

Invitational Series #148
Packet 1
Tossups

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- 1. In July 2015 this European country repealed its blasphemy law on the urging of the Pirate Party. The world's first openly gay head of state, Jóhanna Sigurdardóttir [YOH-hah-nah SEEG-yur-dar-"daughter"], served as prime minister of this country. The 2008 failure of its three largest banks led to strict capital controls on its currency, the (*) krona. In 2010 the Eyjafjallajökull [ay-uff-YAHT-lah-YOH-kut-ul] volcano erupted in—for 10 points—what island country whose capital is Reykjavik [RAYK-yah-vik]?**

answer: (Republic of) Iceland (or Lydveldid Ísland)

<384792>
- 2. Pencil and paper ready. Frank lives in a state with a 6% sales tax and needs to know the total post-tax cost for a stereo. The stereo is on sale for 20% off the normal \$250 pre-tax price. Frank first figures out the discounted price of the stereo, then adds in the sales tax. Use this method, or any other, and compute (*) —for 10 points—what total cost of the \$250 stereo given a 20% discount and a 6% sales tax?**

answer: \$212.00 [$\$250 \times (1 - .20) = 250 \times .80 = \$200 \times 1.06 = \$212$]

<180266>
- 3. In a dream, this man finds an axe in the street and gives it to his mother. In one story, he is demoralized after discovering he has slept next to seven loaves of bread. A serpent steals from him a plant that grants immortality, which he learned about from (*) Utnapishtim [OOT-nuh-PISH-tim]. He defeats the Bull of Heaven with his companion Enkidu [AYN-kee-doo]. For 10 points—name this king of Uruk [OO-rook], the namesake of an ancient Mesopotamian [meh-soh-poh-TAY-mee-un] epic.**

answer: Gilgamesh [GIL-guh-mesh]

<359338>
- 4. In response to this event's controversial ninth resolution, one participant declared that it "will make us ridiculous." This event was organized in response to its planners' poor experiences at the 1840 World Antislavery Convention, where they had not been permitted to speak. Frederick Douglass attended this event, which produced the (*) Declaration of Sentiments. For 10 points—name this 1848 women's rights convention.**

answer: Seneca Falls Convention (or Seneca Falls Conference)

<375163>
- 5. These people wear ornate "suits of lights" that weigh 15 to 20 pounds. Low, slow passes called *veronicas* [vair-oh-NEE-kahss] are performed by these people, who also perform more dramatic *faroles* [fah-ROH-"lace"] from a kneeling position. Mounted *picadores* [PEE-kah-DOH-"race"] with lances weaken the opponents of these performers before they enter the ring, wherein they traditionally (*) wave a red cape. For 10 points—name this type of participant in a Spanish blood sport.**

answer: bullfighters or toreros (accept matadors)

<386123>

6. In one poem this author refused to be “A pet-lamb in a sentimental farce.” Another work by this poet observes that “hedge-crickets sing” and “gathering swallows twitter” during the title “season of mists and mellow fruitfulness.” This poet of “Ode on Indolence” and “To Autumn” also addressed a “Sylvan historian” in a work that states (*) “Beauty is truth, truth beauty.” For 10 points—name this Romantic poet of “Ode on a Grecian Urn.”

answer: John Keats

<341374>

7. The first commercial use of this substance was in toothbrush bristles under the trade name “Exton.” Its original form is often designated “66” [“six-six”] because it was made by combining two six-carbon molecules. In World War II, American production of this polymer was commandeered by the military after Japan shut off (*) silk exports. DuPont chemist Wallace Carothers discovered—for 10 points—what polymer widely used in stockings?

answer: nylon (or nylon-66 or nylon-6 or nylon-6,6; prompt on “polyamide”)

<386767>

8. Early leaders of this regime issued permits for trade carried in red-seal ships and were advised by the Englishman William Adams. This government's last ruler, Yoshinobu, resigned after the Boshin War. Its founder established it after defeating the Western Army at the Battle of Sekigahara; that founder, (*) Ieyasu [ee-eh-yah-soo], later built Edo Castle. For 10 points—name this last shogunate, which preceded the Meiji Restoration.

answer: Tokugawa [toh-koo-gah-wah] Shogunate (or Tokugawa bakufu; accept Edo Shogunate or Edo bakufu)

<314934>

9. This city's Port Jackson, the largest natural harbor in the world, is crossed by a single iconic steel-arch bridge nicknamed “The Coathanger.” Bondi [BON-dye] Beach is a popular tourist attraction in this city that lies just north of Botany Bay, where James Cook landed in 1770. Its skyline includes the Harbour Bridge as well as Jørn Utzon's [YURN OOT-zun'z] (*) shell-shaped Opera House. For 10 points—name this most populous city in Australia.

