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Tossups

1. **These values are derived for correlation functions using the Bennet-Chandler procedure in a path sampling experiment. Marcus Theory predicts that this value increases up to the diffusion limit and then decreases with increasing exergonicity (ek-SER-go-NIH-city) in the inverted region. The "on" and "off" versions of this quantity can be calculated by Surface Plasmon Resonance. The ratio between these values when replacing hydrogen with (*)** deuterium (dew-TEAR-ee-um) gives the deuterium isotope effect. Using the quasi-steady-state approximation, the sum of this value for unbinding and conversion over this value for binding is equal to K-m in the Michaelis-Menten equation. The units of this value are dependent on the order of the reaction. For 10 points, name this value symbolized by a lowercase k, which multiplies some product of concentrations to give the speed of reactions.
ANSWER: **rate** constant

2. **A component designed by the Max Planck Institute for one of NASA's Great Observatories made use of this effect to create a map of the isotope Aluminum-26. Bothe's coincidence circuit that won him the 1954 Nobel Prize in Physics was used to verify one aspect of this effect. The maximum energy which this effect can transfer between particles is its namesake edge, while one variant of it is used to map distant galaxy clusters; (*)** that inverse variety of it is the Sunyaev-Zel'dovich (suh-NYE-eff ZELL-doh-vitch) effect. If certain energy conditions are met, the particles involved with this process will undergo the photoelectric effect instead. Along with an effect named after J. J. Thomson, this effect is described by the Klein-Nishina (nuh-SHEE-nuh) formula and is only observed with X-rays and gamma rays. For 10 points, name this process where a photon undergoes an inelastic interaction with a charged particle, increasing its wavelength.
ANSWER: **Compton** scattering [or **Compton** effect]

3. **One poem in this collection compares the "bondage of finery" to a "child...decked with prince's robes". This collection's speaker wonders "who is this that follows me in the silent dark?" and is "ashamed" to find that it is his "little self" with a "loud voice." This collection contains a discussion with a prisoner who is bound in his own treasure-house and a woman who has gone "to join the carnival of lamps." One line in this collection describes a place "where the mind is without fear" into which the speaker prays his (*)** country will awake. An essay included in this collection quotes a poem about children playing on a seashore and describes how its poems "stirred my blood as nothing has for years." The first poem in this collection opens "thou hast made me endless, such is thy pleasure," and it contains an introduction by W. B. Yeats. For 10 points, name this collection of "song offerings" written by Rabindranath (ruh-BIN-druh-nath) Tagore (tuh-GORE).
ANSWER: **_Gitanjali_** [accept **_Song Offerings_** until "song" is read]

4. **In a response to this work, Heidi Hartmann claims that ignoring gender differences leads to misunderstanding of the origins of patriarchal structures. J.B. Foster argues that the author of this work is "Promethian" about the environment, but that its phrase "idiocy of rural life" should be understood as a condemnation of the attitude of urban industrialists. One word in this work was first translated into English as (*)** "frightful hobgoblin." This work claims that members of the namesake group "disdain to conceal their views and aims" and are the "most advanced and resolute" of progressives. This work opens with the statement "A spectre is haunting Europe" and claims that all of history is the history of class struggle. For 10 points, name this work that draws a distinction between the proletariat and the bourgeois, written by Engels and Marx.
ANSWER: The **_Communist Manifesto_** [or **_Manifesto of the Communist Party_** or **_Manifest der Kommunistischen Partei_**]

5. **The second part of this book asks "Who in ventrous vessel measured the Amazon?" after worrying that readers will consider the first part "abundance of an idle brain." It uses the fact that the shifting of the stars ruins the zodiac to prove that the world is getting worse. A character in this book is accompanied by a metal man who never sleeps but refuses to rescue him from the slave-mistress Radigund. The six parts of this book are concerned with the (*)** virtues of Holiness, Temperance, Chastity, Friendship, Justice, and Courtesy. One man in this poem goes to the Bower of Bliss to battle Acrasia; that man, Guyon, is later defeated by a woman who marries Artegal. Duessa and Archimago are foiled by the lion-taming Una in this work, which also features the female knight Britomart, the Redcrosse Knight, and Gloriana, who represents Elizabeth I. For 10 points, name this epic poem by Edmund Spenser.
ANSWER: The **_Faerie Queene_**

