1. MRN recruits ataxia telangi·ectasia mutated during this process to facilitate gamma H2AX production. Lig-4 complexes with XRCC4 during a form of this process. 53BP1 is countered by the activity of BRCA1 when this process is performed during S or G2 phase. A protein kinase complex used for this general process is also needed for telomere stability and B and T cell maturation and is localized to specific sites by its Ku70 and Ku80 proteins. A defect in a type of this process causes xeroderma pigmentosum. Pathways in this process include nonhomologous end-joining, which addresses double-strand breaks such as those caused by ionizing radiation. For 10 points, name this process in which lesions on a namesake genetic molecule are patched.
ANSWER: **DNA repair** [or **nucleotide excision repair**; or **NER**; or **base excision repair**; or **BER**; or **mismatch repair**; or **homology-directed repair**; or **HDR**; or **nonhomologous end-joining or NHEJ** until "nonhomologous" is read; prompt on homologous recombination; prompt on partial answers] <Smart>

2. One character in this novel intentionally overeats to gain weight because his wife hurts him every time he tries to beat her. Another character in this novel scars his face to match that of the girl he wants to marry, a member of an African tribe that worships roofleaves, the Olinka. This novel's protagonist starts a business making pants after moving to Tennessee with a singer known as the Queen Honeybee. A woman in this novel is sentenced to twelve years in jail for attacking the mayor after his wife asks her to be their maid. In this novel, the protagonist discovers her husband has been hiding letters from her sister Nettie, which are recovered with help from Shug Avery. For 10 points, name this epistolary novel in which Celie addresses many letters to God, a work of Alice Walker.
ANSWER: The *__Color Purple__* <Collins>

3. The base of a statue of one of these people includes a globe inscribed with the zodiacal signs of Taurus, Capricorn, and Scorpio. A wreath of oak leaves is held above one of these people in the upper tier of a dual-level *gemma* carved from Arabian onyx. A small Cupid rides on a dolphin at the feet of one of these people in a sculpture featuring an intricately-rendered breastplate. Michelangelo made the centerpiece of his design for the Capitoline Piazza a 175 AD bronze sculpture of one of these men that served as a prototype for Renaissance equestrian statues. The first of these rulers commissioned a monument to peace called the Ara Pacis. For 10 points, name these rulers depicted in portrait sculptures such as the Augustus of Primaporta.
ANSWER: **Roman emperor**s [or **emperor of Rome**; or **Imperator**; or **Princeps**; or **Caesar**; or **Augustus** until it is read; prompt on emperors; prompt on Roman rulers] <Gupta>

4. This man challenged Henry Frank to a debate conducted in Yiddish after Frank accused this man of antisemitism. When newspaper deliverymen in his city went on strike, this man read the Sunday Dick Tracy comics out loud on the radio show *Talk to the People*. A namesake committee established by this man found that smoking marijuana "does not lead to addiction in the medical sense of the word". After he gave a radio address promising to "drive the bums out of town", this man started a campaign to find and destroy slot machines owned by Frank Costello. Along with George Norris, this man co-sponsored a bill that banned employers from forcing workers to sign yellow-dog contracts. For 10 points, name this Italian-American mayor of New York who names a New York City airport.
ANSWER: Fiorello **LaGuardia** <Lou>

5. Luke Timothy Johnson argues for an early dating for this book since it makes no reference to events in Jesus's life, suggesting lack of access to the Gospels. In one section, this work counters early Christian antinomianism by arguing that the Binding of Isaac story demonstrates the necessity of circumcision and obedience. This book is cited as the inspiration for the Christian practice of anointing the sick, and it claims that it is "pure joy" to "face trials of many kinds". Martin Luther called this document an "epistle of straw" because of its claim that "faith without works is dead". This book's author shares his name with an apostle who is the patron saint of Spain. For 10 points, name this non-Pauline epistle whose author is traditionally identified with Jesus's brother, called "the Just".
ANSWER: Epistle of **James** <Marvin>

