

### Tossups

0. Upon being reminded of the existence of this group, a character says “You know what sucks? Everything” as he forms the word “SUX” using fridge magnets. The first of these characters shoots fireballs and remarks “Pirates are in this year!” Another member of this group punched a hole in the moon and attended Vegan Academy. This group includes the (\*) twin brothers Kyle and Ken Katayanagi. A massive sledgehammer is summoned from another dimension to fight Roxy Richter, the only female member of this group. A sword called the “Power of Self-Respect” was used to defeat the final member of this group, Gideon Gordon Graves, who is revealed to be the manager of Sex Bob-Omb. For 10 points, name this group that Scott Pilgrim must fight to win the love of Ramona Flowers.

ANSWER: the Seven Evil Exes [accept descriptive answers, such as “Ramona Flowers’ exes”; do not accept “seven ex-boyfriends”] <KG>

1. In a painting of this war, a wounded soldier leans on a drum next to a fallen horse which has just been bayoneted in the neck, while a soldier on the left is being bayoneted next to a cannon. A commander in this war kneels next to his horse in an Arnold Friberg painting. Another painting of this war is sometimes censored in textbooks because of a (\*) watch fob that is often mistaken for genitalia, and inspired a sonnet in which each line is an anagram of the title. That painting of this war includes a figure in a red shirt who may be a woman disguised as a man, and shows a man standing at the front of a boat as rowers try to push chunks of ice away. John Trumbull painted many scenes from this war. For 10 points, name this war depicted in *Washington Crossing the Delaware*.

ANSWER: American Revolutionary War <WN>

2. Factories employing members of this ethnic group often used “lectors” who read newspapers and literature for the workers’ entertainment. Frank White’s gubernatorial campaign issued television advertisements involving members of this ethnic group who had rioted at Fort Chaffee. Bryan O. Walsh helped develop a campaign supported by Tracy Voorhees which centered on children of this ethnic group. The immigration policy surrounding members of this nationality is nicknamed (\*) “wet feet, dry feet.” Elián González is a member of this ethnic group, which made up much of Tampa’s Ybor City neighborhood and participated in a mass exodus to the United States in the Mariel Boatlift. For 10 points, name this ethnic group whose members primarily live in Florida and include Marco Rubio.

ANSWER: Cuban-Americans <KG>

3. In a 1950s adaptation of a literary work in this genre, a poet helps a ninety-nine year old woman on a park bench relive the beauty of her youth. A drowned gardener returns as a ghost to haunt a princess for making him play a fake instrument in another work in this genre. A spirit stuck on Earth performs a dance symbolizing the phases of the moon in a third play of this type, so that a fisherman will return her feather mantle. Arthur Waley’s translation popularized the title (\*) *Damask Drum* for one of these plays. In *At the Hawk’s Well*, W.B. Yeats used many of the conventions of this genre, such as zither and gong accompaniment. These plays are typically separated by comedic interludes known as *kyogen*, and were established as a genre by the father-son combo Kanami and Zeami in the 14th century. For 10 points, name this mask-incorporating Japanese dramatic genre.

ANSWER: Noh [or Nogaku] <AG>

4. A bullet-holed limousine has been preserved to commemorate an assassination attempt on this man that lightly injured several of his country's astronauts. This politician is the namesake of his country's third and final constitution, which updated a 1936 document. This politician explained his best-known initiative in a speech before the Fifth Congress of the Polish Union Worker's Party. Jokes about this man's weakness for winning easy medals reached an all-time high when his (\*) trilogy of memoirs won the Lenin Prize. This politician's foreign minister Andrei Gromyko signed the SALT I treaty with the US. The "Age of Stagnation" begun under this leader continued under his successor, Yuri Andropov. For 10 points, name this head of the Soviet Union from 1964 to 1982, who justified intervention in communist countries with his namesake doctrine.

ANSWER: Leonid Brezhnev <AG>

5. This book's original English translation, by H. M. Parshley, has been widely criticized for its inaccuracies. This book notes ironically that its subject "enjoys that incomparable privilege: irresponsibility." This book ends by exhorting humanity to "unequivocally affirm their brotherhood." This book's analyses of particular writers include "D. H. Lawrence or Phallic Pride" and "Montherlant or the Bread of Disgust," which appear in its first volume, "Facts and Myths." Its second volume, "Lived Experience," discusses childhood and (\*) motherhood and imagines a world in which women have equality with men. This book famously states "One is not born, but rather becomes, a woman." For 10 points, name this classic of second-wave feminism by Simone de Beauvoir.

