

2020 Terrapin Open

Packet 4

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Tossups

1. **In a novel by this author, a closeted addict tricks a gay assassin into killing him by injecting him with a lethal dose of pure cocaine rather than shooting him with his gun. The protagonist of a novel by this author repeats “But that is not the story” while telling stories to a half-human, half-spider scientist. This author created a character who moves to the Bronx and struggles to lose her accent in order to avoid the “Storm Posse.” This author personally illustrated maps of the North and South Kingdoms for a 2019 novel about a hunter with a gifted sense of smell named Tracker; that novel was marketed as an “African (*) Game of Thrones.” This author used slang like “sufferah” and “duppy” in a novel in which Josey Wales’s men attempt to prevent the Smile concert by shooting up the house of “the singer.” For 10 points, name this author of *Black Leopard, Red Wolf* who fictionalized an assassination attempt on Bob Marley in *A Brief History of Seven Killings*.**

ANSWER: Marlon **James**

<AP, World/Other Literature>

2. **Core alpha 1,3-fucosylated moieties such as MMXF3 can interfere with some tests for these disorders. The differential diagnosis for one form of these disorders caused by parvalbumin Gad c 1 includes scombroid poisoning. CCDs generate false positives for some tests for these disorders such as CAP and RAST due to binding between peptides and carbohydrate determinants. Another method of testing for these disorders may use phenolated saline or glycerin injection as a negative control and is positively indicated by a wheal-and-flare pattern. Patients who are [emphasize] already on diphenhydramine or other (*) H-one inhibitors can be tested for these disorders with specific IgE (“eye-G-E”) immunoassays, which, unlike scratch tests for these disorders, don’t carry the risk of inducing anaphylaxis. For 10 points, name these type-one hypersensitivity disorders usually treated with antihistamines.**

ANSWER: **allergy** [or **allergic** reaction; or any specific types of allergies; or **type I hypersensitivity** response until read; or **allergic** asthma; accept **anaphylaxis** until read; prompt on **hypersensitivity** or **sensitization**; anti-prompt on **hives**, **pruritus**, or **urticaria** by asking “can you be less specific?”]

<VS/JS, Biology>

3. **This man wrote the song “Hold the Line,” which describes how concertgoers formed a line, protecting Paul Robeson and this musician from rioting KKK members during a performance in Peekskill, New York. A group led by this musician that pioneered the “world music” genre recorded the Israeli song “Tzena, Tzena, Tzena” and the South African song “Wimoweh.” Apocryphally, this man threatened to unplug the sound equipment at the 1965 Newport Festival in response to (*) Bob Dylan “going electric.” After he appeared on *The Smothers Brothers Comedy Hour*, CBS censored a song he wrote about a captain who drowns after foolishly ordering his men to ford a deep, titled “Waist Deep in Big Muddy River.” Together with Lee Hays, he founded the Weavers, but he first rose to prominence with his group the Almanac Singers. For 10 points, name this American folk singer of “Where Have All the Flowers Gone?” and “If I Had a Hammer.”**

ANSWER: Pete **Seeger** [or Peter **Seeger**]

<CK, Other Arts: Music>

4. *Two answers required.* **In a conflict, one of these two men had his slingers use bullets inscribed with a vulgar poem he had written about the other’s adulterous relationship with the ex-hetaira Cappadocian noblewoman**

Glaphyra. After marrying the other's elder sister, one of them traveled to Athens where he allowed himself to be deified as the New Dionysus. One of these two men served in the army of the consuls Hirtius and Pansa, stymieing the other's attempt to seize Cisalpine Gaul from Decimus Brutus at the Battle of (*) Mutina. The wife of one of these two men, Fulvia, led an uprising against the other in the Perusine War. One of them lost popularity after the other broke into the temple of the Vestal Virgins and stole a secret will that described his Donations of Alexandria. These two men signed the Lex Titia, which created a political alliance that also included Marcus Lepidus. For 10 points, name these members of the Second Triumvirate whose civil war ended at the Battle of Actium.

ANSWER: **Octavian** AND Mark **Antony** [accept Gaius Julius Caesar **Augustus** or **Augustus** Caesar or Gaius **Octavius** Thurinus in place of "Octavian"; accept Marcus **Antonius** in place of "Mark Antony"]
<CK, Ancient History>

5. Two answers required. Neither of them is hydrogen, but the iridium-cyclooctadiene-bipyridine catalyst system is often used to form bonds between these two elements. An extremely hard binary compound of these two elements contains 84-vertex polyhedra that are interconnected by short chains where atoms of these two elements alternate. Pinacol or catechol oxygens are bound to the lighter of these elements in common reagents that are used to form bonds between these two elements. Palladium inserts into a bond between these two elements in the transmetalation step of the (*) Suzuki reaction. Oxidation with alkaline hydrogen peroxide breaks a bond between these two elements in a two-step reaction to give overall anti-Markovnikov addition of an alcohol. That bond between these two elements could have been introduced by reacting an alkene with 9-BBN or TEB. For 10 points, name these two elements, the lightest in groups 13 and 14.