6. A character in this series is poisoned alongside her husband by her former lover, a Brazilian baron, after marrying a perfumer for his money. In a work of this series, a sculptor falls in love with an actress only to find out that she is a castrato, sending the sculptor into a murderous rage after Zambinella. In another work in this series, a Polish sculptor named Wenceslas Steinbock marries Hortense Hulot (or-TONSE yoo-LOW). The title object of a work in this series grows smaller every time that it grants a wish to Raphael de Valentin (vah-lon-TAN), and a story in it was analyzed by Roland Barthes in *S/Z*. The criminal Vautrin (voh-TRAN) and the ambitious Rastignac (ross-teen-YOCK) are characters in this series, which includes "Sarrasine", *The Wild Ass's Skin*, and *Cousin Bette*. For 10 points, name this sprawling series of novels by Honoré de Balzac.
ANSWER: The ***Human Comedy*** [or La ***Comédie humaine**]* <Droge>

7. Prior to this country's 2015 presidential election, the ruling party appointed nine hundred thousand *mandataires* to oversee the vote. In the documentary *Fatal Assistance*, its president claimed he would have been overthrown had he not allowed the rival INITE party on the ballot. A group of opposition leaders in this country called the G-8 have demanded new elections. Jovenel Moise recently won its first round of presidential voting. Banana Man and Sweet Micky are nicknames of politicians from this country. In June 2015, ProPublica found that the American Red Cross had collected five hundred million dollars but built only six houses in this country following a disaster. For 10 points, name this Caribbean country, still recovering from a 2010 earthquake.
ANSWER: **Haiti** <Bentley>

8. The fortieth verse of the "Parties" sura may be an interpolation regarding the status of these people. A hadith analogizes a person's relationship to this role as the brick which forms the corner of a house, and two others claim that there will be either twenty-three men and four women, or thirty total individuals, who spuriously claim to be this type of person in the future. The major heresies of the Ahmadiyyas and Bahá'í, respectively, were claiming that Mirza Ghulam Ahmad and Bahá'u'lláh were this kind of person. The belief that Muhammad was the "Khatam" of these people is commonly expressed by analogy to a wax seal. For 10 points, name these people in Islam who bring the message of God.
ANSWER: **prophet**s <Weiner>

9. For a map *f* between a compact manifold *M* and connected manifold *N*, this quantity modulo two is defined as the order of the preimage of a regular value modulo two. For a homogeneous function *f*, Euler showed that the sum, over *i*, of x-sub-*i* times the partial of *f* with respect to x-sub-*i*, is equal to this quantity times *f*. This word is used to denote the dimension of a field extension as a vector space over its base field. Abel, Ruffini, and Galois (gal-WAH) independently showed that there is no general algebraic formula for the roots of certain functions that have a value of this quantity that is larger than five. Depending on convention, this value is either equal to negative infinity or zero for the zero polynomial. For 10 points, what word describes the largest exponent of a polynomial's terms?
ANSWER: **degree** [or **deg**; or **order**] <Hothem>

10. This company employed the doctor Morris Young to establish two hospitals to protect its workers from disease. Workers of this company were housed in a slum derisively nicknamed the Paper City. During World War II, the products of this company, along with those of its competitors, were mixed and sold as "pool". The expeditions of George Reynolds were authorized by the Green Document obtained by its founder, William D'Arcy. The overthrow of Mohammad Mossadegh revitalized this company, which had operated a massive refinery at Abadan. This company was leasing the Deepwater Horizon rig when an explosion in 2009 caused the largest oil spill of all time. For 10 points, name this company once called the Anglo-Iranian Oil Company and often known by a two-letter acronym.
ANSWER: **BP** [or **British Petroleum**; or **AIO** or **Anglo-Iranian Oil Company** until it is read] <Droge>

11. A four-dimensional form of this quantity is defined as the zero-th basis vector of an MCRF. A simpler form of a composition law for this quantity results when setting this quantity equal to the hyperbolic tangent of a namesake parameter, due to the angle addition formula for the hyperbolic tangent. A form of this quantity is the reciprocal of the slope of a world line. A non-intuitive result for this quantity is that it must be added using Einstein's law of addition. Newton's laws are all Galilean invariant, meaning that they are the same when a constant factor of this quantity is applied. It appears divided by the square of the speed of light in the Lorentz factor. Because the proper time along a null line is zero, the four-dimensional form of this quantity cannot be used to define a photon's four-momentum. For 10 points, identify this quantity whose time derivative is acceleration.
ANSWER: relative **velocity** [or v] <Voight>