ANSWER: *The Second Sex* [or *Le deuxième sexe*] <WN>

6. In some experiments, these objects can be supported on a Minusheet perfusion system. In another technique, these objects can be classified into regions of interest demarcated by "gating." Sets of sixteen squares occupying the corners of a three-by-three laser-etched grid can be observed to count these objects, and technologies like FaCS can be used to sort them. Depending upon the density of these objects, and upon whether they are "adherent" or "suspension," there are different ways of (\*) "passaging" them. Addition of calcium chloride to these objects allows them to be transfected. Jurkat and HeLa are examples of immortalized "lines" of these objects typically used in culturing them in a laboratory hood. For 10 points, name these objects first discovered by Robert Hooke using microscopy, the basic organizational unit of life.

ANSWER: cells <AG>

7. In one poem, this author described a flower that was seen "like chased gold and pearl," one that "rested on the ground," and one that "twirling, seemed to say, 'Here love rules.'" He wrote a patriotic poem predicting that "virtue against fury / shall take up arms" for "ancient valor / is not dead" in his countrymen's hearts. One of his best known poems begins with an image of "Clear, sweet fresh water." This poet wrote that "he ends well, who dies loving well," in a poem that the Earl of (\*) Surrey translated as "Love, that doth reign and live within my thought." Sections labeled "In life" and "In death" divide this poet's best known collection, which consists of 366 poems and begins "You who hear the sound, in scattered rhymes." For 10 points, name this Italian poet who celebrated Laura in the *Canzoniere* and popularized the division into eight and six lines in his namesake sonnet.

ANSWER: Petrarch [or Francesco Petrarca] <AG>

8. The Fuoss-Eigen reaction and the Eigen-Wilkins mechanism describe substitution reactions involving these compounds. Those substitution reactions involving these compounds generally come in associative, dissociative, or interchange mechanisms. In the trans effect, when these compounds are oriented trans to each other, the rate of their substitution increases. In the nephelauxetic effect, these compounds decrease the (\*) B Racah parameter. These compounds name a field theory that combines molecular orbital theory and crystal field theory. When bonded to more than one atom, these compounds are called polydentate and act as chelators. Eta

notation is used to describe the hapticity of these molecules. For 10 points, name these molecules that bind to central metals in coordination complexes.

ANSWER: ligands [anti-prompt on specific complexes like “octahedral” or “square planar”; accept coordination complex until the word oriented, but prompt on it after until the word field] <SD>

9. This figure asked a divine architect to build him and his wife a palace of gold, but ended up giving it away during a housewarming ceremony for the palace itself. This figure gave a buffalo to protect his son Chattran, or Vishnumaya, fathered with a girl he thought was Koolivaka. This deity gave one of his devotees the sword Chandrahas. A hymn called this deity’s Tandava Stotram was dedicated to him by that devotee, the (\*) demon Ravana, who was crushed by this god’s home Mount Kailash after he had insulted this deity’s bull Nandi. This god cut off the head of a son of his, and gave that son an elephant head as a replacement. This father of Ganesh is represented by a lingam, has a third eye, and is married to the goddess Parvati. For 10 points, name this Hindu destroyer deity, the third member of the Trimurti in addition to Brahma and Vishnu.

ANSWER: Shiva <SD>

10. A 1967 book about these things was designed by Quentin Fiore and included pages printed backwards so they had to be read in a mirror; that book is subtitled “An Inventory of Effects.” The effects of these things were categorized as enhancement, obsolescence, retrieval or reversal in a book about their laws. Borrowing ideas from Gestalt psychology, a thinker characterized these things as figures which operate through their ground, or context. These things were divided into (\*) “hot” and “cool” types on the basis of how much participation they require in a book about “understanding” them. A thinker best known for studying these things wrote *The Mechanical Bride* and *The Gutenberg Galaxy*. For 10 points, name these things studied by Marshall McLuhan, which include movies and television.

