Quarterfinals

Tossups

Questions by Phil Durkos

1) "Faith in their hands shall snap in two/ And unicorn evils run them through," exhorts this 1933 poem, which later became the basis for Rinde (RIN-deh) Eckert's opera *Call Me Ishmael Tonight*, Stanislaw Lem's novel *Solaris*, and Bob Dylan's hit song "Death Is Not the End." With a title taken from Paul's *Epistle to the Romans*, it was its author's first poem published in a literary journal, and is the source of the famous lines " They shall have stars at elbow and foot/ Though they go mad they shall be sane/ Though they sink through the sea they shall rise again/ Though lovers be lost love shall not." For ten points, identify this famous debut poem of Dylan Thomas.

Answer: **"And Death Shall Have No Dominion"**

2) One of Hilbert's Problems concerns this assertion, which has yet to be proven or disproven; the first serious attempt was by Russell in the *Principia Mathematica*. Gödel demonstrated in his 1937 proof of Incompleteness Theorem that it could verifiably not be derived from the 9 more conventional Zemerlo-Fraenkel Axioms, nor could any of them be derived from it alone. It is often called Tychonoff's Theorem or Zorn's Lemma, especially in the context of its generation of non-integrable functions. For ten points identify thios postulate of set theory which dictates that, in any collection of nonempty sets C, there exists a function f such that one can choose any set S and find f of S to be a member of S.

Answer: **Axiom of Choice** (accept **Zorn's Lemma** and prompt on **Tychonoff's Theorem** (which has to be generalized to be synonymous with AC) before they are mentioned.

3) His glyph is tecpatl (tek-PAH-tel), the obsidian knife, and his two forms, Yaotl (yah-OH-tel) and Tepochtli (the- POHCH-tli), symbolize his dual roles as warrior-poet and traitor. Two of the most important myths about him concern his seduction of the love goddess Xochiquetzal (SHO-chi-ket-SAHL) and his expulsion from Tula, where he was lord of the Toltec pantheon. His name is Nahuatl (nah-WAH-tel) for "Smoking Mirror" and is derived from his shining breastplate. For ten points identify this jaguar-god, the jealous younger brother and archnemesis of Xolotl (sho-LOH-tel) and Quetzalcoatl, the Aztec god of night.

Answer: **Tezcatlipoca** (tez-CAHT-li-PO-ka)

4) In 1946 the advent of the atomic bomb led this work's painter to reconsider its theme, and paint a refutation entitled "The Disintegration of" this painting. The landscape is one of yellow sand and a sunset seascape, with a tree growing from a rock on the left. Much of the painting is thought to have been inspired by reality; the beach is known to be Cadaquéz (kah-dah-KAYS) in Catalunya (kah-tah-LOON-ya), and the supine figure on the rock by the shoreline is considered either a grotesque self-portrait or a mockery of Pablo Picasso. For ten points identify this surrealist masterpiece, the most famous painting by Salvador Dali.

Answer: The **Persistence of Memory** or La **Persistencia del recuerdo** or   La **Fletría de lo inmemoria** (Catalán title)

5) It occurred on May 30 of a seminal year in history, during which Gutenberg obtained a patent financing the mass production of his printing press and the Hundred Years War drew to an end. The besiegers' forces crossed the Sea of Marmara by night and descended from the Bulgarian wastes to the north, encircling the city. The navy of Mehmet (meh-MET) II became the first to use artillery at sea in this battle, when they fired on the Marble Quays of Theophrastus while the city's terrified denizens took refuge in the Hippodrome and in Hagia Sofia. For ten points, identify this 1453 CE battle which saw the end of Byzantium.

Answer: **Siege of Constantinople** (accept equivalents)

6) It opens in Budapest in 1956, when Gregor is desperately trying to teach his 4-year-old daughter Florence everything he knows before the soldiers come to take him away, then abruptly shifts to Thailand in 1985, where Florence is greeted by Freddie, who sings "Freddie's Entering Number." Freddie will represent the US, with Florence as his sidekick, while Anatoly and his toady Molokov compete for the USSR. This musical, a collaborative effort between Tim Rice and Benny and Bjorn (BYORN) of ABBA fame, scored number 1 hits on the 1984 US charts with "I Sing the Body Electric" and German disco-rapper Falco's cover of "One Night in Bangkok." For ten points identify this musical about a game of bishops and rooks.

