

1. **The first step in the creation of these objects is ambipolar diffusion. They create jets known as Herbig-Haro objects, which are expelled into the H-2 regions where they often form. They produce energy in the triple-alpha process, the proton-proton chain, or the (*) CNO cycle.** A plot of the effective temperatures against the luminosities of these objects is the Hertzsprung-Russell diagram, which contains the "main sequence" of their life spans. For 10 points, name these massive objects that undergo fusion, examples of which include Sirius and the Sun.

ANSWER: stars [accept protostars until "triple alpha"; do not accept any other more specific answers]

026-09-10-02102

2. **In one play by this author, Hugo Barine kills Hoederer (HOY-dur-er), but is unaware that the Party wants to create a martyr. This author of *Dirty Hands* wrote about the sweetish sickness that afflicts Antoine Roquentin in his novel (*) *Nausea*.** His play about the interactions of Ines, Garcin, and Estelle inspired the saying "Hell is other people." For 10 points, name this author of *No Exit* and other French existentialist works.

ANSWER: Jean-Paul Charles Aymard Sartre

020-09-10-02103

3. **Aides under this man were ordered to always be in possession of a comb, and referred to said comb as "the football." In June 2009, he participated in a musical comedy dubbing himself a "Superstar" as a fundraiser for a cancer charity. He became infamous for proclaiming "I'm not (*) giving it up for nothing" in reference to a privilege he found "golden" in tapped 2008 telephone calls.** For 10 points, name this former governor of Illinois who is facing charges of corruption for trying to sell a US Senate seat.

ANSWER: Milorad Blagojevich (blu-GOY-uh-vich) [or Rod Blagojevich]

002-09-10-02104

4. **Enzymes in this pathway can be activated in the presence of reduced thioredoxin (THY-oh-ree-DOX-in). One enzyme in this pathway, glyceraldehyde-3-phosphate dehydrogenase (GLISS-ur-AL-duh-hide THREE FOS-fate dee-hie-DRAW-jen-ase), uses (*) NADPH as an electron donor.** In addition to six molecules of G3P, this process also produces one carbon available to be converted into a sugar. Rubisco is a catalyst in, for 10 points, what cycle of reactions that takes place in chloroplasts and are part of the dark reactions?

ANSWER: Calvin-Benson Cycle [prompt on dark reactions before it is read]

040-09-10-02105

5. **One member of this organization gave the "Ballot or the Bullet" speech and was suspended for using the phrase "chickens coming home to roost" to describe the Kennedy assassination. This organization planned the Day of Absence in parallel with the Million Man March. Moving towards radicalism under its current leader (*) Louis Farrakhan, it was earlier expanded by a man who was born as Elijah Poole. For 10 points, name this black-superiority group, founded by the mysterious Wallace Fard, whose spokesman in the 1960s was Malcolm X.**

ANSWER: the Nation of Islam

034-09-10-02106

6. He commemorated “the founder of Danish literature” by composing the *Holberg Suite*. “Wedding Day at Troldhaugen” and “March of the Trolls” are part of his piano *Lyrical Pieces*. “Solweig's Song,” (*) “Morning Mood” and “In the Hall of the Mountain King” are in the first suite of his most notable work. For 10 points, name the romanticist composer of the incidental music for *Peer Gynt*, a play by Henrik Ibsen, a fellow Norwegian.

ANSWER: Edvard Grieg

034-09-10-02107

7. In one novel by this author, the Magistrate attempts to return a crippled, blinded girl to her people following Colonel Joll's brutality. This author of *Waiting for the Barbarians* wrote about Lucy welcoming her father David Lurie to her home, after David loses his job as a professor for (*) seducing a student. For 10 points, name this South African author of *Disgrace* and a work about a harelipped gardener, *Life & Times of Michael K*.

ANSWER: John Maxwell Coetzee

022-09-10-02108

8. The two primary forms of this religion are known as Rada and Petro. Its ceremonies include the kanzo and the taking of the ason, the latter of which involves ascending to the priesthood as either a mambo or a houngan (HOON-gahn). This religion reveres the (*) crossroads as the intersection between the earthly and spirit worlds, and venerates lwa (LO-uh) such as Ogoun (OH-"goon") and Legba. In this religion, nasty lwa (LO-uh) can create zombies. For 10 points, name this religion, most popularly practiced in Haiti.