ANSWER: media <WN>

11. This leader referenced the Kent State shootings as proof that the United States lacked the moral authority to criticize his country in his June 9 speech. A son of this leader campaigns for the rights of disabled persons, having become paraplegic after jumping or being thrown out of a window during a torture session. This leader was placed under house arrest after being accused of planning a 1976 protest triggered by the removal of displays of mourning. In 1992, he took a tour of the southern part of his country. He famously stated that it doesn’t (\*) matter whether a cat is black or white, as long as it catches mice. He enacted a previous leader’s Four Modernizations, and formulated the “one country, two systems” principle. As *de facto* leader, he suppressed the Tiananmen Square protests. For 10 points, name this “paramount leader” of China throughout the 1980s.

ANSWER: Deng Xiaoping <WN>

12. Toluca International Airport was briefly closed in anticipation of the arrival of this man. An enemy of this man referred to himself in the third person while claiming that he would “kick his ass” rather than negotiate, and remarked that this man used the U.S. “like it was a vacuum cleaner.” Along with a man nicknamed “The Barbie,” this man, who was found lying in bed with his former beauty queen wife at a beachfront resort in 2014, led a five-day protest at (\*) Altiplano. This man supposedly placed a 100-million-dollar bounty on Donald Trump, who he earlier claimed would “swallow his words.” This man, who met with Sean Penn for a clandestine *Rolling Stone* interview, earlier disappeared from a shower area and rode off on a motorbike in a July 2015 escape from prison. For 10 points, name this leader of the Sinaloa Cartel who was captured once again in early January 2016.

ANSWER: “El Chapo” Guzmán [accept either underlined part; or Joaquín Archivaldo Guzmán Loera; or “Shorty” Guzmán] <KG>

13. This novel's protagonist is accosted by a man saying the word "Water" and tries to silence him before he realizes he's asking for a drink of water for his sick child. The narrator of this novel creates a packet of documents with which he tries to piece together the ending of the story, including a letter written by the title character and a letter from the title character's parson father. This novel features a butterfly collector who advises the royal Mohammed Bonso, named (\*) Stein. Its protagonist falls in love with a mixed-race woman named Jewel. In this novel, a raid by the pirate Gentleman Brown leads to the death of Doramin's son, Dain Waris. Its title character ends up in Patusan after shamefully abandoning his ship *Patna*, and has his story told by the author's recurring character Charles Marlow. For 10 points, name this Joseph Conrad novel.

ANSWER: Lord Jim <WN>

14. James Yorke's paper about how this property "implies chaos" extends Sharkovsky's theorem about points with this property. Dirichlet characters are multiplicative functions that also have this property. Along with sensitivity and transitivity, chaos requires that the set of points with this property is dense. Any orbit on a closed, bounded subset of a plane either has this (\*) property or asymptotically approaches an orbit with this property, and any closed trajectory in phase space will have this property. For a map  $T$ , if  $T$  to the  $n$  of  $x$  equals  $x$ , then  $T$  has this property at  $x$ . On an infinite domain, Fourier series are only applicable to functions which have this property. The function  $f$  of  $x$  has this property if  $f$  of  $x$  equals  $f$  of  $x$  plus  $T$  for all  $x$ . For 10 points, name this property of functions that repeat after some finite interval.

ANSWER: periodic [accept word forms] <BM>

15. This composer used themes from "Home Sweet Home" in a scene where a woman asks to be led to the castle where she was born. That opera by this composer ends with the challenging soprano cabaletta "Coppia iniqua." The title character of another opera by this composer gets distracted while playing piano with the Marquise of Birkenfeld, who is revealed to be her mother. Another of his characters sings "Udite, udite, o rustici" to make a (\*) sales pitch to some villagers. This composer called for the tenor to sing nine high Cs in "Ah! mes amis," in his opera about Marie, who is raised as an army's canteen girl. In his best-known opera, Dr. Dulcamara sells Bordeaux wine to Nemorino, who sings about a single tear he saw in Adina's eye in "Una furtiva lagrima." For 10 points, name this composer of *The Daughter of the Regiment* and *The Elixir of Love*.

