

ACF Winter 2010: Temporary Autonomous Zone

Edited by Andrew Hart, Rob Carson, Trevor Davis, Dennis Jang, and Eric Mukherjee

Packet by Maryland A (Jeff Amoros, Phil Durkos, Jeremy Eaton, SteveJon Guth, and Chris Ray) and Furman (Nathan James, Hannah Woodard, Courtney Strimpfel, and Earl Honeycutt)

Tossups

1. In this work, Eurydice is taken back to the Underworld, after which Orpheus collapses on stage, in a performance of Gluck's *Orpheus*. Another character in this work witnesses a man spitting on cats from across his hotel room. Grand's anxiety prevents him from writing a letter to his former wife Jeanne in this work. This work's protagonist converses with Tarrou about Father Paneloux's sermons, which change in nature throughout this novel. The criminal Cottard fires his gun in the streets near the end of this work, at which point Raymond Rambert's wife visits him from Paris. This work opens with the death of thousands of rats in the streets of Oran, and focuses on Dr. Bernard Rieux. For 10 points, name this Albert Camus novel about the title epidemic.
ANSWER: *The Plague* [or *La Peste*]
2. In 2009, physician-blogger Rany Jazayerli was denied media access by this team after criticizing its head athletic trainer, Nick Swartz. A questionable call by umpire Don Denkinger led to this club's only World Series victory. The mythology of The Dugout suggests that a former utility infielder for this team, Bill Pecota, is engaged in an epic struggle with its owner David Glass. One former player on this team was the subject of the 1983 Pine Tar Incident. It spent most of the late 90s losing after trading away Jermaine Dye and Johnny Damon. For 10 points, identify this former team of Mike Sweeney, George Brett, and Bo Jackson, which now features pitchers Gil Meche and Zack Greinke plays home games in Kauffman Stadium in Kansas City.
ANSWER: Kansas City Royals [accept Kansas City before it is read]
3. Umezawa et al showed that the signaling of this molecule is regulated by protein phosphatase 2C. The pathway for the synthesis of this compound begins with a zeaxanthin precursor and ends with the cleavage of a C₄₀ carotenoid into xanthoxin, which is finally oxidized to this molecule; that process of this molecule's synthesis is called the MEP pathway. Functions of this hormone include promoting gene transcription for proteinase inhibitors in response to wounding and producing α-amylase in order to act against the effects of gibberellins. It also plays a major function in regulating the closure of the stomata. For 10 points, name this plant hormone that is sometimes called dormin, which is responsible for the inhibition of seed germination, fruit ripening and budding.
ANSWER: abscisic acid [accept abscicin II; accept dormin before read]
4. In one work, this composer used the mourning chorus "Pace alla tua bell'amina" to interrupt the duet "Stolto! a un sol mio grido," which was about to lead to a duel between Tebaldo and Romeo. He required another opera's primary tenor to hit the F above high C; that opera by this man sees Elvira go crazy after the Royalist Arturo becomes a fugitive. This composer of *I Capuleti e i Montecchi* also created a work in which Elvino refuses to believe in Amina's innocence until she crosses the dangerous mill bridge, proving she's the title character. The title character sings "Casta Diva" in an opera by this man which sees Adalgisa's lover Pollione jump onto the title Druid priestess's funeral pyre. For 10 points, name this Italian composer of *I Puritani*, *La Sonnambula*, and *Norma*.
ANSWER: Vincenzo Salvatore Carmelo Francesco Bellini
5. This pupil of James Cantlie wrote about one experience in his book *Kidnapped in London*. This man unsuccessfully worked with He Kai and Sir Henry Blake before forming the Revolutionary Alliance and adopting the alias Nakayama Shou. This man's ideas were influenced by Henry George, and he was a leader of the March 29 revolution. This creator of the United League and co-author of a manifesto with the Soviet diplomat Adolf Joffe favored democracy, nationalism, and the general welfare, which he called the "Three Principles of the People." This man returned to his native country during the Wuhan revolution, and formed an uneasy alliance with Yuan Shi-kai. For 10 points, name this first party chairman of the Kuomintang and first provisional president of China.
ANSWER: Sun Yat-sen [or Guofu; or Zhongshan; or Sun Zhongshan; or Sun Deming; or Sun Dixiang; or Sun Wen; or Sun Rixin; or Sun Yixian; or Sun Zaishi; accept Nakayama Shou in either order before mentioned]