12. In *The Light of Common Day*, Diana Duff-Cooper recalls finding her food ill-tasting because this man was so bad at dinner conversation. He gained the nickname "The Bloody Baron" for suppressing communist movements, becoming the only person to have fought against Germany to receive the Iron Cross. This man ordered the construction of six POW camps called Keskitysleiri (KESS-kee-toos-LAY-ree). Thor Damen recorded several minutes of a private conversation between this man and Hitler when Hitler visited him for his seventy-fifth birthday. He served eight years as chairman of his country's defence council, and he was promoted to field marshal by the time of the Continuation War. For 10 points, name this Finnish statesman who established a namesake defensive line across the Karelian isthmus.
ANSWER: Carl Gustaf Emil **Mannerheim** <Droge>

13. In a *Madonna lactans* by this artist, mountains can be seen through two arched windows, and Christ holds a goldfinch. Christ escapes the embrace of his mother, whose spinning tool resembles a miniature cross, in the *Buccleuch* and *Lansdowne Madonnas* by this artist, collectively known as the *Madonna of the Yarnwinder.* Two side panels depicting musician angels were part of an altarpiece containing this artist's best-known Madonna, which exists in two versions at the Louvre and National Gallery in London, both of which feature an angel and John the Baptist alongside Mary and Jesus in a craggy landscape. For 10 points, name this artist whose commissions for Ludovico Sforza in Milan include *The Virgin of the Rocks* and *The Last Supper.*
ANSWER: Leonardo **da Vinci** [or **Leonardo** di ser Piero da Vinci] <Gupta>

14. The last verse paragraph of a longer poem by this author begins, "The world stands out on either side, no wider than the heart is wide". In a poem by this writer, a mother who sings while making a pair of mittens and a little blouse tells her son, "you've need of clothes to cover you, and not a rag have I". The speaker of another poem by this writer sees "three islands in a bay" and traces "the line of the horizon". This poet of "The Ballad of the Harp-Weaver" wrote a poem at the age of 19 that begins, "All I could see from where I stood was three long mountains and a wood". In a short poem by her, the speaker says, "My candle burns at both ends, it will not last the night". For 10 points, name this American poet who wrote "Renascence" and "First Fig".
ANSWER: Edna St. Vincent **Millay** <Sy>

15. A ten-minute-long piece in this genre comprises a slow movement marked "Ruhig schreitend" (ROO-eek SHRYE-tint) and a fast theme-and-variations movement. That Anton Webern (VAY-burn) piece in this genre is scored for nine instruments. It is not a violin sonata, but three movements exhibiting cyclic form comprise a D minor piece in this genre by César Franck (fronk). In a programmatic piece in this genre, near the end of the fourth movement, a wistful clarinet solo plays just before a loud *tutti* chord depicting a guillotine. In that piece in this genre, depictions of "Rêveries – Passions", a "March to the Scaffold", and a "Dream of a Witches' Sabbath" all distort the central "idée fixe" (ee-DAY FEEKS). For 10 points, name this genre in which Hector Berlioz wrote a piece titled *fantastique*.
ANSWER: **symphony** <Kim>

16. W. Arthur Lewis's model of developing economies is named after this number. The New York game has this many equilibriums. It is the number of fundamental theorems of welfare economics. This is the highest payoff available in the standard formulation of the Battle of the Sexes game, which, like the Stag Hunt game, has this many equilibriums. An alternate name for the Heckscher–Ohlin model is based on this number, because it was originally formulated using this many products and this many countries. Each player in the prisoner's dilemma has this many possible actions, and it is also the number of players in the game. For 10 points, name this number of axes in the standard graphic representation of supply and demand.
ANSWER: **two** <Droge>

