

Bergen Academies Spring Quizbowl Tournament 2016

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Round 4: Tossups

1. **In the late 19th century, Daniel DeLeon led this group in a failed shift towards socialism. This group was formed as a replacement for the Garment Cutters Association of Philadelphia by Uriah Stephens. Under the leadership of (*) Terence V. Powderly, this group saw membership sharply increase, though its reputation was drastically changed by an incident at the McCormick Harvesting Machine Company. For ten points, name this labor union that was supplanted by the AFL in the late 1880s after the disastrous Haymarket Riot.**

ANSWER: Noble and Holy Order of the Knights of Labor, accept K.o.L. or K. of L.

2. **This thinker held chairmanships of the Departments of Logic and Moral Philosophy at the University of Glasgow. While a professor there, he published his collection *Lectures on Jurisprudence*. In his *The Theory of Moral Sentiments*, he defended (*) selfishness because such an attitude invariably bequeaths positive effects upon others. This idea was expanded in his most famous work, which detailed the motives of the butcher, brewer and baker. That same work outlined the efficiencies of a pin factory and the benevolence of the invisible hand. For ten points, name this Scottish economist and author of *The Wealth of Nations*.**

ANSWER: Adam Smith

3. **Through a deal with his agent Irving Mills, this musician played at the Cotton Club, and he popularized the song “Perdido” which was written by his trombonist Juan Tizol. He also collaborated extensively with saxophonist Johnny Hodges. Despite it being a Billy Strayhorn composition, (*) “Take the A Train” is one of this bandleader’s most well known pieces. “Caravan” was another Tizol composition recorded by this pianist, who wrote “Don’t Get Around Much Anymore”. For ten points, name this jazz pianist who composed “In a Sentimental Mood” and “It Don’t Mean a Thing (If It Ain’t Got that Swing)”.**

ANSWER: Edward “Duke” Ellington

4. **This experiment’s results were challenged by Felix Ehrenhaft, who had earlier mathematically determined a value much smaller than the one attained in it. As a result of this experiment, Gerard Horton was criticized for selective reporting of data. Since (*) Stokes’ Law was invalid, the pressure of the system in this experiment had to be determined separately, and the setup of the experiment involved two charged parallel metal plates whose force was meant to counteract gravity. For ten points, name this experiment in physics that determined the elementary charge of the electron, conducted by Robert Millikan.**

ANSWER: Millikan oil drop experiment (prompt on partial answer)

5. **The BepiColombo mission will study this body, on which the volcanic activity takes place in the Caloris Basin. The Pantheon Fossae on this body are a set of troughs centered around Apollodorus Crater. The surface temperature of this planet can reach 700 Kelvin, although the (*) MESSENGER probe detected ice on its north pole. The *Mariner 10* flyby of this body made it the last terrestrial planet to be visited, and it exhibits a 3:2 spin-orbit resonance. Orbiting the Sun in 88 days is – for ten points – what smallest planet of the Solar System that is also the closest to the Sun?**

ANSWER: Mercury

6. **This character, played by Ellen Terry, wears a dress decorated with green beetle shells in a painting by John Singer Sargent. This character is unable to commit a crime because the victim “resembled” her “father as he slept”. Dmitri Shostakovich wrote an opera titled for this character (*) “of the Mtsensk District”. She invokes spirits to “unsex me here” before a monarch comes to visit her home at Inverness and later hallucinates that her hands are covered with blood that she cannot wash out. For ten points, name this wife of a Shakespearean title character, who convinces her husband to murder Duncan in order to become the King of Scotland.**

ANSWER: Lady Macbeth (do not accept or prompt on “Macbeth”)

