

Early Fall Tournament 2018: I guess Brexit really does mean Brexit

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Tossups

1. **This author dedicated many works to an unknown figure named Syrus, including a collection of sayings called the *Centiloquium*. Jacopo d'Angelo made a widely distributed Latin translation of a text by this author after studying in Constantinople. The Vietnamese trading post of Óc Eo corresponds to the location that this author called Kattigara. This author gave the name “Golden Chersonese” to the Malay Peninsula in a text that derives heavily from a now-lost treatise by Marinus of Tyre and uses the “Fortunate Isles” to mark a (*) Prime Meridian. This author’s *Tetrabiblos* laid the groundwork for the study of astrology. This author adapted a star catalog from Hipparchus in a treatise that introduced a long-enduring geocentric model. For 10 points, name this 2nd-century resident of Alexandria who authored the *Geography* and *Almagest*.**

ANSWER: Claudius **Ptolemy**

<KS, Other History>

2. **A crown ether containing this many oxygen atoms is the largest that preferentially binds lithium cations. Both the cations and anions in the wurtzite crystal structure have this coordination number. Ladderanes consist of several fused rings of this size. The simplest anti-aromatic hydrocarbon has this many carbon atoms. Because it is the lightest element to violate the (*) aufbau principle, chromium has this many d electrons. Apart from d-z-squared, all d-orbitals have this number of lobes. This is the principal quantum number of the lowest-energy f subshell. Metal complexes with this many ligands can adopt geometries such as see-saw or tetrahedral. For 10 points, give this number of hydrogen atoms in methane.**

ANSWER: **four** [or **4**]

<EM, Chemistry>

3. **The IZA Prize is an annual prize awarded to economists who study this phenomenon. George Borjas authored an introductory textbook on the economics of this phenomenon, whose supply curve begins to bend backwards when the income effect exceeds the substitution effect. Dale Mortensen and Peter Diamond created a function analogous to a production function that is dependent on the “tightness” of this phenomenon’s market to explain its market’s “search frictions” as part of their (*) matching theory. This phenomenon is the input that is *not* represented by the letter *K* in the Cobb–Douglas production function, and it is considered one of the three factors of production alongside land and capital. For 10 points, name this quantity that represents the measure of work done by humans, which is typically paid for with wages.**

ANSWER: **labor** [prompt on jobs or work before mention]

<BN, Social Science - Economics>

4. The works of Pausanias describe a site in Stymphalia that is home to a triple shrine to this deity. Another temple dedicated to this deity on Samos is a candidate for the oldest surviving ancient Greek temple site. In a section from the fourteenth book of the *Iliad*, this deity leads the effort to sabotage a proposed decree that would prevent the gods from fighting in the Trojan War. A curse from this deity turned (*) Lamia into a child-eating demon. While disguised as this deity, the cloud nymph Nephele gave birth to the centaurs after being raped by Ixion. When this goddess's servant Argus was killed, she put his eyes on the plumage of one her symbols, the peacock. For 10 points, name this queen of the Olympian gods, the wife of Zeus.

ANSWER: Hera [accept Juno]

<DM, Mythology>

5. The antagonist of one story by this author wears a "maroon-colored flannel shirt" made by "some Jewish women on the east side of New York." That character created by this author causes the Weary Gentlemen Saloon to board up and a drummer to take refuge under the bar because of stray bullets. The protagonist of a story by this author nervously checks his watch multiple times on a train from San Antonio to the (*) title town. Scratchy Wilson stands down in a confrontation with Sheriff James Potter because he finds out that Potter is newly married in one story by this author, who also created Henry Fleming in his best-known novel. For 10 points, name this author of "The Bride Comes to Yellow Sky" and *The Red Badge of Courage*.

