Tossup

1. *Note to moderator: Please read the first sentence slowly.*
   For some reversible, infinite-step processes, this quantity equals the natural log of the volume ratio times the number of moles, the ideal gas constant, and temperature. This physical quantity accounts for the difference between the molar heat capacity of an ideal gas at constant pressure and the molar heat capacity at constant volume, the latter of which is equal to 3/2 times the ideal gas constant. The change in the internal energy of a system is equal to heat plus this quantity, and for a compressed gas, this quantity equals pressure times the change in volume. For 10 points, name this quantity which represents energy transfer done by acting against a force for a given distance.
   ANSWER: thermodynamic **work**

2. In one scene in this novel, a character who hears the words "falling plane" thinks he is in a falling airplane and assumes a fetal position. That character in this novel is taken to a hospital staffed by a nun who doesn't believe in God. This novel's protagonist learns German from Howard Dunlop, and shoots Willie Mink after learning about Mink's affair with his wife Babette. In this novel, College on the Hill professor Murray Jay Siskind wants to create a scholarly field centered on Elvis. A black cloud of Nyodene D is released after a train crashes, causing the "Airborne Toxic Event" in this novel. For 10 points, identify this novel about Hitler Studies professor Jack Gladney, written by Don DeLillo.
   ANSWER: ***White Noise***

3. It is not Bactria, but this region was the site of the Heliodorus column erected by Antialcidas. Antialcidas ruled a kingdom in this region that was founded by Menander I. The diplomat Megasthenes wrote a book describing this region, where a request to be treated "like a king" was made by King Porus. Taxila was a major city in this region, and lied along a river which gives this region its name. The city of Bucephala was founded in this region to commemorate a horse who died at the Battle of Hydaspes River. Greek excursions into this region were contemporaneous with the rule of Chandragupta Maurya. For 10 points, name this Asian subcontinent that was invaded by Alexander the Great.
   ANSWER: the **India**n subcontinent [or **Indika**; anti-prompt on more specific answers like "the Punjab" or "Pakistan"; prompt on "Asia"]

4. This artist included a yellow radiator in the bottom left of a work that shows the reflections of two rows of lights in the window of the title restaurant. In that work by this artist, a bowl of fruit sits on the windowsill, while a woman in a green coat and yellow hat sits at a table. Like Winslow Homer, this man was inspired by the coast of Maine, which resulted in paintings like *The Lighthouse at Two Lights*. This artist depicted restaurants in *Automat* and *Chop Suey*. His most famous work includes an ad for five-cent cigars above the windows of a diner in which three people sit at the bar. For 10 points, identify this American painter of *Nighthawks.*
   ANSWER: Edward **Hopper**

5. In order for some of these cells to develop, stromal cells must secrete stem cell factor, Kit, and IL-7. In the process of clonal deletion, these cells undergo negative selection but not positive selection. The AID enzyme helps these cells modify the isotype of their products via recombination, in a process called class switching. Rituximab attacks CD20 on the surface of these cells before they fully mature, which is exploited to treat lymphoma. After these cells develop into plasma cells, they produce Y-shaped proteins that recognize antigens. For 10 points, name this these antibody-producing lymphocytes, which are often contrasted with T cells.
ANSWER: **B** cells [or **B** lymphocytes]

6. This author wrote a story in which a woman agrees to marry Federigo after he offers his last possession, a falcon, for her to eat. In another of his stories, Lisabetta dies after her brothers discover the buried head of a slain lover in a pot of basil. He wrote about the recluse Alibech, who is taken to become the wife of Neerbal after she is taught how to put the devil back in Hell by the monk Rustico. This man wrote about Dioneo, who is granted the privilege of not having to follow the "days" theme. Other storytellers he created include Panfilo, Pampinea, and Filostrato. For 10 points, name this Italian writer who wrote about survivors of the Black Death telling stories in his *Decameron*.
ANSWER: Giovanni **Boccaccio** ["boh-KAH-chee-oh"]

7. Several characters in this film repeatedly chant "Ha! Ho! Hwa! Hwee! Ha! Ho! Ho! Ho!" as a prelude to a sort of gang initiation for the main character, who goes through the "Ring of Fire" atop "Mount Wannahockaloogie". An escape plan in this film is foiled by an AquaScum 2003. The protagonist of this film is taken on the "EAC" by Crush. In this film, Philip Sherman turns out to be a dentist. The protagonists of this film memorize the address "42 Wallaby Way," which they read off of some snorkeling goggles by the light of an anglerfish. For 10 points, identify this Pixar animated film in which Marlin, a clownfish, tries to rescue his son, the title character.
ANSWER: ***Finding Nemo***