ANSWER: **boron** AND **carbon** [or **B** AND **C**; accept in any order]
<EM, Chemistry>

6. This man carried around a pricker and a long sheet of paper to rate women as either good, medium, or bad in order to produce a "beauty map." He discovered that praying over randomized plots of land did not make plants more likely to grow in a statistical analysis into the efficacy of prayer. This thinker invented the term "anticyclone" after creating the world's first weather map. He invented a pachinko-like device which shows that, with a sufficiently large sample size, the binomial distribution approximates the normal distribution, known as the (*) bean machine. Stephen Jay Gould's *The Mismeasure of Man* recounts how at the International Exposition of 1884, this man erected an Anthropometric Laboratory where, for three-pence, he would measure your skull. This man's book *Hereditary Genius* supposedly caused his cousin to abandon his belief that "men do not differ much in intellect." For 10 points, name this cousin of Charles Darwin who coined the term "eugenics."

ANSWER: Francis **Galton**
<CK, Other Academic>

7. This author created a character who, in a tirade, imagines forcing a Jewish character's family to reenact David and Goliath's battle at a salon. In another scene, a character created by this author misinterprets a historian's remark, "You really have a fairy's touch," as directed towards him after he accidentally topples over a vase of apple blossoms. After the narrator of that novel by this author is accused of spreading lies, he angrily tramples upon a possibly homosexual character's new silk hat. In a novel by this author, (*) Bloch attends a dinner party where he attempts to badger Madame de Norpois ("nor-PWAH") into a debate about the Dreyfus Affair. This author created the Baron de Charlus ("shar-LOOSE") in his best-known work, which begins with a section in which Vinteuil's ("van-TUH-ee's") violin sonata becomes the "national anthem" of the title character's love for Odette de Crécy. For 10 points, name this author who included *The Guermantes Way* and *Swann's Way* in his *In Search of Lost Time*.

ANSWER: Marcel **Proust** ("proost")
<CK, European Literature>

8. In a 1975 paper, William Nordhaus argued that these phenomena arise because politicians have little reason to value future investment. The welfare cost of these phenomena was calculated as [read slowly] one-half the standard deviation of the natural log of consumption squared, times the degree of risk aversion, by Robert Lucas. A model of these phenomena explains them as arising from a time-preference asymmetry between patient “gatherers” and impatient “farmers”; that model is named for (*) Kiyotaki and Moore. When studying them, economists often smooth out the trend component of the time series using the HP filter. The “Time to Build” paper explains these phenomena as arising from real, not nominal, shocks, and won the Nobel Prize for its authors, Edward Prescott and Finn Kydland. Ben Bernanke dubbed a decrease in the volatility of these phenomena in the early 21st century as the “Great Moderation.” For 10 points, name these periodic fluctuations in the economy. ANSWER: business cycles [or real business cycle theory; or RBC]
<CK, Social Science>

9. According to Herman van der Wee’s *The Growth of [this city’s] Market and the European Economy*, this city’s rise to prominence began after it became the hub of the Portuguese spice and sugar trade with Germany. To increase the speed and efficiency of loading cargo, this city established a freight terminal called the *Hessenhuis* (“HESS-in-house”). After the French recaptured Calais (“cal-AY”), this city became the center of the English cloth trade with the continent. Many of this city’s merchants were arrested for unpaid debts at European fairs after their property was destroyed when troops led by (*) Sancho d’Avila sacked this city in 1576. After the invention of the scaif in 1456, this city’s Diamond Quarter became a center of the global diamond trade. The closing of the Scheldt ended this city’s economic dominance, which had begun after the silting of Zwiijn (“zwain”) caused merchants to move from Bruges (“broozh”) to this city. For 10 points, name this Flemish city, the commercial capital of Europe during the early 16th century. ANSWER: Antwerp
<AE, European History>

10. A work created using this technique that depicts the phrase “enriched bread” is titled *That They May Have Life*. The words “Seized shipment: Did a leak kill...” are shown under a tuna can in *Tunafish Disaster*, which was created using this technique. This technique was used to create works protesting Vatican II, like *Let the Sun Shine In*, by Catholic nun Corita Kent. An artist used this technique to create recolored scenes by Uccello (“oo-CHELL-oh”) and Botticelli in the series *Details of Renaissance Paintings*; that artist used it for his final series, which was based on (*) Da Vinci’s *Last Supper*. This technique was used for the *Electric Chairs* series and for a painting showing a large blank white space on the right next to images of a corpse in a wrecked car, titled *Silver Car Crash (Double Disaster)*. The title celebrity in cowboy attire points a gun at the viewer in multiple copies created with this technique. For 10 points, name this technique used for *Eight Elvises* and the *Marilyn Diptych* by Andy Warhol. ANSWER: silkscreening [or screen printing; or serigraphy; prompt on printing]
<CK, Painting/Sculpture>