ANSWER: Stephen Crane

<RR, Short Fiction>

6. The radical Swiss philosopher Richard Avenarius combined critical philosophy with this movement, and Avenarius's hybrid movement was the subject of a lengthy critique by Vladimir Lenin. A 1961 paper named for this movement discusses "ambiguity in sense-data theories" and attacks a view that its author dubs "the Myth of the Given." A Wilfrid Sellars paper is titled for this position "and the (*) Philosophy of Mind." Another philosophical paper named for this view discusses the sentence "no bachelor is unmarried" to attack the difference between "analytic" and "synthetic" types of knowledge. Willard van Orman Quine wrote a paper named for "two dogmas of," for 10 points, what view often contrasted with rationalism, and which is the theory that all knowledge derives from the senses?

ANSWER: empiricism [accept Empiricism and the Philosophy of Mind or Two Dogmas of Empiricism]

<IJ, Philosophy>

7. Ulysses S. Grant's first veto denied compensation to an innovator of these products named Rollin White. A businessman born in Ogden, Utah, designed these products for the Belgian company FN Herstal. Creating a variety of this product established Ambrose Burnside's reputation before the Civil War. Shipments of this product were given the nickname (*) "Beecher's Bibles" during the Bleeding Kansas era. Samuel Walker, leader of the Texas Rangers, suggested improvements to a variety of this product made in Hartford, Connecticut. The assembly of these products from interchangeable parts was championed by Eli Whitney and showcased at the Great Exhibition by Samuel Colt. For 10 points, identify this type of product manufactured by Smith & Wesson.

ANSWER: guns [or firearms; accept specific types, such as rifles, revolvers, muskets, or carbines]

<KS, American History>

8. Both motors and these devices can be analyzed using an equivalent circuit model developed by Charles Steinmetz. Power loss in these devices can be broken down into no-load losses due to hysteresis and eddy currents, and load losses due to Joule heating. In these devices, the rms voltage is proportional to the supply frequency times the cross-sectional area times the peak magnetic field. Materials like laminated silicon steel or ferrite are used in the (*) cores of these devices, which are based on the principle of mutual inductance. The properties of these devices depend on the number of turns in the primary and secondary winding coils. For 10 points, name these devices that use electromagnetic induction to transfer energy between two circuits while “stepping up” or “stepping down” the voltage.

ANSWER: transformers [prompt on inductors]

<BB, Physics>

9. This country’s Kibale (“kee-BAH-lay”) Forest National Park is home to a variety of primates including the red colobus. The Bassese (“bah-seh-seh”) people were forced to leave this country’s Ssesse Islands due to sleeping sickness. Matooke (“mah-TOW-kay”) is a dish unique to this nation made up of mashed unripened bananas. SafeBoda is a ride hailing service similar to Uber for boda-bodas exclusive to this nation’s capital. A (*) crane is located in the center of this nation’s black, yellow, and red striped flag. This country’s largest airport is in Entebbe, a city on the shores of Lake Victoria. Also known as the “Pearl of Africa,” for 10 points, name this Swahili-speaking country governed by Yoweri Museveni from Kampala.

ANSWER: Republic of Uganda

<KH, Geography>

10. This character relates an anecdote about a man who is condemned to walk a quadrillion kilometers before he can enter paradise. In a later novel, this character wins a game of chess even though his king literally runs off the board. On the eve of Dmitri’s trial, Ivan hallucinates being visited by this character in *The Brothers Karamazov*. In the later novel, this character organizes an event whose hostess bathes in blood and rose oil, at which he produces a supposedly lost copy of a novel about (*) Pontius Pilate upon declaring that “Manuscripts don’t burn.” A writer’s apartment transforms into this character’s Walpurgis Night ball in a novel where he leads the buffoonish knight Koroviov, the fanged Azazello, and the cat Behemoth in terrorizing the streets of Moscow. For 10 points, name this figure from Christianity who adopts the guise of Woland in *The Master and Margarita*.