17. Worshipers of this god beat statues of him after unsuccessful hunts, and remained quiet during mid-day to avoid disturbing his naps. Plutarch's "On the Failure of Oracles" describes how a voice informed the sailor Thamus of the death of this "great god". Zeus fell in love with Io thanks to a charm cast by this god's daughter Iynx, whom he fathered with Echo. This god helped retrieve Zeus's sinews by shouting to frighten the dragon Delphyne. King Midas got his donkey ears by claiming that this god had won a contest against Apollo. This god pursued the nymph Syrinx to the River Ladon, where she transformed into the reeds which he used to make his trademark instrument. For 10 points, name this goat-legged, pipe-playing Greek god of nature.
ANSWER: **Pan** <Brownstein>

18. A monarch of this house urged his foreign subjects to accept British rule in the Kew Letters and faced a revolt led by the Patriots faction. Gaspar Fagel authored several open letters in the name of a member of this house. Following the Treaty of Arras, a bounty of 25,000 crowns was put on a member of this house, motivating his assassination by Balthasar Gerard. A member of this house, whose powers were limited in the Act of Seclusion, landed at Brixham after receiving a letter from the Immortal Seven. The Eighty Years' War was partially incited by a member of this house known as "the Silent", and a later member of this house took the British throne via the Glorious Revolution. For 10 points, name this colorfully-named house of many Dutch people called William.
ANSWER: House of **Orange**-Nassau <Droge>

19. Some astronomical observatories use laser guide stars to excite this element in the atmosphere because that creates a wavefront reference for adaptive optics. An experimental type of nuclear reactor cooled by this element, sometimes in an alloy with potassium, includes the extremely accident-plagued Monju Nuclear Power Plant. Pretty much all of the solid form of this element used commercially is prepared using a mixture of it and calcium chloride in a Downs cell. The solvent for aluminum oxide in the Hall–Héroult (ay-ROO) process is a mixture of aluminum and this element bound to fluoride; that mixture is cryolite. A 588.99 and 589.59 nanometer doublet in an astronomical object's spectrum corresponds to this element's D lines. For 10 points, name this element that forms a molten salt above 801 degrees Celsius when bound to chlorine.
ANSWER: **sodium** [or **Na**] <Voight>

20. The protagonist of this story is forced to be a witness for a wedding because he is the only man in a church. A character in this story who first appears wearing a mask introduces himself as the Count Von Kramm. Early in this story, two men are able to surmise that a piece of paper originated in mainland Europe because of the markings of its manufacturer. Its central scheme involves throwing a plumber's rocket into the residence of a woman who will be forced to reveal the location of her most prized possession because she thinks that the building is on fire. This story's plot is sent into motion when a European duke asks its central characters to retrieve a damaging photograph from Irene Adler. For 10 points, name this Sherlock Holmes story named after a Czech region.
ANSWER: "A **Scandal in Bohemia**" <Droge>

21. Most phase diagrams of this type switch between solid solution and intermetallic, with distinct liquidus and solidus lines. An application of the conservation of mass to this type of phase diagram results in the lever rule, which involves computing the relative lengths of tie lines. A peritectoid reaction involving this many phases yields one new phase. For this type of system, the Gibbs phase rule is simplified to degrees of freedom equals four minus number of phases. A very important and complex example of this type of phase diagram is the iron–carbon one because iron and carbon are the constituents of steel. For 10 points, name this type of phase diagram that features only two components.
ANSWER: **binary** phase diagram [or **binary** alloy; or **two** component systems; prompt on alloys or multicomponent systems] <Voight>

1. Born in the wake of the French Revolution, this style of opera was characterized by politically-charged topics, five lengthy acts, and an elaborate ballet scene towards the middle. For 10 points each:
[10] Name this lavish style of opera that arose in 19th-century France to appeal to the growing middle class in the wake of diminishing royal patronage of opera.
ANSWER: *grand* opéra (gront oh-pay-RAH)
[10] Centering on the Austrian occupation of Switzerland, this Italian composer's four-act *William Tell* is considered a forerunner of grand opéra.
ANSWER: Gioachino **Rossini** [or Gioachino Antonio **Rossini**]
[10] This French composer's operas *Werther* (vair-TAIR) and *Manon* illustrate a more lyric style of opera that grew out of both the rich texture of grand opera and the light subject matter of competing opéra comique.
ANSWER: Jules **Massenet** (mass-NAY) [or Jules Émile Frédéric **Massenet**] <Kim>

