

by Bill Tressler

with thanks to Bern McCauley and the Great Valley Quiz Team

### Tossups

1. **A paramount leader focused on this edifice in a 1984 campaign, and said “let us love our country”. The historian Joseph de Guignes posited its creation caused European invasions. The Jesuits Antoine Gabil and Dominique Parrenin created an 18<sup>th</sup> century map of this object for the emperor. Only about eight percent of it is in good condition, and (\*) twelve hundred miles are gone. Qin Shi Huang ordered an 3<sup>rd</sup> century BC expansion of this structure again lengthened by the Ming Dynasty. For 10 points—give this defensive structure on China’s northern border.**

answer: **Great Wall** of China or **changcheng**  
[Guignes’s theory was that the wall forced nomads west]

2. **This writer included Edith Wharton’s “Afterward” in a 1983 ghost story collection. In another work, this author said Ranghild Hansen, Birgit Svenson, and three more childrens’ disappearances were due to witches. He wrote the autobiography *Going Solo*, and wrote of a pet demanding molars fixed in his poem “The Dentist and the Crocodile”. His character (\*) Sophie befriends a large figure who stores dreams in a cave. *The BFG* and *Matilda* are by—for 10 points—what author who also had Charlie Bucket visiting Willy Wonka’s Chocolate Factory?**

answer: **Roald Dahl**

3. **Ewald Hering’s opponent process theory explains how humans understand these concepts. Vladimir Nabokov’s synesthesia meant he linked graphemes like numbers with them. These qualities correspond with 400- to 700-nanometer wavelengths and can label the Hertzprung-Russell diagram’s horizontal axis. (\*) Deuteranopia and tritanopia are different ways of processing these sensations that result when the eye’s cone cells are stimulated. For 10 points—give the term for these properties we label mauve, cyan, and brown.**

answer: **colors** (accept **color blindness** after "deuteranopia")

4. **This mythological group used brazen clubs to kill Agrius during the Gigantomachy. They are credited with inventing eta, tau, and five other alphabet letters. Alcestis acted on a promise Apollo extracted from these figures to save Admetus. Some said they were similar to Tyche, and they gave a young Meleager a horoscope. This group included (\*) Atropos the inevitable, Lachesis the alotter, and Clotho the spinner. People’s lives are threads manipulated by—for 10 points—what figures who determined destinies or outcomes?**

answer: **The Fates or Moirai or Moerae**

5. **This scientist modified an eudiometer to test gas flammability, a device called his “pistol”. Objects bouncing in a charged container are called his “storm” to honor his hail formation theory. This University of Pavia professor isolated a gas with formula CH<sub>4</sub>. This scientist used alternating copper and zinc disks and an electrolyte to produce a (\*) “pile” that provides current. The electric potential SI unit honors him and describes rectangular batteries producing nine of that unit. For 10 points—give this Italian whose name is that unit plus the letter “a”.**

answer: **Alessandro Volta**

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6. **This work's protagonist meets Filippo Argenti while crossing a river. Another of its sections has a contest between groups pushing weights and crashing into each other. Its characters are briefly denied entrance to the city of Dis after seeing the inscription states "abandon all hope, ye who enter here". Trees whose branches are broken to cause (\*) pain are seen in this work's Seventh Circle, where self-harm is punished. For 10 points—name this first part of the Divine Comedy in which Dante is guided through hell.**

answer: **Inferno** (or **Dante's Inferno**; prompt on "Divine Comedy")

7. **In 1877 this organization's employee Nathaniel Druscovich was implicated in aiding Harry Benson and William Kurr in the Turf Fraud Scandal. In 2017 Cressida Dick became its first woman commissioner. Tommy Butler headed its Flying Squad and headed a team to address a 1963 train heist masterminded by Bruce Reynolds. Since (\*) Robert Peel founded it, its employees were known as "Bobbies". Kings from north of England stayed in an area later used by—for 10 points—what London police force some nickname "the Yard"?**

answer: **Scotland Yard** or **MPS** or **Metropolitan Police Service** (accept **New Scotland Yard** after "2017"; prompt on "London police" until given; prompt on "The Yard" until given)