ANSWER: voodoo [or voudon]

003-09-10-02109

9. This language's written form was derived from Nabatean script. It is spoken by the Mizrahi Sephardic population. This language's Maghrebi variety borrows some words and pronunciations from Berber and is spoken in areas like (*) Algeria and Morocco. The earliest example of this language in writing may be on a tomb unearthed in Syria. The Koran is written in this language. For 10 points, name this Semitic language commonly spoken in the Middle East and North Africa, and which is the liturgical language of Islam.

ANSWER: Arabic

032-09-10-02110

10. This man created a confederation of Greek states called the Panhellenion. A cult dedicated to his young companion Antinous (AN-tin-ooce) arose after the youth's death. This emperor saw to the completion of a massive temple of Zeus begun centuries earlier, the (*) Pantheon, after which he assumed the title Olympius. He put down the Bar Kokhba (bar COKE-buh) revolt in Judea after succeeding Trajan as emperor. For 10 points, name this Roman emperor who built a namesake wall in Northern Britain.

ANSWER: Hadrian [or Adrian; or Caesar Traianus Hadrianus Augustus; or Publius Aelius Hadrianus]

030-09-10-02111

11. This man made use of an inverted telescope to size the proportions of his hometown, which he depicted in a painting of buildings on the river Schie (SHE). This artist of *Girl Interrupted at Her Music* depicted his own backside as he sits down to paint in his work *The* (*) *Art of Painting*. He showed a woman looking over her left shoulder, wearing a blue headdress while a piece of white jewelry hangs from her ear. For 10 points, name this Dutch artist who painted *View of Delft* and *Girl with a Pearl Earring*.

ANSWER: Jan Vermeer [or Johannes Vermeer]

024-09-10-02112

12. **This movement consulted with German academic Rudolf von Gneist to create a constitution. One uprising against this movement was led by Saigo and was called the Satsuma rebellion. An important document of this movement was the (*) Charter Oath. Reforms resulting from this movement included the repartitioning of the daimyo's land. The Tokugawa shogunate was overthrown and the emperor was returned to power during, for 10 points, what nineteenth century movement which Westernized Japan?**

ANSWER: Meiji restoration [or Meiji Ishin]

032-09-10-02113

13. **This man names an algorithm that takes numbers a and b and returns the answer of the algorithm on numbers b and a mod b. That algorithm computes the greatest common divisor. He proved that there are infinitely many primes, and he wrote a work in which the first (*) four books deal with plane geometry and include the Pythagorean Theorem and the parallel postulate. For 10 points, name this Greek mathematician who wrote *Elements* and is considered the father of geometry.**

ANSWER: Euclid of Alexandria

040-09-10-02114

14. **In this country, a conspiracy to assassinate King Joseph I was crushed by the Marquis de Pombal. One dictator of this country was an economist who established the Estado Novo. This country, which was ruled by Antonio (*) Salazar, was controlled by the Braganza Dynasty until the twentieth century. It was called Lusitania by the Romans and was given the land east of the line of demarcation in the Treaty of Tordesillas (tor-deh-SEE-yas). For 10 points, name this Iberian country which suffered a 1755 earthquake in its capital of Lisbon.**

ANSWER: Portugal

015-09-10-02115

15. **This nation's northern end is Jaffna Peninsula. This nation is nearly connected to its northwestern neighbor by a chain of limestone shoals called Adam's Bridge, but is in fact separated by the Palk Strait and the Gulf of Mannar. Although the (*) Sinhalese people are the majority in this country, a minority ethnic group sponsors the militant Tamil Tigers. For 10 points, name this island nation that was once called Ceylon and is located in the Indian Ocean.**

ANSWER: Democratic Socialist Republic of Sri Lanka [or Shri Lamka Prajatantrika Samajaya di Janarajaya; or Ilankai Jananayaka Choshalichak Kutiyarachu]

034-09-10-02116

16. **The Maxwell-Boltzmann distribution gives the distribution of "root mean square" form of this quantity for classical particles. This quantity is crossed with magnetic field strength to yield the (*) Lorentz force. Centripetal (sen-TRIP-et-uhl) force is proportional to the square of this value. The second time derivative of this quantity is jerk, while its first time derivative is acceleration. For 10 points, what quantity is the vector equivalent of speed?**