Answer: **Chess**

7) Although this writer is most often considered a representative of the Hermetic literary tradition, he called his own style "Existential Romanticism." He wrote nonfiction, such as the 1923 essay collection *In Sight of Chaos,* and poetry, like the 1970 anthology *Crisis.* He is better known for his novels, of which the first was the bildungsroman *Demian (DAY-mi-en),* which introduced his recurring meta-character, the mystical synthesis of "desire and nobility, cruelty and righteousness," known as Abraxas, the Devil-God. Two subsequent bildungsromans were *Narziv and Goldmund* and 1969's *Magister Ludi.* For ten points identify this German writer, whose novels include *The Glass Bead Game* and *Steppenwolf.*

Answer: **Hermann Hesse (HEHR-mahn HES-a)**

8) Discovered by its namesake Belgian surgeon in 1861, its exact relationship to other cerebral components is unknown, except that it seems to store information related to hierarchical syntax and the differentiation of parts of speech. It is also most active among humans between the ages of 2 and 7, leading to the hypothesis that it plays a key role in primary language acquisition. For ten points identify this section of the cerebral cortex, located in the inferior frontal gyrus of the frontal node, which results in its discoverer's namesake aphasia if badly damaged, an aphasia characterized by sentences containing only nouns and verbs, which is also called "non-fluent aphasia."

Answer: **Broca's Area** or **Broca's Zone**

9) His career began in 1556 as a samurai serving the daimyo Imagawa Yoshimoto, and his first command, in 1564, led to victory at the Battle of Totomi, for which he was rewarded

with a new name, Motoyasu. In 1567 he was proclaimed daimyo of Komaki, which required him to swear allegiance to Oda Nobunaga, and in 1579 he was given his most famous names by Nobunaga as a reward for valor. In 1598 he became regent for the infant shogun Toyotomi Hideyori, despite the monarchical ambitions of his coregent, Ishida Mitsunari. For ten points identify this samurai hero, whose nobility inspired Ishida's general Kobayakawa Hideaki to switch sides, winning the 1600 Battle of Sekigahara and truly unifying Japan under one shogunate, the Tokugawa.

Answer: **Tokugawa Ieyasu** (do not accept just "Tokugawa, even on early buzz)

10) Its author called it "an assessment of man's condition and potentialities," and he published an epistemological companion piece to it in his literary review, "These Modern Times," in 1945, of which the most famous part is the essay "Portrait of an Anti-Semite." Unfortunately his 1980 death prevented completion of its second companion, an analysis of its ethical implications. Its principal theses are the differentiation of the "en-soi" (AWN-SWAH), which are characteristics like tall or heterosexual and the "pour-soi" (POUR-SWAH), which are attributes like noble or guilty, the simultaneous freedom and isolation of mankind, and the "innate responsibility to the ideal self." For ten points identify this metaphysical opus of Jean-Paul Sartre, whose title is a play on a Martin Heidegger (HY-deg-gehr) title.

Answer: **Being and Nothingness** or **L'Etre et la Néant** (LET-ra AY la-nay-AWNT)

11) This name designates two places in geography, unrelated save that both are in Asia and mountainous. The earlier one designates a city in the modern-day province of Xinjiang (shin-ZHANG), where the elders of the Mongol people would gather to elect their Khan. It was the Mongol capital until the founding of the Yuan Empire, after which Kubla Khan razed it and moved the seat of Yuan power to Cambaluc (KAHM-bah-look), near modern Nanjing. The later one refers to a mountain range on the Dravidian Plateau. For ten points identify this name, which nowadays designates the mountain range that is the home of K2.