8. This thinker's essay "On the Nature of Acquaintance" cites William James' proposal that substances are not intrinsically physical or mental, but differ only in their context. This champion of neutral monism was criticized in a paper by P.F. Strawson that posits sentences like "the table is covered with books." He criticized Meinong's theory of objects and Frege's idea of sense and reference in his essay "On Denoting." Godel's incompleteness theorem dealt a blow to this man's attempt to formulate axioms from which all mathematical truths could be derived. For 10 points, name this philosopher who wrote *Principia Mathematica* with Alfred Whitehead.
ANSWER: Bertrand Arthur William **Russell**

9. La Voisin was thought to be one of these people during the Affair of the Poisons. Johann Weyer argued that these people were insane and harmless. One of these people is depicted with "Vinegar Tom" on the cover of a book by self-proclaimed "general" Matthew Hopkins. These people are the subject of Johann Sprenger and Heinrich Kramer's treatise *Malleus Maleficarum*. The ducking stool was sometimes used on these people because they were believed to not sink in water. These people were thought to kiss the behinds of goats during their Sabbaths. For 10 points, identify these alleged practitioners of black magic who were targeted in trials like the ones in Salem, Massachusetts.
ANSWER: **witch**es [or **magician**s; or **sorceress**es; or **sorcerer**s; accept anything else suggesting devotees of the devil]

10. This opera includes an aria with several Fs so high that they are often nicknamed for that aria. The finale of this opera includes a chorale prelude on "Ach Gott, vom Himmel sieh darein." At the beginning of this opera, three women save its protagonist from a serpent. This opera includes a lengthy solo for glockenspiel or celesta in an aria in which a bird catcher wishes for a "maiden or a little wife." Pamina is instructed to kill Sarastro in this opera's aria "Der Hölle Rache" ["dehr HUHR-luh RAH-khuh"]. That aria is one of two sung by the Queen of the Night in this opera. For 10 points, name this Mozart opera in which Tamino and Papageno are saved from fire and water by the title instrument.
ANSWER: The **Magic Flute** [or Die **Zauberflöte**]

11. Vieta's formula can be used to show that the sum of these quantities always equals the trace. One consequence of the spectral theorem is that a change of coordinates can be applied so that these entities all lie along the diagonal. All of these numbers equal one for a rotation, since vector lengths remain unchanged. These are the numbers lambda so that A minus lambda times the identity matrix is singular, which makes these entities the roots of the characteristic polynomial. For 10 points, identify these numbers associated with a given square matrix, which are the coefficient of proportionality when a matrix is applied to an eigenvector.
ANSWER: **eigenvalue**s [prompt on "lambda" until mentioned]

12. Two men in the mythology of these people were given a message relayed through a hawk, which had eaten a snake, which had eaten a toad, which had eaten a louse. According to a text central to these peoples' beliefs, a god of earthquakes and a god of mountains were the children of an impostor who pretended to be the Sun and Moon and was named Vucub Caquix, or Seven Macaw. In this myth system, obstacles like the House of Razors and House of Bats are no match for the Hero Twins, who ultimately outwit the Lords of this myth system's underworld, Xibalba. The *Popol Vuh* is a compendium of the mythology of, for 10 points, what Mesoamerican civilization?
ANSWER: **Mayan**s [or K'iche **Maya**n civilization; or **Maya**n mythology]

13. The patriarch of this novel kicks his gloomy sister Ferula out of their house after finding her in the same bed as his wife. That character in this novel lends fifty pesos to Transito Soto to help her find her fortune in the city. A character in this novel gives birth to twins after her parents die in a car crash. Earlier in this novel, that character marries the fiancée of her green-haired sister Rosa the Beautiful after Rosa is fatally poisoned with brandy intended for her father Severo de Valle. In this novel, Blanca begins a relationship with Pedro Tercero despite her father Esteban's disapproval. For 10 points, name this novel that chronicles four generations of the Trueba family, written by Chilean author Isabel Allende.
ANSWER: The **House of the Spirits** [or La **Casa de los Espiritus**]