6. **One of these figures had a companion who was sawed in half, but the two halves of that companion's body continued to recite scriptures. Another one proved his abilities to a scholar by successfully ordering an illiterate water carrier to recite religious verses. A group of texts about the life of one of the figures has a name literally meaning "birth stories" and includes the tale of his four journeys, called Udasis (oo-DAH-sees), and an anecdote about a cobra (*)** shading him from the sun. The first of these people taught the practice of repeatedly changing God's name to control the five evils, while the 10th one laid down the practices of the 5 Ks, created the Khalsa order, and was named Gobind Singh. For 10 points, name these figures which include Tegh Bahadur (teg BAH-hah-duur), Angad, and Nanak, the spiritual leaders of Sikhism.
ANSWER: Sikh **Gurus**

7. **This man fired staffer Jack Hunter after Hunter turned out to have a racist radio alter-ego dubbed the "Southern Avenger." This successor to Jim Bunning was a member of the NoZe Brotherhood at Baylor University where he allegedly helped demand that other students worship the "Aqua Buddha." He praised Lysander Spooner and questioned the wisdom of** *Lochner v. New York* **in a (*)** speech that opposed the nomination of John Brennan and he agreed to pay $250,000 to change a primary election to a caucus in his home state. In his video "How Would You Kill the Tax Code?" he took a chainsaw to 70,000 pieces of paper, and in a debate accused Chris Christie of giving Barack Obama "a big hug." For 10 points, name this opthamologist, a libertarian Republican running both for president and for re-election as Senator for Kentucky.
ANSWER: **Rand Paul** [prompt on "Paul"]

8. **Description Acceptable. Sheldon names were used by some to refer to the achievements of this endeavor, while other names include East and Sunrise. One participant in this program, Arnaldo Tamayo (tuh-MY-oh) Mendez, later joined the Cuban National Assembly. A motorcade celebrating participants of this program was attacked by an army deserter wielding two pistols. The largest conventional detonation at the time occurred during a test of the (*)** N1 for this program. One effort of this program, whose earliest participants were called the Vanguard Six, was timed with the International Geophysical Year; that effort led to the founding of ARPA in the United States. This program was based from the Baikonur (BYE-koh-nur) Cosmodrome, and its missions included Vostok 1 and Soyuz. For 10 points, name this program responsible for Sputnik and Yuri Gagarin's (guh-GAHR-in) spaceflight.
ANSWER: **Soviet space** program [accept **Cosmonaut** program; accept more specific answers like **Sputnik** before they're mentioned; accept **Russian** instead of Soviet because who are we kidding]

9. **This man argued that deformations should be put into their own categories, as they are "teratological" cases. This man contrasts two concepts by positing the formulas one plus one plus one repeating equals I versus one plus one prime plus one double prime et cetera, and uses the analogy of changing the number of pieces on a chessboard versus changing the pieces to ivory to distinguish between internal and external. This man's theory of sonant (SOH-nahnt) coefficients was proven fifty years after its proposal by the discovery of (*)** Hittite (HIT-ahyt) texts. The "AB" and "CD" axes are used to illustrate his idea that analysis should be conducted both at a fixed time and across time, called the synchronic (syn-KRON-ik) and diachronic (dahy-uh-KRON-ik) approaches. He contrasted abstract grammatical structures and everyday utterances, or *langue* (LONG) and *parole* (puh-ROLE), and argued for the arbitrariness of the sign, composed of signal and signification. For 10 points, name this father of semiotics whose notes were compiled into the *Course in General Linguistics.*
ANSWER: Ferdinand de **Saussure** (soh-SYR)

10. **This group suffered relatively high casualties while securing the Paitilla (pie-TEE-uh) Airfield during one conflict and they captured the minelaying** *Ajr* **and helped destroy several oil platforms during Operation Nimble Archer. Members of this group were surrounded by** *carabinieri* **(kar-uh-bin-YAIR-ee) in a standoff at Signorella (see-nyaw-REL-la) Air Base in 1985 as they approached an EgyptAir plane that contained the (*)** hijackers from the *Achille* (uh-SHEEL) *Lauro*. Units of this group are headquartered at Norfolk, Virginia and Coronado, California and emerged out of the World War II-era Underwater Demolition Teams. Operation Neptune Spear was carried out in Abbottabad, Pakistan by members of, for 10 points, what Naval special forces unit whose sixth team killed Osama Bin Laden?
ANSWER: Navy **SEAL**s or U.S. Navy **SE**a, **A**ir, and **L**and teams