6. Enzymatic instances of this reaction are catalyzed by bacterial type II fatty acid synthesis enzymes, and by Chalcone synthase, which contain a Thiolase fold. A modification of it replaces a reactant with succinate, while a classic version of it occurs between ethyl benzoate and acetophenone, the former of which is not enolizable. It is driven by the removal of a doubly-alpha proton in the final product and the subsequent resonance stabilization of the negative charge, and its modifications include the Stobbe and crossed varieties. An intramolecular version of this reaction is used to create five- or six-member rings and is named for Dieckmann. For 10 points, name this condensation reaction that forms beta-keto-esters, the ester counterpart of the aldol condensation.

ANSWER: **Claisen** condensation

7. This city's Roman ruins advertise to tourists that Marcus Aurelius wrote his *Meditations* here when this city was a Roman settlement called Aquincum. Saint Gerard was martyred by being thrown off of the Gellért Hill in this city, which now houses ritzy houses and the citadel. This city's Castle Hill is served by a funicular railway, which leads up from a famous bridge to the thirteenth-century Royal Palace. This city subsumes three islands, Obuda, Csepel, and Margaret. Its name is a portmanteau of the names of a flat city and a hilly city that merged to form this metropolis; its constituent cities are now connected by the Szechenyi Chain Bridge. For 10 points, name this city on the Danube, the capital of Hungary.

ANSWER: **Budapest** [prompt on **Buda** or **Pest** before "portmanteau"]

8. This character asks, to another who has insulted him, if he should address that character "in a bondman's key / with bated breath and whispering humbleness." He notes that some men "love not a gaping pig...and others, when the bagpipes sing i' th' nose, / cannot contain their urine" in justifying his feelings. He responds to accusations of being an "unfeeling man" by asking, "Wouldst thou have a serpent sting thee twice?" While discussing the elopement of his daughter Jessica, this character discusses rumors of ships lost at sea and also asks, "If you prick us, do we not bleed?" and "Hath not a Jew eyes?" For 10 points, which Shakespearean character who is derailed by Portia in his attempt to remove a pound of flesh from Antonio in *The Merchant of Venice*?

ANSWER: **Shylock**

9. This thinker attacked his predecessors by claiming that Homer should be beaten and that Pythagoras was a swindler. He held that thinking was common to all things, and a scholarly debate exists over whether or not he thought that the psyches of the best men were immortal. This thinker argued that contraries are co-present in objects, using the example of "the bow and the lyre," in his doctrine of Unity of Opposites. This man proposed that the world was driven by *logos*, and he argued for another doctrine that was at odds with the main theory of Parmenides. For 10 points, name this philosopher who argued that the world was in a state of eternal flux, claimed that fire was the basic element, and supposedly said that you cannot step into the same river twice.

ANSWER: **Heraclitus**

10. This piece's second movement was described by Franz Liszt as "a flower between two chasms," and that scherzo movement switches over to the major key and repeats its short melody twenty times throughout the piece. This work's mostly pianissimo first movement is instructed to be played with the sustain pedal depressed the entire time, and consists of both a theme which is accented at the beginning of each measure and a constant ostinato triplet motive. This piece's third movement uses a plethora of sforzando notes which gives this piano section a stormy quality and is given the tempo marking "presto agitato." For 10 points, identify this C-minor "Quasi una fantasia" work by Beethoven that was given its nickname due to its semblance to illumination upon Lake Lucerne.

ANSWER: **"Moonlight Sonata"** [or **Piano Sonata** No. **14** in C-Sharp Minor "Quasi una fantasia"]

11. A standoff between the navies of this country and the United States during a hurricane at Apia left over a hundred dead. A rebellion in one of this country's colonies was led by Kinjikitile Ngwale and was known as the Maji Maji rebellion. In 1897, this country seized territory, including Tsingtao, that would later be given to Japan in the Shandong settlement. One of this country's colonies saw the Battle of Waterberg, which led to the Herero and Namaqua genocide. One of this country's leaders gave up Zanzibar in return for a narrow piece of land giving access to the Zambezi river, the Caprivi strip. For 10 points, name this country that colonized Nauru, Togoland and Cameroon, as well as Tanganyika and the future Namibia, all of which it lost by the Treaty of Versailles.