7. **This ruler gave the Hun Speech to troops deployed against the Boxer Rebellion. This man visited Tangiers and rode a white horse there to support Moroccan autonomy, leading to the Algeciras conference. This author of the Kruger Telegram lost much of his power after calling the English (*) “mad, mad, mad as March hares” in an interview with the *Daily Telegraph*. Early on in his reign, he dismissed Otto von Bismarck as Chancellor, and he supported Austria-Hungary in the July Crisis of 1914. For ten points, name this last German Kaiser, who was ousted in the final days of World War I.**

ANSWER: Wilhelm II (prompt on “Wilhelm”)

8. **Famous studies in this activity include the Excelsior and Saavedra. Before this activity was structured internationally, one dominant participant was Paul Morphy, and its Romantic Era was ended by William Steinitz. More recent people to partake in this activity include Anatoly (*) Karpov and Viswanathan Anand, and in 1997 the reigning world champion was defeated by a computer named Deep Blue. Magnus Carlsen is the current world champion of – for ten points – what game whose best players included Bobby Fischer and Garry Kasparov?**

ANSWER: chess

9. **The city of Sansha was established in this area, which is the site of an ongoing land reclamation project on Mischief Reef. This body of water also features an island being built on Johnson South Reef, which was the site of a skirmish in 1988. This sea, which contains the Paracels Islands, is encompassed by the (*) Nine-Dotted Line, against which Brunei and Vietnam have filed official complaints. The Spratly Islands are also a source of conflict in this sea, which is connected by the Luzon Strait to the Philippine Sea. For ten points, name this disputed sea of the Pacific Ocean named after a large Asian country to its north.**

ANSWER: South China Sea

10. **This man analyzed the elemental breakdown of the human body with Gretchen Schwartz, and sold his share of Grey Matter technology for five thousand dollars. This character worked for Bogdan’s carwash, a business he later purchased. This character once tried to (*) sell fulminated mercury to Tuco Salamanca, but had a much more lucrative contract with Gustavo Fring. He lived on Negro Arroyo Lane in Albuquerque with his wife Skyler and their children, employed the lawyer Saul Goodman, and formerly taught Jesse Pinkman chemistry. For ten points, name this character portrayed by Bryan Cranston, a meth cook and the antihero of *Breaking Bad*.**

ANSWER: Walter Hartwell White (prompt on “Heisenberg”)

11. **This man included scenes of Cain slaying Abel in lunettes at the top of a larger work. He inscribed his motto “As I can” on another work that is thought to be a self-portrait, of a man wearing a red chaperon. In one of his paintings, oranges ripen on the windowsill to represent fertility for the subjects. That portrait contains a chandelier with one candle blown out as well as the artist’s (*) writing on the back wall. The center panel of another of his works shows a figure wearing a three- tiered crown of Saint Peter who is known as “The Almighty”. This man collaborated with his brother Hubert on that work, sometimes known as the *Adoration of the Mystic Lamb*. For ten points, name this Dutch artist of *The Ghent Altarpiece* and *The Arnolfini Portrait*.**

ANSWER: Jan van Eyck (do not accept or prompt on “Hubert van Eyck”)

12. **A CCA tail exists at the end of the acceptor loop on this class of molecules. An experiment conducted by Seymour Benzer on a process catalyzed by the aaRS [“a-a-r-s”] protein discovered that these molecules had a high-specificity for the different molecules with which they are “charged”. Hydrogen bonds between nitrogenous bases in this non-DNA molecule create its (*) variable loops and 3-dimensional structure. A three-nucleotide sequence called an anticodon is found on these molecules opposite molecules like methionine and alanine. For ten points, name this class of “clover-leaf” shaped molecules that move amino acids to the ribosome in translation.**

ANSWER: tRNA or transfer RNA or transfer Ribonucleic acid (prompt on “RNA”, do not accept or prompt on “mRNA” or “rRNA” or any other prefix of RNA that isn’t “t”)

13. In *Either/Or*, Kierkegaard argues that this work alone allowed its composer to enter the “ranks of the immortals”. In this work, Zerlina sings “Batti, batti” to her fiancée, after her wedding is ruined with the “Champagne Aria”. Another aria in this opera names almost (*) 2,000 women from various countries, all of whom were seduced by the title character of this opera, and is frequently nicknamed “The Catalogue”. The finale of this opera shows the title character being dragged to hell by a statue of the Commendatore, who he had murdered in the beginning of the opera. For ten points, name this opera about a Spanish womanizer who refuses to repent, by Wolfgang Amadeus Mozart.