Answer: **Karakorum**

12) The oracle Heremod (HAIR-a-mahd) casts augurs, and finds that everything this man has built will end within one generation, leaving only "fields of ashes and wastes of salt where the sea has dried away." Unfortunately, the warning is too late, since Prince Ingeld has already brought his people, the Heathobards (HAY-tho-bards), into the kingdom, when he married this king's daughter Freawaru (fray-WAH-roo). As such, he is the last of the line of kings which began with Scyld (SHIELD) and continued to Half-Dane, this king's father, who ordered the construction of Heorot (HAY-or-rot). For ten points identify this Danish King who gives his sword, Hrunting, to Beowulf.

Answer: **Hrothgar**

13) Its assessment of the global political situation is predicated on a tacit renunciation of the game-theory-inspired approach to political science that was very fashionable in 1992, when it was written, in favor of a return to the Hegelian Dialectic. It argues that modern Singapore and Thailand's governments, like Meiji Japan and Bismarckian Germany, are endemic to periods of transition and innately unstable because high technology cannot

coexist for long with political authoritarianism. From this and other such arguments, it draws the conclusion that history has delivered a verdict in favor of liberal democracy, which will inevitably soon be the form of all world governments, and that this is a very good thing. For ten points identify this political science treaty and exercise in absurdity, a work of Francis Fukuyama.

Answer: The **End of History**

14) His mother Matilda, a descendant of the House of Anjou (awn-ZHU), had the strongest claim to the British throne when the death of Henry I ended the Norman Dynasty, but the nobles refused her on account of her impetuous temper and gave the crown instead to Stephen of Blois (BLWAH). Since Stephen twiddled his thumbs for 19 years, this king's coronation in 1154 sparked a military fervor that instigated victories over King Malcolm IV of Scotland and an invasion of Ireland. His reign was marked, however, by a singularly ignominious end, brought about in 1189 due to a revolution led by his own queen, Eleanor of Acquitaine. For ten points identify this first Plantagenet ruler of England, father of Richard the Lionheart.

Answer: **Henry II**

15) In this novel, the protagonist, a homely young woman named Nell who lives her entire life in the poor black neighborhood of the Bottom, serves as a foil to the vivacious and amoral title character. Notable episodes in the novel include the renaming as "Dewey" of all three adopted boys and the aged Eva imagining herself as Brünnhilde while she immolates her drug-addicted grandson Plum. Loneliness and despair over the title character's sudden death bring about the climax, in which the poor blacks stream out of the Bottom and die en masse in a blaze of glory trying to attack a bridge in the white section of town.
For ten points identify this Toni Morrison novel.

Answer: **Sula**

16) Wolfgang Pauli first posited its existence in 1931 as an explanation for the continuous spectrum of beta-decay, and his friend Enrico Fermi coined its name. In 1956 it was detected for the first time by passing radiation through a tank of water and cadmium chloride, an experiment which earned Reines the 1995 Nobel Prize in Physics. The Super K reactor that imploded in Japan was attempting to count these. They have ½ spin, which because it is not an integer dictates that they are fermions and are subject to the Pauli Exclusion Principle. For ten points identify these uncharged and nearly massless particles whose 3 flavors are electron, muon, and tau.

Answer: **neutrino**

17) It is said that he would fly into a rage if anyone called him a "composer" or "musician" and insist that he was neither of these things but a "phonometrician." He moved to Paris in 1895, but became destitute and had to live in a Montparnasse bordello, where he wrote his first successful pieces, the piano caprices "Gold Powder" and "Legend of California." In 1911 he formed a school of musical theory, a coterie of young musicians called L'Ecole d'Arceuil, (dar-SWEEYL)who inspired his 5 pieces entitled "Furniture Music," but it wasn't until 1917, after he had been accepted into Les Six, that he achieved great success with "Three Pieces in

the Shape of a Pear," which was so patently heterodox that Les Six expelled him and recruited Louis Durey. For ten points identify this avant-garde composer of the opera *Parade* and the "Gymnopédies." (zheem-no-pey-DEEZ)