11. **This number of movements comprises a chamber piece whose scherzo sandwiches a Trio estatico between its outer Allegro misterioso sections. Anton Webern's Opus 9 comprises this many bagatelles (bag-uh-TELLS) for string quartet. A string quartet with this many movements ends with a Largo desolato, uses an "A, B-flat, B-natural, F" motif to depict the composer's lover Hanna Fuchs-Robettin (FEWKS ROH-buh-tin), and is the (*)** *Lyric Suite* of Alban Berg. This many instruments play a one-movement chamber piece whose five sections correspond to the five stanzas

of a poem about a woman who tells her lover that she is pregnant with another man's child. That setting of a Richard Dehmel (DEM-ell) poem is Arnold Schoenberg's (SHERN-berg's) *Transfigured Night*. For 10 points, give this number which is half of the number of notes in a dodecaphonic tone row.
ANSWER: **six**

12. **Ndengei (nuh-DEN-gay), the Fijian (FEE-jee-an) creator-god, was depicted as one of these animals. In Korean mythology, a girl who became pregnant out of wedlock was thrown in a box and became one of these creatures; that goddess of wealth is Chil-seong-shin, the Jeju (CHAY-jew) equivalent of Eopsin ("up shin"). In another mythology, the progenitor of these creatures challenged her sister Vinata (vin-AH-ta) to guess the color of a divine horse's tail; that queen of them is Kadru (CAD-rue). Uttu told another one of these creatures to hide in a bull's corpse to hide from an** (*) eagle. Artemis filled the bridal chamber of Alcestis (all-CEST-is) and Admetus (ad-MEET-us) with these creatures, and they are often depicted as giving humans gifts by licking their ears; examples include Melampus and Asclepius (us-KLEE-pee-us). In Hinduism, the nagas take this form. For 10 points, name these animals, two of which appear on Hermes' caduceus and one of which was slain by Apollo at Delphi.
ANSWER: **snakes** [or **serpents**; or **dragons**; accept **nagas** before mention; accept more specific answers]

13. **Elizabeth Johns describes how the central figure of this painting is portrayed as a teacher of future American generations. The students of this painting's artist took a photograph parodying it in which the main character dramatically holds an axe. A man with a yellow scarf appears to be falling asleep and a man with a goatee leans over a balcony in this work. On the left of this painting, two figures stand in a red tunnel** (*) behind the main proceedings. On the left, a blond clerk takes notes while four men including James Barton and Daniel Appel conduct their work. In the central scene, a woman with clenched hands looks away from the torso of a patient of ambiguous gender being cut by the title Jefferson Medical College professor. For 10 points, name this Thomas Eakins (EE-kinz) painting showing an elderly black-coated professor lecturing in a surgical theater during an operation.
ANSWER: The ***Gross Clinic***

14. **Two characters in this novel argue whether women have been cursed to suffer the fate of putting up with men, or vice versa. One character in this novel goes to prison after getting grouped in with a bunch of robbers in a subway station; that character, who falls in love with Elizabeth at a diner, is revealed to be the protagonist's true father, Richard. One character in this novel is asked if he has never been "made to drink a cup of sorrow" before being shown a letter from his dead wife** (*) Deborah, which Florence kept in her handbag for years. This novel's protagonist is upset when his brother comes home with a knife gash and doesn't know why that brother, Roy, is favored by his preacher stepfather Gabriel. This novel takes place on the fourteenth birthday of its protagonist, who experiences a religious revelation. For 10 points, name this semi-autobiographical novel about John Grimes, by James Baldwin.
ANSWER: ***Go Tell It on the Mountain***

15. **This man's *Troezen (TREE-zen) Decree* recalled Xanthippus (zan-TIP-us) and Aristides (ar-uh-STEE-deez) the Just from ostracism, and during one battle he bribed Eurybiades (your-EE-bee-AH-deez) to stay. This man was given one year to learn the Persian language and customs after arriving at the *shah-na-shah*'s court, after which he so impressed his patron that he was made the Governor of Magnesia on the Meander. This man financed one of his ventures using a newly discovered silver vein at Laurion. This man's forces retreated from a three day** (*) battle in which his forces used a defensive crescent formation. This man sent his slave Sicinnus (sih-SIN-nuhss) with a fake defection letter to lure the enemy into a narrow strait by Piraeus (pi-REY-us). This son of Neocles interpreted a prophecy from the Delphic Oracle that "only a wooden wall would not fail" as a cue to build large numbers of triremes for his city's navy. For 10 points, name this Athenian admiral who was the *de facto* Greek commander at the battle of Salamis (SAL-uh-miss).
ANSWER: **Themistocles**