11. “Pessiland” and “Heuristica” are two of five possible worlds that Russell Impagliazzo (“im-pal-YOT-so”) theorized for different hypothetical truth values of this statement. Baker, Gill, and Solovay showed that this statement allows for “contradictory relativizations.” Due to the PCP theorem, for good, feasible approximations to exist for some problems, this statement must be true. The inverse of this statement is an assumption of Ladner’s theorem. An analogue to this statement is proved as a corollary to Savitch’s theorem and deals with space. Due to the (*) Cook–Levin theorem, this statement could be proven by showing that Boolean Satisfiability belongs to a certain complexity class. This statement means that all problems whose solutions can be checked in polynomial time can also be solved in polynomial time. For 10 points, name this statement about intractability central to an open Millennium Problem in computer science.

ANSWER: **P = NP** [accept **P does not equal NP**; accept **P vs. NP**; accept **PTIME** or **polynomial time** in place of “P”; accept **NPTIME** or **nondeterministic polynomial time** in place of “NP”]

<VS, Other Science: Computer Science>

12. **This author wrote a poem inspired by Rubén Darío that opens with the speaker making a gin-and-tonic titled “Sympathy in White Major.” This author wrote another poem describing a funeral procession, which ends with the narrator hearing a voice “singing of Kitty, or Katy, as if the name meant once, all love, all beauty.” The speaker of a poem by this author declares “oh hell, only the young can be alone freely” after receiving an invitation to a “crowd of craps” from a man named (*) Warlock-Williams. A poem by this author describes “everyone young going down the long slide to happiness, endlessly.” In addition to writing “Dublinesque” and “Vers de Soci  t  ” (“vair duh so-s’yay-TAY”), this poet wrote a poem whose speaker declares “I know this is paradise” when “I see a couple of kids and guess he’s fucking her and she’s taking pills or wearing a diaphragm.” For 10 points, name this poet whose collection *High Windows* includes a poem that declares “they fuck you up, your mum and dad.”**

ANSWER: Philip **Larkin**

<CK, British Literature>

13. **In response to the ruling on this case, Learned Hand claimed that the Supreme Court had “assumed the role of a third legislative chamber.” Herbert Wechsler argued that the court’s ruling in this case could not be justified under any neutral principle in *Toward Neutral Principles in Constitutional Law*. To prevent the appearance of a divided court, the court asked the involved parties to reconsider “three questions” at the behest of Felix Frankfurter, before rehearing the case during the next session. The ruling in this case used *Sweatt v. Painter* to highlight the importance of (*) “intangible factors” as a violation of the Fourteenth Amendment. While clerking for Justice Jackson, William Rehnquist wrote a memo arguing [emphasize] *against* the eventual outcome of this case. Resistance to this case’s ruling triggered the only case to have all nine justices listed as authors, *Cooper v. Aaron*; that case arose after Orval Faubus attempted to resist its ruling. For 10 points, name this Supreme Court case that overturned *Plessy v. Ferguson* and ruled segregation unconstitutional.**

ANSWER: ***Brown v. Board of Education***

<EL, American History>

14. **Note to moderator: Read the answerline carefully. It’s not “secret” or “essence,” but a tantra named after the “Web” of this concept is the most important of the 18 tantras in the Mah  yoga Nyingma tradition. “Bodies” of this concept are contrasted with the Body of Clear Light and are attained during the completion stage of the Highest Yoga Tantra. The second of the Six Dharmas of N  ropa (“NAH-ro-puh”) is named after the yoga of this concept, *gyulu*, which is further explored in the (*) Dream Yoga. Kum  raj  va (“koo-mah-ruh-JEE-vuh”) translated a text which claims that the nature of reality is empty and all dharmas are a form of this concept. Nine Similes of this concept, including a lamp, flash of lightning, and dewdrop, are included in a four-line *g  th  * at the end of one s  tra. The full name of the Diamond S  tra refers to the use of wisdom to “shatter” or “cut through” this concept. For 10 points, name this Buddhist concept that shares its Sanskrit name with Sh  kyamuni (“SHAH-kyuh-moo-nee”) Buddha’s mother M  y   and indicates that things are not what they seem.**

ANSWER: **illusion** [accept ***m  y  *** until read, but prompt after; accept **illusory** body, **magic**, **unreality**, or **untruth**; accept ***gyulu*** until read; accept ***m  h  k  y  ***; prompt on **dream** or ***milam*** or **appearance**; prompt on **delusion** or **deception** or **ignorance** or **confusion** or **falsehood** or **lies** by asking “what is either the original Sanskrit term or an alternate translation?”]