Answer: **Erik Satie**

18) It followed the disaster for the Athenians which ensued at the Battle of Thermopylae earlier the same year, as well as the indecisive naval battle in the harbor of Artemisium. The Spartans, under the command of their admiral Eurybiades (YUR-a-BY-a-deez), wanted to use all their ships to blackade the Isthmus of Corinth to prevent the Persians under Xerxes I from landing in the Peloponnese, but the Athenians convinced them to remain in the Saronic Gulf where Xerxes' ships could not maneuver. The Greeks nearly lost when the Queen of Helicarnassus brought her more agile navy to join the Persians, but Themistocles managed to deliberately have a false message intercepted, tricking the Persians and winning the day. For ten points identify this 480 BCE battle fought off the coast of Cyprus.

Answer: **First Battle of Salamis**

19) It originated in a letter summarized Christian doctrine that Bishop Auxentius of Milan sent with the missionary Wulfilas (OOL-fee-las) into the land of the Ostrogoths, which classified God the Father as "unbegotten," and therefore clearly superior to Jesus, classified as "only-begotten." This may or may not have been an oversight, but Wulfilas started preaching it, leading to the Synod of Alexandria of 321 CE. By 325, its spread had grown even greater, leading to the Ecumenical Council of Nicaea (ny-SEE-a)at which its most vociferous opponent, Bishop Athanasius, composed the Nicene Creed. For ten points identify this heresy named for an Antiochene prelate which claimed that the divine substance of Christ was similar to but not the same as the divine substance of God the Father.

Answer: **Arianism**

20) Born a penniless shepherd with a maimed ankle in the hinterlands of Scythia, the title character of this tragedy learns that with force can he achieve anything. At first, when he starts his revolution, his motives are idealistic, like those of his friends Techelles and Usumcasane. Their first great victory is over the Persian Emir, Bajazeth, whom the title character cages and whose wife, Zabina, he seduces. Then he overthrows the Sultan of Egypt and marries his daughter, Zenocrate, a beautiful princess both charmed and terrifed by him. For ten points identify this 1591-1593 tragedy about a namesake conqueror of central Asia whose noble ideals are corrupted by violence and excess into bloodlust and tyranny, a 2-part Marlowe work.
Answer: **Tamburlaine the Great**

21) The discovery which prompted the foundation of this school of psychology was that of the an optical illlusion in which stationary lights blinking in sequence appear to follow a circular path, which KURT Koffka named the "phi phenomenon" in 1912. Koffka's colleague Wolfgang Köhler (KOHR-ler) was also instrumental in its foundation, as was their professor, Max Wertheimer (VERT-hy-mer). Its guiding precept was one of holism, advocating analysis of organized phenomena rather than distinct spheres. For ten points identify this school of psychology named for a German synonym for "synergy."
Answer: **Gestalt**

22) One of 2 technologies is used to perform it, either the Soderberg Method, which uses liquid pitch to continuously renew the required anode, or the Pre-Bake Method, which uses a more expensive but higher quality anode that does not degenerate nearly as fast as a Soderberg Anode. Monatomic carbon is added to a bath of liquid cryolite, Al_2O_3 ore, and silver fluoride. As a result, carbon dioxide gas is released, the cryolite is unchanged, and pure metal forms a precipitate. Simultaneously but independently discovered by eponymous American and French industrialists was, for ten points, what process that turns aluminia ore into pure aluminum.