ANSWER: Don Giovanni

14. This man wrote a poem “to the tender heart and brave”, titled for his close friend Charles Sumner. In a poem about the village of Grand Pré, this man wrote of the Acadian “Gentle Evangeline”. That poem begins “This is the forest primeval”, while another epic poem in trochaic tetrameter is set (*) “on the shores of Gitchee Gumee”. The subject of one of his poems did not actually make it “to the bridge in Concord town” but was captured with his horse in Lexington. For ten points, name this American poet of “The Song of Hiawatha” who coined the phrase “one if by land, two if by sea” in his poem “Paul Revere’s Ride”.

ANSWER: Henry Wadsworth Longfellow

15. Grignard reagents can react with carbonyl groups to form these compounds. Their primary type can be oxidized to aldehydes and then to carboxylic acids, but their secondary type normally terminates the process at the ketone stage. In (*) Fischer esterification, they are reacted with carboxylic acid to form the namesake group of compounds, and according to the Pasteur effect, their production increases in the absence of oxygen in fermentation. For ten points, name this class of compounds containing a hydroxyl or -OH group, examples of which include its grain type, ethanol.

ANSWER: alcohol (prompt on ethanol before mention)

16. Every twenty years, a shrine dedicated to this deity is destroyed and then rebuilt. This figure was born after her father washed out his left eye. She created day and night when her husband killed the goddess of food, and she is the owner of the (*) Eight-Hand Mirror. During one dispute she received the grass-cutting sword, while in another she had a flayed horse thrown at her. The descendants of this goddess sit on the Chrysanthemum Throne, and her great-great-grandchild is the Emperor Jimmu. For ten points, name this sister of Susano-O, the Shinto goddess of the Sun.

ANSWER: Amaterasu-ōmikami or Ōhirume-no-muchi-no-kami

17. In one story by this author, the unnamed narrator struggles with the death of Father Flynn. That story, “The Sisters”, appears in a collection of fifteen short stories titled for this author’s home city. Another story in that collection tells of Ignatius Gallaher and (*) Thomas Chandler and is titled “A Little Cloud”. One of his novels is divided into three parts and 18 chapters, the first part of which features the “stately, plump Buck Mulligan”. That novel ends with a passage from the point of view of Molly Bloom remembering her husband Leopold’s proposal, in which she repeats the word “yes”. For ten points, name this Irish author of the short story collection *Dubliners* and the long novel *Ulysses*.

ANSWER: James Joyce

18. Upon this figure’s death, he became the reason why people deny, forget, and make mistakes. He gave 40 years of his life to Dawid, shortening his predetermined lifespan of 1,000 years. This man had 120 pairs of twins, and each son married the twin sister of another; his third son, (*) Sheth, was named his successor. Iblis was banished from Heaven for refusing to bow to this person because he was made from clay. He and his wife Hawwa are instructed to avoid a certain tree, but Iblis convinces them to eat its fruit, causing their expulsion from Paradise. For ten points, name this first prophet of Islam, who in the Abrahamic religions is the first man created by God.