ANSWER: **Germany** [or **Deutschland**]

12. At low temperatures, the mean free path of these particles is comparable with the dimensions of their propagation medium in the de Haas-Biermasz effect. One mechanism for the collision of these particles theorizes that the sum of the wave vectors of the original particles is equal to the final wave vector plus a reciprocal primitive translation vector, the Umklapp process. These particles always have 3 acoustic modes for a substance with greater than two atoms per unit cell. Their density of states is used to derive that the heat capacity is proportional to T^3 in the Debye Model. They drive the pairing of electrons into Cooper pairs in the BCS theory of superconductivity. For 10 points, name these bosons that propagate at the speed of sound in a solid, described as quantized lattice vibrations.

ANSWER: phonons

13. The artist's friend Meyer de Haan appears with two semi-nude women surrounded by flowers in his *Barbarian Tales*. A naked black woman lies on her stomach on a green bed in one painting by this painter. He drew a tree branch to set off the main action taking place on a vermillion background in another work. This painter of *Spirits of the Dead Keep Watch* and *Jacob Wrestling with the Angel* also painted a religious figure surrounded by Breton women. He depicted an old woman with a white bird at her feet representing the final stage of life in another painting. For 10 points, name this French painter who painted *The Yellow Christ* and *Where Do We Come From? What Are We? Where Are We Going?* while living out his life on Tahiti.

ANSWER: Paul Gauguin

14. This author satirized common customs as Jonathan Oldstyle in writing nine letters to the *Morning Chronicle*. Travel abroad to consult the manuscripts of Columbus led this man to write "A Chronicle of the Conquest of Granada." The title character is called upon to contrive a defense for Aben Habuz's realm in one story by this author, who also wrote about Gottfried Wolfgang's attempt to regain mental stability in "The Adventure of the German Student." This author of *Bracebridge Hall* and *Tales of the Alhambra* also wrote under the pen name "Geoffrey Crayon." For 10 points, name this American author of "The Devil and Tom Walker" and creator of Katrina van Tassel and Ichabod Crane in "The Legend of Sleepy Hollow."

ANSWER: Washington Irving

15. The category of these objects has the property that every morphism is a monomorphism. The spectrum of one of these objects contains one point, and the p -adic numbers for a given p form one of these. These objects necessarily have zero Krull dimension. Those with a finite number of elements have order equal to a power of a prime. Their extensions have a one-to-one correspondence with their intermediates according to the fundamental theorem of Galois theory. A division algebra is one of these without multiplicative commutativity, and can be defined as a ring with multiplicative identity, inverse, and commutativity. For 10 points, name these algebraic structures that include the rationals and reals.

ANSWER: field [accept rational domain until mentioned, prompt on commutative division algebra until mentioned]

16. During this man's reign, he built a nine-spouted fountain house, the Enneakrounos. This ruler established a circuit of traveling judges and opened his library and gardens to the public. This leader, who traced his ancestry to the youngest son of Nestor, led a faction called the Hillsmen. He once supposedly rode in a chariot with Phya, who was dressed as Athena. This leader helped Lygdamis regain his supremacy at Naxos, and he established the Panathenaic festival. This man won the battle of Pallene to end his second exile, and Harmodius and Aristogiton are remembered for killing one of his sons. This man was opposed by Lycurgus and Megacles, and he was supposedly Solon's lover. For 10 points, name this father of Hippias and Hipparchos, a noted tyrant of Athens.

ANSWER: Peisistratus

17. The "Cost of" this man is explored in a paper by Robert Cooter which examines how one of this man's papers is misleading. Robert Ellickson's paper entitled this man and "and cattle" examines this man's example of farmers and ranchers and concludes that the way trespass disputes were resolved manifested as social norms. This man's most famous result contradicted Pigou's theory about the role of the government in the economy by positing that agents can internalize externalities through negotiation. That theorem states that in the absence of transaction costs, any distribution of property rights leads to optimal resource allocation, and was first explained in his "The Problem of Social Cost." For 10 points, name this Chicago school economist who authored "The Nature of the Firm."