ANSWER: Gaetano Donizetti [or Dominico Gaetano Maria Donizetti] <AG>

16. An account of one of the earliest of these events in Europe was written by Johannes Fründ, the clerk of the court in the French city of Valais. A widespread one of these events began in the Basque region of Logroño after a group involved in it met at a meadow called Akelarre. During the English Civil War, Matthew Hopkins gained popularity for organizing these events. A treatise concerning these events was written by (\*) Heinrich Kramer. While returning home from his marriage to Princess Anne of Denmark, the future James I of England was caught in sea storms, which led him to initiate a series of these events in North Berwick, Scotland. In 1634, the physician William Harvey examined four women involved in these events, clearing them of any wrongdoing. For 10 points, name these events carried out by early English colonists in the New World at Salem.

ANSWER: witch trials [or witch hunts; accept burning witches or obvious equivalents] <JM/KG>

17. In one religious tradition, the five shekhinas and the Father of Greatness rule over a realm named for this substance. In an epistle addressed to the Son of the Wolf, Baha'u'llah compared two Baha'i martyrs to this substance. According to Kabbalistic beliefs, the *keter* produces 620 objects made of this substance. The Original Man in Manichaeism defended a world named for this substance. A (\*) glass-enclosed object that produces this substance is compared to Allah in the twenty-fourth sura of the Qu'ran. In Islam, angels are said to be made of this substance. In the Sermon on the Mount, Jesus calls his disciples the "salt of the earth" and this substance "of the world." For 10 points, name this substance, the first thing that came into being after God formed the Heaven and Earth.

ANSWER: light [do not accept “fire” or “flame”] <KG>

18. This is the key used in all seven movements of Bach’s early church cantata *Christ lag in Todes Banden*. The third movement features a section marked “Maggiore - Theme russe” in Beethoven’s eighth string quartet in this key. This is the key of a piece with a 2/4 “Larghetto” central movement, Elgar’s *Serenade in Strings*. The opening movement of a symphony in this key is an “Adagio” in 4/8 time that transitions to an “Allegro molto” in 2/4 time. Mendelssohn had the soloist enter almost right away in his (\*) *Violin Concerto* in this key. A symphony in this key, whose second movement “Largo” in common time features a famous English horn solo, was influenced by Native American music and African-American spirituals, and was subtitled “From the New World” by its composer Dvorak. For 10 points, name this relative minor key of G major, which has one sharp.

ANSWER: E minor [do not accept or prompt on “E” until the word “minor” is read, after which you can accept it] <AG>

19. The Landau gauge and Feynman gauge differ by a term in the propagator for these particles, and that internal propagator has two spacetime indices. Like gluons, these particles are on shell when their energy squared is equal to their momentum squared. In December ATLAS and CMS announced possible signs of a resonance at around 750 GeV which decays to two of these particles. A virtual one of them is exchanged in both (\*) Bhabha and Moller scattering. Electrons may be emitted when these particles’ energy exceeds the work function, and they interact with electrons in Compton scattering. QED is the theory of their interactions with charged particles. These massless particles have energy equal to Planck’s constant times their frequency. For 10 points, name this carrier of the electromagnetic force.

ANSWER: photon <BM>

20. A poem in this collection uses the metaphor of laying out a mousetrap to demonstrate that “a man can never avenge himself / On the monstrous ogre Life.” Another poem in this collection describes a vicious cycle in which a boy steals an apple, can’t find work because he is labeled a thief, and is forced to steal more to survive. This collection includes a poem warning “degenerate sons and daughters” that “Life is too strong for you -- it takes life to love Life.” That poem is about Lucinda (\*) Matlock. The best-known poem in this collection describes a woman “wedded... not through union, but through separation” to Abraham Lincoln. This collection’s first poem asks “Where are Elmer, Herman, Bert, Tom, and Charley,” and answers “All, all are sleeping on the hill.” For 10 points, name this collection of musings by deceased residents of an Illinois town, by Edgar Lee Masters.

ANSWER: Spoon River Anthology <AG>

Tiebreaker: A woman with this name says that “Love has pitched his mansion in the place of excrement” after being told “Those breasts are flat and fallen now, those veins must soon be dry.” Another character with this name “cast herself down into such a pure depth” when she was sad; that character is described as a “maimed darling” and a “skittery pigeon” by the speaker, who remembers her “neckcurls, limp and damp as tendrils.” A woman of this name is mourned by a speaker who is (\*) “neither father nor lover” after being thrown by a horse. A “crazy” woman of this name talks with a bishop in a W. B. Yeats poem. For 10 points, give this name of a woman who is the subject of an elegy by Theodore Roethke.