<KS, Religion: Buddhism>

15. **After he is duped into trading his horse for a sickly team of mules, a character from this family spends the money that his wife gave him to buy a milk separator to buy another horse, only to discover that it’s his old**

horse painted black and inflated with a bicycle pump. A member of this family buries fake treasure to trick Henry Armstid and the sewing machine salesman V. K. Ratliff into purchasing a worthless piece of property. A member of this family is ordered to pay ten bushels of corn for wiping his (*) manure-covered feet on a rug in a story that ends with the 10-year-old Sarty failing to warn Major de Spain of that man's impending act of arson. In a novel set in Frenchman's Bend, Will Varner hires a member of this family named Flem as insurance against another member of this family, Abner, who appears in its author's story "Barn Burning." For 10 points, what family is the subject of a trilogy including *The Hamlet*, written by William Faulkner?

ANSWER: **Snopes** family

<CK, American Literature>

16. An F-sharp major piece in this genre opens with a low C-sharp octave, a held treble "B D-sharp G-sharp" chord, and a few enigmatic bars drifting down; long double trills on A-sharp and C-sharp recapitulate the *cantabile* ("con-TAH-bee-lay") theme of that piece in this genre, Chopin's Opus 60, which is unusually in 12/8 time. In 1972, Jean Doyen ("zhahn dwa-YANN") recorded 13 piano pieces in this genre, including the early Opus 26 in A minor, by Gabriel Fauré. An operatic duet in this genre lilts from long F-sharp to G, then from long G to F-sharp. The (*) "June" movement of Tchaikovsky's piano suite *The Seasons* is written in this genre. Jules Barbier wrote the libretto for an opera whose third-act duet between Giulietta and Nicklausse in this genre is "Belle nuit, ô nuit d'amour" ("bell NWEE oh NWEE dah-MOOR") from Offenbach's *Tales of Hoffman*. For 10 points, name this genre typically composed in a swaying 6/8 time to represent the music of Venetian gondoliers.

ANSWER: **barcarolle** [or **barcarolla**; accept Venetian **boat song** or **gondola song** or **gondoliers' song** until "gondoliers" is read]

<JD, Classical Music>

17. It's not Russia, but the publishing of the October Manifesto in this country laid the groundwork for a fascist movement that published a magazine titled after their salute, *Anauê!* That fascist movement in this country preached the importance of becoming one with the homeland through the "Revolution of the Self." A dictator in this country dissolved its legislature and all of its parties, including the fascist AIB, after using an imaginary communist plot called the (*) Cohen Plan to cement his power. Luís Prestes ("PRESS-chiss") led the ANL, which opposed a fascist movement in this country that used the uppercase Sigma as its symbol and was led by Plínio Salgado. This country's Integralists at first supported, but were then repressed by, a leader who came to power by overthrowing the government of Washington Luís. For 10 points, name this country that was led during the *Estado Novo* by Getúlio Vargas ("zhay-TOOL-yoo VAR-guss").

ANSWER: **Brazil** [or **Brasil**]

<JL, World History>

18. Rigol et al. introduced a "generalized" mathematical object named for this scientist to describe equilibration of observables in isolated quantum systems. It's not Heaviside, but this scientist built on mathematical work of W. K. Clifford to use vector calculus to describe electromagnetism instead of quaternions. This scientist names a formula in which the sum of negative p -sub- i log p -sub- i , over microstates, equals the thermodynamic (*) entropy of a system. With a European, this scientist names an equation that sets changes in chemical potential summed over all particles to zero in equilibrium. This scientist introduced a quantity given by the Legendre transform of enthalpy, which is the chemical potential per particle. For 10 points, name this American physicist who introduced a namesake free energy that decreases in spontaneous processes.

ANSWER: Josiah Willard **Gibbs** [accept generalized **Gibbs** ensemble; accept **Gibbs** entropy; accept **Gibbs** free energy]

<GR, Physics>

19. In his best-known book, this philosopher argued that even if ghosts do not exist, we should encourage belief in them to promote social order. He argues that Heaven's Will is like "the compass is to a wheelwright or the set-square is to a carpenter," because it provides him with a model and a standard. This thinker's background as a fortification expert may have influenced his arguments that only defensive wars are just. This philosopher's best-known book consists of (*) Ten Doctrines including "moderation in funerals" and "against music." Later followers of this thinker include Gongsun Long, who argued that "white horses are not horses" and belonged to the School of Names. This philosopher critiqued filial piety, arguing instead that people should be filial to everyone's parents, and developed a consequentialist ethics based on "impartial concern." For 10 points, name this Warring States philosopher, a critic of Confucianism who advocated universal love.