ANSWER: velocity [prompt on speed]

034-09-10-02117

17. **This painter contrasted a figure placing forehead to knee with a hand holding an egg in his work *The Metamorphosis of Narcissus*. Multiple images of a colorfully garbed Venus de Milo appear in this artist's *Hallucinogenic Toreador*. This creator of the *Mae West Lips Couch* and the (*) *Lobster Telephone* painted a work in which ants swarm a pocket watch and three clocks appear to melt. For 10 points, name this mustachioed Spanish Surrealist who painted *The Persistence of Memory*.**

ANSWER: Salvador Dalí [or Salvador Domingo Felipe Jacinto Dalí i Domènech]

063-09-10-02118

18. **This poet wrote of "great wings beating still above the staggering girl" in his "Leda and the Swan." This author of a series of poems about Maud Gonne wrote of a place "that is no country for old men" in another poem. This author of (*) "Sailing to Byzantium" warned that "a terrible beauty is born" in a poem about an unsuccessful uprising. This poet wrote "things fall apart, the center cannot hold" in "The Second Coming." For 10 points, name this Irish poet and author of "Easter, 1916."**

ANSWER: William Butler Yeats

045-09-10-02119

19. **The Palermo stone is an early record of the existence of this deity, whose popularity skyrocketed after the Ennead and Ogdoad merged. This deity's wife traveled to Byblos to find his body after his brother locked him in a coffin and threw it into the river. A fish devoured one of his organs after this figure's outraged brother (*) chopped and dismembered him into fourteen pieces. Thirteen of those pieces were recovered; the fourteenth was replaced by a golden penis by his wife, Isis. For 10 points, name this Egyptian god of the dead and father of Horus.**

ANSWER: Osiris [or Usiris; or Asar; or Aser; or Ausar; or Ausar; or Wesir; or Usir; or Usire; or Ausare]

002-09-10-02120

20. **In one work by this man, the murdered Donald Willsson tries to expose corruption in Personville, Montana. That novel by this man is about the Continental Ops and is titled (*) *Red Harvest*. Julie Wolf's murder is investigated by Nick and Nora Charles in his *The Thin Man*. Another of this man's characters has the client Brigid O'Shaughnessy, who tries to seduce the detective Sam Spade. For 10 points, name this author of the "hard boiled" novel *The Maltese Falcon*.**

ANSWER: Samuel Dashiell Hammett

027-09-10-02121

21. **One character in this work obsessively makes shoes in order to relieve his guilt at not being able to save a man from the guillotine. Another of its characters recognizes her brother Solomon but is blackmailed into secrecy after it is revealed that Solomon has been spying for the British and the (*) French. That woman, Miss Pross, shoots Madame Defarge in order to protect Lucy Manette, who is in love with Charles Darney. For 10 points, name the novel, in which Sydney Carton sacrifices himself to save Charles, a work by Charles Dickens.**

ANSWER: A *Tale of Two Cities*

032-09-10-02122

1. This disciple of Saint-Simon is quoted on the Brazilian flag. For 10 points each:

[10] Name the French sociologist, who outlines his Law of Three Stages in *The Course of Positive Philosophy*.

ANSWER: Auguste **Comte**

[10] Comte was a key influence on this other Frenchman, who founded the first department of sociology at Bordeaux. He theorized that the division of labor in society creates organic solidarity.

ANSWER: Émile **Durkheim**

[10] Another important contribution of Durkheim was a case study of this phenomena. He classified them into egoistic, altruistic, anomic, and fatalistic types.

ANSWER: **suicides**

034-09-10-02201

2. Name these German philosophers, for 10 points each:

[10] This thinker argued for a new breed of philosophers in *Beyond Good and Evil* and declared that "God is Dead" in *The Gay Science*.

ANSWER: Friedrich Wilhelm **Nietzsche**

[10] This author of *Lectures on the Philosophy of History* proposed that the conflict between the thesis and antithesis was solved by the synthesis, thus formulating the dialectic, in his *Phenomenology of Spirit*.

ANSWER: Georg Wilhelm Friedrich **Hegel**

[10] This student of Husserl underwent a philosophical "turn" and formulated the "being for whom being is in question", or *dasein* (DAH-zyne), in *Being and Time*

ANSWER: Martin **Heidegger**

005-09-10-02202

3. For the stated points, answer the following questions about sporting events.

[10] For 10, this author described watching Roger Federer as "Religious Experience," and created the Enfield Tennis Academy in *Infinite Jest*.