ANSWER: Satan [or the Devil; accept Woland before it is read; prompt on the professor]

<AG, Long Fiction>

11. A C-sharp-minor piece in this genre begins with the right hand first playing a G-sharp, then the sixth (read slowly) “G-sharp E,” and then the sixth (read slowly) “F-double-sharp D-sharp.” Chopin’s works in this genre took their cue from a D-flat major piano piece by Carl Maria von Weber. A brief piece in this genre is based on the repeating eighth-note pattern (read slowly) “G, A-flat, C, B-flat.” Maurice Ravel titled a set of pieces in the genre in homage to two Schubert sets of them titled (*) “noble” and “sentimental.” They’re not polonaises, but Chopin used the adjectives “Grande” and/or “Brillante” (“bree-YONT”) to describe his first five published works in this genre. A D-flat-major Chopin piece in this genre was inspired by watching a little dog chase its tail. Chopin wrote a “minute” example of, for 10 points, what kind of piece named for a ballroom dance in 3/4 time?

ANSWER: waltzes [or Walzer; or valses; accept Valses nobles et sentimentales or “Minute Waltz”]

<JR, Music>

12. A university in this empire was founded at the site of a former ruler's cabinet, the Twelve Collegia. Activist Vera Figner criticized her treatment at one of this empire's many Institutes for Noble Maidens. Members of the Philomath Society who were sentenced for opposing this empire include the author of *Pan Tadeusz* ("pahn tah-DAY-oosh"). In the late 1800s, this empire's restrictions on education were resisted by a secretive "Flying University" that taught (*) Marie Curie. A polymath who discovered the atmosphere of Venus founded a university in this empire with the sponsorship of Empress Elizabeth. This empire's forces closed down Vilnius University as part of a campaign to culturally assimilate Poland-Lithuania into its realm. For 10 points, name this empire that produced Mikhail Lomonosov, where education reforms were made under Catherine the Great.

ANSWER: Russian Empire

<KS, European History>

13. A novel set in this country was bizarrely brought back into print after Richard Dawkins complained. That novel set in this country is *Red Strangers* by Elspeth Huxley. A novel set in this country proposes the railroad as a centre of romance and describes how "the train became an obsession: if you missed it, sorrow seized your heart." In another novel set in this country, Howlands enriches the landowner Jacobo, who is beaten at a strike by (*) Ngotho. Another novel by an author from this country describes the guilt of Mugo who is held as a lionized for leading a hunger-strike despite his betrayal of Kihiko. This is the home country of the author of *Weep Not, Child* and *A Grain of Wheat*. For 10 points, name this home country of Ngugi wa Thiong'o ("GOO-gee wah thee-ON-go").

ANSWER: Kenya

<JG, Long Fiction>

14. The "depth of zero annual amplitude" is defined by examining the depth of this substance. In general, scientists distinguish between the "discontinuous" and "continuous" regions where this substance forms, which is partly dependent on the "aspect" of a mountain. This substance is responsible for the creation of karst-like structures known as hummocks, which are created when this substance "heaves" the underlying earth. Excess pore water from this substance may combine with earth to create structures known as (*) pingoes. The "active layer" above these regions is responsible for inducing solifluction, a form of mass wasting caused by the movement of melted water. Cryoturbation refers to the mixing of various kinds of soil caused by the thawing of this kind of soil. For 10 points, name this component of the ground that is frozen year-round.

ANSWER: permafrost [prompt on soil; do not accept frost]

<IJ, Other Science - Earth Science>

15. This religion holds that the lowest forms of life are microscopic, one-sensed beings that pervade the universe. In this religion's cosmology, human beings were six miles tall during the first of the six "spokes" in the descending phase of the wheel of time. In this religion, nonsentient, nonmaterial substances such as space and motion are categorized as "nonsoul," one of the two components of reality along with "soul," or (*) *jiva*. A sectarian dispute in this religion concerns whether souls can attain liberation from female bodies, an ability denied by the "sky-clad" nudist Digambaras. This religion venerates 24 "ford makers," or *tirthankaras*. For 10 points, Mahavira founded what Indian religion that emphasizes nonviolence?

