

Harvard Fall Tournament XI

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And with thanks to Harvard College, MIT Quiz Bowl, and various playtesters



Finals 1

Tossups

1. **One section of this region was discovered using BBC’s Bournemouth transmitter, and it has namesake “sudden disturbances” caused by solar flares. Kennelly and Heaviside predicted a section of this region whose existence was confirmed by Edward (*) Appleton, and this region contains D, E, and F layers. This layer forms the inner edge of the magnetosphere, and it is used to reflect radio waves to remote areas on Earth. This layer contains the upper mesosphere and overlaps with the thermosphere, and its most notable property results from solar radiation. For 10 points, give this layer of the atmosphere so named since it contains charged particles.**

ANSWER: ionosphere (accept Appleton-Barnett layer before mention of “Appleton”; prompt on “outer atmosphere”)

2. **This story is preceded by the description of another in which the Virgin Mary visits hell. A “banner of earthly bread” and a refusal to perform a miracle are described in this story. One figure in this story is berated for giving people freedom by denying the three (*) temptations in the desert, and it ends with that figure kissing the title character on the lips after being condemned to burn as a heretic. This story describes the imprisonment of Jesus by the title Spanish religious official, and it is told by Ivan to his younger brother Alyosha in Book 5, Chapter 5. For 10 points, name this “parable” by Fyodor Dostoyevsky that appears within his larger novel *The Brothers Karamazov*.**

ANSWER: the parable of the Grand Inquisitor (accept basically anything that mentions “Grand Inquisitor”)

3. **At the request of another figure, the Aboriginal goddess Yhi performed this action using a flower. Using Kingu’s blood, either Enki or Marduk performed this action, and Viracocha initially failed to do this in Incan mythology when using large stones. By twirling a rope around her head, (*) Nuwa did this repeatedly in Chinese mythology, and, by throwing rocks over their shoulders, Deucalion and Pyrrha did this action out of necessity after they survived a massive flood. Often, this action is done by molding clay and then giving the clay a breath of life. For 10 points, name this action that God did when he made Adam and Eve.**

ANSWER: creating humanity (accept anything that describes making people, man or woman)

4. **The “selectivity” of this field was criticized in an E.H. Carr book asking “*What Is [this field]?*” One of the most notable journals in this field is based in the Bloomington campus of Indiana University and is abbreviated *AHR*, and the application of economics to this field is termed (*) cliometrics. The French *Annales* school focuses on the “long-term” study of this field, and Giambattista Vico’s *The New Science* argued that the subject of this field is cyclical. Thomas Carlyle popularized the “Great Man theory” of this field. For 10 points, name this field that was studied by Livy, Thucydides, and its “Father,” Herodotus.**

ANSWER: history (accept specific fields of history; accept historiography)

5. After being abandoned by Hope, this character sings the aria “Possente spirto” trying to convince another character to let him cross a river. The Duke of Gonzaga’s viewing of Jacopo Peri’s opera titled for this man’s wife inspired the aforementioned opera titled after him. In the third act of *Le feste d’Apollo*, (*) Gluck reused music from his earlier opera about this character and his wife. An “Infernal Galop” better known as the “can-can” appears in a Jacques Offenbach operetta about this character in *the Underworld*, and he is the main character of an early Monteverdi opera. For 10 points, name this mythological musician, the husband of Eurydice.

ANSWER: Orpheus (accept *L’Orfeo*; accept Orpheus in *the Underworld*)

6. A novel titled for the phrase “Himmler’s brain is called Heydrich” is set in this city and won the 2010 Prix [“pre”] Goncourt. *HHhH* is set in this city, and along with Cambridge, Stoppard’s play *Rock ‘n’ Roll* takes place in this city. Simone Simonini forges *The Protocols of the Elders of Zion* in an (*) Umberto Eco book titled for a “Cemetery” in this city. Ludvik makes the disastrous “Joke” in this city, and Sabina has an affair with Tereza’s womanizing husband Tomas in this city, the longtime residence of Milan Kundera. For 10 points, what European city is the setting of *The Unbearable Lightness of Being*, in which it’s undergoing a “Spring?”