ANSWER: David Foster **Wallace**

[5/5] Riots over the result of a 1969 World Cup qualifying match turned into a full-scale war between two Central American countries. Name them for 5 points each.

ANSWER: Republic of **El Salvador** [or Republica de **El Salvador**] and Republic of **Honduras** [or Republica de **Honduras**]

[10] For 10, this artist depicted a horse race in 1821's *Race for the Derby at Epsom* and a group of survivors of a shipwreck in *The Raft of the Medusa*.

ANSWER: Theodore Jean Louis Andre **Gericault**

003-09-10-02203

4. The victims of this event had signed a petition asking for an eight-hour workday and improved working conditions. For 10 points each:

[10] Name this 1905 massacre in which a procession led by George Gapon was fired upon by Russian police upon reaching the Winter Palace. It shares its name with two separate clashes in Ireland.

ANSWER: **Bloody Sunday**

[10] Bloody Sunday touched off a 1905 revolution against this Russian tsar, who was later overthrown in the 1917 Russian Revolution.

ANSWER: **Nicholas II**

[10] After the 1905 revolution, Nicholas II appointed this statesman as Prime Minister. This man dissolved the Duma and introduced a court system whose speedy and shady trials led to the gallows being nicknamed this man's "necktie."

ANSWER: Pyotr Arkadyevich **Stolypin**

003-09-10-02204

5. This story is followed by one about St. Cecilia's martyrdom. For 10 points each:

[10] In what tale does the rooster Chanticleer escape his the fox after having a prophetic dream about his death?

ANSWER: The **Nun's Priest's Tale**

[10] The Nun's Priest's Tale is one of the tales in this unfinished Middle-English work by Geoffrey Chaucer, whose other important speakers include the Wife of Bath and the Knight.

ANSWER: The **Canterbury Tales**

[10] In this second tale in the poem, Nicholas tricks John into believing that a flood is coming and sleeps with his wife while John hides in a tub.

ANSWER: The **Miller's Tale**

034-09-10-02205

6. It confirmed results from the earlier Avery-MacLeod-McCarty experiment. For 10 points each:

[10] Name this experiment that showed that DNA was the carrier of genetic information by using *E. coli* infected with radioactive viruses.

ANSWER: **Hershey-Chase** experiment

[10] The experiment used the T2 variety of this type of viruses that infect bacteria.

ANSWER: bacteri**phages**

[10] This phage that infects *E. coli* was discovered by Esther Lederberg and is an important molecular biology tool. It is known by a Greek letter.

ANSWER: **lambda** phage

001-09-10-02206

7. The Palaelogus, Isaurian, and Macedonian were among the dynasties which ruled this empire. For 10 points each:

[10] Name this empire, which persisted until the 1453 conquest of Constantinople by Ottoman Turks.

ANSWER: **Byzantine** Empire [or **Byzantium**; or **Eastern Roman** Empire]

[10] Leo the Isaurian was one of the Byzantine emperors who instigated this movement for the destruction of religious images.

ANSWER: **iconoclasm**

[10] Macedonian Dynasty member Basil II became known as the "slayer" of this ethnic group after mutilating a captured army of Tsar Samuel at the Battle of Kleidion.

ANSWER: **Bulgars**

019-09-10-02207

8. This man painted the *New Orleans Cotton Exchange*. For 10 points each:

[10] Name this French painter who depicted a lonely pair drinking in *L'Absinthe*, and also executed many scenes of ballet dancers.

ANSWER: Edgar **Degas** [or Hilaire-Germain-Edgar De **Gas**]

[10] This other Frenchman who was influenced by Impressionism painted several views of Mont Sainte-Victoire (mon san vee-TWAR), as well as many still-lives with fruit.

ANSWER: Paul **Cezanne**

[10] Cezanne also depicted many groups of fleshy, naked people doing this activity, under bent trees near the edge of a lake.

ANSWER: **bathing** [or *The Bathers*; or *The Large Bathers*]

005-09-10-02208

9. This equation is the less general form of the Eyring equation. For 10 points each:

[10] What equation, whose pre-exponential factor is the product of the collision frequency and the steric factor, is used to calculate the reaction rate?