2. Miss Temple is a kind employee at this place contrasted with the fiendish Mr. Brocklehurst, who mistreats all of the students. For 10 points each:
[10] Name this school for poor and orphaned girls featured in a British novel. The protagonist befriends the angelic Helen Burns at this institution, who ends up dying of consumption. The protagonist finally leaves this place to become a governess.
ANSWER: **Lowood** Institution
[10] The Lowood Institution appears in what Charlotte Brontë novel where the title character ends up working for the mysterious Mr. Rochester?
ANSWER: *Jane Eyre*
[10] In *Jane Eyre*, this woman, Rochester's mad wife, burns down Thornfield Hall. She is the protagonist of the novel *Wide Sargasso Sea*.
ANSWER: **Bertha** Mason [or Bertha **Mason**; or **Antoinette**; or **Cosway**] <Cheyne>

3. This event led to the public release of the Phillips Report. For 10 points each:
[10] Name this disaster that killed Gus Grissom, Edward White, and Roger Chaffee, and began as a result of an electrical fire.
ANSWER: The **Apollo 1** fire [or **AS-204** disaster]
[10] An Apollo 1 mission patch was left on the moon by the crew of Apollo 11, including Buzz Aldrin and this man, the first astronaut to walk on the moon.
ANSWER: Neil **Armstrong**
[10] This first-term Senator revealed the Philips Report's criticisms of Apollo contractors and led the charge in Congress to attack NASA's "evasiveness" and "lack of candor". In a later election, he used the ad slogan "Where's the beef?" against his opponent and said he would tell the truth and thus promise to raise taxes.
ANSWER: Walter "Fritz" **Mondale** <Cheyne>

4. The wavefunctions for this system are proportional to functions of sine because its boundary conditions require a value of zero at both zero and big *L*. For 10 points each:
[10] Name this quantum mechanical model system, which describes a particle trapped within a region bounded by infinitely large energy barriers.
ANSWER: **particle in a box** [or **infinite square well**; prompt on infinite potential well]
[10] For a particle in a box, the constant named after this process is equal to the square root of two over the length. This process requires the probability over all space for a wavefunction to be equal to one.
ANSWER: **normalization** [or word forms like **normalized**]
[10] This quantum mechanical model, used in microwave spectroscopy, describes two atoms connected by a bond of fixed length. The eigenfunctions of this system are proportional to spherical harmonics.
ANSWER: **rigid rotor** [prompt on rigid object; do not accept "rigid rotator"] <Nagari>

5. This book begins with the line "I hate traveling and explorers". For 10 points each:
[10] What 1955 memoir is part travelogue, part anthropological study, and describes its author's time teaching at the University of São Paulo as well as his studies of various Brazilian cultural groups?
ANSWER: *Tristes Tropiques* [or The *Sad Tropics*]
[10] *Tristes Tropiques* is a book by Claude Lévi-Strauss, a leader of this anthropological school that argues that most cultural practices have similar counterparts in other cultures. For example, this school would argue that exchange is an universal principle of kinship.
ANSWER: **structural** anthropology [or word forms of **structure**]
[10] Lévi-Strauss wrote a four-volume work titled for these belief systems. He argued that many cultures had similar counterparts in the pantheons of these systems, such as a trickster god.
ANSWER: **myth**ologies [or *Mythologiques*; or **myth** systems; prompt on folklore] <Cheyne>

6. In the *Lay of Harbard*, Thor admits to battling these creatures' wives. For 10 points each:
[10] Name these Odin-worshipping warriors who wore the skins of either bears or wolves. These men possibly used drugs to whip themselves into a frenzy before battle.
ANSWER: **berserk**ers
[10] Four berserks watched the giantess Hyrrokkin's wolf during this event, but ended up killing it. The ship Ringhorn was burned during this event, which took place after a piece of mistletoe was used as a weapon.
ANSWER: **Baldr's funeral**
[10] During Baldr's funeral, one of these creatures named Lit dared to walk in front of Thor, prompting Thor to kick him into the funeral pyre. These master blacksmiths were short.
ANSWER: **dwarves** [or **dwarf**] <Collins>