ANSWER: Ronald Coase

18. This figure ordered Brian, Iuchar, and Iucharba to seek out a number of weapons, then refused to heal the injuries they incurred, thus avenging his father's death. After slaying Cermait for sleeping with one of his wives, this figure was killed by Cermait's three sons. This figure once claimed to possess all skills at the gate of Tara and later proved his mettle by defeating Oghma in a flagstone-throwing contest. He received the sword Fragarach from his foster father, Mannanan mac Lir. This son of Cian and Ethniu avenged the death of Nuada at the second battle of Magh Tuireadh by blinding and slaying Balor, after which he became the leader of the Tuatha de Danaan. For 10 points, identify this father of Cuchulainn, a Celtic hero considered cognate to the Welsh Lleu Llaw Gyffes.

ANSWER: Lugh [or Lamfhada; Lugaidh; Lonnbeimnech; Lonnansclech; Samhildanach; or mac Ethlenn]

19. This man suffered a memory lapse while meeting with the Austrian minister, leading to William Rufus Day taking his spot as Secretary of State. James Garfield first rose to prominence while running this man's 1880 presidential campaign. He was the chief Senate proponent of the bill that became the "Crime of '73." This politician drafted a measure to redeem Civil War greenbacks with gold, the Resumption Act, which he also carried out while serving as Treasury Secretary under Hayes. One piece of legislation named for this man expanded the Bland-Allison Act. Another bill named for him was used against unions during the Pullman strike before being used to break up Standard Oil. For 10 points, name this Ohio politician who authored a Silver Purchase Act and an Antitrust Act.

ANSWER: John Sherman

20. A narrator of one of this man's novels encounters the Schneils, a pair of married linguists, while hosting the show *The Tower of Babel*. This author describes several men of the Machigengua tribe in that work, whose other narrator is a man with a large facial birthmark named Saul Zuratas. In another of his novels, the Poet loses his virginity to Golden Toes, and Porfirio Cava is caught stealing a chemistry test. That novel by this man sees the Slave killed by Jaguar, the leader of the Circle at the Leoncia Prado Academy. This author of *The Storyteller* and *The Time of the Hero* wrote a novel whose narrator works on soap operas at a radio station, where he meets Pedro Camacho. For 10 points, name this Peruvian author of *Aunt Julia and the Scriptwriter*.

ANSWER: Mario Vargas Llosa [or Jorge Mario Pedro Vargas Llosa]

21. One intermediate output of this process is described as "fuming," and it ideally runs at 450 degrees centigrade. To ensure a purer end product, the gaseous products pass through absorption towers multiple times in this process's DCDA portion. Platinum catalysts were abandoned in favor of less efficient vanadium oxide catalysts to reduce the risk of poisoning in this process, byproducts of which process include oleum and sulfur trioxide. It is much more efficient than the previously used lead-chamber process. For 10 points, name this chemical process developed by a vinegar merchant which can use pyrite as an input, the preferred industrial method of producing sulfuric acid.