ANSWER: Jane [accept Crazy Jane] <WN>

MLK 2016: Amusing Subtitle  
Packet 10

**Bonuses**

1. Electromagnetic waves travelling into this region will be reflected at the point where their frequency equals the plasma frequency. 10 points each:

[10] Name this layer of the atmosphere where high-energy UV rays strip electrons from atoms, creating the region's namesake charged particles.

ANSWER: **ionosphere**

[10] This is the name given to the process of high-energy UV rays splitting oxygen and other molecules into atoms. Those atoms may then be further ionized.

ANSWER: **photodissociation** [or **photolysis** or **photodecomposition**, prompt on dissociation]

[10] The rate of photodissociation depends on the number of photons absorbed, which depends on photon flux. This function takes into account that higher layers absorb photons to give the dependence of photon flux on altitude.

ANSWER: **Chapman** profile or function <BM>

2. This incident resulted in the deaths of many relatives of Chief Logan, including his brother John Petty, wife Mellana, and nephew Molnah. For 10 points each:

[10] Name this massacre of Mingo Indians carried out on the orders of Jacob and Daniel Greathouse. By provoking retaliatory attacks by Native Americans, this massacre helped lead up to Lord Dunmore's War.

ANSWER: **Yellow Creek** Massacre

[10] This other Native American tribe that inhabited the Ohio River valley helped the Mingo fight back. Their Chief Cornstalk led an attack in the Battle of Mount Pleasant, and their other leaders included Tenskwatawa and Tecumseh.

ANSWER: **Shawnee**

[10] The Shawnee and Mingo fought this colony in Lord Dunmore's War. Its legislature was known as the House of Burgesses, and the first settlement in this colony was Jamestown itself.

ANSWER: **Virginia** <SD>

3. This object's name was coined by Albert C. Outler, rather than by the man with whom it is identified. For 10 points each:

[10] Name this concept that refers to the four principles of scripture, tradition, reason, and experience that its namesake used to understand theology.

ANSWER: **Wesleyan Quadrilateral** [or **Methodist Quadrilateral**]

[10] John Wesley founded Methodism with the help of George Whitefield, who was an active preacher during the first of these religious revivals.

ANSWER: **Great Awakenings**

[10] John Wesley followed a type of Methodism named for this Dutch theologian active in the Protestant Reformation, as opposed to the Calvinist Methodism followed by George Whitefield.

ANSWER: Jacobus **Arminius** <SD>

4. The Prime Minister explained these events by saying "When a big tree falls, the earth shakes." For 10 points each:

[10] Describe these 1984 events, such as the Honth-Chillar massacre. Jagdish Tytler was blamed for inciting some of these events, which the Akal Takht considers a genocide.

ANSWER: 1984 **anti-Sikh riots** [accept anything mentioning the killing/massacre/etc. of Sikhs]

[10] The anti-Sikh riots broke out in response to the assassination of this Indian Prime Minister, the daughter of Jawaharlal Nehru who authorized the Smiling Buddha nuclear test.

ANSWER: **Indira Gandhi** [prompt on "**Gandhi**"]

[10] Indira Gandhi was assassinated by her Sikh bodyguards in retribution for her attack on the Golden Temple in Amritsar, an operation known by this name.

ANSWER: Operation **Blue Star** <WN>

5. The speaker looks “far out into the pregnant night” and hears a “solemn booming gun” fired by the title vessels in this author’s poem “Ships that Pass in the Night.” For 10 points each:

[10] Name this African-American poet who wrote of an object that “grins and lies” and “hides our cheeks and shades our eyes” in “We Wear the Mask.” Maya Angelou took the title “I know why the caged bird sings” from a line in his poem “Sympathy.”

ANSWER: Paul Laurence **Dunbar**

[10] Many of Dunbar’s poems, such as “Little Brown Baby” and the “Ivy” poems in the collection *Oak and Ivy*, use this literary device to capture the language spoken by their subjects.