ANSWER: Jainism [or Jain Dharma]

<AG, Religion>

16. In this city, Philipp Franz von Siebold began a medical school and created a botanical garden before being expelled on suspicion of being a Russian spy for possessing unauthorized maps. A woman born in this city, Kusamoto Ine (“ee-nay”), was Japan’s first female physician and became an obstetrician for Emperor Meiji. An artificial island built off of this city called (*) Dejima was initially built to house Portuguese traders, and later became the entry point of *rangaku* or Dutch learning. Due to its primary target Kokura being obscured by smoke and fog, the plane *Bockscar* targeted this city. This city was the only port open to the West under the Tokugawa shogunate. For 10 points, name this southwestern Japanese city, the target of the second atomic bomb.

ANSWER: Nagasaki

<TR, World History>

17. The initial exhibition of a painting by an artist from this country led another artist to proclaim that “it’s the alpha and omega of painting.” A work by another artist born in this country was inspired by an event in which his wife mistook him for a demon while lying facedown on a bed, “her eyes wide with fear.” The centers of many paintings by an artist from this country show lions eating other animals, such as in *The Repast of the Lion* and *The Hungry Lion Throws Itself on the Antelope*. That artist from this country painted many (*) “jungle scenes,” including one in which his lover Yadwiga watches a man charm a snake titled *The Dream*. Primitivist painters from this country include Henri Rousseau and a man who painted *Spirit of the Dead Watching* during his travels to Tahiti. For 10 points, name this country home to Paul Gauguin.

ANSWER: France [or French Republic; or République française]

<YFL, Painting>

18. This process is easier to predict in systems with low contact order, and algorithms like Rosetta tend to favor low-contact-order results. Transition states in this process are inferred using phi value analysis. The fact that random sampling would take longer than the age of the universe to finish this process is the subject of Levinthal’s paradox, and the fact that its outcome is specified by (*) primary structure is known as Anfinsen’s dogma. This process attempts to minimize contact between hydrophobic regions and water and occurs after release from the ribosome. For 10 points, name this process assisted by chaperones, in which a protein spontaneously adopts three-dimensional structure.

ANSWER: protein folding

<Eric M, Biology>

19. This author wrote about his English grandmother Emily Dickinson Wellcome in the poem “Dedication for a Plot of Ground.” The speaker of another of this author’s poems describes dancing naked when his wife and baby are sleeping and asks “who shall say I am not / the happy genius of my household?” A poem about “Variations on a theme” of this author relates the story of how “I gave away the (*) money that you had been saving to live on for the next ten years” and asks for forgiveness because the “March wind” seemed “juicy and cold.” That parody of this author of “Danse Russe” is by Kenneth Koch and makes fun of a poem about eating some plums in an icebox. For 10 points, name this American poet of “This is Just to Say” and “The Red Wheelbarrow.”

ANSWER: William Carlos Williams

<RR, Poetry>

20. A contemporary opera by a composer from this country portrays the minotaur from the Theseus myth as a tragic creature who gradually gains the ability to speak and laments his status as half-man, half-beast. A controversial opera from this country includes a musical depiction of fellatio and dramatizes the real life of a scandalous socialite. A fairy queen admonishes her subjects for being attracted to mortal men in the song “Oh, foolish fay” in a satirical operetta from this country called (*) *Iolanthe*. This country is home to the composer Thomas Adès (“ADD-iss”) and an opera in which Peep-Bo and Pitti Sing are among a group of girls who sing “Three little maids from school are we.” In an opera from this country, a character boasts about knowing “many cheerful facts about the square of the hypotenuse” and calls himself the “very model of a modern Major-General.” For 10 points, name this country that was home to Gilbert and Sullivan.

ANSWER: **United Kingdom** [or **UK**; or Great **Britain**; accept **England**]

<BN, Other Arts - Opera>

Bonuses

1. Barbara Karinska designed distinct costumes for each of this ballet's three acts; in the second act, the costumes flare out at the hips. For 10 points each:

[10] Name this ballet that sets Stravinsky's *Capriccio for Piano and Orchestra*, Tchaikovsky's Symphony No. 3, and works by Fauré in three different acts.