ANSWER: **Mozi** ("MO-tzuh") [or **Mo-tzu**; or **Micius**; or Master **Mo**]

<CK, Philosophy>

20. Some buses in areas populated by this group maintained segregated seating until the practice was banned by a 2011 court ruling. The concept of *Torato Umanuto* ("toh-rah-TOH oo-mah-noo-TOH") has effectively granted youth belonging to this group freedom from a government requirement. After a 2012 protest called "No Female Candidate, No Female Vote," female members of this group founded a new political party for women. Members of this group often get their news from telephone hotlines and broadsides (*) pasted to public walls, called *pashkevilim* ("posh-kvee-LEEM"). This group is represented by the political parties UTJ and Shas ("shoss") in the Knesset. The Mea Shearim ("may-AH sheh-ah-REEM") neighborhood in Jerusalem is populated by this group, whose members have historically been granted exemption from service in the IDF. For 10 points, name this group within Orthodox Judaism known for its strict adherence to Jewish law.

ANSWER: **Haredim** ("ha-ray-DEEM") [or **ultra-Orthodox**; prompt on Hasidim; prompt on Orthodox Jews or Jews]

<CK, Modern World>

Bonuses

1. This enemy of Islam is directly mentioned in Sura 111, al-Masad. For 10 points each:

[10] Name this uncle of Muhammad. The Qur'an states that he "shall enter a blazing fire" and that "upon [his wife's] neck is a rope of palm fiber."

ANSWER: Abu **Lahab**

[10] Muhammad and Abu Lahab both belonged to this Mecca-based tribe, the namesake of Sura 106. According to hadith, the caliph must belong to this tribe.

ANSWER: **Quraysh**

[10] Abu Lahab died after being hit over the head with a tentpole at this place, which is located between the hills of Safa and Marwah.

ANSWER: well of **Zamzam**

<NC, Religion: Islam>

2. Charles Boone commissioned a "floating castle" ship to defeat this empire's naval officer Kanhoji Angre, but failed when that ship, the *HMS Phram*, caught fire. For 10 points each:

[10] Name this empire primarily ruled by a *peshwa*. This empire's first *chhatrapati* ("CHUH-truh-puh-tee") established its first capital at Raigad.

ANSWER: **Maratha** Empire [accept **Maratha** Confederacy]

[10] The Maratha Empire split into many princely states after three wars against this organization, which ruled India for Britain until the introduction of the Raj.

ANSWER: British **East India Company** [or **EIC**]

[10] Among the rulers of the princely states active after the fall of Maratha was this queen who died fighting the British at Gwalior Fort. Subhas Chandra Bose named his all-women regiment of the Indian National Army for this queen.

ANSWER: **Lakshmibai** [accept **Rani** of **Jhansi**]

<EL, World History>

3. Iterated algorithms for this process are more accurate, but are more computationally taxing than filtered back projection. For 10 points each:

[10] Name this process of reconstructing an image from a set of projections. For example, this process can be used to construct a 3D structure from a set of X-ray attenuation cross-sections called a CT scan.

ANSWER: **tomography** [or **tomographic** imaging; or **tomographic** reconstruction; accept computed **tomography** scan or computerized axial **tomography** scan; prompt on inversion or inverse problem]

[10] Filtered back projection is the inverse of this mathematical operation, which relates a function defined on a plane to a function defined on a space of lines. The Hough ("huff") transform in image processing can be thought of as a discrete version of this operation.

ANSWER: **Radon** transform

[10] The Radon transform is related to this well-known integral transform by a slice theorem. This transform relates a signal to its different frequency components.

ANSWER: **Fourier** transform

<GR, Other Science: Mathematics>

4. The theory that this person was actually May Fitton inspired a George Bernard Shaw play that depicts her as the girlfriend of a Beefeater at Whitehall Palace. For 10 points each:

[10] Name this anonymous woman. A. L. Rowse's study of the journals of astrologer Simon Forman led him to conclude that this woman was Emilia Lanier.

ANSWER: **Dark Lady**

[10] In Sonnet 145, Shakespeare recounts how, after the Dark Lady, a woman threw his “hate away.” That is likely a pun on the name of this woman, Shakespeare’s wife.

ANSWER: Anne **Hathaway**

[10] In her sonnet “Anne Hathaway,” Carol Anne Duffy imagined Shakespeare making love to Anne on this specific piece of furniture, which was the only item Shakespeare left to her in his will.

ANSWER: William Shakespeare’s **second-best bed** [prompt on bed]

<CK, British Literature>

5. Vincent d’Indy’s (“van-SAWN dan-DEE’s”) *Symphony on a French Mountain Air* was originally a fantasy for this instrument, and Copland’s *Appalachian Spring* and Barber’s lush Violin Concerto also unusually give it a prominent orchestral role. For 10 points each:

[10] Name this instrument that arpeggiates G major on the first beat of Barber’s concerto and later accompanies the Scotch snaps with falling quarter notes. Located behind the harps, it doesn’t tune up along with the orchestra.

ANSWER: **piano** [prompt on keyboard]

[10] This instrument in the center of the orchestra introduces the haunting melody of the concerto’s second movement. Most of the orchestra tunes against an A played by this high double-reed instrument.