ANSWER: **dialect** [or **vernacular** English; or **African-American Vernacular English**; or **AAVE**; grudgingly accept “**ebonics**”]

[10] Dunbar was championed by this poet, whose own dialect poems include one in which a girl is repeatedly warned about the “Gobble-uns ‘at gits you / Ef you / Don’t / Watch / Out!,” titled “Little Orphant Annie.”

ANSWER: James Whitcomb **Riley** <AG>

6. This artist included an Anatolian carpet featuring Cancer and Pisces, symbolizing the Council of Florence, and the patron saints Cosmas and Damian, among other elements of Medici propaganda, in his San Marco Altarpiece. For 10 points each:

[10] Name this Italian painter whose masterpiece is an Annunciation scene set in a portico, featuring an angel with multicolored wings. He was also a priest.

ANSWER: **Fra Angelico** [or **Guido** di Pietro]

[10] A less brightly-colored annunciation by Fra Angelico is named for this Tuscan city, which a century later was the birthplace of the artist who filled the ceiling of the grand salon of the Palazzo Barberini with his *Allegory of Divine Providence*.

ANSWER: **Cortona** [accept Pietro da **Cortona**]

[10] Fra Angelico’s Annunciations were among the first in Western art to demonstrate this principle, the ability to represent the three-dimensional view of the world on a two-dimensional canvas.

ANSWER: linear **perspective** <AG>

7. A chapter of Kierkegaard’s *Either/Or* discusses the eroticism of this art form. For 10 points each:

[10] Name this art form. In the Romantic era, philosophers and other writers debated the merits of its “absolute” form, a debate which has been written about recently by Jerrold Levinson.

ANSWER: **music**

[10] Music is one of the art forms studied in this branch of philosophy, which investigates the nature of art and beauty.

ANSWER: **aesthetics**

[10] Kant’s work on aesthetics, the *Critique of Judgment*, posits that there are exactly four reflective judgments: the beautiful, the sublime, the good, and this category, which includes judgments of the tastiness of food.

ANSWER: the **agreeable** [or **angenehm**] <WN>

8. In this play, Dolabella muses that “men are but children of a larger growth” upon being banished by his friend and romantic rival. For 10 points each:

[10] Name this reworking of Shakespeare’s *Antony and Cleopatra*, in which the aides Alexas and Ventidius try to separate the lovers.

ANSWER: **All for Love**

[10] This first official poet laureate and author of *All for Love* allegorized contemporary England in his long poems *The Hind and the Panther* and *Absalom and Achitophel*, and poked fun at Thomas Shadwell in “MacFlecknoe.”

ANSWER: John **Dryden**

[10] Dryden worked with this godson of Shakespeare on an adaptation of *The Tempest* titled *The Enchanted Island*. This author wrote the libretto to the first English opera, *The Siege of Rhodes*, and did not finish his epic poem *Gondibert*.

ANSWER: Sir William **Davenant** [or William **D'Avenant**] <AG>

9. A concerto for this instrument written to celebrate Allied victory in World War I is divided into two movements representing cypresses and laurels. For 10 points each:

[10] Name this instrument that dominates the “Poco adagio” and “Maestoso” sections of an 1886 two-movement symphony, the third by its composer.

ANSWER: pipe **organ**

[10] This French composer of *Cypres et lauriers* and the *Organ Symphony* quoted his *Danse macabre* in his *Carnival of the Animals*.

ANSWER: Camille **Saint-Saens** [or Charles-Camille **Saint-Saens**]

[10] An extremely fast “tempo primo” third movement caps off this A minor Saint-Saens piece, which unusually begins with a short chord from the orchestra followed by the main theme stated by the soloist.

ANSWER: **Cello Concerto No. 1** [or Saint-Saens’s **first cello concerto**; accept Saint-Saens’s **op. 33**] <AG>

10. Answer the following about the structure of special relativity, for 10 points each.

[10] Special relativity centers around the invariance of spacetime under boosts and these kinds of transformations, which mix two spatial components. This kind of motion involves particles revolving around an axis.

ANSWER: **rotation**

[10] SO(3, 1) describes Lorentz transformations and may be complexified to SO(4) which is isomorphic to two copies of this group. This group describes rotations of spin half particles, while SO(3) works for spin one.

ANSWER: **SU(2)** [pronounced S U two]

[10] The transformations in SO three comma one preserve this object that can convert between covectors and vectors. In special relativity it’s described with a mostly plus or mostly minus signature.