ANSWER: Adam

19. **One of this man's few comedies derived its title from the Rubaiyat and was called *Ah, Wilderness!* In another of his plays, this writer included a character who loves fog but not the repeated sound of a foghorn. An autobiographical character in that play has a friend named Harker who is an oil heir and his mother is addicted to morphine. This man adapted (*) *Libation Bearers* into *The Hunted* as part of his retelling of the Oresteia centered on Ezra and Lavinia Mannon. For ten points, name this American realist playwright of *Mourning Becomes Electra* who described Edmund Tyrone's family in *Long Day's Journey Into Night*.**

ANSWER: Eugene Gladstone O'Neill

20. **A horse stampede was used to hide the location of this man's grave and the men riding those horses were all subsequently murdered, so that his gravesite would remain forever secret. In 1219, his army conquered the Khwarezmid Empire, and in the year of his death he also successfully destroyed the (*) Western Xia. During his rise to power, he fought his former blood brother Jamukha, and afterwards he enacted the Yassa code. He was succeeded by his son Ogedei, and was known as Temujin during his childhood. For ten points, name this grandfather of Kublai and founder of the Mongolian Empire.**

ANSWER: Genghis Khan (accept Temujin until mentioned)

Tiebreaker Question:

Early theologians of these people included such "Fathers" as Origen and Tertullian. The Catacomb of Priscilla contains some of the first artwork of these people, including an orant figure. Priscilla and Aquila helped spread this group's message. One early one of these people dreamt of a cross in the sky and later granted them tolerance in the Edict of (*) Milan. One person joined their ranks while on the road to Damascus and these people were held responsible by Nero for the Great Fire of Rome, and Paul spread the tenets of this people's faith to the Gentiles. For ten points, name this group of religious adherents to Jesus whose ranks included Constantine.

ANSWER: Christians (or Early Christians, or followers of Jesus or other wordings)

Round 4 Bonuses

1. Give the following about an English king who married six times, for ten points each:

[10] This second Tudor monarch became first in line to the throne after the death of his brother Arthur. He subsequently married Arthur's widow Catherine of Aragon.

ANSWER: **Henry VIII** (prompt on just "Henry"; do not accept or prompt on "Henry Tudor")

[10] Henry used his adviser Thomas Wolsey and his influence in Rome to have his marriage to Catherine annulled in favor of this other woman, who was beheaded three years after their marriage.

ANSWER: Anne **Boleyn**

[10] Henry's fourth wife was this Flemish woman, who, according to legend, either looked or smelled like a horse; his marriage to her lasted only six months.

ANSWER: **Anne of Cleves**

2. The centers of these objects may rise to become resurgent domes. For ten points each:

[10] Name these geological features that are formed by collapsed land after a volcanic eruption. Their name comes from the Spanish word for "boiler".

ANSWER: **caldera**

[10] This largest lake in Indonesia sits on top of a caldera. It was the site of the largest eruption in the past 25 million years, which registered at a volcanic explosivity index of 8.

ANSWER: Lake **Toba**

[10] The caldera under this national park was the site of eruptions that formed the Snake River Plain. Today, heat from the caldera fuels geysers in this national park such as Old Faithful.

ANSWER: **Yellowstone** National Park

3. This adventurer has drawn comparisons to Odysseus, and his travels were eventually recorded in *One Thousand and One Nights*. For ten points each:

[10] Name this sailor from Baghdad who went on seven voyages in the Indian Ocean. He tells his stories to a porter of the same name.

ANSWER: **Sinbad** (or **Sindbad**)

[10] In his fifth voyage, Sinbad is chased by one of these large mythical raptors after stealing its eggs. They are tricked into mining diamonds in his second voyage.

ANSWER: **roc**

[10] Also in his fifth voyage, Sinbad fights this type of deity. Greek examples include Proteus as well as Nereus, the father of Thetis.

ANSWER: **sea** god (accept equivalents for "sea"; accept **old man of the sea**; prompt on "water god")

4. Toys are often featured as the basis of films. For ten points each:

[10] This popular game was the basis for a 2012 film that saw Liam Neeson and Rihanna atop the title vessel. However, it is unclear if the missile system was based on the canonical grid.

ANSWER: **Battleship**

[10] In this Robin Williams feature, Alan Parrish has been trapped inside the title board game for 26 years. *Zathura* is loosely considered a sequel.