ANSWER: Prague, Czech Republic

7. If the carbonyl compound is *aromatic*, then the precipitate will be this color in a positive Brady’s test. If a reducing sugar is present a precipitate of this color is formed by Benedict’s and Fehling’s tests, and it is the color of selenium crystals and liquid sulfur di-chloride. The allotrope of (*) phosphorous with this color is made of amorphous interlocking tetrahedra, and the lower range of an indicator made from lichen dyes is this color. Performing the flame test on cadmium, lithium, and strontium gives this color, and it’s present in minerals containing iron-three ions like ferric oxide. For 10 points, name this color given off by rust and the dust on Mars.

ANSWER: red (accept any specific color as long as, in your best judgment, it’s a shade of red; *Ed’s note: that includes crimson*)

8. This entity first appears in a package labeled “Happy anniversary” sent to a Saudi medical attache. Joelle van Dyne, the deformed Mario, and a man who later committed suicide with a microwave were instrumental in its creation. It was created by James (*) Incandenza, and this entity also called the “samizdat” is pursued by a group of “wheelchair assassins” agitating for Quebec separatism. This entity is so entertaining anyone who watches it wants nothing else, and its name comes from a Hamlet speech addressing Yorick. For 10 points, name this fictional film giving its title to David Foster Wallace’s magnum opus.

ANSWER: copies of Infinite Jest (accept “the Entertainment” or “samizdat” before mention)

An assassination plot in this modern day country was led by the “six martyred ministers.” The Gapsin Coup and Imo Mutiny both took place in this country. The American merchant ship *General Sherman* was destroyed by this country after attempting to (*) trade with it, and the elites of this country were known as “men of the sacred bone,” or “yangban.” Sejong the Great led this country during part of its 500-year rule under the Joseon dynasty, and this country’s isolationist policy gave it the nickname of the “Hermit Kingdom.” For 10 points, name this modern day country now split along its namesake peninsula into North and South segments.

ANSWER: Korea (or Korean peninsula; accept North or South Korea; accept Republic of Korea or Democratic People’s Republic of Korea; anti-prompt [ask for less specific] on Joseon or Choson Dynasty)

10. **Description acceptable. After this action has been concluded, one person spends time alone in the Room of Tears. The *Infirmarii*, Revisers, and Scrutineers are key figures in this action, and it can be postponed for reflection if it fails consecutively seven times. The cry (*) “*Extra omnes!*” is used to clear outsiders so that this process can occur in isolation. The success of this action ends the *sede vacante* and is marked with the announcement “*Habemus Papam* [“hah-bey-mus pah-pahm”]!” and a white smoke signal. For 10 points, name this action undertaken by the College of Cardinals that leads to a new person becoming Bishop of Rome.**

ANSWER: **choosing a Pope** (accept synonyms for **choose**, such as **select**, **vote** for, **elect**, etc.; accept synonyms for **Pope**, such as **pontiff** or **Bishop of Rome** before mention; accept papal **conclave**)

11. **Erle Loran claimed that this artist plagiarized a work that was simply a black and white outline of Paul Cezanne’s portrait of his wife. One figure in an artwork by this man covers his mouth to stifle laughter upon seeing that his pantsless friend has snagged his own jacket with a (*) fishing hook. This artist included Donald Duck in his *Look, Mickey!*, and he painted a wave swirling above a girl who refuses to call Brad for help. This artist prominently used Ben-Day dots, such as in a work with the text “rockets blazed through the sky” showing two fighter jets. For 10 points, name this Pop artist of the comic-book inspired *Drowning Girl* and *Whaam!***

ANSWER: Roy (Fox) **Lichtenstein**

12. **Henry D. Cogswell and Simon Benson were noted for building machines named for the fact that they did not contain this substance. Riots named for a type of this substance occurred in Portland, Maine, as a result of the actions of mayor Neal S. Dow. First Lady Lucy Hayes earned her nickname due to her (*) opposition to this product, in which she was joined by Wayne Wheeler and the WCTU. This is the product whose sale is most commonly controlled via “blue laws.” This substance was the subject of the Volstead Act and was violently destroyed by Carrie Nation. For 10 points, name this good whose sale was prohibited by the 18th Amendment.**