ANSWER: **Jewels**

[10] *Jewels* is by this Georgian-born choreographer who created the ballet *Serenade* set to Tchaikovsky's Serenade for Strings. This choreographer co-founded the New York City Ballet with Lincoln Kirstein.

ANSWER: George **Balanchine** [or Georgiy Melitonovich **Balanchivadze**]

[10] Balanchine created the ballet *Episodes*, which sets both music by Webern and Bach, alongside this choreographer and dancer known for a namesake dance technique and the choreography to *Appalachian Spring*.

ANSWER: Martha **Graham**

<YFL, Other Arts - Dance>

2. F. Scott Fitzgerald suggested that this novel end by saying that this world "breaks everyone," and "those it does not break, it kills." For 10 points each:

[10] Name this novel, which was re-published in 2012 with all 47 alternate endings, including the Fitzgerald ending and an ending that states "Catherine died and you will die and I will die and that is all I can promise you."

ANSWER: *A **Farewell to Arms***

[10] *A Farewell to Arms* was written by this friend of Fitzgerald's and author of *The Sun Also Rises*.

ANSWER: Ernest **Hemingway**

[10] In this Hemingway short story, Helen hears a hyena cry, signaling that Harry has died of gangrene.

ANSWER: "The **Snows of Kilimanjaro**"

<RR, Misc Literature>

3. This god has empty eye sockets because instead of sacrificing himself alongside other gods in one event, he instead cried until his eyes fell out. For 10 points each:

[10] Name this deity who serves as companion to the underworld in one myth system. This deity is represented by the evening star phase of Venus and is considered the protector of ollin ("OH-leen"), a certain concept of motion.

ANSWER: **Xolotl** ("SHOW-lohtle")

[10] This god went to the underworld with Xolotl, his twin, to create the first humans of the fifth sun-era world by dipping the bones of previous humans in his own blood. This Aztec deity's name means "feathered serpent."

ANSWER: **Quetzalcoatl** [or **Quetzalcohuātzin**]

[10] This Aztec rain god was the lord of the third sun and is also sometimes represented as Venus, similar to Xolotl and Quetzalcoatl. This god rules the underworld for drowned souls and had children sacrificed to him.

ANSWER: **Tlaloc**

<YFL, Mythology>

4. Answer some questions about animal mating, for 10 points each.

[10] This behavior, sometimes called presenting, involves curving the spine so the posterior pelvis is raised to signal receptivity to copulation. Wearing high heels are thought to be a vestige of this behavior in humans.

ANSWER: **lordosis** behavior [or **lordosis** posturing; or **lordotic**]

[10] The tails of these animals are used a classic example of sexual selection. Amotz Zahavi used them to elucidate the handicap principle, which states that impractically costly anatomic features are reliable signals of fitness.

ANSWER: **peacocks**

[10] This scientist was the first to describe sexual selection, once noting that the peacock's tail makes him "sick." His studies of finches in the Galápagos were continued by Peter and Rosemary Grant.

ANSWER: Charles **Darwin**

<Eric M, Biology>

5. The Chilcot Report alleged that a report sent to this prime minister based its description of Saddam Hussein's chemical weapons on the Nicolas Cage film *The Rock*. For 10 points each:

[10] Name this British prime minister, a key ally of George W. Bush in starting the Iraq War.

ANSWER: Tony **Blair** [or Anthony Charles Lynton **Blair**]

[10] Upon election in 1997, Blair's government was described using this two-word phrase which indicated a turn away from his party's previous socialist policies.

ANSWER: **New Labour** [accept **Third Way**]

[10] One of Blair's signature accomplishments was negotiating this 1998 agreement that ended the Troubles in Northern Ireland.

ANSWER: **Good Friday** Agreement [or **Belfast** Agreement]

<TR, Other History>

6. With his 1913 piece *Syrinx*, Debussy revitalized writing for this instrument alone. For 10 points each:

[10] Name this woodwind instrument played by James Galway, who studied under Marcel Moyse and Jean-Pierre Rampal.