ANSWER: **oboe**

[10] This muffled instrument introduces the violin’s fast hemiola triplets to open the perpetuum mobile rondo finale. Beethoven’s Violin Concerto opens with 5 notes by this instrument at the back of the orchestra that doesn’t tune to the oboe.

ANSWER: **timpani** [or **kettledrum**; prompt on drum]

<OL, Classical Music>

6. While many famous Wild West heroes were male, there were also many famous female icons of the American West. For 10 points each:

[10] This sharpshooter and star attraction of Buffalo Bill’s Wild West show was nicknamed “Little Sure Shot” by Sitting Bull and was supposedly able to shoot a cigarette out of a man’s mouth.

ANSWER: Annie **Oakley**

[10] This frontierswoman also joined the Wild West show, but her fame was mostly due to her being a character in the Deadwood Dick dime novels, which made her an icon of the Wild West. While considered a fierce fighter, this woman was renowned for her kindness and for aiding strangers in need.

ANSWER: **Calamity Jane** [or Martha Jane **Canary**]

[10] Richard Fox’s posthumous biography of this woman made her a popular character in Wild West lore. Nicknamed the “Bandit Queen,” this associate of Jesse James was famous for wearing a man’s Stetson hat with an ostrich plume.

ANSWER: Belle **Star**

<AE, American History>

7. Answer the following about the history of supersonic passenger jets, for 10 points each.

[10] Other than the Soviet Tu-144, this Anglo-French collaboration is the only supersonic aircraft ever to fly commercially. Commercial service on this aircraft was discontinued in 2003.

ANSWER: **Concorde**

[10] The Concorde had several advantages over the Tu-144, including its fuel-saving supercruise mode enabled by engines that this British company developed jointly with the French firm Snecma. After GE, this company is the second largest maker of aircraft engines in the world.

ANSWER: **Rolls-Royce** [or **Rolls-Royce Holdings plc**]

[10] The future of supersonic travel came into doubt with a disastrous 1964 study on the effects of sonic booms in this city. The study ended early after the sonic booms caused thousands of complaints and over 100 broken windows in this city.

ANSWER: **Oklahoma City**, Oklahoma
<GR, Modern World>

8. A perfect fluid has this property because the diagonal spatial components of its stress–energy tensor are equal. For 10 points each:

[10] Name this property. According to the cosmological principle, the universe is homogeneous and has this property on large scales.

ANSWER: **isotropic** [or word forms such as **isotropy**; do not accept or prompt on “anisotropic” or “anisotropy”]

[10] This radiation, sometimes called the afterglow of the Big Bang, is highly isotropic, with only small deviations from its blackbody spectrum at 2.7 kelvins.

ANSWER: **CMBR** [or **cosmic microwave background** radiation]

[10] This process is a consequence of the finite distance that photons could travel between scattering events in the epoch of recombination. It smoothed out density fluctuations in the early universe, resulting in a highly isotropic CMBR. Like baryon acoustic oscillations, this process provides a standard cosmological ruler.

ANSWER: **diffusion damping** [or **Silk damping**; prompt on **damping**; prompt on photon **diffusion**]

<GR, Physics>

9. This novel parodies the author’s fellow countrymen, like Alejo Carpentier (“ah-LAY-ho car-pen-tee-AIR”), in a section in which various authors narrate the death of Trotsky. For 10 points each:

[10] Name this novel that opens with an Emcee shouting “Showtime!” Characters like Bustrófedon and a comically obese singer named La Estrella appear in this novel by Guillermo Cabrera Infante.

ANSWER: **Three Trapped Tigers** [or **Tres Tristes Tigres**]

[10] Natalia Stefanović learns how a tiger that was freed when its cage was bombed during World War II haunted her grandfather’s village in this author’s debut novel, *The Tiger’s Wife*. She described a Balkan immigrant’s experiences in the Arizona territory in her 2019 novel *Inland*.

ANSWER: Téa **Obrecht**

[10] In a Rajiv Joseph play, a Bengal tiger roams the streets of this city as a ghost after a soldier shoots him in his cage. The novel *Begone, Demons* was written by Saddam Hussein shortly before the US invaded this city and overthrew him.

ANSWER: **Baghdad** [accept **Bengal Tiger at the Baghdad Zoo**]

<VS, World/Other Literature>

10. This problem’s formulator attacked responses to it based on average utility, contrasting a Hell where ten people are tortured with a Hell where ten million are tortured for a briefer amount of time. For 10 points each:

[10] Name this problem that arises because, for any population, there’s a larger population whose total existence is better even though its members have lives not worth living.

ANSWER: **repugnant conclusion** [or **mere addition** paradox]

[10] Derek Parfit’s repugnant conclusion is a counterexample to this ethical view developed by Jeremy Bentham, which is often divided into “act” and “rule” forms.