8. **Eppa Rixey never attained this status Jack Quinn accomplished at age 46. Ray Chapman died while trying to do this. Grover Cleveland Alexander took an object he earned for this accomplishment to the pawn shop, and Moose Skowron wanted a Rolex. Yusmeiro Petit is the only man to do this and accomplish a related juvenile feat in (\*) Williamsport, Pennsylvania. No one did this in 1994. Don Larsen threw a perfect game en route to doing this in '56, and Yogi Berra holds the record at ten times. For 10 points—give this feat accomplished in 2017 by the Houston Astros..**

answer: **winning a World Series** (accept other equivalents like **World Series champions**; prompt on partial answers; do not accept generic answers like "play baseball")

[Petit also won the Little League World Series]

9. **Archimedes proved these mathematical objects have segments whose area is four-thirds that of an inscribed triangle. A polar equation example is R equals five over the quantity one plus sine theta. This object with eccentricity one is the set of points equidistant from a focus and a directrix. Suspension bridge (\*) cables, water sprinkler spray paths, and satellite dishes are often examples of this shape. Y equals X squared is an example of—for 10 points—what conic sections that like hyperbolas are open curves?**

answer: **parabolas** or **parabolae** (do not accept "quadratic" as the clues are specific)

10. **This leader reprieved George Wilson's robbery, but Wilson declined the pardon. In 1780 he and his brother Robert were in the Battle of Hanging Rock, and later as redcoat prisoners, this man earned a head scar for refusing to clean an officer's boots. Robert John Sevier, Waightstill Avery, and Charles Dickinson are among those this leader (\*) dueled. The Trail of Tears relocations followed his signing of the Indian Removal Act. Old Hickory was a nickname of—for 10 points—what seventh president depicted on the \$20 dollar bill?**

answer: Andrew **Jackson**

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11. **The Australian government of Gough Whitlam was criticized for buying this artist's *Blue Poles*. This artist said "a stampede [of] every animal in the American West" appeared on his 1943 Mural created for Peggy Guggenheim. This spouse of Lee Krasner obscured thumbtacks, cigarette butts, and coins with paint in (\*) *Full Fathom Five*. Brown and yellow paint are applied to a fiberboard in this artist's *Number 5, 1948*, which critics describe with words like "pours", "splatter", and "drizzles". For 10 points—give this American artist known as "Jack the Dripper".**

answer: Jackson **Pollock**

12. **Robert Charles Birney called this "An Enduring Problem in Psychology" and William Wundt coined the term for any repeated behavior. Jean Henri Fabre tried to separate this from of intellect, and pointed to the differences between mud cells of wasps and mason bees' dust nests. Examples include (\*) geese imprinting, spiders' web-spinning, and newborn leatherback turtles crawling towards the sea. Irresistible actions triggered by an environment are —for 10 points—what behaviors organisms do not need to learn?**

answer: **instinct** or **innate** behavior

13. **This author writes "We must go back with Policeman Day" in the poem "The City of Sleep". In another work by this author, the affluent Harvey Cheyne lives with fishermen after falling from a boat. In another novel, he wrote about a boy with Irish parents who learns espionage in India by memorizing a tray of items. His 1894 collection includes the (\*) tiger Shere Khan and the stories "Rikki-Tikki-Tavi", "Kaa's Hunting", and "Mowgli's Brothers". For 10 points—name this author of *Kim* and *The Jungle Book*.**

answer: Rudyard **Kipling**

14. **Émile Waldteufel [wal-TOY-ful] created *Pomona* and *The Skaters* in this genre, and one begins Aram Khachaturian's ["catch"-ah-TUR-ee-anns] *Masquerade*. Mexico's Juventino Rosas wrote "Sobre las Olas", or "Over the Waves", this kind of music common in trapeze acts. Frédéric Chopin's examples include *Departure*, *Farewell*, and (\*) *Minute*. Often in 3/4 ["three four"] time, Johann Strauss the Younger included staccato wind chords in one of these titled *The Blue Danube*. For 10 points—give this ballroom music, a German term meaning to dance or wander.**

answer: **waltz** (prompt on "dance" until "Departure")