answer: Sydney

<382862>

10. The third person who held this title established men's and women's missionary societies called the Manji and Piri. The tenth person with this title emerged from a tent holding a bloody sword during his founding of the Khalsa. This title was first held by a man who proclaimed “there is no Hindu, no Muslim,” and it was permanently given to the (*) Granth Sahib in 1708. For 10 points—give this title for leaders of Sikhism.

answer: guru

<386332>

11. In a play by this author, Hyllos swears to fulfill his father's dying request by marrying the captive Iole [EE-oh-lay]. The title character of another play by this author throws himself on a sword after he is tricked into massacring sheep. This playwright of *Women of Trachis* [trah-KEESS] and *Ajax* [AY-“jacks”] also wrote about a king's daughter who violates (*) Creon's [KREE-ahn's] order against burying Polyneices [“polly-NICE”-eez]. For 10 points—name this ancient Greek author of *Antigone* [ann-TIG-uh-nee].

answer: Sophocles [SAH-fuh-kleez] (or Sophokles)

<384893>

12. A “bomb spike” affects the calibration of this technique. Its measurements can be biased by limestone or recent atmospheric exposure. Willard Libby developed this technique, which is based on a substance emitting an electron to form nitrogen. It is most useful for samples (*) younger than 60,000 years—about ten half-lives. For 10 points—name this technique that measures the presence of isotope 14 of its namesake element.

answer: radiocarbon dating (accept carbon-14 dating or C-14 dating; prompt on “dating” or descriptive answers like “determining age”)

<381270>

13. In March 2015 this man went to Guatemala to lecture on U.S. aid, leading Orrin Hatch to take this man's usual seat during Benjamin Netanyahu's address to Congress. In 2014 this man controversially claimed Turkey's president had admitted to failures in border security. In May 2015 this man's (*) son, a former Attorney General of Delaware, died of brain cancer. Beau [boh] was the son of—for 10 points—what current vice president?

answer: Joe Biden (Jr.) (or Joseph Robinette Biden Jr.)

<382870>

14. This man spared the commando George Lane from execution after meeting him for tea. He led a failed siege of Tobruk and later defeated U.S. forces at the Battle of Kasserine [KASS-uh-reen] Pass. In 1943 he was tasked with fortifying the Atlantic Wall, a year after he lost to Bernard Montgomery at the Battle of (*) El Alamein [el AH-luh-MAYN]. The *Afrika Korps* ["core"] was led by—for 10 points—what German tank commander of World War II known as the "Desert Fox"?

answer: Erwin (Johannes Eugen) Rommel [AIR-veen RUM-ul]

<386306>

15. 51 Peg b was the first of these objects to be detected by Doppler spectroscopy. The CoRoT satellite used the transit method to find these objects, which are generally colder and less dense than brown dwarves. The TESS mission will build upon the *Kepler* satellite's detection of these objects, which include "hot (*) Jupiters" and "super Earths." For 10 points—name these objects found around stars outside the solar system.

answer: extrasolar planets or exoplanets (accept equivalents indicating a planet orbiting another star or a planet outside the solar system before "stars"; prompt on "planets")

<386208>

16. In one novel by this author, the protagonist mentions the "abominable" selfishness of a refusal to play lawn tennis while breaking off her engagement to the pompous Cecil Vyse. This author also wrote a novel in which a visit to the Marabar [MAR-uh-bar] Caves causes (*) Adela Quested to mistakenly accuse Dr. Aziz [uh-ZEEZ] of attempted sexual assault. For 10 points—name this English author of *A Room with a View* and *A Passage to India*.

answer: E(dward) M(organ) Forster

<383820>

17. This man's ranch on the Pedernales [pur-duh-NALL-iss] River was the site of a practical joke involving driving an amphibious car into a lake. As Senate majority leader, he intimidated colleagues by standing uncomfortably close when speaking, a process called "The Treatment." He won his first elected office as a congressman for (*) Texas thanks to financial support from his wife, "Lady Bird." For 10 points—what man served as president after JFK?

answer: Lyndon B(aines) Johnson (or LBJ; prompt on "Johnson")