ANSWER: **utilitarianism**

[10] This economist-turned-utilitarian-ethicist defended the “intrapersonal addition theorem,” which states that general utility is the sum of individual utilities, in his 1991 book *Weighing Goods*.

ANSWER: John **Broome**

<CK, Philosophy>

11. An iconic black-and-white photograph by this artist shows the model Elsa Peretti posing in a bunny costume on the roof of her New York City apartment. For 10 points each:

[10] Name this “King of Kink” who, in another photograph, depicted a woman with slicked-back hair, wearing Yves Saint-Laurent’s (“eev san-loh-RON’s”) *Le Smoking* tuxedo and posing with a cigarette on a dimly lit Parisian street.

ANSWER: Helmut **Newton**

[10] Newton was a longtime photographer for this fashion magazine that employed photographers Irving Penn and Richard Avedon. Since the 1980s, this magazine has been edited by Anna Wintour (“winter”).

ANSWER: **Vogue**

[10] In an iconic photograph for *Vogue*, Richard Avedon depicted Dovima in a Dior evening dress posing with outstretched arms between two of these animals.

ANSWER: **elephants**

<VS, Other Arts: Photography>

12. The Duggan–Schwartz theorem generalizes this result, showing that any anonymous, non-imposed method is manipulable by both “optimistic” and “pessimistic” voters. For 10 points each:

[10] Name this result which states that if a resolute voting system with more than three candidates is not susceptible to tactical voting, then it is a dictatorship.

ANSWER: **Gibbard–Satterthwaite** theorem

[10] After it was pointed out that this system was susceptible to tactical voting, its namesake retorted that it was “intended for only honest men.” This system assigns candidates points according to their position on a ballot.

ANSWER: **Borda** count

[10] Tactical voting in the form of compromising is extremely common under this voting system in which voters vote for a single candidate and the candidate with the most votes wins.

ANSWER: simple **plurality** voting [or **first-past-the-post** voting; or **FPTP** voting; or **winner-takes-all** voting; or **single-choice** voting]

<CK, Social Science: Political Science>

13. After separation, this activist lived for a while on money raised from poems like “Bingen on the Rhine” before her husband realized that he could just take that money since he was her husband. For 10 points each:

[10] Name this reformer, the likely basis for George Meredith’s character Diana of the Crossways, who pushed for bills protecting female divorcées after her husband took full custody of her children and cut her off from any money. In a later dick move, this woman’s husband sued the then prime minister for supposedly having an affair with her.

ANSWER: Caroline **Norton**

[10] The PM who Norton’s husband sued was Lord Melbourne, the first prime minister during the reign of this monarch. The women’s suffrage movement developed during the late reign of this queen, who wore black for the rest of her life after the death of her husband, Prince Albert.

ANSWER: Queen **Victoria** [or Alexandrina **Victoria**; or **Victoria I**]

[10] After a close vote in Parliament, Melbourne resigned as PM. In response, Victoria asked Charles Peel to form a new government, but his request for her to dismiss several ladies-in-waiting sparked this crisis.

ANSWER: **Bedchamber** Crisis

<VS, British/Commonwealth History>

14. Mothers within this group grow a lipid-rich layer of skin for their babies to feed upon. For 10 points each:

[10] Name this group of limbless amphibians whose babies, alongside maternal dermatophagy, also graze on their mother’s delicious oviductal secretions. This wormlike group includes a blind Mexican burrowing species.

ANSWER: **caecilians** (“sih-SIL-ee-uns”)

[10] This property describes the skin-covered eyes of the Mexican burrowing caecilian. The highly-reduced limbs of *Amphiuma* salamanders also exhibit this property, as they have lost most of their ancestral functionality over time.

ANSWER: **vestigiality**

[10] Caecilians recently demonstrated susceptibility to this fungus that has been devastating amphibians worldwide.

ANSWER: **chytrid** (“KIT-trid”) [or **chytridiomycosis** (“kit-trid-ee-oh-my-KO-siss”); or **Bd**; or **Batrachochytrium** infection; or **B. dendrobatidis** infection; or **B. salamandrivorans** infection]

<JD, Biology>

15. Apocryphally, this dynasty came to power after the cruel Prince Popiel II (“POPE-yell the second”) was imprisoned and eaten alive by rats and mice. For 10 points each:

[10] Name this dynasty that succeeded the Popielid dynasty. A history by Gallus Anonymus claims that this dynasty was founded by a namesake wheelwright with an always-full cellar, an ancestor of Bolesław (“bo-LESS-waff”) the Brave.

ANSWER: **Piast** Dynasty

[10] After a cruel archbishop of this city named Hatto II locked his peasants in a burning barn, he was apocryphally chased across a river and eaten by a horde of mice. Peter of Aspelt was a later archbishop of this city, whose archbishops claimed the title of *Primas Germaniae*.