14. Supporters of this group were killed in Preston during an action planned by this group called the Plug Plot. Neo-druid William Price fled the country disguised as a woman after participating in this group's attack on the Westgate hotel. The National Land Company and the newspaper *Northern Star* were founded by one of this group's members, Feargus O'Connor. A militant group of them under John Frost led the Newport Rising. This group supported a document partly written by William Lovett that called for a secret ballot and universal male suffrage. For 10 points, name this 19th-century movement of British workers, named for the petition which they presented to Parliament.
ANSWER: **Chartist**s [or **Chartism**]

15. Before this man was born, his mother dreamt that a white elephant with six tusks entered her body. This man, whose birth is celebrated on Vesak, was locked away in a palace by King Suddhodana for twenty-nine years because of a prophecy given by a seer named Asita. This man's charioteer Channa showed him the "four sights" of an old man, a sick man, a dead man, and an ascetic. This man resisted the temptations of the demon Mara, and he achieved enlightenment while meditating under the Bodhi tree. At a sermon in Deer Park, this man revealed the Four Noble Truths. For 10 points, name this man who showed the path to nirvana in the religion he founded.
ANSWER: the **Buddha** [or **Siddhartha Gautama**; accept either underlined name]

16. Act II of this play begins with discussion of a storm that wrecked most of a Turkish fleet, though Montano soon spies the protagonist's surviving ship. After stabbing himself, one character in this play says he will "die upon a kiss." This play opens with the antagonist claiming that the protagonist is making "the beast with two backs" with Brabantio's daughter. After mishearing discussion of a handkerchief discovered by Bianca, the protagonist of this play becomes convinced his wife is having an affair with Cassio. For 10 points, identify this Shakespeare play in which the title "Moor of Venice" is tricked into smothering his wife Desdemona by the treacherous Iago.
ANSWER: *Othello* [or *The Tragedy of **Othello**, the Moor of Venice*]

17. This river is home to the enormous Huchen salmon. This river passes through two hydroelectric dams at the Iron Gates, which form part of an international border. A canal links this river to the more northerly Main ["MINE"] river. This river formed the Wachau valley, known for its wines and castles. Its tributaries include the Inn and the Prut. A city on this river is known for its Hofburg and Schönbrunn palaces. This river flows through both the Pannonian and Carpathian basins. This river originally separated two cities that merged to become a central European capital. For 10 points, name this river that passes through cities like Bratislava, Belgrade, Vienna, and Budapest before flowing into the Black Sea.
ANSWER: the **Danube** [or **Donau**; or **Dunav**; or **Dunarea**; be very lenient with vowels]

18. In SVT theory, the background vacuum of the universe is modeled as a BEC exhibiting this phenomenon. A loss of heat in one molecule's melting named for Pomeranchuk enables the creation of one substance that experience this effect. Quasiparticle excitations called rotons were invented in Lev Landau's Nobel-winning study of this phenomenon. Heat transfers in some substances experiencing this effect via the "second sound," and a Rollin film of one of them can display the Onnes effect. Below the lambda point, Helium-4 exhibits this phenomenon, enabling it to creep up walls. For 10 points, identify this phenomenon in which fluids at sufficiently low temperatures have no viscosity.
ANSWER: **superfluid**ity

19. This composer's violin concerto begins with the soloist playing a dissonant G against a quiet, slowly tremoloed D minor chord in the high strings, and it ends with what Tovey called a "Polonaise for polar bears." His tone poems include *The Oceanides*. His last works were written in the late 1920s, well before he died in 1957. His seventh and last symphony is a C Major work in one movement. The ending of one of his symphonic poems was turned into the national anthem of the title country. This composer of *Tapiola* also wrote the *Kullervo* symphony and the suites *Karelia* and *Lemminkainen*, which includes *The Swan of Tuonela*. For 10 points, name this composer of many tone poems inspired by the *Kalevala*, as well as *Finlandia*.
ANSWER: Jean **Sibelius** [or Johan Julian Christian **Sibelius**]

20. The perpetrator of this event did not buy ivory grips despite thinking that they would have looked better in a museum than wooden ones. An autopsy of its perpetrator's revealed that he suffered from phimosis. After this event, Alexander Graham Bell brought a metal detector that amusingly mistook the springs in a bed for a bullet. Because its perpetrator failed to receive a consulship in Paris, the Pendleton Civil Service act was passed after this event. Despite his argument that this event's victim died of unsanitary medical practices, Charles Guiteau was ultimately found guilty of murder. For 10 points, identify this 1881 event which resulted in the death of Chester A. Arthur's predecessor.
ANSWER: **assassination** of James A[bram] **Garfield** [accept obvious equivalents indicating the death or shooting of **Garfield**]