7. Answer the following about cartoonist Thomas Nast, for 10 points each.
[10] Nast is probably best known for his many cartoons mocking this rotund leader of Tammany Hall, depicting him as a corrupt vulture or as a man with a bag of cash for a face.
ANSWER: Boss William **Tweed**
[10] During the presidential election of 1884, Nast could not support James G. Blaine and ended up endorsing Democrat Grover Cleveland. He thus was one of this group of reform-minded Republicans, whose name comes from an Algonquin word for "important person".
ANSWER: **Mugwumps**
[10] Another of Nast's targets was this man, who was mocked for his statement that the North and South should "clasp hands across the bloody chasm". In Nast's cartoons, this man was shown extending his hand over Lincoln's grave and Andersonville prison.
ANSWER: Horace **Greeley** <Cheyne>

8. Near the end of this novel, Ras the Exhorter gives a speech that criticizes the Brotherhood for its inaction during the funeral of Tod Clifton. For 10 points each:
[10] Name this novel by Ralph Ellison whose unnamed narrator feels unnoticed by society due to his skin color.
ANSWER: *Invisible Man* [do not accept "*The Invisible Man*"]
[10] In the prologue to *Invisible Man*, the narrator relates how he lives in an underground dwelling where he carries on a battle against a local company by using 1,369 of these objects.
ANSWER: light **bulb**s
[10] After participating in the "Battle Royal", the narrator of *Invisible Man* is rewarded with one of these things, presented in a briefcase by a jeering crowd.
ANSWER: a college **scholarship** [or obvious equivalents] <Droge>

9. This lake has a namesake type of ringed seal native to it. For 10 points each:
[10] What lake is the largest in Europe and is located in the Republic of Karelia?
ANSWER: Lake **Ladoga**
[10] Lake Ladoga is very near this large Russian city, which from 1924 to 1991 was known as Leningrad.
ANSWER: **Saint Petersburg** [or **Petrograd**]
[10] This archipelago is the largest island in Lake Ladoga and has been owned at various times by both Russia and Finland. It is noted for a beautiful 14th-century Orthodox monastery and for being a popular tourist destination for various Russian rulers.
ANSWER: **Valaam** [or **Valamo**] <Cheyne>

10. The only dog Frans Hals ever painted appears in a portrait depicting the St. Adrian one of these groups, whose portraits were called either *schuttersstuk* (SKOO-ters-stook) or *doelenstuk* (DOO-lin-stook). For 10 points each:
[10] Name these civic organizations, the subjects of many group portraits during the Dutch Golden Age. In one such portrait, a man hoists a blue and yellow checkered flag above a girl wearing the claws of a dead chicken on her belt.
ANSWER: **militia** companies [or city **guard**s; or **Kloveniers**]
[10] This painter of the Dutch Golden Age executed regents group portraits such as *Syndics of the Draper's Guild* and militia group portraits like *The Night Watch.*
ANSWER: **Rembrandt** van Rijn [or Rembrandt Harmenszoon **van Rijn**]
[10] The *Meagre Company* is the only militia portrait Hals painted outside this city, whose "bleaching grounds" are the subject of one of many panoramic "little views" by Jacob van Ruisdael (YAH-cop fon ROUSE-doll). Judith Leyster offered her self-portrait to this city's guild of St. Luke.
ANSWER: **Haarlem** <Gupta>

11. Peter M. Shearer's *Introduction to Seismology* claims this whole-Earth seismic phase is the Holy Grail of body wave seismology. For 10 points each:
[10] What seismic phase, abbreviated by five letters because it travels from one end of the Earth to the other, is a P-wave in the mantle and outer core, but an S-wave in the inner core?
ANSWER: **PKJKP**
[10] PKJKP phases allow one to measure this type of velocity in the inner core and compare it to normal mode calculations. The "S" in S-waves is usually said to stand for "secondary" or for this term.
ANSWER: **shear**
[10] In the 1930s, Inge Lehmann (IN-guh LAY-mon) broke from seismological tradition by not ignoring unexplainable seismic wave readings and instead using her powers of deduction to propose what fact about the Earth's interior?
ANSWER: that there is a **solid inner core** [or obvious equivalents, such as the **core is not all liquid**; prompt on there are two cores or there is an inner and outer core] <Voight>