ANSWER: **flute**s

[10] This French composer wrote a flute sonata for Rampal around the time that he wrote his opera *Dialogues of the Carmelites*. This member of Les Six ("lay SEESE") wrote a concerto for two pianos and a sextet for piano and winds.

ANSWER: Francis **Poulenc** ("fron-SEESE poo-LANK")

[10] This late-19th-century French composer wrote a flute *Concertino* that's a staple of the instrument's repertoire. She was once known for piano miniatures like *La lisonjera* and "Scarf Dance."

ANSWER: Cécile **Chaminade** ("say-SEEL shah-mee-NOD")

<JR, Music>

7. Answer the following about theological differences between the Eastern Orthodox and Catholic churches, for 10 points each.

[10] Orthodox Christians use the word *theotokos* as a title for this Biblical woman, the wife of Joseph and Virgin mother of Christ.

ANSWER: the Virgin **Mary**, Mother of God

[10] Unlike Western churches, Orthodox churches usually use this oldest Greek translation of the Hebrew Bible as a basis for further translations. It takes its name from the number of scholars who originally ordered its translation.

ANSWER: the **Septuagint** [or the Translation of the **Seventy**]

[10] The Catholic doctrine of this place is not recognized by Orthodox churches. Catholics often describe this place as full of cleansing fire.

ANSWER: **purgatory**

<DM, Religion>

8. The release of these particles causes chain reactions in fission reactors. For 10 points each:

[10] Name these uncharged baryons found in atomic nuclei.

ANSWER: **neutrons**

[10] In fission reactors, neutrons are classified into categories like “cold,” “thermal,” and “fast” based on their energies measured in this unit, which equals approximately 1.6 times 10-to-the-negative-19th joules.

ANSWER: **electronvolts** [or **eV**]

[10] In particle accelerators, neutrons are often made via this general process, in which a material ejects fragments of itself in response to stress; in the case of neutrons, a proton beam is shot at a heavy metal target, which ejects pulsed beams of neutrons.

ANSWER: **spallation**

<BB, Physics>

9. Durvasa starts this play’s central story when he places a curse on a woman who fails to greet him properly. For 10 points each:

[10] Name this play in which a regal signet ring recovered from a fish allows Dushyanta to perform the title phenomenon and be reunited with his bride.

ANSWER: *The **Recognition of Shakuntala***

[10] This author of *The Cloud Messenger* wrote *The Recognition of Shakuntala*.

ANSWER: **Kalidasa**

[10] Kalidasa wrote most, but not all, of *The Recognition of Shakuntala* in this language. This is the language in which many ancient Indian epics, such as the *Mahabharata*, were written.

ANSWER: **Sanskrit**

<RR, Drama>

10. During this year, pilgrims were told that they would be absolved of sin if they visited St. Peter's and St. Paul's Basilicas in Rome. For 10 points each:

[10] Name this year during which Pope Boniface VIII declared the first Christian Jubilee, which he originally planned for the Church to repeat every 100 years.

ANSWER: 1300

[10] This Florentine writer wrote the treatise *De Monarchia* to oppose Boniface VIII's declaration of Papal Supremacy in the bull *Unam Sanctam*. This poet marked Boniface as destined for hell in his best known work.

ANSWER: Dante Alighieri [accept either underlined answer]

[10] Dante was a member of the Guelph faction, which descended from the Lombard League formed to oppose this Holy Roman Emperor's 12th-century invasion of Italy.

ANSWER: Frederick Barbarossa [or Frederick I; prompt on partial answer]

<TR, European History>

11. A 2015 paper by Hulme and Snowling summarizing research into the acquisition of this skill found three primary determinants: letter knowledge, phoneme awareness, and rapid automatized naming. For 10 points each:

[10] Name this skill. Dyslexia inhibits acquisition of this skill.

ANSWER: reading [prompt on literacy]

[10] This process is the internal pronunciation of words as they are read, involving tiny movements of the larynx to mimic actual pronunciation of the words.