Extra

A character in this play admonishes the main character for spending three weeks making Christmas ornaments, which were subsequently ruined by the family cat. That character in this play also refers to the main character as a "little squirrel." The main character of this play insists that her husband watch her practice dancing the tarantella in order to prevent him from finding a letter from Krogstad. That letter was meant to blackmail this play's main character about a loan used to take a trip to Italy for Torvald Helmer's health. For 10 points, name this play that ends with Nora Helmer slamming the door on her family, written by Henrik Ibsen.
ANSWER: *A **Doll's House*** [or *Et **Dukkehjem***]

Bonuses

1. This country is in free association with self-governing states like Niue and the Cook Islands. For 10 points each:
[10] Name this Pacific island nation that governs the Kermadec islands, as well as two much larger islands just called the North Island and the South Island. Most of the world's Maori people live in this country.
ANSWER: **New Zealand** [or **Aotearoa**]
[10] This archipelago is also a dependent territory of New Zealand. These islands lie in the far north of New Zealand, just north of Samoa.
ANSWER: **Tokelau** [or the **Union Islands**]
[10] This Polynesian island nation lies just north of the Kermadec islands. It is the only kingdom in Polynesia.
ANSWER: Kingdom of **Tonga** [or Puleʻanga Fakatuʻi ʻo **Tonga**]

2. Name the following things about symphonies for solo piano, for 10 points each.
[10] This composer made famously difficult piano arrangements of orchestral works, including all of Beethoven's symphonies and Berlioz's *Symphonie Fantastique.*
ANSWER: Franz **Liszt** [or **Liszt** Ferenc; or Franz, Ritter von **Liszt**]
[10] Charles-Valentin Alkan wrote a *Symphony for Solo Piano*, included in one of his sets of works in this genre. Liszt also wrote a set of twelve "Transcendental" works in this genre, which focus on specific, difficult musical techniques.
ANSWER: **étude**s [or **study**; or **studies**]
[10] This earlier composer had included a keyboard version of one of his symphonies in his collection *Clavierstücke verschiedener Art*. His other keyboard works include a Fantasia in F-sharp Minor and a Solfeggietto in C Minor.
ANSWER: **C.** P. E. **Bach** [or **Carl** Philipp Emanuel **Bach**; accept **K.** or **Karl** for C./Carl; prompt on just "**Bach**"]

3. The protagonist first meets this character when his horse slips on an icy road. For 10 points each:
[10] Name this character, who employs the housekeeper Alice Fairfax at Thornfield Hall. Grace Poole sometimes gets drunk, allowing this man's first wife Bertha Mason to escape from the attic.
ANSWER: **Edward Rochester** [accept either name; accept "Mr. **Rochester**"]
[10] Rochester ends up marrying the protagonist of what Charlotte Brontë novel?
ANSWER: *Jane Eyre*
[10] This character, modeled on Charlotte's older sister Maria, dies of consumption after befriending Jane at the Lowood school.
ANSWER: **Helen Burns** [accept either name]

4. The Copenhagen Criteria determine whether or not a country can join this organization. For 10 points each:
    [10] Name this international organization established by the 1993 Treaty of Maastricht, the common currency of which replaced the French franc in 2002.
    ANSWER: **E**uropean **U**nion
    [10] A predecessor to the EU was a community established by the 1951 Treaty of Paris that aimed to make war "materially impossible" by creating a common market for these two industrial commodities.
    ANSWER: **coal** and **steel** [accept in either order; both required]
    [10] Europe Day commemorates the date of this French prime minister's namesake 1950 declaration, which proposed the Coal and Steel Community.
    ANSWER: Robert **Schuman**

5. While they appear to be lizards, these animals are the only surviving members of the order Sphenodontia. For 10 points each:
    [10] Name these reptiles native to New Zealand, of which there are only two species. These reptiles differ from lizards in that they have no external ears, and a much more primitive circulatory and respiratory system.
    ANSWER: **tuatara**s
    [10] Unlike those of lizards, the teeth of tuataras are simply sharp projections of the maxilla and this other bone, which makes up the lower jaw.
    ANSWER: **mandible**
    [10] Unlike snakes and tuataras, which have no true ears, most vertebrates perceive sound by "matching" this physical quantity of the sound stimulus between the tympanic membrane and the stapes footplate.
    ANSWER: **impedance** [accept "**impedance** matching"]