ANSWER: **Arrhenius** equation

[10] The Arrhenius plot, based on the Arrhenius equation, describes a linear relationship between the natural logarithm of the reaction rate and this quantity, which is a function of a certain physical property.

ANSWER: the **inverse** of the **temperature** [or **one over temperature**; or **1/T**]

[10] In addition to temperature, the reaction rate is governed by this chemical property, which determines the slope in the Arrhenius plot. It is increased by inhibitors and decreased by catalysts.

ANSWER: **activation energy** [accept **threshold energy**]

034-09-10-02209

10. This author wrote about the common failure of the "best laid schemes of mice and men" in "To a Mouse." For 10 points each:

[10] Name this eighteenth-century poet best known for his use of the Scottish dialect.

ANSWER: Robert **Burns**

[10] This Burns poem claims that "we'll take a cup of kindness yet" for the title time period. It is often sung on New Year's Eve.

ANSWER: "**Auld Lang Syne**"

[10] This other Burns poem compares his love to "a melody that's sweetly played in tune" and the title flower "that's newly sprung in June."

ANSWER: "A **Red, Red Rose**"

003-09-10-02210

11. This man's Fantaisie-Impromptu resembles "Moonlight Sonata". For 10 points each:

[10] Name this French-Polish composer of many ballades and nocturnes and the "Minute Waltz".

ANSWER: Frederic **Chopin** [or Fryderyk Franciszek **Chopin**]

[10] For piano, Chopin wrote a "Revolutionary" one of these musical exercises. Franz Liszt (LIST) wrote "Transcendental" pieces of this type.

ANSWER: **etudes**

[10] Chopin wrote many piano pieces based on two Polish folk dances that are in 3/4 (THREE FOUR) time. One has an example nicknamed "Heroic," the other is a dance that accents the second beat. Name either.

ANSWER: **mazurka** or **polonaise**

005-09-10-02211

12. It is noted that two parents in this novel died in India. For 10 points each:

[10] Name this novella in which Mrs. Grose takes care of two children, Flora and Miles, whom she suspects are in contact with the ghosts of Peter Quint and Miss Jessel.

ANSWER: *The **Turn of the Screw***

[10] *The Turn of the Screw* was written by this American author of *The Golden Bowl*, *The Portrait of a Lady*, and *Washington Square*.

ANSWER: Henry **James**

[10] Henry James's protagonists Daisy Miller and Roderick Hudson both die in this Italian city, home to the ancient satiric poets Horace and Juvenal.

ANSWER: **Rome** [or **Roma**]

024-09-10-02212

13. This man participated in the massacre of Captain William Fetterman in 1866, and he refused to agree to the provisions of the Second Treaty of Fort Laramie. For 10 points each:

[10] Name this Ogala Sioux united his troops with Sitting Bull in a 1876 battle.

ANSWER: **Crazy Horse** [or **Ta-sunko-witko**]

[10] Crazy Horse and Sitting Bull badly defeated General George A. Custer in this 1876 battle in Montana.

ANSWER: **Little Bighorn**

[10] This colonel pursued Custer following Little Bighorn, and he captured Geronimo. As a general, he landed 3,500 American troops at Guanica, Puerto Rico in the Spanish-American War.

ANSWER: Nelson **Miles**

030-09-10-02213

14. He names an insulating enclosure, or "cage," formed by a mesh of conducting material. For 10 points each:

[10] Name this scientist who names the SI unit of capacitance and the charge on one mole of electrons.

ANSWER: Michael **Faraday**

[10] Faraday is usually given credit for discovering this effect, the creation of voltage by a conductor moving through a static magnetic field or a magnetic field changing around a conductor.

ANSWER: electromagnetic **induction**

[10] Induction through a moving wire drives the functioning of this device, a progenitor of the electric generator.

ANSWER: **dynamo**

032-09-10-02214

15. Their namesake was a son of Zeus and Eurymedousa. For 10 points each,

[10] Name this band of warriors that were originally ants, whose name now refers to loyal, unquestioning followers.

ANSWER: **Myrmidons**

[10] During the Trojan War, the Myrmidons were commanded by this man, the slayer of Hector.