16. **This city's Saksaywaman (SAK-say-WHY-man) walls were built by the Killke (KILL-ik) culture during its early history. This city was divided into quarters within its *urin* and *hanan* sectors. A dispute over the control of this city was settled at the Battle of Las Salinas (suh-LEE-nus). One citadel on the northern outskirts of this city was the site of a siege by the puppet ruler Manco II who retreated to the jungle where his son succeeded him. A man who claimed to be a direct descendant of that son two centuries later staged an indigenous** (*) uprising before being executed in this city. Both those men were known as Tupac Amaru. The War of Two Brothers saw this city fall to its king, who was later notoriously captured and held in a "Ransom Room" by the Spanish. For 10 points, name this Incan capital plundered by Francisco Pizarro in modern-day Peru.
ANSWER: **Cuzco**

17. **This artist's company went on with scheduled performances of** *Divertimento (dih-vur-tuh-MEN-toh)* *Number 15* **the night of his death from CJD. This man collaborated with Paul Hindemith (HIN-duh-mith) on a work with "Melancholic" and "Sanguine" movements, and derived the inspiration for another work from Arpels, of van Cleef and Arpels fame. This man used excerpts from Faure's** *Pelias and Melisande (PEE-lee-as and meh-LEE-sand)* **and Stravinsky's** *Capriccio (kuh-PRE-chee-oh)* *for Piano and Orchestra* **for the first and second movements of one work; those movements are based on (*)** emeralds and rubies. Barbara Karinska (kuh-RIN-skuh) created most of the costumes for his works, and in a 1954 retelling of a Hoffman tale, this man cast longtime collaborator Maria Tallchief as the Sugarplum Fairy. For ten points, name this Georgian co-founder of the School of American Ballet and the New York City Ballet, most famous for his version of Tchaikovsky's *Nutcracker*.
ANSWER: George **Balanchine** (BAL-uhn-cheen)

18. **One character in this novel derides vain people by telling them to "take out the cork" and writes a document about how he fell in love with Marylena as she balanced on top of a bench. He introduces himself to the narrator of the story by dividing people into four types: "cretins, fools, morons, and lunatics." The narrator's girlfriend Amparo is upset when she is possessed at a** *terreiro de candomble (tuh-RARE-ee-oh duh can-duhm-BLEY)* **to which she is taken by Aglie, an elderly man posing as the (*)** immortal Count de Saint Germain. This novel is divided into ten sections representing the ten Sephirot (SEFF-ee-rote) from Kabbalah (kuh-BAH-lah). While working at the Garamond publishing house, the main characters of this novel use a manuscript by Colonel Ardenti and a computer nicknamed Abulafia to develop "The Plan". This novel opens in a museum, where Causabon watches members of the Tres society hang Belbo from the title object. For 10 points, name this conspiracy-rich novel by Umberto Eco.
ANSWER: *Foucault's **Pendulum*** [or *Il **pendolo** de Foucault*]

19. **A flow is the group action of** *this set* **on another. A series of algebras over this field are named for Cayley and Dickson. Subsets of** *this set* **named for Vitali lack a Lebesgue (luh-BEG) measure. Any order field with the supremum property is isomorphic to** *this set*. **A Euclidean space generated by taking the Cartesian (car-TEASE-ee-un) product of** *this set* **with itself has the property that each bounded sequence has a convergence subsequence according to the (*)** Bolzano-Weierstrass (bowl-ZAHN-oh VIE-er-strahs) Theorem. One method of constructing this set involves selecting a dense subset of them and partitioning it using a Dedekind (DEY-di-kind) cut. A statement that is independent of Z-F-C posits that there is no set whose cardinality is between this one and the integers; that statement is the continuum hypothesis. These numbers can be represented using infinite decimal expansions. For 10 points, name this set of numbers that are indicated by a blackboard R and which have no imaginary part.
ANSWER: **real** numbers [or the **reals**]