Answer: **Hall-Héroult** (HAHL-he-ROO) **Process**

Bonuses

Questions by Phil Durkos

1) Answer the following questions about things that happened in Athens in the year 402 BCE, 5-10-5-10.
[5] In the spring of 402, this Spartan general, the victor of Aegospotami, arrived in Athens.
Answer: **Lysander**
[10] Lysander set up this oligarchical government in Athens; its name comes from the number of its members and their military backgrounds.
Answer: **Thirty Tyrants**
[5] In the summer of 402, this philosopher-teacher was briefly imprisoned by the Thirty Tyrants because he refused to help place Leon of Cyprus under house arrest on the grounds that the Tyrants had not explained to him why it served justice.
Answer: **Socrates**
[10] The autumn of 402 saw the overthrow of the Thirty Tyrants by this statesman and botanist, who recruited the army that seized the Piraeus from the border forts of Phyle. A noted opponent of oligarchy, he also defeated and dismantled the Council of Four Hundred in 411 BCE.
Answer: **Thrasybulus**

2) Identify each of the following Shakespearean villians from descriptions, 5-10-15.
[5] This man is responsible for the series of schemes that make Desdemona and Othello suspect one another.
Answer: **Iago**
[10] This vain cynic convinces Posthumus that he slept with Imogen when in fact she was loyal. He is the principal villain of *Cymbeline*.
Answer: **Iachimo**
[15] With the help of her catamite Aaron, this captive Queen engenders the murder of Bassanius and the brutal rape of Lavinia. She is the principal villain of *Titus Andronicus*
Answer: **Tamora**

3) For ten points each, identify the Platonic Dialogue.
[10] The longest Platonic dialogue, its most famous section is its seventh, in which a conversation between Glaucon and Socrates develops into the Allegory of the Cave.
Answer: the **Republic**
[10] The only dialogue in which Socrates' wife Xanthippe appears, it chronicles his execution and his meditations on the nature of death and infinity.
Answer: **Phaedo**
[10] In this short but frequently studied dialogue, Socrates teaches the title merchant prince that one can know without knowing how one knows; he demonstrates this by asking a slave boy to construct various triangles out of fennel stalks; the boy's success proves that he intuitively knows hinge theorem.
Answer: **Meno**

4) Identify the following trivia related to Ridley Scott's 1982 film "Blade Runner," 5-5-10-10.
[5] This sci-fi novella by Philip K. Dick, intended as a prequel to "Eye in the Sky," forms the basis of "Blade Runner." It differs from the movie by ending not with an escape to paradise but a suicide pact.
Answer: **Do Androids Dream of Electric Sheep?**
[5] When he enters the lab of Hannibal Chew, Roy Batty, played by Rutger Hauer, recites "Fiery the angels fell/ Deep thunder rolled around their shores." These lines are taken from the verse epic "America: A Prophecy," by what author better-known for "The Tiger" and "The Book of Thel."
Answer: **William Blake**
[10] The last scenes of the movie are filmed in this famously eerie L.A. building inspired by Bellamy's "Looking Backwards." It was also the set of the 1950 noir classic "D.O.A" and of the most famous episode of "The Outer Limits," "The Man with the Glass Hand."
Answer: **Bradbury Building**
[10] Complete Rutger Hauer's famous last speech in the movie by adding the final 4 words. "I've seen things you people wouldn't believe. Attack ships on fire off the shoulder of Orion. I watched C-beams glitter in the dark near the Tannhauser Gate. All those moments will be lost ____ _____ __ ____"
Answer: **"like tears in rain"**

5) For ten points each, or for five points each if you need the author, identify the famous poem from its opening lines.
[10] "I have seen the best minds of my generation destroyed by / madness, starving hysterical naked, / dragging themselves through the negro streets at dawn looking / for an angry fix"
[5] Allen Ginsberg
Answer: **Howl**
[10] "He clasps the crag with crooked hands; / Close to the sun in lonely lands, / Ringed with the azure world, he stands"
[5] Sir Alfred, Lord Tennyson
Answer: **The Eagle**
[10] "Come and grow old along with me!/ The best is yet to be"
[5] Robert Browning
Answer: **Rabbi ben Ezra**

6) Answer the following questions which pertain to the Battle of Hastings, 5-5-10-10.
[5] In what year was it fought on the 14th of October?
Answer: **1066 CE**
[5] It saw William the Conqueror's celebrated defeat of what king?
Answer: **Harald II**
[10] Harald II's army was already weakened by having defeated his rivals Tostig and Harald Hardraada at this September 25, 1066 battle.
Answer: **Battle of Stamford Bridge**
[10] After Harald II, this man is the most famous casualty of the Battle of Hastings. Minstrel to William the Conqueror, he decided it was a good idea for a bard to lead the Norman vanguard; he was immortalized after his death as the archetypical troubadour hero. France's greatest female composer, a member of "Les Six," renamed herself after him.
Answer: **Taillefer**