<384085>

18. Tetracycline [TET-ruh-SYE-kleen] and streptomycin [STREP-tuh-MYE-sin] kill bacteria by inhibiting this process. In prokaryotes, EF-Tu ["E-F-T-U"] works as an elongation factor in this process that begins with formyl-Met [FOR-mil-MET] and ends at amber, ochre, or opal signals. Before this process occurs in eukaryotes, (*) introns are removed and poly-A tails are added to mRNA. For 10 points—name this process in which ribosomes "read" mRNAs to make proteins, and which follows transcription.

answer: translation (accept translating; accept protein synthesis, or variants like synthesizing proteins, before "proteins")

<384795>

19. This number is the street address of London's "Gherkin" building, on St. Mary Axe. Sweden's Gustavus Adolphus [goos-TAH-vuss uh-DOL-fuss] died in the Battle of Lützen [LOOT-sun] during a war of this many years, which ended with the Peace of Westphalia. According to the Gospel of Matthew, (*) betraying Jesus resulted in Judas being paid this many pieces of silver. Tina Fey starred in an NBC sitcom titled—for 10 points—by what number followed by the word "Rock"?

answer: 30 (accept 30 St. Mary Axe or 30 pieces of silver or Thirty Years' War or 30 Rock)

<380876>

20. This leader once declared “Whether you like it or not, history is on our side.” This leader sent tanks to overthrow the reformist government of Imre Nagy [em-reh nazh], which prevented Hungary from leaving the Warsaw Pact; later he told Western ambassadors “We will bury you!” In 1956 he denounced his predecessor's personality cult in his (*) “Secret Speech.” For 10 points—name this Soviet leader who succeeded Joseph Stalin.

answer: Nikita (Sergeyevich) Khrushchev [KROOSH-choff]

<385234>

21. This composer wrote one *étude* [AY-tood] “For Five Fingers—after Mr. Czerny” [“CHAIR”-nee]. He made heavy use of whole-tone scales in his *Voiles* [vwahl], which joined *The Girl with the Flaxen Hair* and *The Sunken Cathedral* in his two books of *Préludes*. He included a “sentimental promenade” based on a Paul Verlaine poem in his (*) *Suite Bergamasque* [BAIR-guh-mahsk]. For 10 points—name this French Impressionist composer of *La Mer* [mair] and “Clair de Lune” [klair duh loon].

answer: (Achille-)Claude Debussy [deh-byoo-see]

<372324>

22. This figure is described as a “bronzed, lank man” who “walks at midnight” in a poem by Vachel Lindsay [VAY-chul]. An elegy for this man refers to an “Ever-returning spring” that brings a “powerful western fallen star.” Carl Sandburg wrote biographies about this man's “Prairie Years” and “War Years.” (*) Walt Whitman's poems “When Lilacs Last in the Dooryard Bloom'd” and “O Captain! My Captain!” commemorate—for 10 points—what slain president?

answer: Abraham Lincoln (or Abe Lincoln; accept Abraham Lincoln Walks at Midnight)

<35820>

23. In this musical one character sings “I've been offstage for far too long” after wondering “Whatever happened to my part?” The words “bone,” “cone,” or “done” [dun] allude to an object under an audience seat in this musical that begins with a “Fisch [“fish”] Schlapping Dance.” A quest for a shrubbery leads King (*) Arthur to be told to “Always Look On the Bright Side of Life” in—for 10 points—what musical based on *Monty Python and the Holy Grail*?

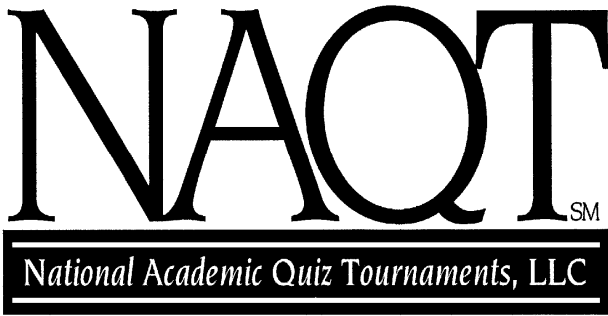
answer: Monty Python's Spamalot (do not accept or prompt on “Monty Python (and the Holy Grail)”) [The object under the audience member's seat is the Holy Grail.]