ANSWER: **Achilles**

[10] Achilles gave this king of Mysia a wound that would not heal; according to some accounts, Achilles later healed the wound in exchange for this man's services as a guide.

ANSWER: **Telephus**

040-09-10-02215

16. This mineral, the most abundant in the crust after Feldspar, has “smoky” and “rose” varieties. For 10 points each:

[10] What mineral, the main component of sandstones, is widely used watches and crystal oscillators because of its piezoelectric property?

ANSWER: **quartz**

[10] Quartz is the crystalline form of this compound, whose other mineral forms include tridymite and cristobalite. Opal is the hydrate form of it.

ANSWER: **silica** [accept **silicon dioxide**; or **SiO₂**]

[10] Quartz is seven on this scale of hardness, which gives a standard for comparison in scratch tests. Talc is 1 and diamond is 10 on this scale.

ANSWER: **Mohs** hardness scale

034-09-10-02216

17. The religious movement called “I AM” Activity was founded on a mountain in this state. For 10 points each:

[10] Name this western state home to such peaks as the aforementioned Mount Shasta and its second highest peak, Mount Williamson.

ANSWER: **California**

[10] This tallest mountain in California is the highest in the contiguous United States. It was named for the state geologist, despite an attempt during World War II to rename it after Churchill.

ANSWER: Mount **Whitney**

[10] This city in California is located on Humboldt Bay. Known as the “Queen City of the Ultimate West,” it is near the Coast Redwood preserve. It was also a shipping site during the gold rush.

ANSWER: **Eureka**

052-09-10-02217

18. This work depicts six figures with nooses around their necks. For 10 points each:

[10] Name this statue that commemorates the willingness of six prominent citizens of a French city to sacrifice their own lives during the Hundred Years' War.

ANSWER: *The **Burghers of Calais*** [or *Les **Bourgeois de Calais***]

[10] This French sculptor who depicted a pensive sitter in his *The Thinker* sculpted *The Burghers of Calais*.

ANSWER: Auguste **Rodin** [or François-Auguste-René **Rodin**]

[10] Rodin was accused of casting from a live model in this metallic statue of a nude man holding his hands near his head.

ANSWER: *The **Age of Bronze*** [or *L'**age d'airain***]

026-09-10-02218

19. King Harsha conquered a large part of the north of this modern day country, which also contained the Maratha Confederacy and the Haidar Ali-ruled Mysore kingdom. For 10 points each:

[10] Name this modern day country, that at other times was ruled by the Chola Dynasty and Vijayanagar kingdom.

ANSWER: Republic of **India** [or **Bharat**]

[10] This greatest Mauryan ruler and son of Bindusara managed to conquer the kingdom of Kalinga before converting to Buddhism and becoming peaceful.

ANSWER: **Asoka** Maurya

[10] These proclamations are some of the earliest evidence of Buddhism in India. They proclaim Ashoka's conversion and contain moral and ethical teachings.

ANSWER: **Rock** edicts [or **Pillar** edicts]

048-09-10-02219

20. Name these German writers for 10 points each.

[10] These two brothers collected folk poetry and fairy tales in compilations such as *Deutsche Sagen*.

ANSWER: Jacob and Wilhelm **Grimm**

[10] He wrote about veterans in *The Three Comrades* and *The Road Back*. Paul Baumer dies during the last minutes of World War I in his *All Quiet on the Western Front*.

ANSWER: Erich Maria **Remarque**

[10] A mob of the title craftsmen frees Jaeger in this playwright's work *The Weavers*. His play *The Sunken Bell* focuses on the artist Heinrich.

ANSWER: Gerhart **Hauptmann**

063-09-10-02220

21. Name these ancient Greek places, for 10 points each.

[10] In this city, the *ephors* annually declared war on the helots, and boys were housed in harsh barracks in order to prepare for such military exploits as the delaying action at Thermopylae.

ANSWER: **Sparta**

[10] This city briefly dominated Greece at the head of the Boetian (bo-EE-shun) League, until its elite Sacred Band was destroyed at Chaeronea (KAR-oh-NAY-uh) by Philip of Macedon.

ANSWER: **Thebes**

[10] This neutral, holy island was the location of the treasury held by the Athenian Empire; Pericles's removal of the fortune to Athens was one cause of the Peloponnesian War.

ANSWER: **Delos**

019-09-10-02221