7) Answer the following questions related to mitochondria for ten points each.
[10] The mitochondria are the site of this catabolic process, which when combined with glycolysis and oxidative phosphorylation yields 38 ATP per iteration.
Answer: **Krebs Cycle** or **Citric Acid Cycle** or **TriCarboxylic Acid Cycle**
[10] Mitochondria, like chloroplasts, are examples of this type of organelles, which is bound by a double membrane, has its own DNA and RNA, and originally existed independently from a host cell
Answer: **Endosymbiont** Organelle
[10] Cytochromes and ATP synthase stud the walls of these intricate folds in a mitochondrion's inner membrane.
Answer: **Cristae**

8) Identify each of the following related to my favorite 15th century French poem, "La Ballade des Dames du Temps Jadis" (bel-LAHD day DAWM du TAWM zha-DEE) or the "Ballad of the Ladies of Yore" for the stated number of points.
[10] This poet, bard, and lover of Princess Evangeline of Languedoc, who is also well-known for his lais, wrote "La Ballade des Dames du Temps Jadis" around the year 1450.
Answer**: François Villon** (vee-YAWN)
[5] The *Ballade's* famous refrain, "Où sont les neiges d'antan" or "where are the snows of yesteryear, is repeatedly sung as background music in this Tennessee Williams play.
Answer: **The Glass Menagerie**
[5] In its descriptions of legendary heroines, the *Ballade* calls this woman "the good maid of Lorraine/ Whom the English burnt alive at Rouen".
Answer: **Joan of Arc** or **Jeanne d'Arc**
[5] The *Ballade* calls this unlucky Marchioness "the wisewoman for whose sake was castrated and made less Pierre Abelard at Saint-Denis".
Answer: **Héloïse de Fulbert** (fool-BEAR)
[5] Somewhat more obscure are the first two women the *Ballade* mourns for; one was a great female Cynic philosopher known for consummating her marriage to Crates on the flagstones of the Athenian Agora, and the other was supposedly a witch who wore a silver mask and enchanted Alexander the Great to make him raze Persepolis. Name either.
Answer: **Hipparchia** or **Thaïs**

9) Identify for ten points each the following people or things from Babylonian myth that you'd probably rather not run into.
[10] This "Dragon of the Cosmic Abyss," the patronage of envy and salt-water, was slain by Marduk.
Answer: **Tiamat**
[10] Tiamat had two consorts; one was a patron of fresh water who was slain by Enki, the god of wisdom, while the other was the demon who wore as his breastplate the Stone Tablets of Destiny and was slain by Marduk. Name either.
Answer: **Apsu** or **Kingu**
[10] This Queen of the Underworld imprisoned Ishtar on her quest to rescue her lover Tammuz. She is the patroness of darkness and deceit.
Answer: **Ereshkigal**

10) Answer the following questions about the composer and ethnomusicologist Béla Bartók, 5-5-10-10.

[5] Bartók was a native of this country on the Black Sea.

Answer: **Rumania**

[5] His ethnomusicological interests inspired this series of pieces inspired by old songs collected from his native land. It is performed most often among his works.

Answer: **Rumanian Dances**

[10] This most famous Bartók ballet was banned from its 1918 completion until 1926 because of its compassionate but realistic depiction of prostitutes and highwaymen.

Answer: The **Miraculous Mandarin** or **A Csodálatos Mandarin**

[10] This work, Bartók's only opera, was also banned for several years because its librettist was a student radical. Its title character murders all his wives.

Answer: **Bluebeard's Castle** or **A Kékszakállú Herceg Vára**

11) Identify the following writers of Imperial Rome who all have something in common for ten points each.