<376129>

24. A contact boundary of two different types of these materials is called a heterojunction. Their Fermi level can be populated even though it lies in a band gap. Their carrier type determines whether they are “p-type” or “n-type.” Impurities are added to them in a process called (*) doping. For 10 points—name these materials whose electrical conductivity is more than that of an insulator, but less than a traditional conductor.

answer: semiconductors (do not accept or prompt on “conductor”)

<381040>



Invitational Series #148
Packet 1

Bonuses

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1. On July 8, 2015, a number of businesses suffered significant computer issues. For 10 points each—
- A. This airline claimed a “network connectivity issue” caused it to ground all its planes for nearly two hours; many speculated the glitch was a remnant of technical issues stemming from its merger with Continental.
answer: United Airlines (Inc.)
- B. An unknown technical issue halted all trading on this stock exchange, the world's largest.
answer: New York Stock Exchange or NYSE (do not accept or prompt on “Dow (Jones)” or “Wall Street”)
- C. The website for this American newspaper with the largest print circulation also went down for several hours, possibly due to internet traffic from people seeking news on the United and NYSE outages.
answer: The Wall Street Journal (accept www.WSJ.com)
- <384820>
2. This quantity can be calculated via the consumption or income methods. For 10 points each—
- A. Name this quantity, the total amount of value produced within a country's economy.
answer: GDP (or gross domestic product; do not accept or prompt on “gross national product” or “GNP”)
- B. This “coefficient” measures a country's economic inequality; it is the ratio of areas under ideal and actual income distribution curves.
answer: Gini coefficient (or Gini index or Gini ratio)
- C. Wagner's law predicts that this type of state will emerge from free-market capitalism as people vote to increase social services. They are also called “social states” or “mixed economies.”
answer: welfare state(s)
- <381211>
3. For 10 points each—name these films about the demise of silent films:
- A. Jean Dujardin [zhahn doo-zhar-DAN] is a washed-up silent film star in this 2011 Oscar winner that also features John Goodman.
answer: The Artist
- B. Lina Lamont's screechy voice means she can't adjust to the talkie era in this 1952 Gene Kelly musical in which the title song declares “What a glorious feelin'—I'm happy again.”
answer: Singin' in the Rain
- C. The scriptwriter Joe Gillis visits Norma Desmond, a washed-up silent film star, in this 1950 Billy Wilder classic.
answer: Sunset Boulevard
- <311480>
4. In 1522, this religious reformer attacked the custom of fasting during Lent. For 10 points each—
- A. Name this Swiss Reformation leader who died defending Zurich [ZOO-rik] in the 1531 Battle of Kappel.
answer: Huldrych (or Ulrich) Zwingli [HUL-drik ts'VEENG-lee]
- B. The 1529 Marburg Colloquy [KOL-uh-kwee] attempted to reconcile the views of Zwingli with those of this German religious reformer, who wrote the Ninety-Five Theses and criticized the sale of indulgences.
answer: Martin Luther
- C. Under Zwingli's leadership, Zurich banned the practice of this religious rite on adults, leading to the 1527 execution of Felix Manz for performing it.
answer: (re-)baptism (or baptizing or baptize; accept adult baptism or credobaptism or believer's baptism)
- <381053>

5. Pencil and paper ready. Rob is flipping a coin. For 10 points each—

A. If the coin is fair, what is the probability that 2 flips will yield 1 “heads” and 1 “tails,” in either order?

answer: $\frac{1}{2}$ or 0.50 or 50% or 1 in 2 [The 4 possible outcomes of flipping a coin twice are HH, HT, TH, and TT. All 4 outcomes are equally likely, and 2 of them (HT and TH) yield 1 “heads” and 1 “tails”; $\frac{2}{4} = \frac{1}{2}$.]

B. If the coin is *not* fair, and there is an expected value of 63 “heads” over 70 flips, what is the probability of getting “tails” on any single flip?

answer: $\frac{1}{10}$ or 0.10 or 10% or 1 in 10 [The probability of getting “heads” on any given flip is $\frac{63}{70} = \frac{9}{10}$, so the probability of “tails” is $1 - (\frac{9}{10}) = \frac{1}{10}$.]

C. Flipping a fair or unfair coin once can be modeled with what distribution named for a Swiss mathematician? Its generalization to n flips is the binomial [“by”-NOH-mee-ul] distribution?

answer: Bernoulli [bur-NOO-lee] distribution [named for Jacob Bernoulli]

<387092>

6. This author wrote a collection of essays, one of which analyzes the Day of the Dead holiday in his country. For 10 points each—

A. Name this author of *Sun Stone* and *The Labyrinth of Solitude*.

answer: Octavio Paz (Lozano)

B. Octavio Paz was from this country, whose Aztec peoples' calendar inspired his poem *Sun Stone*.

answer: Mexico (or United Mexican States or Estados Unidos Mexicanos)