ANSWER: Electorate of **Mainz** (“mines”)

[10] A rat is placed on a hot plate and made to burrow and gnaw through the victim’s intestines in a method of torture that was frequently used by Diederik Sonoy, an ally of this Prince of Orange who led the Dutch revolt.

ANSWER: **William** the **Silent** [or **William I**; or **William of Orange**; or **William the Taciturn**; prompt on **William**]

<VS, European History>

16. This man savaged Sven Birkerts as a “critic who seems unaware of the inner workings of his own profession” in “The Man Who Would Be Sven,” a piece whose meanness he would later regret. For 10 points each:

[10] Name this longtime literary critic for *The New Republic*. The line “Rick Moody is the worst writer of his generation” opens his essay collection *Hatchet Jobs*.

ANSWER: Dale **Peck**

[10] In an essay on David Foster Wallace, Peck argued that this other author hasn’t produced one “recognizably human character” in his 30-year career. Private investigator Doc Sportello squares off against Detective “Bigfoot” Bjornsen in a novel by this author.

ANSWER: Thomas **Pynchon** (The novel is *Inherent Vice*.)

[10] Peck argued that David Foster Wallace’s analogy of entertainment addiction to drug addiction in this novel was fundamentally flawed; in it, the title James Incandenza movie turns any viewer into an addict.

ANSWER: **Infinite Jest**

<EL, American Literature>

17. The first kami, Amenominakanushi (“AH-meh-no-MEE-na-ka-NOO-shee”), is identified with this asterism and the North Star. For 10 points each:

[10] Name this asterism that represents seven hunters chasing an animal in Micmac mythology. Three hunters chase an animal represented by this asterism’s remaining four stars in the Iroquois version of the legend.

ANSWER: **Big Dipper** [prompt on **Ursa Major**]

[10] In Greek mythology, Ursa Major is created when this nymph is placed among the stars in the form of a bear by Zeus to prevent her son Arcas from accidentally killing her.

ANSWER: **Callisto**

[10] The constellation Draco intertwines the Big and Little Dippers to form the Xuanwu (“shwen-woo”), which is one of these animals constricted by a snake. This animal represents the color black and the cardinal direction of north in Chinese cosmology.

ANSWER: **turtle** [or **tortoise**]

<JSH, Mythology>

18. An essay from this movement notes “a picture, before being a battle horse, a female nude or some sort of anecdote, is essentially a flat surface covered with colors assembled in a certain order.” For 10 points each:

[10] Name this movement whose members include the author of “Definition of Neo-Traditionalism” and the painter of *The Talisman*.

ANSWER: Les **Nabis** (“lay nah-BEE”) (The artists are Maurice Denis and Paul Sérusier.)

[10] The painter of *The Talisman*, Paul Sérusier, depicted this fellow Nabi wearing prophet-like robes. Due to his esotericism, his house, the meeting place of Les Nabis, was jokingly called “Le Temple,” and his own paintings include the Hindu-myth-inspired *Nabi Landscape*.

ANSWER: Paul **Ranson** (“rawn-SAWN”)

[10] Sérusier was guided in creating *The Talisman* by this artist of *The Yellow Christ*, who spent many years painting in Tahiti.

ANSWER: Paul **Gauguin** (“go-GAN”)

<VS, Painting/Sculpture>

19. This story ends with the narrator declaring, “Mother, mother, have pity on your sick child! And do you know that the Bey of Algiers has a wart under his nose?” For 10 points each:

[10] Name this story whose narrator begins signing forms as Ferdinand VII, and describes how he’s being held by the Spanish Inquisition in erratically-dated letters.

ANSWER: “The **Diary of a Madman**”

[10] This Ukrainian author wrote “The Diary of a Madman.” The barber Ivan Yakovlevich finds his client Major Kovalyov’s nose in his morning bread in this author’s story “The Nose.”

ANSWER: Nikolai **Gogol**

[10] This Italian author wrote the bizarre story “Gogol’s Wife,” which recounts how Gogol married a life-size balloon named Caracas who became pregnant with a balloon child and contracted syphilis.

ANSWER: Tommaso **Landolfi**

<AB, European Literature>

20. Answer the following about intersystem crossing, for 10 points each.

[10] In intersystem crossing, electrons can be excited into a triplet state with higher spin multiplicity, resulting in a transition of this type. Both phosphorescence and intersystem crossing are examples of electronic transitions of this type, which are not allowed by selection rules.

ANSWER: **forbidden** transitions

[10] Intersystem crossing can be represented by a squiggly arrow pointing to the right on these diagrams. These diagrams, which depict electronic transitions, arrange electronic states by plotting energy versus spin multiplicity.

ANSWER: **Jablonski** diagrams

[10] According to this rule named for an Egyptian chemist, the rate of intersystem crossing is dramatically increased if the transition is accompanied by a change in orbital type.

ANSWER: **El-Sayed**’s rule

<KS, Chemistry>