ANSWER: subvocalization [accept phonological recoding, silent speech, inner speech, phonological encoding, or speech recoding]

[10] This method for teaching children to read emphasizes phoneme awareness and learning grapheme-phoneme correspondence. In contrast to "whole language" approaches, this method breaks down words into constituent parts to teach them.

ANSWER: phonics [do not accept or prompt on "phonetics" or "phonology"]

<RR, Social Science - Psychology>

12. The first of these poems incorporates material from Nicander's *Theriaca*, a didactic poem about serpent venom and its cures. For 10 points each:

[10] Name this set of four poems that were published in 29 BC. They include a poem that describes various types of soils, and uses Eratosthenes's division of five climate zones to describe the Earth.

ANSWER: Georgics [or Georgica]

[10] The *Georgics* were written by this Latin poet, who began his masterpiece the *Aeneid* during the year he finished the *Georgics*.

ANSWER: Publius Virgil Maro

[10] Virgil calls this ruler, his patron, the "begetter of the harvest" in *Georgics*. This man and the great-uncle who adopted him had their lineages traced backed to Ascanius in the *Aeneid*.

ANSWER: Augustus Caesar [or Octavianus]

<IJ, Poetry>

13. Samuel von Pufendorf defended the doctrine of the “natural” type of this concept, which holds that this concept ultimately derives from human nature. For 10 points each:

[10] Name this concept which the Dutch philosopher Hugo Grotius said was so “immutable” that God himself could not change it.

ANSWER: law [accept natural law or the laws of society]

[10] The doctrine of natural law has been used to defend this other concept, in which an individual gives up some freedoms to join society. It takes its name from a book by Jean-Jacques Rousseau.

ANSWER: social contract [accept *The Social Contract*]

[10] A 1689 book by this philosopher posits that natural law should underlie society, and argues that no one can deprive a man of life, liberty, and the rule of law. Another of his books attacks Robert Filmer’s divine right of kings theory.

ANSWER: John Locke

<IJ, Philosophy>

14. This policy was advocated by speculators such as George Washington and Robert Morris because the centralization it entailed made it more likely that they would be repaid. For 10 points each:

[10] Identify this financial policy that was central to the Compromise of 1790, in which Thomas Jefferson’s faction accepted this policy in exchange for a permanent national capital on the Potomac River.

ANSWER: debt assumption [accept any answer mentioning the assumption of the state debts incurred financing the Revolutionary War or any descriptive answer indicating that the federal government would pay or assume or take over state debts]

[10] Debt assumption was a central proposal in the First Report on the Public Credit, a document written by this first Treasury Secretary, who also advanced creditor-friendly policies in his Report on Manufactures.

ANSWER: Alexander Hamilton

[10] To pay the interest on the assumed debt, Hamilton successfully lobbied for an excise tax on this product, and then personally led federal troops to put down a group of farmers led by Herman Husband who opposed the tax.

ANSWER: whiskey [or distilled spirits; accept Whiskey Rebellion or Whiskey Insurrection]

<AH, American History>

15. The Kronecker product takes two matrices as an input, and generates a matrix of this type as its output. For 10 points each:

[10] Name this type of matrix in which a matrix is divided up into the namesake smaller sub-matrices. It is often used to calculate a matrix inverse.

ANSWER: blocking a matrix [accept blocks]

[10] Blocking a matrix is often used to perform this basic arithmetic operation. The matrix form of this operation is associative but not commutative in general.

ANSWER: matrix multiplication [or multiplying]

[10] Helmert–Wolf blocking is often used to solve this kind of problem in linear algebra, which seeks to find the “best” solution to an overdetermined system. As indicated by its name, it works by minimizing the sum of a certain operation on the residuals.

ANSWER: ordinary least squares

<IJ, Other Science - Mathematics>

16. As a politician, this man led the conservative faction at court and opposed the reforms of Chancellor Wang Anshi (“WONG on-shurr”). For 10 points each:

[10] Name this Song dynasty historian whose *Zizhi Tongjian* (“DZUH-jurr TOHNG-j’yen”) details Chinese history up to that point.