20. **A condition in which this substance is elevated in the blood can be caused by mutations in P-C-S-K-nine and commonly causes xanthelasma palpebrarum (ZAN-thuh-LASS-muh PAL-puh-BRAY-rum). In humans, the protein S-CAP detects low levels of this substance and binds to S-R-E-B-Ps to stimulate biosynthesis of this substance. Drugs used to inhibit the bio-synthesis of this substance are commonly given with co-enzyme Q-ten to prevent myopathy. In one disease that stems from the accumulation of this substance, macrophages called (*)** "foam cells" form on blood vessel walls. I-P-P results from the decarboxylation of mevalonate (meh-VAL-oh-nate) in the biosynthesis of this substance; the rate limiting step of that biosynthesis is catalyzed by H-M-G-Co-A reductase, which is inhibited by statins. For 10 points, name this lipid used in animal cell membranes and as a precursor to steroid hormones.
ANSWER: **cholesterol** [accept **LDL** or **HDL**; prompt on lipids or fats]

Bonuses

1. This equation can be derived by integrating the Euler equation along a streamline. For 10 points each:
[10] One version of this law states that an increase in velocity results in a decrease in pressure. It essentially says that the sum of potential, kinetic, and internal energy is the same at any point in a streamline on a steady flow.
ANSWER: **Bernoulli**'s principle or law
[10] The simplest form of Bernoulli's principle is valid for flows of this type, in which the divergence of the flow velocity is zero. Alternately, the density within an infinitesimal volume in this kind of flow is constant.
ANSWER: **incompressible** [do NOT accept "compressible"]
[10] When operating at Mach numbers greater than 1, this device becomes useful, as it can accelerate fluids through both ends, since it forces choked flow in its narrow section, which results in expansion on the back end.
ANSWER: **de Laval nozzle** [or **convergent-divergent nozzle**; prompt on "nozzle"]

2. The protagonist in this novel works as an extra playing a musician but is embarrassed when no sound comes out of his fake bagpipes. For 10 points each:

[10] Name this book about the failed actor Tommy Wilhelm, who is given the title advice by the sinister psychologist Dr. Tamkin.
ANSWER: _Seize the Day_
[10] This other novel by the author of _Seize the Day_ describes the picaresque life of "an American, Chicago born," who catches eagles with Thea Fenchel and survives a shipwreck by escaping on a lifeboat with a madman.
ANSWER: The _Adventures of Augie March_
[10] This author of _Seize the Day_ and _The Adventures of Augie March_ wrote about a Holocaust survivor in _Mr. Sammler's Planet_ and fictionalized Allan Bloom in _Ravelstein._
ANSWER: Saul **Bellow** [or Solomon **Bellows**]

3. This man created a plan in which each person in his new colony was given 50-acre lots of land, with those who could support themselves given more. For 10 points each:
[10] Name this man, whose personal secretary was Methodist leader Charles Wesley. He arrived at his new colony on a ship called the _Anne_.
ANSWER: James **Oglethorpe**
[10] This was the colony founded by James Oglethorpe, intended to resettle internees from debtors prisons. It was invaded by Spanish Florida during the War of Jenkins' Ear.
ANSWER: **Georgia**
[10] The city of Savannah was developed from land bought from this Indian tribe by Oglethorpe. Oglethorpe became great friends with their chief Tomochichi.
ANSWER: **Yamacraw**

4. The title object of this story has writing on it which is called Sanskrit, but is actually Arabic. For 10 points each:
[10] Name this novel, in which Raphael de Valentin uses the title object's power to grant his wishes, but finds that it keeps shrinking. He tries to ingratiate himself with Foedora but declares his love for Pauline at the novel's end.
ANSWER: The _Wild Ass's Skin_ [or The _Magic Skin_ or La _Peau de chagrin_]
[10] Like _Eugenie Grandet_, _Sarrasine_, and _Le Pere Goriot_, _The Wild Ass's Skin_ a part of this French author's massive cycle _The Human Comedy_.
ANSWER: Honore de **Balzac** [or Honoré **Balssa**]
[10] The vengeful title character of this novel from _The Human Comedy_ works with Valérie Marneffe to completely fuck up her relatives in the Hulot family after Hortense Hulot marries her love interest Count Steinbock.
ANSWER: _Cousin Bette_ [or La _Cousine Bette_]