ANSWER: **Jumanji**

[10] This film series includes the installments *The Rise of Cobra* and *Retaliation*. It is based on the Hasbro action figures, who were marketed as "Real American Heroes".

ANSWER: **G.I. Joe**

5. For ten points each, name the following about the literary genre of constrained writing:

[10] *Le Train de Nulle Part*, a novel by Michel Thaler, contains no words of this type. These words include the transitive and auxiliary varieties.

ANSWER: **verbs**

[10] The second chapter of Christian Bök's *Eunoia* ["yu-NOY-ya"] contains no vowels other than this one. Ernest Vincent Wright's *Gadsby* contains this vowel zero times.

ANSWER: **e**

[10] Like *Gadsby*, this novel by Georges Perec conspicuously lacks the letter 'e'. It tells of the friends of Anton Vowl searching to fill the emptiness that they inexplicably feel.

ANSWER: ***A Void*** or ***La Disparition***

6. Despite the random collisions of gas particles, there are still chemical principles that attempt to make sense of them. For ten points each:

[10] Name this law derived from a combination of Boyle's and Gay-Lussac's Law, which is mathematically expressed as $PV=nRT$.

ANSWER: **ideal gas** law or **universal gas** law

[10] This variation of the ideal gas law has factors *a* and *b* that attempt to compensate for pressure and volume irregularity present in gases not at standard temperature and pressure.

ANSWER: **Van der Waals** Equation of Real Gases

[10] Gases also undergo effusion which can be modeled mathematically as proportional to the square root of molar mass, as per this man's eponymous equation.

ANSWER: **Graham's** Law

7. This character kills his adopted son Ikemefuna. For ten points each:

[10] Name this Igbo clan leader and local wrestling champion, the son Unoka and father of Nwoye.

ANSWER: **Okonkwo**

[10] Okonkwo appears in this novel set in a Nigerian village during British rule. A line from the W.B. Yeats poem "The Second Coming" lends its name to this novel's title.

ANSWER: ***Things Fall Apart***

[10] Okonkwo was created by this author *Things Fall Apart* and its sequel, *No Longer at Ease*.

ANSWER: Chinua **Achebe**

8. New Holland was a historical name for this country-- for ten points each:

[10] The Dutch explorer Willem Janszoon first found this large Southern Hemisphere island, although Abel Tasman was the first to apply it to this island country.

ANSWER: **Australia**

[10] Janszoon also gave a part of Australia this name, which comes from a Dutch province. Abel Tasman later used this name for a nearby country made up of North and South islands, with a capital at Wellington.

ANSWER: **New Zealand** or **Nieu Zeeland**

[10] A later explorer, James Cook also went to the eastern part of New Holland, landing the *HMS Endeavor* for the first time in this bay, 13 kilometers south of modern day Sydney.

ANSWER: **Botany** Bay

9. He is known for his loud orchestral soundtracks, including *The Lion King* and *Gladiator*. For ten points each:

[10] Name this Grammy- and Oscar-winning film composer for *The Dark Knight* and *Inception* who is known for his use of synthesizers.

ANSWER: Hans **Zimmer**

[10] This recent Zimmer soundtrack was for yet another Christopher Nolan film, which starred Matthew McConaughey, Anne Hathaway and Matt Damon and featured the gargantuan black hole cleverly named Gargantua.

ANSWER: ***Interstellar***

[10] For the *Inception* soundtrack, Zimmer mixed a recording of this French singer's song "Non, je ne regrette rien".

ANSWER: Édith **Piaf** or Édith Giovanna **Gassion** or Édith **Pills**

10. This quantity is the fourth of the quantum numbers describing an electron. For ten points each:

[10] Name this intrinsic quantum property of particles, analogous to angular momentum. Bosons have integer values for this quantity, while fermions have half-integer values.