ANSWER: **metric** <BM>

11. Answer the following about some cubes that aren’t on the University of Michigan campus, for 10 points each.

[10] A huge blue cube in Copenhagen serves as one of these buildings. Frank Gehry used several curved pieces of steel in his design for one of these places in Los Angeles named for Walt Disney.

ANSWER: **concert halls** [or **music halls** and other obvious equivalents; prompt on “**theaters**” or “**auditoriums**”]

[10] Piet Blom designed a row of houses with interlocking, elevated cubes in this city. Ossip Zadkine’s sculpture of a man with a gaping hole in his chest represents the destruction of this city.

ANSWER: **Rotterdam**

[10] A residential complex in this city consists of 354 identical cubic units arranged and placed together in different orientations, and was designed by Moshe Safdie for this city’s World’s Fair.

ANSWER: **Montreal** <KG>

12. In plants, duplexes of this genetic material are methylated by Hua-Enhancer 1 and transported out of the nucleus by Hasty. For 10 points each:

[10] Name this single-stranded non-coding genetic material, derived from hairpin-forming transcripts. Unlike a very similar type of molecule, it does not require full complementarity to base-pair with mRNA after being incorporated into the RISC (“risk”).

ANSWER: **miRNA** [or **microRNA**]

[10] This enzyme with RNase III and PAZ domains cleaves the precursors of both miRNA or the closely-related siRNA during RNA interference.

ANSWER: **Dicer** [or endoribonuclease **Dicer**; or **helicase with RNase motif**; or **Dicer 1**]



[10] miRNAs act as triggers for latency in the “simplex” virus in this family, which can cause both cold sores and blisters in the genitals.

ANSWER: herpesviruses [or Herpesviridae] <NC/AG>

13. Turgesius, a chief of these people, captured Dublin in the 9th century. For 10 points each:

[10] Name these Norse seafarers who conducted many raids in Ireland with their longships.

ANSWER: Vikings

[10] The Viking Age is sometimes dated from the Viking destruction of the abbey on this Holy Island, where a famous illuminated gospel manuscript was produced.

ANSWER: Lindisfarne

[10] This Irish town, founded as a Viking settlement, was the site of the most successful of the uprisings during the Irish Rebellion of 1798. In 1649, this town was sacked despite David Sinnen's attempt to surrender.

ANSWER: Wexford <WN>

14. This quantum system's ground state energy was estimated in 1929 by Egil Hylleraas using a 10 parameter wavefunction. His work was improved by C. L. Pekeris, who used 1078 parameters. For 10 points each:

[10] Name this system, whose Schrodinger equation can't be solved because of an electrostatic repulsion term that includes the term  $1/r^2$  (“r-sub-1-2”). Ignoring that term gives an energy of -109 eV, while the real value is -79 eV.

ANSWER: helium atom

[10] Modeling helium as a hydrogen-like atom containing one electron lets you use this formula and its namesake constant to predict wavelengths of spectral lines produced by electron transitions.

ANSWER: Rydberg formula

[10] Multi-electron systems like helium also require you to consider this principle, which states no two electrons in an atom can have the same four quantum numbers. Two electrons in the same orbital thus must have different spins.

ANSWER: Pauli exclusion principle <SD>

15. The period at the end of the Republican Calendar was named for this term. For 10 points each:

[10] Give this term that referred to the working class during the French Revolution. It derives from the tendency for lower-class people to wear trousers instead of breeches.

ANSWER: sans-culottes

[10] The sans-culottes were influential in ending this period of the Revolution, during which Maximilien Robespierre executed thousands of political dissidents.

ANSWER: Reign of Terror

[10] During the Reign of Terror, the term “republican marriage” referred to executions via this cause of death that were carried out in Nantes in late 1793 and early 1794.

ANSWER: drowning [accept word forms] <KG>

16. Answer the following about psychologists named Aronson, for 10 points each.

[10] Elliot Aronson is known for his research on this phenomenon, also studied by Leon Festinger, in which individuals are uncomfortable because they hold contradictory beliefs or values.

ANSWER: cognitive dissonance

[10] Elliot Aronson also developed this teaching technique, in which a class is divided into small groups to work on problems, and then combine their solutions to solve a larger problem.