12. Answer some questions about partially ordered sets, for 10 points each:
[10] The ordering relation of a partially ordered set is reflexive, antisymmetric, and this. For any a, b, and c in the set, this property states that if a is less than or equal to b, and b is less than or equal to c, then a is less than or equal to c.
ANSWER: **transitive** [or **transitivity**]
[10] According to this statement, if every chain in a partially ordered set has an upper bound in the set, then the partially ordered set has at least one maximal element. It is equivalent to the axiom of choice.
ANSWER: **Zorn's lemma**
[10] This algebraic structure is a partially ordered set in which any two elements have a join and a meet. The shortest vector problem for these structures has cryptographic applications.
ANSWER: **lattice**s <Collins>

13. This religion's key scriptures are the Epistles of Wisdom. For 10 points each:
[10] What Middle Eastern religion's members are primarily found in Syria and Lebanon? It developed out of Isma'ili Islam, is monotheist, and does not believe in a clergy or in conversion from non-members.
ANSWER: **Druze**
[10] This term from Druze means unity or one-ness. It basically means that God is absolute existence and is not either an entity in Himself or simply a creator; rather, all of physical existence is God.
ANSWER: **tawhid**
[10] This sixth Fatimid ruler was hailed by Druze as God incarnate. He founded the Egyptian House of Wisdom and was noted for strict laws against Jews and Christians. Either his name or his common, pejorative Western nickname is acceptable.
ANSWER: **Al-Hakim** bi-Amr Allah [or Abu 'Ali Mansur **al-Ḥakim** bi-Amr-Allah; or the **Mad Caliph**]
<Cheyne>

14. In this novel, the Little People construct air chrysalises, the subject of a short novel by the precocious Fuka-Eri. For 10 points each:
[10] Name this 2009 Japanese novel whose two protagonists are the math teacher Tengo and the assassin Aomame. Its title derives from a George Orwell novel.
ANSWER: *1Q84* [or *ichi-kew-hachi-yon*]
[10] *1Q84* was written by this contemporary Japanese author who described Tōru Okada's search for his missing cat in *The Wind-Up Bird Chronicle*.
ANSWER: Haruki **Murakami**
[10] The alternate dimension named "1Q84" is primarily distinguished by the presence of two of these bodies, which Tengo and Aomame gaze upon while meeting at a playground.
ANSWER: **moon**s <Sy>

15. A secret society that participated in this insurrection was the Union of Salvation. For 10 points each:
[10] Name this rebellion that elected prince Sergei Trubetskoy as interim dictator and sought to place Constantine on the throne of Russia. Upon being named dictator, Trubetskoy promptly predicted its failure and sought refuge in the Austrian embassy.
ANSWER: **Decembrist** Revolt
[10] The Decembrist Revolt was put down by the first tsar of this name. The second tsar of this name was killed during the Russian Revolution in 1918.
ANSWER: **Nicholas**
[10] The second phase of the Decembrist Revolt was instigated in the Ukraine by members of this army regiment, but they were defeated by troops under Friedrich Caspar von Geismar.
ANSWER: **Chernigov** Regiment <Droge>

16. For 10 points each, answer the following about fools who appear in Shakespeare's plays.
[10] The fool Trinculo hangs out with Stephano and Caliban in this Shakespeare play. In this play, Prospero conjures up the title storm to shipwreck his wicked brother Antonio, who usurped his title as Duke of Milan.
ANSWER: The *Tempest*
[10] This fool torments the imprisoned Malvolio while disguised as the clergyman Sir Topas in Act IV of *Twelfth Night*. The play ends with him singing a song that claims "we'll strive to please you every day".
ANSWER: **Feste**
[10] The Fool was unceremoniously terminated from this Irish poet's happy-go-lucky adaptation of *King Lear*. He collaborated with John Dryden on the second part of Dryden's satirical poem *Absalom and Achitophel*.
ANSWER: Nahum **Tate** <Manners>