5. Zoltán Kodály (ZOHL-tahn KOH-dye) used this key to write a solo sonata for a cello whose bottom two strings are each tuned down a half step. For 10 points each:
[10] Name this key used to write a one-movement piano piece whose four interconnected sections exhibit double-function form by behaving simultaneously as the movements of a symphony and as the sections of sonata form.
ANSWER: **B minor** [do not accept "B"; do not accept "B major"]
[10] This virtuoso pianist and composer wrote the Piano Sonata in B minor and the _Hungarian Rhapsodies_.
ANSWER: Franz **Liszt** [or **Liszt** Ferenc]
[10] The _Bagatelle sans tonalité_ (bah-gah-TELL sahn toh-nah-lee-TAY) is sometimes grouped with this set of Liszt pieces, the first of which begins with a sequence of stacked fifths that depicts the title character tuning his fiddle.
ANSWER: _Mephisto Waltzes_ [or _Mephisto-Walzer_]

6. This island has hosted multiple US Open Golf championships at Bethpage State Park and Shinnecock Hills and hosts the US Open Tennis championships at Flushing Meadows. For 10 points each:
[10] Brookhaven National Laboratory and Stony Brook University are located on this island that stretches from Montauk and the Hamptons in the East to Queens and Brooklyn in the West.
ANSWER: **Long** Island
[10] In the east-central portion of Long Island is a small preserve of this kind of forest that serves as an aquifer recharge zone. Another forest of this type, known for producing bog iron, is located in Southeastern New Jersey.
ANSWER: **Pine Barren**s [prompt on "pinelands" or "pines"]
[10] New York's harbor is located between Long Island and this spit of land that stretches North from New Jersey. George Washington attempted to cut off British access to the anchorage point here at the Battle of Monmouth.
ANSWER: **Sandy Hook**

7. Froissart's chronicles were an important source for this modern-day work, which attempted to draw a parallel between 14th century and 20th century suffering. For 10 points each:
[10] Name this narrative history centered on the French Nobleman Enguerrand (UN-gur-and) de Coucy, by Barbara Tuchman.
ANSWER: A *Distant Mirror*: The Calamitous 14th Century
[10] A Distant Mirror contains an excellent account of life under this economic system, in which vassals pledged loyalty to their lords and serfs owed labor to the manor they lived on.
ANSWER: **feudal** system [or **feudalism**]
[10] One aspect of the feudal system was this tax paid by a tenant to the government, which allowed them to escape other feudal duties. It was also implemented in the American colonies.
ANSWER: **quit-rent** [prompt on "rent"]

8. This deity sewed heaven together when a goat-person crashed into a pillar holding up the sky. For 10 points each:
[10] Name this female Chinese deity who struck a rope on yellow clay to create human beings.
ANSWER: **Nuwa**
[10] This brother of Nuwa is considered the original human and eventually married Nuwa on Kunlun Mountain under the unison of two piles of fire.
ANSWER: **Fuxi** [or **Paoxi**]
[10] Fuxi compiled this book of trigrams by looking at the patterns on the back of a turtle. This oldest of the Chinese Classics is used for divination.
ANSWER: *I Ching* [or *Book of Changes*]

9. For 10 points each, answer some questions about coordination complexes.
[10] Coordination complexes composed of a metal center and six ligands often adopt this type of VSEPR ("vesper") geometry, in which the ligands are separated by ninety degree bond angles.
ANSWER: **octahedral**
[10] Octahedral complexes often undergo this effect, in which the the bonds along the z-axis are elongated in order to remove the degeneracy of the ground state and lower the overall energy of the molecule.
ANSWER: **Jahn-Teller** distortion
[10] In addition to forming sigma bonds with their metal center, ligands with low-energy antibonding orbitals can also have this property, which increases the octahedral splitting energy of the complex.
ANSWER: **pi accepting** [also accept **metal-to-ligand backbonding**; do not accept "ligand-to-metal backbonding" or "pi donating"; accept word forms of "they can accept pi electrons"; prompt on "backbonding"]