15. **Normand Brissette and Ralph Neal were American POWs who died in the first of these two events. These events were preceded by the 509<sup>th</sup> Composite Group training at Wendover Field. The dropped Leaflet AB-11 urged citizens to beg their emperor before this happened. Some suggest Henry Stimson's honeymoon in (\*) Kyoto saved it from being included in these events caused by objects named Fat Man and Little Boy. *The Full House* and *Enola Gay* were aircraft involved in—for 10 points—what events that killed 129 thousand at the end of World War II?**

answer: dropping **atomic bombs** on Japan or the destruction of **Hiroshima and Nagasaki** (accept either answer, and any reasonable variant including **nuclear weapons**)

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16. **This biblical figure stops the destruction at the floor of Ornan the Jebusite, a scene after an unapproved census. In the book of Numbers this is who decides Reuben's camp is in the south and Ephraim on the west. In other books this figure kills Er and Onan and assigns punishments of 390 and 40 days to (\*) Ezekiel. Blasphemy might use this figure's name improperly, and no others are before this figure in the First Commandment. For 10 points—give this biblical individual who states "let there be light" and creates the Heaven and the Earth.**

answer: **God** of Israel or **Jehovah** or **Yahweh** (prompt on "the Lord" or "the divine")

17. **This phenomenon is described by Pierre-Simon Laplace's differential equations which include latitude and longitude parameters. The Old Brass Brains maintained by the NOAA predicts these events measured by Palmer-Moray gauges. They are affected by the centrifugal force and display a five percent variation between aphelion and perihelion. Many locales see a (\*) 12-hour 25-minute cycle, and the terms spring and neap describe their high and low extremes. For 10 points—give the term for this local rise and fall of sea water.**

answer: **tides**

18. **Stanford's Nathaniel Persily was asked to modify eighteen of these in January 2018. The "efficiency gap" evaluates their equity, a method John Roberts called "sociological gobbledygook". "Goofy kicking Donald Duck" was a name Pennsylvanians used for one of these boundaries that determine Maine and Nebraska (\*) Electoral College votes. *Evenwel v. Abbott* held these areas reconstructed every ten years do not need to be created counting just voting citizens. For 10 points—name these political map features sometimes drawn into gerrymanders.**

answer: **congressional districts** or **House** of Representatives **districts** (accept **gerrymander** before read; the first and third clues refer to **Pennsylvania congressional districts**)

19. **In one work, this poet compares the "dull realities" and "peering eyes" of science to a vulture. This writer mentions the Houri and imagines himself attempting to play the lute bolder than the title angel in "Israfil". A graveyard of soldiers appears in his "Valley of Unrest". He also wrote poems where a beautiful woman lies in a "tomb by the sounding (\*) sea" and another beginning "Once upon a midnight dreary" which tells of an macabre avian who says "nevermore". For 10 points—name this writer of "Annabel Lee" and "The Raven".**

answer: Edgar Allen **Poe**

20. ***Angraecum sesquipedale* is called this man's orchid because he predicted there would exist a moth with a long tongue capable of reaching the nectar. Thomas Henry Huxley's advocacy led to a nickname of this man's "bulldog". In *Living Cirripedia*, this owner of the Down House wrote about barnacles with hermaphrodite and male genders. As a passenger on the (\*) *HMS Beagle*, he visited the Galapagos and studied its finches. *The Descent of Man* and *On the Origin of Species* are works by—for 10 points—what man who developed an evolution theory?**