ANSWER: catalytic contact process

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Bonuses

1. Battles that failed to defend this city from the British occurred at Brandywine and Germantown. For 10 points each:
[10] Name this city of vital importance during the Revolutionary War due to its housing of the Second Continental Congress.
ANSWER: **Philadelphia**
[10] This British general led the Philadelphia campaign, winning at Brandywine and Germantown. He was forced to resign in 1778 due to his failure to destroy Washington's army.
ANSWER: William **Howe**
[10] This leader of the Hessian troops in the British army fought at Brandywine and Germantown. He governed New York during Henry Clinton's absence in 1779-80.
ANSWER: Wilhelm von **Knyphausen**
2. They contain the enzyme alkaline phosphatase, which acts as a marker for their activity. For 10 points each:
[10] Name these cells that build the bone matrix by synthesizing osteoid.
ANSWER: **osteoblasts**
[10] Another molecule synthesized by osteoblasts is this common structural protein. Unlike keratin, it is found in bone, tendon, and scar tissue.
ANSWER: **collagen**
[10] These structures carry blood vessels from the periosteum into the bone. They lie perpendicular to the Haversian canals.
ANSWER: **Volkman canals**
3. In one situation, a rare blue one of these avians named Cojiro is oddly silent due to separation from his owner, Grog. For 10 points each:
[10] Name these birds which have also been used to wake up characters like Talon.
ANSWER: **cuccos** [should sound like "cuckoo" but be lenient]
[10] Cuccos appear in this series that features entries with subtitles like *Ocarina of Time*, *Majora's Mask*, and, recently, *Spirit Tracks*.
ANSWER: *The Legend of **Zelda*** series
[10] This item, often used to climb and cross large gaps, is the primary treasure in dungeons such as the Pirates' Fortress, the Swamp Palace, and the Catfish's Maw. In *Twilight Princess*, you can use two of a slightly modified version of this item at the same time.
ANSWER: **hookshot** [accept **clawshot**]
4. This god is said to live on Mount Kailasa with his graveyard-guardian attendants, the ganas. For 10 points each:
[10] Name this blue-throated destroyer of the Hindu trimurti, often identified with the Vedic god Rudra, who rides the white bull Nandi.
ANSWER: **Shiva** [accept **Siva**; **Tripurantaka**; **Ardhanarishvara**; **Astamurti**; or **Nilakantha**]
[10] Shiva is often depicted as this cosmic dancer, surrounded by an aureole of flames, balancing on one leg, and crushing the dwarf Apasmara as he performs the *tandava*.
ANSWER: **Nataraja** [accept **Sabesan**]
[10] Shiva once used his third eye to burn this Hindu god of love to death. This deity's consort is Rati, and he wields a sugarcane bow strung with honeybees, with which he fires flower-tipped arrows.
ANSWER: **Kamadeva** [accept **Ragavrinta**; **Ananga**; **Manmatha**; **Manasija**; **Madana**; **Ratikanta**; **Pushpavan**; or **Pushpadhanva**]

5. Some of those to which the subject of this six part poem is compared are described as “having gone to his place with old Pierpont Morgan” and “join the shadows with mighty Cromwell.” For 10 points each:
 [10] Name this Vachel Lindsay poem whose narrator “brags and chats” the title figure’s name, “the one American Poet who could sing out doors” and who “sketched a silver Zion.”
 ANSWER: “**Bryan, Bryan, Bryan, Bryan**”
 [10] The narrator asks, “Are you washed in the blood of the Lamb?” often in this Lindsay poem, which ends when the title character, the founder of the Salvation Army, is face to face with King Jesus.
 ANSWER: “**General William Booth Enters Into Heaven**”
 [10] Vachel Lindsay also wrote a poem in which this “bronzed, lank man” paces and mourns near the old courthouse at midnight.
 ANSWER: Abraham **Lincoln**

6. Mauricio Funes leads a successful political party named for this man, which emerged from a Marxist guerilla organization active from 1980 to 1992. For 10 points each:
 [10] Name this leader of the Latin American branch of International Red Aid, who led a rebellion against Maximiliano Hernández Martínez and was killed in 1932 during La Matanza.
 ANSWER: Augustín Farabundo **Martí** Rodríguez
 [10] Farabundo Martí hailed from this home country of Manuel José Arce. Long controlled by the "Fourteen Families," this nation saw the El Mozote massacre.
 ANSWER: **El Salvador**
 [10] El Salvador fought Honduras in this 1969 conflict. Though largely caused by Honduras seizing the land of Salvadoran immigrants, it was directly sparked by violent riots associated with a sporting event.
 ANSWER: **Soccer** War [or **Football** War]