ANSWER: **spin**

[10] This experiment named for its two German creators verified the existence of quantum spin by deflecting particles in a direction based on their quantum spin number.

ANSWER: **Stern-Gerlach** experiment

[10] This effect allows the spin of a particle to be isolated from the particle itself. It was first observed in 2014 with neutrons and their magnetic moment, and is named after a literary feline.

ANSWER: quantum **Cheshire Cat**

11. This man composed such tunes as “I’ve Got Rhythm” and “It Ain’t Necessarily So”, the latter from his opera *Porgy and Bess*. For ten points each:

[10] Name this Jewish-American composer of the aforementioned works as well as *Lady Be Good* and *Of Thee I Sing*.

ANSWER: George **Gershwin**

[10] One of Gershwin’s classical works is this one with a jazz influence. Its clarinet glissando opens the Woody Allen film *Manhattan*.

ANSWER: **Rhapsody in Blue**

[10] George Gershwin created this orchestral work, originally titled *Rumba*, after spending a vacation in Havana.

ANSWER: **Cuban Overture**

12. This school of thought advocated for a simple life that minimizes pain. For ten points each:

[10] Lucretius, author of *On the Nature of Things*, and Horace, who quipped “Carpe Diem,” subscribed to what philosophy?

ANSWER: **Epicureanism**; prompt on “hedonism”, but do not otherwise reveal that “hedonism” is promptable.

[10] Epicureanism is part of this larger school of thought, whose overarching objective is to maximize net pleasure, and believes that people have the right to attempt to maximize their own pleasure so long as others’ rights remain intact.

ANSWER: **hedonism**

[10] Epicureanism became popular among philosophers of this era via Michel de Montaigne’s quoting of Lucretius. This time of “rebirth” in the 15th and 16th centuries saw philosophy inspired by the works of the Greeks flourish.

ANSWER: **Renaissance**

13. For ten points each, name these rivers that were crossed during historical military campaigns:

[10] Julius Caesar famously said “The die is cast” as he crossed this river to enter Rome, igniting a civil war that would culminate with his being appointed Dictator.

ANSWER: **Rubicon**

[10] During the American Revolution, General Howe and his troops crossed this Pennsylvania river north of the American position. The British victory at the battle named for this river allowed them to occupy Philadelphia.

ANSWER: **Brandywine** Creek (or **Brandywine** River)

[10] The area over this river, which flows into the Yellow Sea, was known as “MiG Alley” during the Korean War. Chinese soldiers preemptively crossed it to face UN forces.

ANSWER: **Amnok** River (accept **Yalu** River)

14. This massacre occurred on April 20, 1999. For ten points each:

[10] Name this high school shooting carried out by two Colorado students, which resulted in increased scrutiny of antidepressants and violence in video games.

ANSWER: **Columbine** High School shooting

[10] A July 2012 shooting took place in a movie theater in this Colorado city during a Batman film. The shooter, James E. Holmes, was subsequently apprehended, but pleaded not guilty by insanity.

ANSWER: **Aurora**, Colorado

[10] A 1996 shooting in this nation’s city of Port Arthur led to their still-standing assault weapons ban; this nation has not had a mass shooting since.

ANSWER: Commonwealth of **Australia**

15. This man's first son was named Gershom, meaning "a stranger there". For ten points each:

[10] Name this Biblical figure who married Zipporah while in exile in Midian after his murder of an Egyptian overseer.

ANSWER: **Moses** or **Moshe** or **Musa**

[10] Shortly after leaving Egypt, Moses rescued Zipporah from shepherds harassing her at a well. This priest, his soon-to-be father-in-law was so grateful, he granted Moses her hand in marriage.

ANSWER: **Jethro** or **Reuel**

[10] While in Midian, Moses also encountered the burning bush, a major plot element of this book of the Bible which takes its English name from the mass movement of the Hebrews from Egypt.