answer: Charles **Darwin**

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21. **This astronomical body causes Kirkwood Gaps among neighbors, and Hildian bodies are in a three-to-two resonance with it. Mullo, Kondojiro, and Dioretsa cross the orbit this body shares with Greek and Trojan objects. The Kushida–Muramatsu comet was temporarily a moon of this (\*) planet that had a 1994 collision event with Shoemaker-Levy 9. Twenty-two degrees south of its equator is an anticyclonic storm known as the Great Red Spot. For 10 points—name this fifth planet from the sun, the largest of the Solar System.**

answer: **Jupiter**

22. **In historical times, parts of this body of water were known as the Erythrean Sea and the Sea of Zanj. Its deepest point is in the Diamantina Trench, which is southwest of the U.S. military base at Diego Garcia. Zheng He sailed this body in the 15<sup>th</sup> century. Its warm waters meet the cold currents of another (\*) ocean at the Agulhas [ah-GHOUL-as] Bank. Countries surrounded by it include the Comoros, Maldives, and Sri Lanka. For 10 points—name this third-largest ocean, which lies between Mozambique and Australia.**

answer: **Indian Ocean**

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## Bonuses

1. For 10 points each—give these titles with *Three Musketeers* connections:

A. On this show, Dustin finds a creature he calls D'Artagnan [dar-TAN-yun] and feeds it Halloween nougat. "Dart" turns into an Upside Down "demi-dog" and eats Dustin's cat on this Netflix show.

answer: **Stranger Things** (accept **Stranger Things** season 2)

B. This movie sees Jamal and Salim arrive late to class and earn the names "Athos" and "Porthos". The third musketeer's name ends up being a game show-winning piece of information Jamal guesses in this film.

answer: **Slumdog Millionaire**

C. Leonardo DiCaprio played Louis XV ["the fifteenth"] in this 1998 film that concludes with the Musketeers replacing the king with a twin who formerly covered his face.

answer: The **Man in the Iron Mask** (accept L'**Homme au Masque de Fer**)

2. For 10 points each—give these places with polity division movements:

A. Tim Draper championed a 2018 ballot initiative to divide this most populous state into three, but a court withdrew the measure for legal analysis. Jerry Brown is its current governor.

answer: **California**

B. An October 2017 referendum saw 92% of voters in this region desiring independence. Barcelona is a province of this autonomous community of northeast Spain.

answer: **Catalonia** (or **Catalan** region independence referendum)

C. The Republic of Mahabad was a short 1946 state of this ethnic group. A 2017 referendum in cities such as Erbil and Kirkuk brought tension between these people and the government of Iraq.

answer: **Kurds** (accept the **Kurdistan** independence referendum)

3. In the 20<sup>th</sup> century this condition was known as "shell shock" and "combat neurosis". For 10 points each—

A. Give this condition causing a person to remember unpleasant times when triggered. This anxiety disorder has been studied among military veterans.

answer: **PTSD** or **posttraumatic stress disorder**

B. A common PTSD symptom is these non-awake events. The Latin term *incubo* means one of these and is the source of the incubus demon's name.

answer: **nightmares** or **bad dreams** (prompt on "dream"; accept any equivalent answer indicating an unpleasant or stressful dream; do not accept "night terror")

C. Some studies suggest this brain component has shrunken in PTSD sufferers. This memory formation tissue is named for its resemblance to a seahorse.

answer: **hippocampus** or **hippocampi**

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4. Deformed extremities caused by lung disease are sometimes called his fingers. For 10 points each—

A. Name this ancient physician born on the island of Kos. Modern doctors take an oath attributed to him.

answer: **Hippocrates** (prompt on "Hippocratic oath")

B. In his writings, Hippocrates said of this condition, "when it arises from a wound...the mouth cannot be opened". Caused by a *Clostridium* bacterium, adults tend to get a booster shot to prevent it every ten years.

answer: **tetanus** or **lockjaw**

C. Hippocrates practiced this system of medicine, in which temperament and health were linked to blood, bile, and phlegm.