[10] Works of this Neo-Pythagorean and Stoic philosopher include the dialogue *On Anger* and the tragedy *Of the Madness of Hercules*. Nero ordered the 65 CE suicide of this thinker and his wife because he wrote Nero a letter advising more clemency in an Emperor.

Answer: **Seneca the Younger**

[10]The envious Tigellinus poisoned Nero's mind against this author of the *Satyricon*, instigating the orders for his 66 CE suicide at Cumae. Sienkiewicz makes him the heroine's father in *Quo Vadis*

Answer: Gaius **Petronius**

[10] This poet and scholar was implicated by Nero in Piso's conspiracy and ordered to drink poison despite his innocence in 65 CE at the age of 23, before finishing his masterpiece, the verse epic *Pharsalia*.

Answer: Annius **Lucan**

12) Identify each of the following people who appear in Apocryphal Old Testament books bearing their names, 5-5-10-10.

[5] This Jewish heroine broke into the Assyrian camp at night and cut off the head of Nebuchadnezzar's chief general Holofernes while he was passed-out drunk.

Answer: **Judith**

[5] This false god was tended by priests who secretly took sacrifices to him for themselves; he's destroyed by the prophet Daniel. He shares the name of his Apocryphal book with "the Dragon."

Answer: **Bel**

[10] This blind Israelite imprisoned in Nineveh is busy burying and consecrating the dead, so he sends his son Tobias to collect a loan; the archangel Raphael appears and restores his sight.

Answer: **Tobit**

[10] This patriarch and great-grandfather of Noah also has an apocryphal book, as does his brother Baruch. Upon his death he underwent apotheosis to become the seraph Metatron. In this capacity, his book is the earliest written record of the war in heaven and the fall of the angels.

Answer: **Enoch**

13) Identify the following about a class of phenomena in physics, for ten points each.
[10] This term, coined by Kirchoff in 1862, designates an object which light cannot traverse and which does not reflect light, although it does radiate light.
Answer: **Black Body**
[10] The Rayleigh-Jeans Law, which classical electrodynamics suggests should measure black body radiation density, predicts that an ideal black body in thermal equilibrium will emit infinite radiation and cause this disaster, which would destroy the universe if the R-J Law was actually right.
Answer: **Ultraviolet Catastrophe**
[10] This German formulated an eponymous law in 1900 which uses quantum mechanics to correctly model black body radiation density, but he is better known for his later formulation of his namesake length and time.
Answer: Max **Planck**

14) Name for ten points each of the following historical personages who form the subject of songs by disco super-group Boney M.
[10] The song about this healer-mystic calls him "lover of the Russian Queen" and "Rusdsia's greatest love machine" as it relates his poisoning, shooting, and drowning.
Answer: **Rasputin**
[10] This woman's song discusses how "they shot it out/ [this woman] and her sons/ They didn't want to hang/ They died with blazing guns" after she led her 4 sons on a bank-robbing spree, starting in Chicago in 1931 and becoming America's most-wanted woman.
Answer: **Ma Barker**
[10] This Spanish revolutionary's song compares his hopeless guerrilla war against Falange and the Franco regime in 1937 to the campaigns of Robin Hood.
Answer: **El Lute** or Eleuterio **Sanchez**

15) Identify each of the following South American authors from a pair of famous works for ten points each. You can still receive 5 points if you also need his country of origin.
[10] "Ode on a Pair of Socks" and "Twenty-One Love Poems and a Song of Despair"
[5] Chile
Answer: Pablo **Neruda**
[10] "A Manual for Manuel" and "Hopscotch" or "Rayuela"
[5] Argentina
Answer: Julio **Cortázar**
[10] Dona Flor and her Two Husbands" and "Gabriela, Clove, and Cinnamon"
[5] Brazil
Answer: Jorge **Amado**

