of Kuchuk-Kainarji.

ANSWER: **Crimean Khanate**

[10] The Crimean Khanate were one of several groups to go on "raids" of this commodity into Eastern Europe. Millions of this commodity were transferred across the Atlantic via the Middle Passage.

ANSWER: **slaves**

<JL, European History>

2. An artist who was born in this country had her first exhibition, titled *Lines of Sight*, in 2016 when she was 101 years old. For 10 points each:

[10] Name this home country of the abstract expressionist artist of a series consisting of simple green shapes on white backgrounds. An artist from this country posed nude on top of a skeleton in *On Giving Life*.

ANSWER: **Cuba** (The artists are Carmen Herrera and Ana Mendieta.)

[10] This artist of the abstract paintings *A Green Thought in a Green Shade* and *Green Likes Mauve* used a technique involving diluting oil paints with turpentine, called soakstaining, in a painting inspired by a trip to Nova Scotia.

ANSWER: Helen **Frankenthaler** (The painting is *Mountains and Sea*.)

[10] The *Earth Green* series partially dealt with Lee Krasner's feelings after the death of this artist, her husband.

ANSWER: Jackson **Pollock**

<VS, Painting/Sculpture>

3. This novel is set in Elm County, Virginia, which has a hierarchical society with the "Quality" at the top, followed by the "Low," the "Freed," and the "Tasked." For 10 points each:

[10] Name this 2019 novel centering on Hiram Walker, a slave in the Antebellum South who discovers that he has the power of "conduction," which allows him to teleport over great distances.

ANSWER: *The **Water Dancer***

[10] After first reading *The Water Dancer*, this novelist reportedly told its author Ta-Nehisi ("TAH-nuh-HAH-see") Coates, "That's not fiction, bro." He wrote a novel in which the detective Meyer Landsman investigates the murder of man, who calls himself Emanuel Lasker, who is found dead in his hotel room next to a cardboard chessboard.

ANSWER: Michael **Chabon** ("SHAY-bon") (The novel is *The Yiddish Policemen's Union*.)

[10] Coates's *The Water Dancer* has been frequently likened to this Colson Whitehead novel in which Cora and Caesar flee from the slave-catcher Ridgeway on a literal subterranean train.

ANSWER: *The **Underground Railroad***

<CK, American Literature>

4. Secondary types of this cancer arising from gastric metastases ("muh-TASS-tuh-seez") can manifest as signet ring cells called Krukenberg tumors. For 10 points each:

[10] Name this second-most common cancer caused by BRCA ("BRACK-uh") mutations. It affects a paired organ in the female reproductive system.

ANSWER: **ovarian** cancer [prompt on germ cell tumor and sex cord stromal tumor]

[10] This glycoprotein family found in signet ring cell vacuoles also includes CA-125, whose serum levels can be used to monitor ovarian cancer treatment. The 5AC and 2 members of this heavy, highly-glycosylated family are overexpressed in namesake adenocarcinomas.

ANSWER: **mucins** [accept **MUC** or **mucin** followed by any number; prompt on glycoconjugates; prompt on mucus proteins]

[10] FIGO staging incorporates cytology findings from “washing” this structure during gynecologic surgery. Its parietal layer attaches to the abdominal wall and portions of its visceral layer fold over to create the mesentery and omenta.

ANSWER: **peritoneum** [or **peritoneal** cavity]

<JS, Biology>

5. A type of this phenomenon that occurs in sentences where the embedded sentence is accusative often occurs in the presence of exceptional case-marking verbs. For 10 points each:

[10] Name this syntactic phenomenon that involves the movement of an argument from a subordinate clause up to the matrix clause. It is often contrasted with the superficially similar phenomenon of control.

ANSWER: **raising**

[10] The subject of a clause that contains a raising predicate does not receive one of these values. They formally represent a predicate’s argument structure, distinguishing between nouns that are agents, patients, and experiencers.

ANSWER: **theta-roles** [or **thematic relations**]

[10] These verbs have more than one argument because they take direct objects. In English, “kiss” is one of these verbs, but “sit” is not.

ANSWER: **transitive** verbs

<CK, Social Science: Linguistics>

6. A protocol named “border [this word] protocol” is susceptible to “route leaks” that affect large customer bases, as with the 2019 Cloudflare service outage that took down Discord. For 10 points each:

[10] That protocol named for these things is used to connect autonomous systems, allowing for routing between traffic hosted on different ISPs. The “default” example of these things is the first router a system will contact when looking up an unknown IP.

ANSWER: **gateway** [accept (external) Border **Gateway** Protocol or default **gateways**]

[10] Border Gateway Protocol connectivity starts with the three-way handshake of this protocol, which is often used together with IP. It is connection-oriented and ensures that packets are delivered correctly.