6. This philosopher cited the examples of the ancient kings Yao and Shun as virtuous leaders. For 10 points each:
    [10] Identify this man whose school of philosophy is called the school of "ru," and whose thought dominated East Asian culture for millennia. Later followers of this man's philosophy included Mencius.
    ANSWER: **Confucius** [or **Kongzi**; or **Kong Fuzi**; or **Kong** Qiu]
    [10] This book, published posthumously by Confucius's disciples, collects his aphorisms. This work is one of the "Four Books" of Chinese classics.
    ANSWER: ***Analects*** [or ***Lunyu***]
    [10] Confucius also wrote a commentary called the *Ten Wings* on this religious text. This work is often used for divinations and it contains sixty-four hexagrams.
    ANSWER: ***I Ching*** [or ***Book of Changes***; or ***Classic of Changes***; or ***Zhouyi***; or ***Yijing***]

7. This quantity becomes larger as the difference between the electronegativities of two bonded atoms becomes larger. For 10 points:
[10] Name this quantity, measured in debyes, that can be found by multiplying the magnitude of a charge by the distance between the charges.
ANSWER: **dipole moment** [do not accept or prompt on "dipole"]
[10] These weak intermolecular forces are formed by the generation of spontaneous and temporary dipoles. Unlike permanent dipole-dipole interactions and hydrogen bonds, these interactions exist between essentially all molecules.
ANSWER: **London dispersion** forces [prompt on partial answer]
[10] London dispersion forces get stronger as this property increases. This property represents how easily an electron cloud can be distorted by a nearby electrical field, and it is measured by dipole moment over electrical field.
ANSWER: **polarizability** [or word forms]

8. One character in this epic poem is a veteran of the Battle of Tobruk who learns that one of his ancestors was a Dutch spy who died in the Battle of the Saintes. For 10 points each:
[10] Name this poem in which Major Plunkett researches the history of the homeland of a beautiful maid named Helen. It is mainly set in its author's home country of Saint Lucia.
ANSWER: *Omeros*
[10] *Omeros* was written by this Caribbean author, and features himself as narrator. This author of the poem "A Far Cry From Africa" won the Nobel Prize in Literature in 1992.
ANSWER: Derek Alton **Walcott**
[10] In *Omeros*, a fisherman speaks to his ancestor Afolabe, a slave whose British captors rename him after this Greek hero. Helen reunites with a man named after this hero from the *Iliad* after his rival Hector dies in a car crash.
ANSWER: **Achilles** [or **Achille**]

9. This thinker argues that shareholder influence has given way to managerial power, a form of "accepted fraud" in his final essay *The Economics of Innocent Fraud*. For 10 points each:
[10] Name this Canadian-American economist who authored *The New Industrial State* and coined the term "conventional wisdom" in *The Affluent Society*.
ANSWER: John Kenneth **Galbraith**
[10] Chapter 11 of *The Affluent Society* concerns this phenomenon, in which consumers desire increase to the point that luxuries become necessities. Hayek criticized it in his essay "The *Non Sequitur* of [this effect]".
ANSWER: **dependence** effect
[10] Galbraith also wrote an economic history of the "Great Crash" in this year. Galbraith argued that the stock market crash of October 28th and 29th of this year played a major role in the onset of the Great Depression
ANSWER: **1929** [prompt on "29"]

10. Identify some important events in American history that took place in 1968, for 10 points each.
[10] The 1968 incarnation of this meeting featured the attempted nomination of Pigasus and the use of what Abraham Ribicoff called "Gestapo tactics on the streets of Chicago."
ANSWER: **Democratic National Convention** [or **DNC**]
[10] The 1968 DNC took place not long after the assassination of this former Attorney General by Sirhan Sirhan. His older brother's assassination was investigated by the Warren Commission.
ANSWER: **R**obert Francis **Kennedy** [or **RFK**; prompt on "Kennedy"]
[10] William Calley was convicted for his role in this 1968 event, which was codenamed Pinkville.
ANSWER: **My Lai** Massacre