ANSWER: **alcohol** (or **liquor**; or **spirits**; or **hard drinks**; or **booze**; or **hooch**; or **moonshine**; or **rotgut**; or **sauce**; or **malt** beverages; or **firewater**; or any other of the, like, 1,000 names for the stuff; accept specific kinds of alcohol, like **beer**, **rum**, ____, ____, ____, etc. *Ed’s note: names censored to avoid giving high schoolers ideas; also, this question was literally written by our social chair*)

13. **This figure was given the name “Thurinus” at birth, and his mother Atia was the daughter of the first Julia Minor. He was responsible for the “West” by the Treaty of Brundisium. This figure divorced Pulchra before marrying Scribonia, and he was the most prominent to call himself “Divi Filius,” or (*) “Son of God.” After squashing a pathetic rebellion by Lepidus, this man began a propaganda campaign that a rival was controlled by an “Oriental paramour.” This figure capped his ascension by winning the Battle of Actium against his rival Mark Antony. For 10 points, name this heir to Julius Caesar who later became the emperor Augustus.**

ANSWER: Gaius Julius Caesar **Octavianus** (accept Imperator Caesar Divi Filius **Augustus** before read; do not accept or prompt on just “Caesar”; *Ed’s note: no “Caesar,” in spite of what Octavian himself liked to be called...*)

14. **Composer and genre required. The final one of these works has only two movements, the second of which includes a heavily syncopated variation in 12/32 time. The word “Lebewohl” appears above the first three notes of another of these pieces, which is named after the French translation of that word, (*) *Les Adieux*. One of these pieces calls for the damper pedal to be used throughout the entire first movement, which begins with the right hand playing triplets over a held octave C sharp in the left hand. That piece was named after the title object’s reflection on Lake Lucerne. For 10 points, name these solo piano works which bear nicknames like *Moonlight*.**

ANSWER: **piano sonatas** by Ludwig van **Beethoven** (need all underlined parts; prompt on partial answer)

15. In one poem in this collection, the speaker asks to be reminded of “those who are now examine” and then to “gather the north flowers to complete the south.” The first of these poems remembers how a (*) Greek poet “had sung / Of the sweet years,” and they were disguised as translations of Bosnian poetry. The speaker of one poem in this collection asserts she will do an action “to the depth and breadth and height my soul can reach,” while in another poem she asks the addressee to “call me by my pet-name!” For 10 points, name this collection of poems that includes “How do I love thee? Let me count the ways,” by Elizabeth Barrett Browning.

ANSWER: Sonnets from the Portuguese

16. Alpha-hemolysin is a candidate for the nanopore-based variant of this technique. Treating the sample with bisulfite before performing this technique can reveal methylation patterns on CpG islands. The “next-generation” variant of this technique was pioneered by (*) Illumina, and it can be done on a larger scale with the “shotgun” method. Chain-terminating di-deoxy-nucleotides are used in Frederick Sanger’s variant of this technique. Craig Venter was among the first to do this, and it was the goal of the Human Genome Project. For 10 points, give this action that describes determining exactly what the makeup of an organism’s genetic code is.

ANSWER: sequencing DNA (prompt on partial; accept obvious synonyms that describe figuring out what your DNA says, like determining a genome (at least, before “Genome” is read); accept any organism, but especially human; accept sequencing RNA)

17. This character dresses up as Superman for a birthday party in an episode with a guest appearance from Christopher Reeves. The multi-camera setup was popularized by the show starring this character, and she attempts to sell “Vitameatavegamin” in an episode in which she “Does a TV Commercial.” This character (*) gave birth in an episode broadcast twelve hours after the actress playing her actually gave birth, and in her most memorable moment, she struggles to keep up with a conveyor belt while working at a chocolate factory. For 10 points, name this character played by Lucille Ball in a 1950s TV show titled *I Love* [this character].