ANSWER: **TCP** [or **Transmission Control Protocol**; accept **TCP/IP**; accept **TCP** 3-Way Handshake]

[10] Though BGP is typically run on routers, it can also be run on “layer 3” or multilayer examples of these networking devices. They perform the same task as network bridges on larger scales, and unlike hubs, they bridge traffic between two separate networks without multicasts.

ANSWER: network **switches** [accept layer 3 **switches** or multilayer **switches**]

<VS, Other Science: Computer Science>

7. In one version of this practice, slaves would be instructed to get drunk on pure wine and then forced to sing disgusting songs in order to demonstrate to viewers the importance of drinking moderately. For 10 points each:

[10] Name this practice in which men would hold a daily banquet with their fellow soldiers. Prohibition of excessive drinking at these events meant they were usually tamer than the similar *symposia*.

ANSWER: **syssitia** [accept **pheditia** or **philitia**]

[10] The *syssitia* was a required daily meal for the adult males of this city. This city’s men were extensively trained by the *agoge* (“uh-GO-jee”) to form the most powerful standing army in Greece.

ANSWER: **Sparta**

[10] This group determined whether or not male Spartan infants would be murdered by exposure. This group of 30 elders that was supposedly created by Lycurgus included both kings as members and was the highest judicial body in Sparta.

ANSWER: **Gerousia**
<JL, Ancient History>

8. This book's 83rd chapter contains a ticket to a corresponding real-life location, which includes a display filled with thousands of cigarette butts. For 10 points each:

[10] Name this novel in which Kemal turns Füsün's house into the title institution, which is filled with trinkets that remind him of her after she dies in a car crash.

ANSWER: *The **Museum of Innocence*** [or ***Masumiyet Müzesi***]

[10] This author of *The Museum of Innocence* collected items for a physical Museum of Innocence that he established in the Çukurcuma ("choo-KOOR-joo-ma") district of Istanbul. His other novels include *Snow* and *My Name is Red*.

ANSWER: Orhan **Pamuk**

[10] Pamuk talked about Turkish censorship while giving an interview in the Museum of Innocence to this author, who was tried for acknowledging the Armenian Genocide in *The Bastard of Istanbul*. She wrote about the recently-murdered prostitute Tequila Leila in her novel *10 Minutes 38 Seconds in this Strange World*.

ANSWER: Elif **Shafak**
<VS, World/Other Literature>

9. *A Taxonomy of Sentence Structures* expounds on a concept by this analyst who used acute and breve symbols, and impossible notation like hairpins that both grow and shrink, for agogic ("uh-GOD-jick") accents and *espressivo*. For 10 points each:

[10] Name this composer who meticulously articulated his Five Piano Pieces, Opus 23. His treatise *Fundamentals of Musical Composition* was posthumously published long after his textbook *Harmonielehre* and shift to free atonality.

ANSWER: Arnold **Schoenberg**

[10] Unlike Schoenberg's jagged music, *Harmonielehre* teaches Bruckner's "law of the shortest way," a convention for smooth voice leading in this musical texture of most Renaissance choral music. It developed from organum and consists of multiple independent voices in counterpoint.

ANSWER: **polyphony** ("puh-LIFF-uh-nee") [or **polyphonic** texture; prompt on counterpoint or contrapuntal until read]

[10] Caplin's *Classical Form* builds upon Schoenberg in dividing a sentence into a presentation and a continuation phrase. The latter may break a theme into its component motives, called "fragmentation," or reduce a melody to its essential form, stripping away all that is unique about it, in this technique Schoenberg coined in his *Fundamentals*.

ANSWER: **liquidation** [or word forms like **liquidate**; or **liquidieren**; prompt on dissolution or Auflösung]
<OL, Classical Music>

10. Artist Aaron Koblin used this website to create a depiction of a 100-dollar bill painted by thousands of individuals, titled *Ten Thousand Cents*. For 10 points each:

[10] Name this Amazon-run crowdsourcing website where "requesters" can pay people to perform Human Intelligence Tasks, or HITs.

ANSWER: Amazon **Mechanical Turk** [or **MTurk**]

[10] This crowdsourced game released in 2008 allows users to fold proteins. A 2010 paper in *Nature* found that the solutions found by players of this game outperformed algorithmically computed solutions.

ANSWER: **Foldit**

[10] Crowdsourcing was used to create these challenge tests used to differentiate computers from humans, which have been likened to a "reverse Turing test."