10. Answer the following about Canadian short stories, for 10 points each:
[10] In this Alice Munro story, the writer Janet visits her dying father before a risky surgery and tries to comfort him by telling him about her visit to a planetarium.
ANSWER: "The **Moons of Jupiter**"
[10] Between 2001 and 2013, a line from this Canadian story by Roch Carrier appeared on the back of the Canadian five-dollar bill. It ends with its protagonist praying to God to send moths to devour the title object.
ANSWER: "The **Hockey Sweater**" [or "Le **chandail de hockey**"; or "Une **abominable feuille d'érable sur la glace**"; or "An **Abominable Maple Leaf on the Ice**"]
[10] This inventor of the LongPen wrote ten short story collections, including *Dancing Girls* and *Wilderness Tips*, but you almost certainly know her better for novels like *Oryx and Crake* and *The Handmaid's Tale.*
ANSWER: Margaret **Atwood** [or Margaret Eleanor **Atwood**]

11. Edward Taffe said that one victim of this event died of an aneurysm of the heart, though later it was claimed to be a murder-suicide. For 10 points each:
[10] Name this event in which Crown Prince Rudolf and his mistress Mary Vetsera were discovered dead in an imperial hunting lodge.
ANSWER: **Mayerling** Incident
[10] The Mayerling Incident complicated the succession to the head of this empire, which at the time was ruled by Franz Joseph. Archduke Franz Ferdinand belonged to the royal family of this dual monarchy.
ANSWER: **Austro-Hungarian** Empire [or **Austria-Hungary**; prompt on partial answer]
[10] Crown Prince Rudolf's mother was an empress by this name, who was known as "The Red Archduchess" and was stabbed by anarchist Luigi Lucheni. Another ruler of this name was the daughter of Peter the Great.
ANSWER: Empress **Elizabeth**

12. This artist's portrait of Adele Bloch-Bauer was recently featured in the film *Woman in Gold*. For 10 points each:
[10] Name this Austrian symbolist whose "golden phase" also produced *The Kiss*.
ANSWER: Gustav **Klimt**
[10] Klimt created this work for the 14th Vienna Secessionist exhibition. Seven feet tall and 112 feet wide, the work includes three floating female Genii, the giant Typhoeus, and a knight in shining armor.
ANSWER: The ***Beethoven Frieze***
[10] This other German Symbolist created a controversial sculptural monument dedicated to Beethoven. His *Paraphrase on the Finding of a Glove* are a series of ten sketches inspired by a dream at an ice skating rink.
ANSWER: Max **Klinger**

13. For 10 points each, answer the following about Venice in films, none of which involve James Bond turning his gondola into a hovercraft and zooming across St. Mark's Square:
[10] Gustave von Aschenbach comes to Venice and gazes at Tadzio in this Italian director's film *Death in Venice*. Henry Bacon wrote about his explorations of "decay and beauty" in a book that analyzes his films, such as *The Earth Trembles*.
ANSWER: Luchino **Visconti**
[10] A carnival at Venice opens this director's film about Casanova, where he is played by Donald Sutherland. This Italian's other films include *Nights of Cabiria* and *La Dolce Vita.*
ANSWER: Federico **Fellini**
[10] Klaus Klinski plays this monster in an unofficial sequel to a Werner Herzog remake about this character "in Venice." A "symphony of horror" about this character was made by F. W. Murnau.
ANSWER: **Nosferatu**

14. Mary Osborne, the granddaughter of the first Duke of Marlborough, is thought to be an illegitimate daughter of this playwright. For 10 points each:
[10] Name this Restoration dramatist who wrote *The Old Bachelor* and *The Double Dealer.* Mirabell and Millamant seek Lady Wishfort's approval of their marriage in his play *The Way of the World*.
ANSWER: William **Congreve**
[10] Congreve's most quotable play, *The Mourning Bride*, is the source of a line stating that this art form "hath charms to soothe a savage breast."
ANSWER: **music**
[10] Congreve's play *Love for Love* centers on a character of this name, a son of Sir Sampson Legend who loves Angelica. A Shakespeare character of this name employs the servant Speed and threatens the cowardly Thurio before marrying Silvia.
ANSWER: **Valentine** [do not accept "Proteus"]

15. A algorithm of this type, DES, was rendered useless by a linear cryptanalysis by Matsui et al. For 10 points each:
[10] Name this type of cryptography in which the same secret cryptographic key is used to encrypt and decrypt the message. AES, twofish, and blowfish are some examples.
ANSWER: **symmetric-key** cryptography
[10] The DES cryptosystem was also broken by this particularly inefficient kind of attack, in which one simply tries every possible key or password in some order.
ANSWER: **brute force** [or **brute** or **exhaustive** key search; do NOT accept "dictionary attack" or answers involving the dictionary]
[10] Asymmetric cryptosystems often make use of these functions, which are easy to compute in one direction but very difficult to invert without some secret knowledge. An example is multiplying two very large primes together.
ANSWER: **trapdoor** function [do NOT accept "one-way function"]