ANSWER: jigsaw classroom

[10] Claude Steele and Joshua Aronson demonstrated this effect, a type of self-fulfilling prophecy in which individuals underperform when made to feel like they are representing their race or other social group.

ANSWER: stereotype threat <WN>

17. This character is called “Jesus” by the other members of a gang called the Dusters. For 10 points each:

[10] Name this character who decides to stop growing up at the age of three, and whose voice can break glass.

ANSWER: **Oskar Matzerath** [accept either name]

[10] Oskar Matzerath is the protagonist of *The Tin Drum*, the first novel in the Danzig Trilogy by this German Nobel laureate.

ANSWER: Günter **Grass** [or Günter Wilhelm **Grass**]

[10] Despite his innocence, Oskar lets himself be convicted of the murder of Sister Dorothea after he finds one of these things belonging to her in a field.

ANSWER: a ring **finger** <WN>

18. This woman bribed men to claim an oracle ordered the sacrifice of her step-son Phrixus, but Phrixus was rescued by a ram sent by his real mother, Nephele. For 10 points each:

[10] Name this second wife of King Athamas, who was transfigured into Leucothea while her son Melicertes became Palaemon after her husband went mad and killed her son Learchus.

ANSWER: **Ino**

[10] Hera caused Athamas to go mad because Ino raised this Greek god of wine, the son of her sister Semele. His Roman name is Bacchus.

ANSWER: **Dionysus**

[10] While in the court of Athamas and Ino, Dionysus was forced to behave in this manner so Hera wouldn’t recognize him. Achilles did the same thing while hiding at Skyros.

ANSWER: **pretending to be a girl** [or common word equivalents saying he disguised himself as a female] <SD>

19. These two countries share the Yungas forests, which are notably home to an incredibly dangerous road. For 10 points each:

[10] Name these two countries that share a high plateau region known as the Altiplano. They both have major Quechua populations.

ANSWER: **Bolivia** and **Peru** [or Plurinational State of **Bolivia** and Republic of **Peru**]

[10] Bolivia and Peru share this lake, which is the world’s highest navigable lake. The Desaguadero River transports variable amounts of water out of this lake, sometimes causing the nearby Lake Poopó to dry up completely.

ANSWER: Lake **Titicaca**

[10] This settlement near Lake Titicaca is home to the Gates of the Sun and Moon, which are both made of large stones.

ANSWER: **Tiwanaku** <KG>

20. This author wrote about his Jewish lover Rita in several poems, such as one that begins “Between Rita and my eyes there is a rifle.” For 10 points each:

[10] Name this Palestinian poet, who repeated the command “Write down! I am an Arab” in his poem “Identity Card.”

ANSWER: Mahmoud **Darwish**

[10] Darwish admired this Hebrew poet, but described competing with him to be “the owner of the language of this land.” This champion of colloquial Hebrew penned the collection *Open Closed Open* and wrote about an Israeli’s visit to his hometown in Germany in *Not of This Time, Not of This Place*.

ANSWER: Yehuda **Amichai**

[10] In his prose poem “Memory for Forgetfulness,” Darwish linked the violence of the Lebanese Civil War to this destructive August 6, 1945 event explored in “notes” by Kenzaburo Oe and in a journalistic masterwork by John Hersey.

ANSWER: the dropping of the atomic bomb on **Hiroshima** [prompt on “dropping the **atomic bomb** on Japan” or similar answers] <AG>

Extra: Answer the following about some things the EPA is taking a lot of heat for, for 10 points each.

[10] The EPA knew about the problems in this city's water supply as early as April 2015. Fire hydrants in this city have been photographed bursting with brown water contaminated with iron and lead.

ANSWER: **Flint**, Michigan

[10] The Navajo Nation still demands compensation from the EPA after gallons of mining waste were leaked into this state's Animas River, turning it yellow. Its governor, John Hickenlooper, declared a state of emergency after that incident.

ANSWER: **Colorado**

[10] In September 2015, a U.S. Court of Appeals reversed the EPA's approval of sulfoxaflo, a chemical implicated in the increased number of deaths among these animals. Imidacloprid is also linked to the steady decline in populations of these animals.

ANSWER: honeybees [or **Apis** *mellifera*] <KG>