ANSWER: Lucy Ricardo (or Lucy McGillicuddy; accept *I Love* Lucy)

18. A special relativistic correction to one form of this phenomenon was made by Llewellyn Thomas, and the geodetic effect is a form of it named for Willem de Sitter. A variety of this phenomenon involving magnetic moments in external magnetic fields is named for Joseph (*) Larmor. A wobbling along the path of this phenomenon is called nutation, and a spinning bike wheel can hang from one string at the end of a horizontal axis using it. This phenomenon classical form has angular velocity directly proportional to torque. For 10 points, name this phenomenon in which the axis of rotation shifts, an effect usually demonstrated with gyroscopes.

ANSWER: precession (accept word forms)

19. Description acceptable. In 2004, Elena Filatova claimed to have ridden through this region alone on a motorbike. The typically elderly residents of this place are termed “samosely,” and an object at its center is nicknamed the “sarcophagus.” The Wormwood Forest in this area was nicknamed for its distinctive (*) red color, and it’s also known as the Zone of Alienation. This “Exclusion Zone” is centered near the town of Pripyat, and it’s become home to flourishing wildlife due to cessation of any human development, though it still contains many active “hot spots.” For 10 points, name this thirty kilometer area in Ukraine that surrounds a nuclear reactor meltdown.

ANSWER: Chernobyl Exclusion Zone (accept Exclusion Zone or Zone of Alienation before either is read; accept basically anything mentioning Chernobyl)

20. This nation's missionary work was praised in Pius XII's encyclical *Saeculo exeunte*, issued after it had signed the Concordat of 1940 with the Vatican. This European country's prison camp at Tarrafal was run by the PIDE police. This country's 1974 Eurovision entry "And After the Farewell," was used as a signal for a coup by the (*) Armed Forces Movement. In its "Colonial War," this country lost its colonies of Goa and Angola. The Carnation Revolution in this country overthrew Marcelo Caetano, the successor of a man who declared an *Estado Novo*. For 10 points, name this country formerly ruled by Antonio Salazar, an Iberian nation.

ANSWER: Portugal (or the Portuguese Republic; or the República Portuguesa; prompt on "Estado Novo" before mention)

21. A dwarf elliptical galaxy named for this constellation was discovered in 1994, and a molecular cloud is known as this constellation B2. This constellation's sigma and zeta stars, Nunki and Ascella, are part of its Teapot Asterism, while NGC 6559, the Trifid Nebula, and the Lagoon Nebula comprise its namesake Triplet. It's not Aquarius, but this constellation's alpha star is (*) Rukbat, though its brightest star is Kaus Australis. A compact radio source found in it is thought to be associated with a supermassive black hole found at the center of the Milky Way and is termed A* ["A-star"]. For 10 points, name this constellation that somehow shows an archer.

ANSWER: Sagittarius

Bonuses

1. This concept literally translates as “quenching.” For 10 points each:

[10] Name this Buddhist state of enlightenment in which a person becomes freed from the cycle of rebirth, or *samsara*. The original Buddha reached this state while sitting under the bodhi tree.

ANSWER: nirvana

[10] Nirvana can be attained by following this numerically named guideline. It contains factors like “right speech” and “right action,” and shouldn’t be confused with the Four Noble Truths.

ANSWER: Noble Eightfold Path (accept Noble Eightfold Way)

[10] In Theravada Buddhism, the Noble Eightfold Path can lead to attaining this position in which a person is released from their “fetters.” Chinese Buddhism also believes in eighteen of these people.

ANSWER: arhat (or arahant)

2. A “fascinating trinity” is discussed in one treatise on this practice. For 10 points each:

[10] Name this topic covered by Carl von Clausewitz in his book *On [this practice]*.

ANSWER: warfare (accept *On War*; prompt on synonyms like battle or fighting or combat)

[10] Both Sun Tzu and Niccolò Machiavelli have written books on warfare by this title. Sun Tzu’s more famous version with this title asserts that all of war is based on deception.