17. Answer the following about the philosophy of property, for 10 points each.
[10] The labor theory of property, which basically states that property is created by exerting labor on a natural resource, was explicated by this English philosopher in his *Second Treatise on Government*.
ANSWER: John **Locke**
[10] The "Lockean proviso", which states that the right to claim property is contingent on whether there is enough left for others, was coined in this 1974 book. This book also has sections describing the Experience Machine thought experiment and an argument about distributive justice that uses Wilt Chamberlain as an example.
ANSWER: *Anarchy, State, and Utopia*
[10] Locke's theories on property were approved of by this American anarchist and philosopher. This man wrote the *No Treason* pamphlets against the Civil War, attacked bondage in *The Unconstitutionality of Slavery* text, and created his own competing institution to take on the U.S. Post Office.
ANSWER: Lysander **Spooner** <Cheyne>

18. Fluorescent reporters intercalated in dsDNA are used in a form of this technique for analyzing gene expression. For 10 points each:
[10] Name this technique whose quantitative real-time type uses Taq polymerase to separate the fluorophore from its quencher, allowing fluorescence to build up after each round of amplification. Other varieties of this technique use reverse transcription to build a cDNA library.
ANSWER: **PCR** [or **polymerase chain reaction**; accept any kind of **PCR**]
[10] This qPCR parameter is the spot on the reaction curve where accumulated fluorescent signals are distinguished from background fluorescence. Relative changes in gene expression can be quantified by calculating its delta-delta value.
ANSWER: **Ct** value [or **cycle threshold**; or **threshold cycle**; or **Cq**; or **quantification cycle**; or **cycle of quantification**; or **take-off point**; or **crossing point**; or **TOP**; or **Cp**]
[10] The Ct value should be set in this phase of amplification. It is the linear region between the baseline and plateau phases as seen on a semi-logarithmic plot. The emission intensity of luminescence decreases according to its decay constant, lambda.
ANSWER: **exponential** <Smart>

19. The devices used in this system were officially named the 97 Alphabetical Typewriter, and included Romaji among its three available "languages". For 10 points each:
[10] Identify this name given to the encryption system used by the Japanese navy during World War II. Codebreakers defeated it in part by analyzing duplicate messages sent in the earlier Red system.
ANSWER: **Purple** machine
[10] Purple suffered from some of the same weaknesses as this Nazi encryption system, which was partially cracked by Alan Turing and others during the war.
ANSWER: **Enigma** machine
[10] Much of the work on breaking the Enigma was done at the Government Code and Cypher School at this chief British codebreaking site in World War II. Hut 7 at this place was devoted to cracking Japanese naval codes.
ANSWER: **Bletchley** Park <Bentley>

20. Name these composers of unusual piano sonatas, for 10 points each.
[10] This member of the Darmstadt School wrote that "Schoenberg Is Dead" some four years after composing his twelve-tone *Piano Sonata No. 2*, whose fourth and final movement is a difficult fugue marked "Vif".
ANSWER: Pierre **Boulez**
[10] This composer called for a long block of wood to depress a dissonant tone cluster in the "Hawthorne" movement of his *Concord Sonata*.
ANSWER: Charles **Ives** [or Charles Edward **Ives**]
[10] This composer used four staves for the dense chords in parts of his piano sonata, which, like Ives's piano sonata, was championed by John Kirkpatrick. It was written around the same time as his scores for the ballets *Billy the Kid* and *Rodeo*.
ANSWER: Aaron **Copland** <Kim>

21. In various stories, Gregory Powell, Mike Donovan, and Susan Calvin all work with these things. For 10 points each:
[10] Name these things, examples of which include Speedy, as seen in the short story "Runaround", and Cutie, as seen in the short story "Reason". In both stories, Powell and Donovan must contend with apparently disagreeable types of these things.
ANSWER: **robot**s [or **android**s; or obvious equivalents]
[10] All of the aforementioned stories about robots were written by this prolific science fiction author, who formulated the Three Laws of Robotics and wrote the *Foundation* series.
ANSWER: Isaac **Asimov** [or Isaak **Ozimov**]
[10] In another Asimov story, the planet Lagash is implicitly consumed by chaos after this event happens for the first time in about 2000 years.
ANSWER: **night**fall [or **darkness**; or an **eclipse**; or obvious equivalents, such as the **suns are not visible**] <Cheyne>