16. The international community recognized Ali Mahdi Muhammad, and *not* this man, as president of his country. For 10 points each:
[10] Name this warlord and leader of the SNA who drove Siad Barre out of his nation's capital during its civil war. The capture of this man was one of the objectives of Operation Gothic Serpent.
ANSWER: Mohamed Farrah **Aidid**
[10] Forces loyal to Mohamed Farrah Aidid clashed with the US Army in the Battle of Mogadishu during this country's civil war. For a time, its south was controlled by the Islamic Courts Union.
ANSWER: **Somalia**
[10] Along with the Army Rangers, this special forces team fought in the Battle of Mogadishu. Its members Gary Gordon and Randy Shugart were posthumously honored for their role in the "Black Hawk Down" incident.
ANSWER: **Delta** Force [or 1st Special Forces Operational Detachment-**Delta**]

17. Writers who study the aftereffects of this process include Frantz Fanon and Edward Said, and Jurgen Osterhammel wrote a "theoretical overview" of it.. For 10 points each:
[10] Name this form of imperialism in which a powerful country expands its reach by taking over land from other nations.
ANSWER: **colonialism** [or **colonization**]
[10] A postcolonial form of this discipline was advanced in the essay "Under Western Eyes" by Chandra Mohanty. The SCUM manifesto was a key document in its "radical" form.
ANSWER: **feminism**
[10] This Indian author of "Can the Subaltern speak" is a member of the postcolonialist Subaltern Studies Group. Her other works include "A Critique of Postcolonial Reason" and "Death of a Discipline."
ANSWER: Gayatri Chakravorty **Spivak**

18. The founder of this philosophical school is sometimes called "tattooed" because he was probably an ex-con. For 10 points each:
[10] Name this early Warring States period school of philosophy which moved away from ritual importance and introduced wordplay in logic. Its central tenet was universal love.
ANSWER: **Mohism**
[10] Mozi posited seven disasters that would occur if this figure was unrighteous. The people may oppose one of these figures if they have lost the Mandate of Heaven.
ANSWER: **ruler** or **emperor** [accept reasonable equivalents]
[10] Another school of thought during the Hundred Schools of Thought period is this one led by logicians. Gongsun Long, known for his paradoxes is probably its most notable member.
ANSWER: School of **Names** [or *Mingjia*]

19. This process has P-E-P as its penultimate intermediate before finally generating pyruvate. For 10 points each:
[10] Name this pathway that breaks down glucose into two molecules of pyruvate and generates 2 net ATP before the Krebs cycle.
ANSWER: **glycolysis** [or **E**mbden-**M**eyerhof-**P**arnas pathway; prompt on "cell respiration"]
[10] Glucose is cleaved into two three-carbon molecules by this enzyme at the end of the investment phase of glycolysis. Serum levels of this enzyme are sometimes used to test for muscle damage.
ANSWER: fructose-bisphosphate **aldolase**
[10] This allosteric enzyme is important in cell response to insulin and participates in glycolysis by converting fructose 6-phosphate to fructose 1,6-bis-phosphate. Its second isoform forms a bifunctional complex with F-B-P-ase-2.
ANSWER: **phosphofructokinase** [or **PFK**]

20. This religion's headquarters is called "Gold Base" and the documentary *Going Clear* has several interviews with members of this organization. For 10 points each:
[10] Name this cult slash religion whose most dedicated members make up a pseudo-paramilitary force called the Sea Org. It was founded by science fiction author L. Ron Hubbard.
ANSWER: Church of **Scientology**
[10] L. Ron Hubbard founded Scientology based on this book, which laid down a system of pseudo-psychotherapy using auditing. The volcano on its cover is an allusion to that whole Xenu thing they tried to cover up for a while.
ANSWER: *Dianetics*: The Modern Science of Mental Health
[10] This is the name of the planet that Xenu brought his followers to before killing them with hydrogen bombs. It's now known as Earth.
ANSWER: **Teegeeack**