11. Identify the following about the FX show *Archer*, for 10 points each
[10] In the first season of the show, it's mentioned that Dr. Krieger has a sex robot named "Fister Roboto," a reference to this delightful '70s band known for songs like "Renegade" and "Come Sail Away."
ANSWER: **Styx**
[10] A running joke in the show has Archer piss off Lana by referencing the song "Danger Zone," which, like "Take My Breath Away," appears in *this* film. This film stars Tom Cruise as the fighter pilot Maverick.
ANSWER: *Top Gun*
[10] Malory Archer frequently yells a phrase about attracting these creatures while angrily commenting on the mess in ISIS headquarters.
ANSWER: **ants** [as in, "That's how you get **ants!!**"]

12. This leader ended Balcha Safo's revolt by getting him drunk at a feast and bribing his soldiers. For 10 points each:
[10] Name this emperor revered as a messiah by Rastafarians. He was deposed by Italy's 1935 invasion of his country.
ANSWER: **Haile Selassie** I [or **Tafari** Makonnen Woldemikael]
[10] Haile Selassie ruled this African country. Once home to the Christian Axumite kingdom, this country's current capital, Addis Ababa, was founded by Menelik II.
ANSWER: **Ethiopia**
[10] This emperor ruled Ethiopia between 1889 and 1913. He rejected the terms of the Treaty of Wuchale, after which his forces defeated those of Italian General Baratieri at Adowa in 1896.
ANSWER: **Menelik II** [prompt on "Menelik"; accept **Sahle Maryam**]

13. An acid composed of hydrogen and this element is weak due to this element's extremely high electronegativity.
[10] Name this only halogen lighter than chlorine.
ANSWER: **fluorine** [or **F**]
[10] In the molecular orbital diagram for hydrogen fluoride, hydrogen's lone electron is combined with one of fluorine's 2p electrons in a molecular orbital named after this Greek letter.
ANSWER: **sigma**
[10] According to the molecular orbital diagram for neutral diatomic oxygen, removing an electron from the molecule will cause the bond order of the molecule to decrease by this amount.
ANSWER: **.5** [or **1/2** or **one half**]

14. Identify the following techniques of cinematography, for 10 points each.
[10] This type of shot involves framing the subject tightly in a way that often ignores surroundings. At the end of *Sunset Boulevard*, Norma Desmond declares that she is ready for this kind of shot.
ANSWER: **close-up**
[10] In this kind of shot, the camera is mounted on a moving platform on rails to keep a moving subject in the frame. In *Goodfellas*, there is a very long one of these shots through the Copacabana nightclub.
ANSWER: **tracking** shot
[10] In this type of shot, the frame appears tilted. *The Cabinet of Dr. Caligari* was the first film to use this kind of shot, which perhaps explains one of its alternate names.
ANSWER: **Dutch angle** [or **German angle**; or **Dutch tilt**; or **canted angle**; or **oblique angle**]

15. Name the following about poems related to the Civil War, for 10 points each.
[10] Julia Ward Howe wrote the lyrics to this song, set to the music of the 1860s hit "John Brown's Body." It begins "Mine eyes have seen the glory of the coming of the lord."
ANSWER: "**Battle Hymn of the Republic**"
[10] This author included a poem about the death of Abraham Lincoln called "O Captain! My Captain!" in his collection *Leaves of Grass*.
ANSWER: Walt **Whitman** [or Walter **Whitman**]
[10] The lines "Row after row with strict impunity / the headstones yield their names to the element" open this 1929 poem by Allen Tate, set in a Southern graveyard.
ANSWER: "**Ode to the Confederate Dead**"

16. *Note to moderator: Please do not reveal the answer to the second part when evaluating the answer to the first part.*
The descendants of survivors of this war are the subject of Le Roy Ladurie's micro-history *Montaillou*. For 10 points each:
[10] Identify this war sparked by the murder of Peter of Castelnau during which Arnaud Amalric said "kill them all, God will know his own" before the Massacre of Beziers.
ANSWER: **Albigensian** Crusade [accept, BUT DO NOT READ, **Cathar** Crusade]
[10] The Albigensian Crusade targeted French practitioners of this dualistic heresy, who practiced a sacrament called the *consolamentum* and advocated vegetarianism and abstinence.
ANSWER: **Cathar**s
[10] The Fournier registers provide a record of this institution's interrogation of suspected Cathars. In Spain, victims of this institution would be burned alive during auto-da-fés.
ANSWER: the **Inquisition**