answer: **humorism** or **humoralism** (accept word forms)

5. Tradition holds this figure said "Let them eat cake" upon learning the peasants had no bread. For 10 points each—

A. Name this wife of Louis XVI ["the sixteenth"] whose queenship saw the French Revolution.

answer: Marie **Antoinette**

B. Like her husband's execution, Marie Antoinette was killed with one of these tall, upright frames in which a falling blade decapitates the condemned.

answer: **guillotine**

C. Marie Antoinette's father was this Holy Roman Emperor elected in 1745, the first of his name. He exchanged Lorraine to become the Duke of Tuscany and began the house of Habsburg-Lorraine.

answer: **Francis I** (or **Franz Stefan** or **Francis Stephen** or **Francis III Stephen**)

6. For 10 points each—give these Mexican holidays:

A. This event honors Mexico's victory in the Battle of Puebla in the fifth month of 1862. It has become a popular U.S. celebration of Latino culture.

answer: **Cinco de Mayo** (prompt on "May 5" or "Fifth of May")

B. Held between October 31<sup>st</sup> and November 2<sup>nd</sup>, the Catholic All Saints' Day falls within this celebration. It sees altars remembering loved ones and the wearing of *calaveras* makeup.

answer: **Day of the Dead** or **Día de Muertos** or **Día de los Muertos**

C. This day held on February's first Monday honors 1857 and 1917 Mexican government events. In the U.S. this day is September 17<sup>th</sup>, but is not widely observed.

answer: **Constitution** Day or Día de la **Constitución** or Anniversary of the **Constitution** or Aniversario de la **Constitución**

7. For 10 points each—give these terms describing functions:

A. Functions whose graphs are symmetric about the y axis have this property. For integers, these are numbers like ten or twelve with no remainder when divided by two.

answer: **even** [for such functions,  $f(x) = f(-x)$ ]

B. This term describes a function  $g$  that "undoes" the operation of a function  $f$ , meaning  $g$  of  $f$  of  $x$  equals  $x$ . The pair of functions  $f$  equals  $x$  cubed and  $g$  equals the cube root of  $x$  are an example pair.

answer: **inverse** (accept the **inverse of f**)

C. This is a function that only increases or decreases across its domain. This term can also mean a song or chant sung using only one note.

answer: **monotone** or **monotonic**

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8. He was president of the African National Congress between 1991 and '97. For 10 points each—

A. Name this man whose government formed a Truth and Reconciliation Commission.

answer: Nelson **Mandela**

B. The African National Congress was the leading movement to end this South African system of racial segregation. The term means “separateness” in Afrikaans.

answer: **apartheid**

C. The Reconciliation Commission was chaired by this Archbishop, the 1984 Nobel Peace Prize winner.

answer: Desmond **Tutu**

9. Glasir [GLAH-seer] is a tree outside this hall. For 10 points each—

A. Name this structure in Asgard said to have 540 doors.

answer: **Valhalla**

B. Slain heroes are brought to Valhalla by these females. Some of the named ones include Skuld, Göndul, and Brunnhilde.

answer: **valkyries**

C. One way to get to Valhalla is to cross this rainbow bridge guarded by Heimdall. The forces of Muspelheim will break it in the end times.

answer: **Bifröst** (or **Bilröst** or **Bivrost**)

10. For 10 points each—give these answers related to Tennessee Williams characters:

A. In a play about a Mississippi family in which Brick does not love Maggie, Maggie compares herself to one of these felines “on a hot tin roof”.

answer: **Cat** (on a Hot Tin Roof)

B. “I have always depended upon the kindness of strangers” is said by this woman in *A Streetcar Named Desire*. She loses her wealth and must move in with her sister Stella Kowalski.

answer: **Blanche Dubois** (accept either underlined name)

C. In a 1957 Williams play, Val is a modern version of this Greek hero “Descending”. In Ovid’s telling, this man descends to the gate of Taenarus, and his lyre music causes the Furies to weep.