ANSWER: *The* Art of War

[10] Another important text on battle is this work by the samurai Miyamoto Musashi still studied by generals and business leaders. It consists of chapters inspired by Earth, Water, Fire, Wind, and the Void.

ANSWER: *The Book of* Five Rings (or Go Rin no Sho)

3. Samuel B. Moore exhumed the body of one of this group’s leader and concluded that his mysterious death on the Natchez Trace had been due to murder, not suicide. For 10 points each:

[10] Name this group that made a two-year trip that began in Camp Dubois, wintered in Fort Clatsop in Oregon, and then returned to St. Louis.

ANSWER: Corps of Discovery (prompt on Lewis and Clark expedition, or anything mentioning those guys)

[10] Lewis and Clark led the Corps of Discovery in an expedition prominently aided by Sacagawea, a member of this tribe. Chief Pocatello was a leader of their northern branch, many of whom were killed in the Bear River Massacre.

ANSWER: Shoshone (accept Lemhi; accept Northern Shoshone)

[10] William Clark owned this slave, who accompanied the expedition as the Corps of Discovery’s only black member.

ANSWER: York

4. Susanna Clarke’s endnote-heavy book *Jonathan Strange & Mr Norell* contains a “Learned Society” of characters with this profession. For 10 points each:

[10] Name this profession. One of these figures “of Lublin” titles an Isaac Bashevis Singer novel.

ANSWER: magician (do not accept synonyms)

[10] This author’s *Mario and the Magician* parallels the rise of fascism with the influence of the hypnotist Cipolla. This German described Hans Canstorp’s stay at a sanatorium in *Magic Mountain*.

ANSWER: Thomas Mann

[10] Salim runs a shop visited by the magician Zabeth in this Trinidadian author’s novel *A Bend in the River*.

ANSWER: Sir V(idiadhar) S(urajprasad) Naipaul

5. In this novel, George Emerson throws a set of photographs into a river after some guy gets shanked and inconsiderately bleeds all over them. For 10 points each:

[10] Name this novel by E.M. Forster in which Lucy Honeychurch's whirlwind tour around Europe features proposals from Cecil Vyse and a final elopement with George to Florence.

ANSWER: *A Room with a View*

[10] One of the many references made in *A Room with a View* to other literary works occurs when Cecil quotes this Brit's poem "The Princess." This man also wrote "Ulysses" and "The Lady of Shalott."

ANSWER: Alfred, Lord Tennyson

[10] In the novel, Cecil annoyingly interrupts this activity by reading from a book written by Joseph Emery Prank. Some pieces of equipment for this activity are insultingly sent to the title character of Shakespeare's *Henry V*.

ANSWER: tennis (accept tennis balls)

6. The name for this mytheme in comparative mythology is *catabasis*. For 10 points each:

[10] Describe this common trope in world mythology. Inanna discards seven pieces of clothing while doing this action, and Lemminkäinen's mother does this action by going to Tuonela.

ANSWER: the descent into the underworld (accept obvious synonyms for "descent" and "underworld," like just visiting hell; accept things about the return as well, like returning from the underworld; prompt on just "the descent")

[10] This god visits the underworld sort-of unwillingly after being murdered by his brother Set, though his subsequent resurrection by his wife Isis makes the story another example of *catabasis*.

ANSWER: Osiris

[10] This Welsh king traded places with the king of the Welsh underworld Annwn ["annuin"] for a year and a day. This father to Pryderi names the first branch of the Mabinogion.

ANSWER: Pwyll ["puill"] Pen Annwn (accept Pwyll *Pendefig Dyfed* or Pwyll, *Prince of Dyfed*)

7. Former Harvard radio station member Alex Ross documented the popularity of one of this composer's works among terminally ill AIDS patients. For 10 points each:

[10] Name this creator of the *tintinnabuli* technique, a contemporary Estonian composer of pieces like *Fratres* and the aforementioned *Tabula Rasa*.

ANSWER: Arvo Pärt

[10] Pärt's fourth symphony is named for this western American city and was premiered by its Philharmonic and conductor Esa-Pekka Salonen in the Walt Disney Concert Hall.