7. While one character in this novel is shot defending the people of Dubno, among which include a girl he met at Kiev, his brother is tortured and killed after being captured by Poles. For 10 points each:
 [10] Name this work which details the title character’s life among the Cossacks and the deaths of his seminary-trained sons, Ostap and Andrii.
 ANSWER: **Taras Bulba**
 [10] This play ends with the revelation that Khlestakov, who had dined at the house of mayor Anton Antonovich and proposed to his daughter Maria, is not the title character coming to find evidence of bribery.
 ANSWER: *The **Inspector General*** [or *The **Government Inspector***; or **Revizor**]
 [10] Both *Taras Bulba* and *The Inspector General* were written by this author of stories about Ivan Yakovlevich’s missing body part and Akaky Akakiievich’s missing garment, “The Nose” and “The Overcoat.”
 ANSWER: Nikolai **Gogol**

8. Identify the following about Mannerism, for 10 points each.
 [10] Other works of this student of Andrea del Sarto and teacher of Agnolo Bronzino painted a *Deposition* in the Santa Felicita. He also executed *Joseph in Egypt* and the lunette fresco *Vertumnus and Pomona*.
 ANSWER: Jacopo **Pontormo** [accept Jacopo **Carucci**; or Jacopo da **Pontormo**]
 [10] Two title figures of this Bronzino painting are depicted embracing and kissing in the figura serpentinata form. Its third title figure prepares to throw flower petals at the kissers while the last title character holds up a blue curtain.
 ANSWER: **Venus, Cupid, Folly and Time**
 [10] This Venetian painted *The Capture of Zara from the Hungarians in 1346 Amid a Hurricane of Missiles*, as well as works like the humongous *Paradise*, *The Miracle of the Slave*, and his diagonal depiction of *The Last Supper*.
 ANSWER: **Tintoretto** [accept Jacopo **Comin** or Jacopo **Robusti**]

9. This legislation restricted the right of church officials to excommunicate criminals, requiring the consent of a royal official, and held that vacant church offices in the king's domain devolved to the king. For 10 points each:
 [10] Name this list of sixteen articles aiming to combat so-called "criminous clerks" and weaken the power of the church, promulgated in England.
 ANSWER: **Constitutions of Clarendon** [prompt on partial answer]
 [10] The Constitutions of Clarendon were passed under this king, nicknamed Curtmantle for his short robe. The supporters of this second husband of Eleanor of Aquitaine killed Thomas Becket for opposing the Constitutions.
 ANSWER: **Henry II**
 [10] This Pope allegedly issued the bull *Laudabiliter* that authorized Henry to invade Ireland. He's also known for allying with Manuel Comnenus and for being English.
 ANSWER: **Adrian IV** [or Nicholas **Breakspear**]
10. It is more powerful than the valence bond model because it can explain fractional bond orders. For 10 points each:
 [10] Name this theory of its namesake bonding and antibonding structures, which explain electron clouds in terms of an entire system. Its namesake units come in bonding and antibonding varieties
 ANSWER: **Molecular Orbital** theory [accept **MO**]
 [10] Huckel MO theory is a simplification of this iterative approximation method, which assumes the N-body wavefunction can be decomposed into the product of single-particle wavefunctions.
 ANSWER: **Hartree Fock** Theory/Method [accept **HF** theory, prompt on **independent particle** theory]
 [10] The one-electron wavefunctions in Hartree-Fock theory are approximated using this method, in which a molecular orbital is considered to be the sum of some series $c_i \psi_i$, where ψ_i are atomic orbitals.
 ANSWER: **LCAO** [or **linear combination of atomic orbitals**]
11. This composer's musical works often featured the imaginary characters of Florestan and Eusebius. For 10 points each:
 [10] Name this composer who named sections after his former love Ernestine and wife, Clara, in his *Carnaval*. He also wrote both the *Spring* and *Rhenish* symphonies.
 ANSWER: Robert **Schumann**
 [10] This Schumann piano work's B-minor third movement represents a fast-paced game of Blindman's Bluff. This recollective work's most famous part is probably its seventh movement, an andante "Traumerei," or "Dreaming."
 ANSWER: **Scenes from Childhood** [or **Kinderszenen**]
 [10] This 1831 Schumann piano suite evokes a masquerade ball and begins with a six-measure introduction before breaking into a series of dance movements. It ends with the "Grandfather's Dance," a once-popular wedding dance.
 ANSWER: **Papillons** [or **Butterflies**]
12. This creator of sixteen scourges supported Apaosha in his fight against Tishtrya, who defeated that drought demon and thus ushered in the rainy season. For 10 points each.
 [10] Identify this villainous Persian deity who also created the dragon Azi Dahaka. He is sometimes identified as the chief of the devas or as one of the sons of Zurvan.
 ANSWER: **Angra Mainyu** [or **Ahriman**]
 [10] Angra Mainyu and his virtuous rival Ahura Mazda are the main figures of this dualistic Persian religion that leaves its dead to be consumed by vultures atop towers of silence.
 ANSWER: **Zoroastrianism** [accept word forms; prompt on **Madzaism**]
 [10] This portion of the Avesta outlines a number of rules and regulations by which devas may be foiled. One chapter describes the temptation of Zoroaster by Ahriman, while other chapters contain the legend of Yima.
 ANSWER: the **Vendidad** [or the **Videvdad**]