16) Answer the following questions related to a phenomenon in optics for ten points each.
[10] This term designates the stochastic, or randomized, dispersal of photons by some medium.
Answer: **Scattering**
[10] A generalization of Rayleigh Scattering, this refers to the scattering of light by any collection of spherical particles that obey the Maxwell-Boltzmann Statistics for classical gases. It explains why the sky is blue and why fogs emit light.
Answer: **Mie** Scattering

[10] Named for the Indian physicist who first studied it, this term identifies the scattering of light by a translucent medium through which it passes.
Answer: **Raman** Scattering or **Raman** Effect

17) Answer the following questions about Mary, Queen of Scots in literature and history, 5-5-10-10.
[5] Mary's flight to England is dramatized in the novel *Abbott* by this author of *Ivanhoe*
Answer: **Sir Walter Scott**
[5] Mary was the mother of this Stuart King, whose own literary ambitions were manifested in his "Demonology" and "Attempt at Poetry," the second-to last king before the English Civil War.
Answer: **James I**
[10] This poet and critic, whose better-known works are "Tristram in Lyonesse," *Love's Cross Currents* and *Atalanta in Calydon* also wrote a trilogy about Mary; it parts are *Chastelard, Bothwell:A Tragedy*, and *Mary Stuart.*
Answer: **Algernon Charles Swinburne**
[10] The greatest scandal of Mary's reign was the theft and publication of these documents, which revealed her involvement in the murder of her husband, Lord Darnley.
Answer: **Casket Letters**

18) Identify the following about a specific case of oligopoly in economics, for ten points each.
[10] This term labels an oligopoly with only 2 members.
Answer: **Duopoly**
[10] In contrast to the Cournot model, this model of duopoly suggests that both firms assume that the other will have steady prices.
Answer: **Bertrand (bear-TRAHND) Duopoly**
[10] Whether a duopoly obeys the Bertrand or Cournot model, it always results in this kind of economic equilibrium named for the first proponent of game theory.
Answer: **Nash Equilibrium**

19) Identify the following concerning a school of American painters and one of its members, 5-5-10-10.
[5] This society, which included Sandford Gifford and Asher Durand, was known for painting nature scenes in mystical or fantastic tones, especially around the Catskills and their namesake river.
Answer: **Hudson River School**
[5] This leader of the Hudson River School is known for "Expulsion from the Garden of Eden" and the series "Course of Empire."
Answer: **Thomas Cole**
[10] Cole's protegé was this Hudson River painter, responsible for such works as "Secluded Landscape at Sunset" and "Niagara Falls."
Answer: **Frederick Church**
[10] Church's best-known painting, however, is this depiction of a South American mountain scene.
Answer: **Heart of the Andes**

20) Answer the following questions about the geography of Barcelona, Spain, 5-10-5-10
[5] Citizens of Barcelona conventionally are fluen in Spanish and what other Romance language?
Answer: **Catalán**
[10] This architect designed much of modern Barcelona, but did not live to see the completion of most of his works because he starved himself in a religious rapture, became dazed, and was run over by a bus.
Answer: **Antoni Gaudí**
[5] Gaudí's most famous building is this unfinished church, which eventually will have thirteen towers, one for each Apostle. Its name is Spanish for "Holy Family."
Answer: **El Catedral de la Sagrada Familia**
[10] This park, which Gaudí designed to surround his book-shaped house, has a number of crazed architectural features, including a hedge-maze, transparent aqueducts, stairways to nowhere and an enormous fountain in the shape of a blue-and-orange lizard.
Answer: **Parc Güelle** (GWEL)

21) For ten points each identify each of the following related to plants that grow in the desert.
[10] This term designates a plant with special adaptations for arid climates
Answer: **Xerophyte**
[10] This enzyme, which is the most abundant protein on the planet, catalyzes the first step in carbon fixation and thus triggers the Calvin Cycle.
Answer: **RubisCo**
[10] Many xerophytes retain water by closing their stomata in daylight and only taking in CO 2 at night. To survive without a daytime supply of carbon dioxide, they need this kind of metabolism which converts CO 2 into the namesake acid, which can be broken down at leisure without RubisCo.
Answer: **Crassulacaean Acid Metabolism**