ANSWER: Los Angeles (or LA)

[10] Pärt's other compositions include a "lullaby" named after this holiday. Corelli wrote a concerto titled after this holiday, and Mendelssohn's setting of "Hark! The Herald Angels Sing" is commonly sung on this holiday.

ANSWER: Christmas (accept Christmas *Concerto*)

8. As Joyce Kilmer (sort of) wrote, "I think that I shall never see / A bonus lovely as a tree." For 10 points each:

[10] This Edith Wharton novel ends with the title character disastrously attempting to commit suicide with Mattie by ramming their sled into an elm tree.

ANSWER: *Ethan Frome*

[10] *A Tree Grows In* [this place] in the title of a Betty Smith novel. Adelle Waldman's *The Love Affairs of Nathaniel P* follows a writer living in this neighborhood.

ANSWER: Brooklyn (prompt on New York City or NYC)

[10] This author described a writer moving to Maine in *The Country of the Pointed Firs*. She also wrote *A White Heron* and *A Country Doctor*.

ANSWER: Sarah Orne Jewett

9. Heritage sites destroyed by this group include the ruins of the ancient city of Palmyra and the the Palace of Ashurnasirpal at Nimrud. For 10 points each:

[10] Name this terrorist group headed by Abu Bakr al-Baghdadi. It maintains its *de facto* headquarters in the Syrian city of al-Raqqah, and alternately uses names with the words “Levant” or “Syria.”

ANSWER: **Islamic State** of Iraq and the Levant (or **Islamic State** of Iraq and Syria; or **ISIL** or **ISIS**; or **IS**; or **Daesh**)

[10] In Iraq, ISIS is being combated by the *peshmerga*, a security force made up of this minority ethnicity. These people make up the autonomous region of Rojava in Syria, and they’re the largest ethnic minority in Turkey.

ANSWER: **Kurds** (or **Kurdish** people)

[10] In early 2015, ISIS launched an offensive that captured most of this large governorate in western Iraq, including its city of Fallujah. In February 2016, Iraqi forces retook its capital of Ramadi.

ANSWER: Al **Anbar** Governorate (or **Anbar** Province)

10. With the assistance of Byzantine Emperor Manuel I Komnenos, this kingdom attempted an unsuccessful invasion of Fatimid Egypt. For 10 points each:

[10] Name this Crusader state. It was centered in and named for a city whose Temple Mount is sacred to adherents of Judaism, Christianity, and Islam.

ANSWER: Latin Kingdom of **Jerusalem**

[10] The Kingdom of Jerusalem was conquered in 1187 by this Ayyubid sultan and military genius after his forces captured Guy de Lusignan and Reynald de Châtillon at the Battle of Hattin.

ANSWER: **Saladin** (or An-Nasir **Salah ad-Din** Yusuf ibn Ayyub)

[10] Saladin had earlier been defeated at Montgisard by forces under this then-16-year-old King of Jerusalem, who led his army despite suffering from a debilitating infectious disease.

ANSWER: **Baldwin IV** (or **Baldwin the Leper**; prompt on **Baldwin**)

11. There are left and right cosets in these structures. For 10 points each:

[10] Name these algebraic structures. They’re closed, associative, and have an identity and inverse, but are called “abelian” when they’re commutative.

ANSWER: **groups**

[10] For a cyclic group of n integers, k is a generator only if this operation of k and n is 1. In general, this gives the largest number that “goes into” both n and k .

ANSWER: **greatest common divisor** (accept **factor** in place of “divisor”; accept **gcf** or **gcd**)

[10] This first of three major theorems in group theory states that the kernel of a homomorphism from G to H is a normal subgroup of G , and also that every map factors through the quotient group of G over the kernel.

ANSWER: First **Isomorphism** Theorem (prompt on **Fundamental Homomorphism** Theorem)

12. Answer the following questions about the field of computational chemistry, for 10 points each:

[10] One branch of computational chemistry deals with calculating these regions around the nucleus where electrons can be found. The atomic type includes s and p varieties.