ANSWER: **Sima Guang** (“suh-mah gwong”) [prompt on Sima; do not accept “Sima Qian”]

[10] Sima Guang is not to be confused with the earlier historian Sima Qian (“suh-mah ch’yen”), who wrote the *Records of the Grand Historian* under the rule of this dynasty that succeeded the Qin (“chin”).

ANSWER: **Han** dynasty

[10] Sima Qian described the Shang dynasty, which was long viewed as mythical until the discovery of these objects that were used in divination and whose inscriptions provided details about Shang culture.

ANSWER: **oracle bones** [or jiǎgǔ; prompt on bones]

<TR, World History>

17. Answer the following about the paintings of Correggio, for 10 points each.

[10] In the Duomo of Parma, Correggio used this technique in which extreme foreshortening of figures painted on a ceiling gives the illusion that they’re suspended above the viewer. It is not to be confused with *quadratura*.

ANSWER: ***di sotto in sù***

[10] Correggio used *di sotto in sù* in a fresco of this scene in which the Virgin Mary is taken up to Heaven.

ANSWER: **Assumption** of the Virgin [or **Assumption** of Mary]

[10] Correggio painted St. John with one of these animals on a pendentive of another church in Parma. A boy is abducted by one of these animals as a dog looks on in another painting by Correggio.

ANSWER: **eagles** [accept *Ganymede Abducted by the Eagle*; prompt on birds]

<WN, Painting>

18. One resident of the town affected by this event loses all of the animals that had bred rapidly during his marriage to Petra Cotes. For 10 points each:

[10] Describe this occurrence that lasts for four years after a massacre of banana plantation workers and devastates a town regularly visited by Melquíades.

ANSWER: the **rain** in Macondo [accept **storm** or **rainstorm**; prompt on flood]

[10] The rainstorm devastates Macondo, the home of the Buendía family in this magical realist novel by Colombian author Gabriel García Márquez.

ANSWER: ***One Hundred Years of Solitude*** [or ***Cien Años de Soledad***]

[10] This member of the Buendía family is known as “the Beauty” and spends much of the narrative folding laundry before ascending to heaven in a gale.

ANSWER: **Remedios** the Beauty

<IJ, Long Fiction>

19. Loujain al-Hathloul has been jailed several times for performing this action, once when she attempted to cross the border into the UAE. For 10 points each:

[10] Name this action that Saudi women were finally allowed to perform in June 2018.

ANSWER: **drive** [accept word forms; accept answers involving operating **cars** or **motor vehicles**]

[10] This crown prince of Saudi Arabia has attempted to modernize the country through the Vision 2030 project, which has been hampered slightly by the ongoing war in Yemen and the mass arrests of Saudi royals in 2017.

ANSWER: **Mohammad bin Salman** bin Abdulaziz Al Saud [or **MbS**; prompt on partial answer; do not accept “Salman”]

[10] In a bizarre incident, this Lebanese prime minister announced his resignation while in Saudi Arabia, then rescinded it once he was back in Lebanon. His father’s 2005 assassination sparked the Cedar Revolution.

ANSWER: Saad **Hariri**

<KH, Current Events>

20. Unlike NMR, this technique is useful for experimental measurement of oxidation states. For 10 points each:

[10] Name this technique used to study nuclei, in which a solid sample resonantly absorbs and re-emits gamma rays with no recoil.

ANSWER: **Mössbauer** spectroscopy

[10] Mössbauer measurements of oxidation state rely on an energy shift named for these things. These things are two compounds that have the same molecular formula, but different physical or chemical structures.

ANSWER: **isomers** [accept **isomer shift**]

[10] A commonly-used source of gamma rays for Mössbauer spectroscopy is an iron isotope whose atomic mass is this number. This isotope of iron is one atomic mass unit heavier than the most abundant isotope of iron.

ANSWER: iron-**57**

<BB, Chemistry>