answer: **Orpheus** (Descending)

11. For 10 points each—give these words seen in art:

A. Shepard Fairey designed a red, blue, and beige poster for Barack Obama’s 2008 campaign with this word at the bottom.

answer: **hope**

B. First seen in a MoMA Christmas card, Robert Indiana stylized this word in sculptures using its four letters in a square. Examples are seen at California’s Panda Restaurant headquarters and at the University of Pennsylvania.

answer: **love** (spelling **L-O-V-E** is fine)

C. This word is in the second panel of a Roy Lichtenstein comic-like work depicting a fighter pilot firing rockets.

answer: **Whaam!**



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12. For 10 points each—give this laboratory equipment developed by Germans:

A. Named for a man who worked with the assistant Peter Desaga, this burner is connected via a hose to a gas supply to produce an open flame.

answer: **Bunsen** burner [named for Robert Bunsen]

B. Nutrients and other substances can be added to these shallow round culture dishes, which are named a man who worked with bacteriologist Robert Koch ["coke"].

answer: **Petri** dishes [named for Julius Richard Petri]

C. A flat bottom, conical body, and cylindrical neck characterize this glassware also called a titration flask.

answer: **Erlenmeyer** flask [named for Emil Erlenmeyer]

13. Laurence Powell and Stacey Koon served prison time for violating this man's civil rights. For 10 points each—

A. Name this man who tried to outrun the California Highway Patrol and was subsequently beaten by officers in March 1991.

answer: Rodney **King**

B. The April '92 officers' acquittal led a riot in this most populous California city. Its current mayor is Eric Garcetti.

answer: **L.A.** or **Los Angeles**

C. This representative is still criticized for calling the riot an "understandable" reaction to injustice. This House Financial Services ranking member responded to 2018 death threats by saying her critics "better shoot straight".

answer: Maxine **Waters**

14. For 10 points each—give these answers related to Jules Verne:

A. In an 1870 title, Captain Nemo takes the *Nautilus* submarine for a trip traveling this many leagues "under the sea". The distance equals 60 thousand miles.

answer: **Twenty-thousand** Leagues Under the Sea

B. In this Verne novel, Otto Lidenbrock encounters dinosaurs and giant mushrooms during an adventure ending at the Stromboli volcano.

answer: **Journey to the Center of the Earth** or **Voyage au centre de la Terre**

C. Accompanied by his valet Jean Passepartout, a wager motivates what English gentleman to travel around the world in eighty days?

answer: **Phileas Fogg** (accept either underlined name)

15. For 10 points each—give these answers related to hurricanes:

A. This highest category number on the Saffir-Simpson scale is used for storms whose winds exceed 157 miles per hour.

answer: **5**

B. This picture used in cyclone forecasting shows all the lines of different models' likely paths. The term is from an Italian food whose name means "thin string" or "twine".

answer: **spaghetti** plot (or diagram or model)

C. Hurricanes in the northern hemisphere spin counterclockwise due to this force present on rotating reference frames. The force is named for a Frenchman.

answer: **Coriolis** force [after Gaspard-Gustave de Coriolis]

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16. For 10 points each—give these answers related to environmental activism:

A. This man who narrowly lost the 2000 presidential election published *An Inconvenient Truth* and its follow-up *Our Choice* about global warming.

answer: Al(bert) **Gore** Jr.