ANSWER: **orbital** (accept specific orbitals like atomic **orbital** or molecular **orbital**)

[10] Quantum chemical calculations attempt to solve this fundamental equation of quantum mechanics that describes the evolution of wave functions over time. It has time-dependent and time-independent forms.

ANSWER: **Schrödinger** equation

[10] Collections of atoms are frequently simulated using this branch of science. The ergodic hypothesis is a principal postulate in it, and it studies various “ensembles.”

ANSWER: **statistical mechanics** (accept **stat mech**; do not accept or prompt on “statistics” or “mechanics” on their own)

13. Where are the bonuses of yesteryear? For 10 points each:

[10] First, name this form of narrative poetry that originated in medieval France and was usually accompanied by music. They were often sung by minstrels who described folklore-ish figures like Robin Hood.

ANSWER: **ballads**

[10] The quote “Where are the snows of yesteryear?” comes from Dante Rossetti’s translation of this medieval poet’s work *The Ballad of Dead Ladies*. He also wrote “The Ballad of the Hanged” while awaiting execution, probably as a result of a career of thievery.

ANSWER: François **Villon**

[10] Panurge tells a story about Villon tricking a friar to this François Rabelais character. This character is called the “King of the Dipsodes” in the title of a book that was then followed by a book about this character’s father Gargantua.

ANSWER: **Pantagruel**

14. Tsiolkovsky derived an equation and applied it to the thrust of these objects. For 10 points each:

[10] Name these objects that typically fire propellant out of their ends to go up really fast and really high. A space shuttle might include these devices and a payload.

ANSWER: **rockets** (*Ed’s note: prompt on up-goer*)

[10] This American scientist was effectively the father of rocket science. Despite often outright mocking from the public, he became the first to invent a liquid-fuel rocket.

ANSWER: Robert **Goddard**

[10] The rocket equation equates the change in velocity to this value times the natural log of initial mass over mass. In general, this value is the specific impulse times gravity.

ANSWER: effective **exhaust velocity** (prompt on just velocity; accept **exhaust speed** and likewise prompt on speed)

15. This philosopher was heavily influenced in his “early period” by the Vienna Circle. For 10 points each:

[10] Name this Austrian philosopher known for thought experiments such as a speaking lion and a beetle in a box in his *Philosophical Investigations*. He also wrote the *Tractatus Logico-Philosophicus*.

ANSWER: Ludwig **Wittgenstein**

[10] Wittgenstein’s primary philosophical project in the *Tractatus Logico-Philosophicus* was the grounding of this action in logic. Aspects of this phenomenon include morphology, semantics, and syntax.

ANSWER: **language** (prompt on things like writing or speaking or other ways of using language)

[10] This later American philosopher also studied language in *Word and Object*. In that work, this thinker argued that while a color blind person has an idea of red, the meaning of the word red is not the same as that for a non-color blind person.

ANSWER: Willard van Orman **Quine**

16. Much scholarly debate has raged regarding the identity of three men in the foreground of this man's *Flagellation of Christ*, which curiously places the title scene way in the background of the painting. For 10 points each:

[10] Name this Italian Renaissance master. His use of geometry can be seen in the triangular position of the figures in his *Resurrection*, which shows Jesus stepping out of a sarcophagus near a sleeping soldier with no legs.

ANSWER: **Piero della Francesca** (accept either underlined portion)

[10] Another of the soldiers in Piero's *Resurrection* is a depiction of a person with this relationship to the artist. This is the relationship of a man with a fur collar to Albrecht Dürer in one portrait.

ANSWER: the artist **himself** (accept anything about it being a **self-portrait**)

[10] A man takes off his shirt in the background of a Piero work depicting this man pouring water over Jesus to perform his namesake act. This man's head often makes cameo appearances in artistic depictions of Salome.

ANSWER: **John** the **Baptist** (prompt on "John")

17. One song on this album was written in memory of the recently deceased saxophonist Lester Young and was named for his favorite piece of headgear. For 10 points each:

[10] Name this partially self-titled jazz album, the first appearance of standards like "Goodbye Pork Pie Hat." Another song on this album, "Fables of Faubus," was an attack against the anti-integration governor of Arkansas.