13. Captain Archibold of the *Sephora* appears in the second section of this work, but leaves empty-handed, unable to find his first mate. For 10 points each:
 [10] Identify this novella set in the Gulf of Siam, in which the unnamed captain of a ship comes to identify with the doppelgänger-like murderer Legatt.
 ANSWER: The **Secret Sharer**
 [10] This Polish-British author of *The Secret Sharer* is better known for his novella in which Marlow travels up the Congo River to meet the ivory trader Kurtz, his *Heart of Darkness*.
 ANSWER: Joseph **Conrad** [or Jozef Teodor Konrad **Korzeniowski**]
 [10] Marlow also appears in this other Conrad work, in which the title first mate abandons the *Patna*, which is filled with eight hundred Muslim pilgrims. After fleeing to Patusan, this novel's title character is killed by Doramin.
 ANSWER: **Lord Jim**
14. The Battle of Seven Oaks broke out when Cuthbert Grant tried to sell pemmican to this company. For 10 points each:
 [10] Identify this Montreal-based fur trading company, which claimed Nunavut and spawned a splinter group called the XY Company. It was the main competitor of the Hudson's Bay Company until the two groups merged in 1821.
 ANSWER: **North West** Company
 [10] Cuthbert Grant was a member of this Canadian ethnic group, who speak Michif and are symbolized by an infinity sign. Other leaders of this group included Louis Riel.
 ANSWER: **Métis**
 [10] Ended by the Wolseley Expedition, this movement lost popularity when it executed Thomas Scott. Lasting from 1869 through 1870, it was an attempt, led by Riel, to set up a Métis-led provisional government in Manitoba.
 ANSWER: **Red River** Rebellion [or **Red River** Resistance]
15. In one work, he laid out the case for repealing anti-homosexual laws by comparing such "offences" to masturbation and bestiality. For 10 points each:
 [10] Name this author of "Offences Against One's Self," who also measured right and wrong in terms of "the greatest happiness of the greatest number," establishing the doctrine of utilitarianism.
 ANSWER: Jeremy **Bentham**
 [10] Bentham wrote about the axiom of "greatest happiness of the greatest number" in this text, a critique of William Blackstone's *Commentaries on the Laws of England*.
 ANSWER: the **Fragment on Government**
 [10] Bentham also originated the idea of this structure that promoted self-regulation through perceived omniscience. Michel Foucault wrote of its importance in hierarchical bureaucracies in *Discipline and Punish*.
 ANSWER: the **Panopticon**
16. This energy correction is proportional to the fine structure constant to the fifth power and was measured by Hans Bethe in the hydrogen atom in 1947. For 10 points each:
 [10] First, name this small difference between the 2-S and 2-P energy levels of the hydrogen atom arising from virtual phonons interacting with the electron.
 ANSWER: **Lamb shift**
 [10] The measuring the energy difference from the Lamb can result in an accurate measurement of the fine structure constant and therefore can be used as an accurate precision test for this SU(1) gauge theory that involves the quantization of fields produced by charged particles.
 ANSWER: **QED** [or **quantum electrodynamics**]
 [10] Often used in QED and quantum field theories is this theorem, which states that a product of ladder operators can be decomposed into a sum of products of pairs of said operators.
 ANSWER: **Wick's** Theorem