B. This 1962 Rachel Carson work had a profound effect on environmental policy. It envisions a world where DDT pesticides kill the birds, causing a quiet April season.

answer: **Silent Spring**

C. Ian Lowe wrote in a 1989 title that we would be living in one of these structures if environment concerns were not addressed. Scientists also use this term for compounds such as chlorofluorocarbons and nitrous oxide.

answer: (Living in the) **Greenhouse** (accept **greenhouse gases**)

17. For 10 points each—name these people accused of sexual misconduct:

A. The "Me Too" hashtag gained popularity after the numerous allegations against this film executive. He founded Miramax with his brother Bob.

answer: Harvey **Weinstein**

B. In April 2018 this man was found guilty of three counts of aggravated indecent assault. He starred in the *Fat Albert* cartoon and a successful 80s sitcom as Cliff Huxtable.

answer: Bill **Cosby** Jr. (or William **Cosby**)

C. This man's position at Minnesota Public Radio was ended in November 2017. This former host of *A Prairie Home Companion* wrote the novel *Lake Wobegon Days*, in which all the children are above average.

answer: Garrison **Keillor**

18. For 10 points each—give these people for whom weapons are named:

A. This inventor used interchangeable parts in his Walker and Paterson revolvers. Before they were the Astros, Houston's baseball team was called the .45s "**forty-fives**" after one of this man's guns.

answer: Samuel **Colt** (accept Houston **Colt .45s**)

B. The M4 is an example of the medium-sized tanks named for this 19<sup>th</sup>-century general. He battled Joseph Johnson at Bentonville after he led the Savannah Campaign and burned Georgia.

answer: William Tecumseh **Sherman** (accept **Sherman Tank**)

C. *Call of Duty's* "bottle bombs" are explosive liquids in a glass container that Finnish soldiers named for this Soviet, who was the 1940s foreign minister.

answer: Vyacheslav **Molotov** (accept **Molotov cocktail**)

19. For 10 points each—give these fifth-century peoples:

A. The prayers of Saint Genevieve were credited with saving Paris from these invaders whose leaders included Bleda and Attila.

answer: **Huns**

B. One group subdued by the Huns were these people later consolidated under king Valamir. In 493 they established the Kingdom of Italy that lasted until Justinian's invasion.

answer: **Ostrogoths** (do not accept "Visigoths")

C. In 439 Genseric, king of these people, conquered Carthage. Their 455 sack of Rome caused scholars to use their name to mean people who damage property.

answer: **Vandals**

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20. Dorothea and Elisabeth represent the old and new in this author's novel *The Two Baronesses*. For 10 points each—

A. Name this Danish author known for “The Emperor’s New Clothes” and “The Little Mermaid”.

answer: Hans Christian **Andersen**

B. In this Andersen tale, a woman seeking shelter endures a sleepless night because the queen has placed a small object under her bedding. The title woman then marries the prince.

answer: The **Princess and the Pea** or **Prinsessen paa Ærten**

C. One of these objects recites “Humpty Dumpty” to mice in an Andersen tale. A Betty Smith title states there is one in Brooklyn, and these objects title a Joyce Kilmer poem.

answer: **trees** (accept The **Fir-Tree** or **Grantræet** or A **Tree Grows in Brooklyn**)

21. IUPAC **“eye you pac”** defines these as elements “whose atom has an incomplete d subshell, or which can give rise to cations with an incomplete d subshell”. For 10 points each—

A. Name these metals in the middle of the periodic table.

answer: **transition** metals

B. This transition metal, atomic number 40, has a cubic dioxide compound used in jewelry. Its symbol is Zr.

answer: **zirconium** (do not accept “zircon” or “zirconia”)

C. The zirconium-89 isotope is used as a radioactive tracer in this medical diagnostic imaging technique. David Kuhl did pioneering work on these scans capable of detecting cancer.

answer: **PET** scan or **positron emission tomography**

22. This composer's works include the 1699 *Hexachordum Apollinis*. For 10 points each—

A. Name this German composer whose “Musical Thought on Death” was probably influenced by the loss of his wife Judith Trummert.

answer: Johann **Pachelbel**

B. Johann Pachelbel is best known for one of these musical pieces in D often played at weddings. This term means music with repeated overlapping melodies, not a heavy artillery piece.

answer: **Canon** in D

C. The bass line in the canon first plays the tonic D note, and then uses this note dominant in the key of D major. The tonic chord is D, F sharp, and this note.

answer: **A** (natural)