ANSWER: **Mingus Ah Um**

[10] Charles Mingus played this string instrument. As with its use in classical music, in jazz it is usually played standing up, although jazz musicians usually pluck instead of bow it.

ANSWER: double **bass** (or string **bass**; or contrabass; or upright **bass**; or standup **bass**; or acoustic **bass**)

[10] Another track on *Mingus Ah Um* is titled "Open Letter to" this earlier jazz musician and influence on Mingus. His compositions for big band include "Mood Indigo" and "Take the A Train."

ANSWER: Duke **Ellington** (or Edward Kennedy **Ellington**; prompt on "Duke")

18. Inhibition of PCSK9 has been shown to reduce levels of this lipid molecule. For 10 points each:

[10] Name this steroid molecule that maintains the fluidity of animal cell membranes. HDL is its "good" kind, while LDL is its "bad" kind.

ANSWER: **cholesterol**

[10] Cholesterol levels are more commonly lowered by this class of HMG-CoA reductase inhibitors. Lipitor is part of this class of lipid-lowering drugs.

ANSWER: **statins**

[10] These cholesterol derivatives exemplified by cortisol downregulate the inflammatory response. Unlike mineralocorticoids, these steroid hormones are not involved in the regulation of blood electrolyte levels.

ANSWER: **glucocorticoids** (or **glucocorticosteroids**)

19. This song's cover by Megadeth alters its lyrics, allegedly because Megadeth's Dave Mustaine couldn't understand the words that Johnny Rotten sang on the original recording. For 10 points each:

[10] Name this song whose lyrics ask "Is this the MPLA / Or is this the UDA / Or is this the IRA." Its singer repeats the lyric, "Cause I want to be [the title ideology]."

ANSWER: "**Anarchy in the U.K.**"

[10] Along with "God Save the Queen," "Anarchy in the U.K." was a hit for this British punk band. Sid Vicious, a member of this band, died of an overdose before he could be tried for the murder of his girlfriend Nancy Spungen.

ANSWER: The **Sex Pistols**

[10] Paul Cook played this instrument for the Sex Pistols. Other rockers who played this instrument include The Who's Keith Moon and the Beatles' Ringo Starr.

ANSWER: **drums**

20. Answer the following about everyone's favorite royal family, the Bagrationi. For 10 points each:

[10] During the Middle Ages, the Bagrationi ruled a kingdom that shares its name and most of its area with this modern country. This nation reached its Golden Age under Queen Tamar.

ANSWER: **Georgia** (or the Kingdom of **Georgia**; or the Empire of **Georgia**)

[10] The most famous member of the Bagration family was probably the Russian general Pyotr, who died at the Battle of Klushino while fighting this Frenchman's infamously ill-advised winter invasion of Russia.

ANSWER: **Napoleon** I Bonaparte (prompt on **Bonaparte** alone)

[10] Pyotr Bagration's wife Catherine was also the mistress of this Austrian statesman and foreign minister most known for his organization of the Congress of Vienna.

ANSWER: Klemens (Wenzel) von **Metternich**

21. This character creates a paramilitary group called the Minute Men. For 10 points each:

[10] Name this literary character, a U.S. Senator who wins the presidential election on a populist platform offering a return to traditional values. He then establishes a totalitarian Fascist state, eventually leading to total civil war.

ANSWER: **Berzelius** "**Buzz**" **Windrip** (accept any or any combination of names)

[10] "Buzz" Windrip is a character in this writer's book *It Can't Happen Here*. This writer also wrote the novel *Babbitt*, about a realtor who lives in the fictional city of Zenith, Winnemac.

ANSWER: (Harry) Sinclair **Lewis**

[10] After *Babbitt*, Sinclair Lewis's most famous novel is probably this one about Carol Milford, who moves to the small town of Gopher Prairie and is stymied at every attempt to liberalize it.

ANSWER: **Main Street**