17. Some sources claim that Alexander the Great's mistress Phryne posed for this work. For 10 points each:
 [10] Name this statue that depicts a goddess draping a cloth over an urn with one hand as she covers her groin with the other.
 ANSWER: the **Aphrodite of Cnidus** [or **Knidian Aphrodite**; prompt on **Aphrodite**]
 [10] This Greek sculptor of the *Aphrodite of Cnidus* depicted a lizard crawling up a tree in his *Apollo Sauroktonos* and also created the work *Hermes with the Infant Dionysus*.
 ANSWER: **Praxiteles**
 [10] This French Catalan artist dismissed *Hermes with the Infant Dionysus* as “kitsch.” He sculpted a monument to Louis Blanqui called *Action in Chains*, as well as such seated female nudes as *The Night* and *The Mediterranean*.
 ANSWER: Aristide **Maillol** [or Aristides **Maillol**]
18. This psychologist developed, with his wife Sybil, a namesake questionnaire aimed at classifying individuals based mainly on stability and introversion or extraversion. For 10 points each:
 [10] Name this German-born British psychologist who used psychoticism, extraversion, and neuroticism as the basis for his P-E-N model.
 ANSWER: Hans **Eysenck**
 [10] Eysenck's questionnaire and P-E-N model deal with measuring this based on a set of observable tendencies within an individual. The Minnesota multiphasic inventory also purports to measure this.
 ANSWER: **personality**
 [10] Eysenck was a signor of the “Mainstream Science on” this quantity, the mental capacity of a person. The Binet-Simon test is often used to measure it, and *The Bell Curve* is based on the distribution of these scores.
 ANSWER: **intelligence** [do not accept “IQ” or “Intelligence Quotient”]
19. Mealy machines and Moore machines are an example of this class of computation system, which correspond to Regular Languages on Chomsky's hierarchy. For 10 points each:
 [10] Name this model of computation that can be defined as a certain number of internal conditions and a corresponding transition table.
 ANSWER: finite **state machine** [or **finite** state **automata/on**; or **FSM**; or **FSA**; all can include “deterministic”]
 [10] This result can be used to show that a given language is not regular by contradiction. This result states that a long enough string will cause an FSM to loop, and that loop can be repeated an arbitrary number of times.
 ANSWER: **Pumping** Lemma
 [10] This simple result is important to proving the pumping lemma. It states that if one has more of its namesake birds than their namesake niches, some niches will invariably contain more than one bird.
 ANSWER: Dirichlet's **Pigeonhole** Principle
20. Name the following about Japanese poetry, for 10 points each.
 [10] Like haiku, the term for this type of poetry was coined by Masaoka Shiki; unlike haiku, these poems are divided into five lines in a 5-7-5-7-7 syllable pattern. They're often exchanged by characters in *The Tale of Genji*.
 ANSWER: **tanka** [prompt on **waka**; accept no other answers]
 [10] The first compilation by this mentor of Kagano Chiyo was called *The Seashell Game*. Other works by this Edo-period haiku master include *Records of a Travel-Worn Satchel* and *The Monkey's Raincoat*.
 ANSWER: **Matsuo Bashō** [accept either; accept **Matsuo** Kinsaku; or **Matsuo** Munefusa; or **Sobo**]
 [10] Written in the *haibun* form, in which two *haiku* bracket a prose journal entry, this Basho work tells the story of his journey to the region of Oku, during which he visits all the sites mentioned in the writings of Saigyō.
 ANSWER: the **Narrow Road to the Deep North** [accept close English equivalents; or **Oku no Hosomichi**]
21. This prokaryotic sequence is located about 16 nucleotides upstream of the AUG start codon. For 10 points each:
 [10] Name this sequence of mRNA which includes the six base consensus AGGAGG. Its analogue in eukaryotes is the Kozak consensus sequence
 ANSWER: **Shine-Dalgarno** sequence
 [10] The Shine-Dalgarno sequence serves as a binding site for these organelles which are responsible for amino acid production and are the site of translation.
 ANSWER: **ribosomes**
 [10] Elongation factors during translation often use this molecule for power, which is also used by tubulin and is converted to a cyclic derivative in photoreceptors.
 ANSWER: **GTP**