ANSWER: **Exodus** or **Sh'mot**

16. This book was published posthumously, and won the 1980 Pulitzer Prize in Fiction. For ten points each:

[10] Name this novel telling of Ignatius J. Reilly's misadventures, partly inspired by his obsession with the writings of Boethius.

ANSWER: *A **Confederacy of Dunces***

[10] This author finished *A Confederacy of Dunces* while working in Puerto Rico. He killed himself at the age of 31 after suffering from depression and the rejection of his writings.

ANSWER: John Kennedy **Toole**

[10] Reilly lives in this city with his mother. This city is known for its French influenced cuisine, which includes gumbo and po' boys.

ANSWER: **New Orleans**

17. The Reidemeister moves allow for moving and twisting components of these. For ten points each:

[10] Name these structures studied by Vaughan ["VON"] Jones, who gives his name to a polynomial unique to each of these. One of the simplest is the trefoil, and they can be visualized by tying a string.

ANSWER: **knots** or **knot** theory

[10] Jones received this highest achievement in mathematics for his work in knot theory. Awarded every four years, notable recipients of this prize have included Terence Tao and Maryam Mirzakhani.

ANSWER: **Fields Medal**

[10] This Greek mathematician and physicist appears on the obverse of the Fields Medal. He once remarked that "Give me a place to stand and with a lever I will move the whole world".

ANSWER: **Archimedes**

18. This poem originally featured direct criticism of evangelist and former White Stockings player Billy Sunday, but editor Alfred Harcourt removed it. For ten points each:

[10] Name this Carl Sandburg poem about "The Hog Butcher for the World."

ANSWER: "**Chicago**"

[10] Sandburg wrote a poem titled for this plant, which buries the bodies piled "at Austerlitz and Waterloo", that implores the reader to "Let me work".

ANSWER: "**Grass**"

[10] *The War Years* is part of Sandburg's biography of this man. Sandburg won a Grammy for a performance with the New York Philharmonic of a Copland piece named for this president.

ANSWER: Abraham **Lincoln**

19. This man's "Factory" studio was a gathering place for his namesake superstars. For ten points each:

[10] Name this pop artist, a native of Pittsburgh, Pennsylvania, who created several screen print images of Campbell's Soup cans.

ANSWER: Andy **Warhol**

[10] Warhol also created a "diptych" of fifty nearly identical silkscreened images of this actress who appeared in *Some Like It Hot* and *Gentlemen Prefer Blondes*.

ANSWER: Marilyn **Monroe**

[10] Another common subject for Warhol was this object, controversial due to the ongoing debate on the death penalty in the United States. The one pictured in his prints is thought to be from Sing-Sing prison.

ANSWER: an **electric chair**

20. Secretions from these animals are traditionally used as toxins in the ammunition of the Emberá Chocó peoples. For ten points each:

[10] Name this brightly colored group of small frogs native to South America.

ANSWER: **Poison dart** frogs

[10] Poison dart frogs display this type of adaptation that utilizes bright colors as an alert to predators of their potential toxicity. Monarch butterflies also exhibit this signal in their bright orange wings.

ANSWER: **aposematism** (accept **warning coloration** or **warning signals** or equivalents)

[10] The Mullërian form of this phenomenon occurs when one species, although not poisonous itself, develops similar coloring to a poisonous species to deter predators. It is a general term for any sort of similarities between two species that confer advantages to one or both.

ANSWER: **mimicry**

21. He sent a copy of his paper to Charles Darwin, who never read it. For ten points each:

[10] Name this Czech monk and father of genetics who experimented on 7 different traits in pea plants including seed texture and flower color.

ANSWER: Gregor **Mendel**

[10] A way of visualizing Mendelian genetics is through these diagrams which list allele combinations from both parents on opposite sides of the title shape.

ANSWER: **Punnett square**

[10] Mendel's theories posited that different alleles for separate traits follow this principle of randomly being assigned to gametes.

ANSWER: **independent assortment**