17. The "lost" member of this group was either Merope, who married Sisyphus, or Electra, who grieved at the fall of Troy. For 10 points each:
[10] Name this group of seven sisters who were turned into stars after being pursued by Orion.
ANSWER: **Pleiad**es
[10] This companion to Artemis was turned into a bear after she was raped by Zeus. Her son Arcas was about to kill his mother in bear form before Zeus turned both of them into Ursa Major and Ursa Minor.
ANSWER: **Callisto**
[10] This dog, who always managed to catch his prey, was transformed into Canis Major after he was caught in a paradox trying to catch the Teumessian Fox, who could always evade his captors.
ANSWER: **Laelaps**

18. This artist painted the words "Ceci n'est pas une pipe," meaning "this is not a pipe," below an item that would appear to be a pipe, but is clearly only a painting of a pipe. For 10 points each :
[10] Name his Belgian surrealist who painted *The Treachery of Images*, as well as a series of paintings within paintings called *The Human Condition*. He depicted a train coming out of a fireplace in *Time Transfixed*.
ANSWER: René François Ghislain **Magritte**
[10] Magritte also created this series of paintings that depict streets lit by a single lamp.
ANSWER: The **Empire of Light** [or The **Empire of Lights**; or L'**Empire des lumières**]
[10] In *The Son of Man*, Magritte depicted a man in a suit whose face is not entirely visible, due to *this* obstruction.
ANSWER: there is a green **apple** in front of his face

19. Identify the following about works of early European science fiction, for 10 points each.
[10] Alquist is the last surviving human in this play, in which the automatons Primus and Helena fall in love. It was written by Karel Čapek ["CHA-peck"] and introduced the word "robot" in its modern usage.
ANSWER: *R.U.R.* [or *Rossum's Universal Robots*]
[10] This Russian novel is about a man named D-503 who lives in the "One State" under a ruler called "The Benefactor." It was written by Yevgeny Zamyatin.
ANSWER: *We* [or *Miy*]
[10] This author wrote about a 120,000-foot tall alien who comes to the Earth and laughs when he hears about the philosophy of Thomas Aquinas in his story "Micromégas." He also wrote novels like *Zadig* and *Candide*.
ANSWER: **Voltaire** [or Francois Marie **Arouet**]

20. This part of the earth is nearest the surface at mid-ocean ridges. For 10 points each:
[10] Identify this ductile section of the mantle that lies below the lithosphere.
ANSWER: **asthenosphere**
[10] This upper section of the lithosphere is the outermost layer of the earth. The continental type of this layer is primarily granite, while the oceanic type is mostly basalt.
ANSWER: **crust**
[10] The mesosphere, located in the inner mantle, is home to many minerals with this crystal structure, named for calcium titanate, which is itself named after a 19th century Russian.
ANSWER: **perovskite** minerals/structure

Extra

A story of this kind is about a man who postpones revenge on his father's killer to let him dig a tunnel through a mountain, and eventually finds that he cannot kill that man, as he now considers him his teacher. For ten points each:
[10] Name this genre of short parable-like texts, collected in books like *The Blue Cliff Record*.
ANSWER: **koan**s [or **gong an**; or **kong an**]
[10] Koans are a part of this branch of Mahayana Buddhism. The three contemporary Japanese schools of this religion are Rinzai, Soto, and Obaku.
ANSWER: **Zen** Buddhism [or **chan**; or **seon**]
[10] Koan study may be used to help reach this state of "sudden enlightenment" in Zen Buddhism, referring to the awareness of one's *kensho*.
ANSWER: **satori** [or **wu**]

Evidence for this substance is found in the flat rotation curves of spiral galaxies. For ten points each:
[10] Name this material, which comprises about 27% of the mass-energy density of the Universe. It is named because its lack of light emission means we can't see it with telescopes.
ANSWER: **dark matter**
[10] One possible candidate for what makes up dark matter are these particles. They are much smaller than the contrasting proposed MACHOs.
ANSWER: **WIMP**s [or **W**eakly **I**nteracting **M**assive **P**articles]
[10] Because WIMPs would move very slowly, dark matter comprised of them would have low kinetic energy and thus be described by this adjective. Dark matter of this type is almost certainly the kind that makes up this universe.
ANSWER: **cold** dark matter