ANSWER: **CAPTCHAs**

<CK, Modern World>

11. The first Hohenberg–Kohn theorem states that the external potential is a unique one of these mathematical forms for the electron density. For 10 points each:

[10] Name these mathematical forms used in a namesake theory that depend on electronic density. BLYP is a popular one of these mathematical forms that is used in conjunction with the Kohn–Sham equations.

ANSWER: electron density **functionals** [accept density **functional** theory; prompt on **DFT**; do not accept or prompt on “functions”]

[10] *Two answers required.* Functionals like BLYP that account for the energy from these two interactions cannot be exactly solved by the Kohn–Sham equations. The local-density approximation is used to approximate the energy functional named for these two interactions.

ANSWER: electron **exchange** interaction AND electron–electron **correlation** [accept **exchange–correlation** energy; do not accept or prompt on partial answers]

[10] DFT and Hartree–Fock methods calculate electronic structure by creating approximations of these types of orbitals. These orbitals, which come in bonding, antibonding, and non-bonding types, can be approximated by linear combinations of atomic orbitals.

ANSWER: **molecular** orbitals [accept **MO** theory]

<KS, Chemistry>

12. A poem by this author opens: “I had a dream, which was not all a dream. / The bright sun was extinguish’d, and the stars / Did wander darkling in the eternal space.” For 10 points each:

[10] Name this poet who wrote about the eruption of Mount Tambora and the subsequent Year Without a Summer in his poem “Darkness.”

ANSWER: Lord **Byron** [or George **Gordon**]

[10] During the Year Without a Summer, Mary Shelley began writing this novel for a contest to write the scariest story while locked in a house on Lake Geneva.

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

[10] In the same writing contest, Lord Byron wrote his story “A Fragment,” which this man, Byron’s physician, adapted into a Gothic short story about Lord Ruthven titled “The Vampyre.”

ANSWER: John **Polidori**

<VS, British Literature>

13. Stephen Jay Gould helped resurface the story of this woman in *The Mismeasure of Man*. For 10 points each:

[10] Identify this Khoekhoe (“koy-koy”) woman who was exhibited across Europe as a freakshow for her large butt. You can give either her real name, or her stage name.

ANSWER: Sara **Baartman** [or **Hottentot Venus**; or Saartje **Baartman**]

[10] The Khoekhoe frequently fought or allied with these people in their fight with settlers. Piet Retief (“PEET ruh-TEEF”) led the Great Trek in the aftermath of a war between settlers and these people in which Chief Hintsa was killed.

ANSWER: **Xhosa** (“KAW-sah”) [or **isiXhosa**]

[10] The Xhosa fought the Cape Colony, which was located in this modern-day country formerly home to the Boers.

ANSWER: **South Africa** [or Republic of **South Africa**]

<EL, World History>

14. This thinker rejected the premise that an omnipotent being can actualize every possible world, a mistake he dubbed “Leibniz’s Lapse.” For 10 points each:

[10] Name this thinker who responded to J. L. Mackie's logical problem of evil in his "free-will defense," which claims that God cannot actualize a world wholly without wrong because individuals may be "transworld depraved."

ANSWER: Alvin **Plantinga**

[10] Plantinga's *God, Freedom, and Evil* led to a resurgence in this philosophical view, named for a Spanish Jesuit, which holds that God possesses "middle knowledge," allowing Him to know all true counterfactuals.

ANSWER: **Molinism**

[10] Molinist middle knowledge is a way to avoid the problem of divine foreknowledge, which arises because free will is incompatible with this attribute of God. A being with this property is all-knowing.

ANSWER: **omniscience** [or word forms]

<CK, Philosophy>

15. A 19th-century figure with this name, who is depicted as a bearded man wearing a Sufi-style white robe and cap, delivered sermons on the nature of Malik, or the "Master," in the town of Shirdi. For 10 points each:

[10] Give this name. The Hard Rock Café took its motto "love all, serve all" from a maxim of a 20th-century figure of this name who founded an āshram in his hometown of Puttaparthi ("POO-tuh-par-thee").

ANSWER: **Sai Baba** ("sye BAH-buh") [or **Shirdi Sai Baba**; or Śrī **Sathya Sai Baba**; prompt on **Sai**; prompt on **Baba**]

[10] One of Sathya Sai Baba's many purported miracles was the spontaneous generation of this substance. This substance is poured into bodies of water after the final *samskāra*, Antyesti ("unt-YAY-shtee"), in which it is generated through cremation.

ANSWER: **ash** [or **ashes**; or **vibhūti**; or **bhasma**; or **udi**; prompt on **powder**]

[10] For most of his adult life, Shirdi Sai Baba lived in one of these places. In 1992, one of these places in Uttar Pradesh was ransacked by *kar sevaks* ("kar SAY-vucks") organized by the Vishva Hindu Parishad.

ANSWER: **mosques** [or **masjid**; accept **Babri Masjid**]

<AP, Religion: Hinduism>

16. A song often interpreted as referencing this event is probably a song about hitchhiking, since its artist twice sings the line "ooh-ee, I tried to flag a ride." For 10 points each:

[10] Name this heavily mythologized event that may have inspired a musician to ask God "have mercy now, save poor Bob if you please" in his song "Cross Road Blues."

ANSWER: Robert **Johnson's deal with the devil** [or equivalents mentioning Robert **Johnson** AND synonyms like "**selling his soul** to the devil"; prompt on partial answers]

[10] During a 1941 trip to Mississippi to record Robert Johnson, musicologist Alan Lomax instead discovered this blues singer who first recorded the standards "Mannish Boy" and "Hoochie Coochie Man."

ANSWER: **Muddy Waters** [or McKinley **Morganfield**]

[10] During his final performance, Muddy Waters played with this British blues guitarist who paid tribute to Robert Johnson on his 2004 album *Me and Mr. Johnson*. He popularized Johnson's "Crossroads" in the band Cream.

ANSWER: Eric **Clapton**

<CK, Other Arts: Music>

17. An experiment to detect this type of particle uses cryogenic crystals of germanium and silicon. For 10 points each:

[10] Name this general class of hypothetical dark matter candidates. Extensions to the Standard Model like SUSY ("SOO-zee") and UED predict candidates for this type of particle, such as the LSP.

ANSWER: **WIMPs** [or **weakly interacting massive particles**]

[10] Several WIMP searches, including LUX and its successor LZ, use time projection chambers filled with this inert element to try to identify interactions between WIMPs and nuclei of this element.

ANSWER: **xenon** [or **Xe**]

[10] LUX is housed in the Homestake Mine in South Dakota, which was also the site of an experiment that detected an unexpectedly low number of these particles from the Sun. That anomaly was explained by these particles undergoing flavor oscillation.

ANSWER: **neutrinos** [accept electron **neutrinos** or solar **neutrinos**]

<GR, Physics>

18. A Christmas version of this publication known as the “Wish Book” included kit-houses that were shipped ready-to-assemble on railroad box cars. For 10 points each:

[10] Name this publication by a company whose co-owner Julius Rosenwald opened schools across the South for African-Americans.

ANSWER: **Sears** catalog

[10] Orders from the Sears catalog increased dramatically in 1896 when this government agency began offering Rural Free Delivery.

ANSWER: United States **Postal Service** [or US **Post Office**; or **USPS**; or US **Mail**; or the **Post**; do not accept or prompt on “UPS”]

[10] Benjamin Harrison appointed this early proponent of Rural Free Delivery as Postmaster-General. In what was an obvious conflict-of-interest, this man also owned the largest department store in Philadelphia.

ANSWER: John **Wanamaker** [accept **Wanamaker**’s Department Store]

<CK, American History>

19. This hedge fund’s board included Nobel-Prize-winning economists Myron Scholes and Robert Merton. For 10 points each:

[10] Name this hedge fund that aggressively leveraged itself to take advantage of arbitrage opportunities. It collapsed in 1998, losing 4.6 billion dollars, when the Russian government defaulted on its bonds.

ANSWER: **Long-Term Capital Management** [or **LTCM**]

[10] After the collapse of LTCM, this CEO of Berkshire Hathaway gave its board only an hour to consider a 250-million-dollar buyout. This “Sage of Omaha” advocates value investing.

ANSWER: Warren **Buffett**

[10] A year earlier, the market experienced a “mini-crash” when this nation’s currency, the baht, collapsed, triggering the 1997 Asian financial crisis.

ANSWER: **Thailand**

<CK, Other Academic>

20. The opening story from this work centers on the evil businessman Ciappelletto, who, on his deathbed, tricks a priest into believing he was a saint by begging forgiveness for minor transgressions. For 10 points each:

[10] Name this collection whose frame story describes a *brigata* of Florentines, including Emilia, Filomena and Fiammetta, traveling to a country villa to escape the Black Death.

ANSWER: *The **Decameron*** [or *The **Decameron***, or *Prince Galehaut*; or *Il **Decamerone**: Prencipe Galeotto*]

[10] In *The Decameron*, Emilia tells a story about a man whose wife convinces him that one of these creatures is knocking at their door in the night. In a Breton lay, one of these creatures tears off his unfaithful wife’s nose.

ANSWER: **werewolf** (The lay is Marie de France’s *Bisclavret*.)

[10] Many stories in *The Decameron* were adapted from these bawdy medieval stories written by *jongleurs* in northeastern France.

ANSWER: **fabliaux**

<CK, European Literature>