C. Mexico was also home to this author of *The Death of Artemio Cruz* and *Terra Nostra*.

answer: Carlos Fuentes (Macías)

<302501>

7. The first of these campaigns resulted in the capture of Jerusalem, and the creation of the County of Edessa and the Principality of Antioch [ANN-tee-ahk]. For 10 points each—

A. Name this series of Christian military expeditions in the medieval era.

answer: Crusades

B. The First Crusade was called by this 1095 council of Catholic bishops in France.

answer: Council of Clermont

C. The Council of Clermont was called by Pope Urban II, who had previously supported the Norman conquest of Palermo [puh-LAIR-moh] and Syracuse [SEER-uh-“cues”] on this Mediterranean island.

answer: Sicily (or Sicilia)

<384181>

8. This sea contains the island of Gotland, whose town of Visby [VIZ-bee] was a pirate base for the Victual Brothers. For 10 points each—

A. Name this sea that borders Estonia, Latvia, and Lithuania, its namesake “States.”

answer: Baltic Sea (accept Baltic States)

B. In the medieval era, the Baltic was dominated by this trading alliance of various cities and states in northern Germany.

answer: Hanseatic League (or Hanse or Hansa)

C. Today, this German port city on the North Sea is still known as a “Free and Hanseatic City.” This city lies at the mouth of the Elbe [EL-buh] River.

answer: (Free and Hanseatic City of) Hamburg (or Freie und Hansestadt Hamburg)

<367207>

9. The title character of this work lusts after the schoolteacher Ellen Orford and allows his first apprentice to die of thirst. For 10 points each—
- A. Name this opera that is based on a poem by George Crabbe. Its title character sings “What harbor shelters peace?”
answer: Peter Grimes, Op. 33
- B. *Peter Grimes* was written by this English composer, whose other operas include *The Turn of the Screw*.
answer: (Edward) Benjamin Britten, Baron Britten of Aldeburgh
- C. In this other Britten opera, based on a work by Herman Melville, the title character sings “Starry Vere, God bless you!” before he is hanged for killing Claggart [KLAG-urt].
answer: Billy Budd, Op. 50
- <358276>
10. Seven atoms of this element are found in Prussian blue. For 10 points each—
- A. Name this metal, also found in hemoglobin [HEE-moh-gloh-bin].
answer: iron (or Fe)
- B. Prussian blue contains one of these ions, consisting of a metal atom surrounded by one or more Lewis bases known as ligands [LIH-gunds]. They can react to form coordination compounds.
answer: complex ions or complexes
- C. The six bonds iron can form in hemoglobin, and the six bonds in the Prussian blue complex ion, both have this geometry.
answer: octahedral molecular geometry (accept octahedron)
- <368986>
11. Dr. John Seward, Quincey Morris, and Arthur Holmwood all propose marriage to this woman on the same day. For 10 points each—
- A. Name this friend of Mina Harker, who wastes away as she is preyed upon by a sinister count.
answer: Lucy Westenra (accept either underlined portion)
- B. Name that sinister count, the title character of a Bram Stoker novel.
answer: (Count) Dracula
- C. Bram Stoker did not invent the concept of the blood-sucking vampire; it was earlier featured in the poem “The Giaour” [JOH-ur] by this British Romantic poet of *Don Juan* [JOO-un] and “She Walks in Beauty.”
answer: Lord Byron (or George Gordon (Noel); accept any underlined portion)
- <358191>
12. The sinking of the *Lusitania* [LOO-sih-TAY-nee-uh] helped turn American public opinion in favor of entering this war. For 10 points each—
- A. Name this war fought during Woodrow Wilson's presidency.
answer: World War I (or First World War or Great War)
- B. America's entry was also promoted by propaganda concerning German atrocities, including those committed in this country that Germany invaded to begin the fighting on the Western Front.
answer: (Kingdom of) Belgium (or Royaume de Belgique or Koninkrijk België; accept Rape of Belgium)
- C. Woodrow Wilson decried Germany's waging of submarine warfare described by this adjective. In this form of submarine warfare, merchant ships are sunk without warning.
answer: unrestricted submarine warfare
- <382102>

13. ProPublica and NPR investigated 500 million dollars this charity raised after a 2010 earthquake. For 10 points each—
- A. Name this charity that could only document six new homes built after the quake, and admitted it “does not know” where most of the money went.

answer: American Red Cross (or ARC)

- B. That 2010 earthquake took place in this Caribbean country that shares Hispaniola with the Dominican Republic.

answer: (Republic of) Haiti (or Republique d'Haïti or Repiblik d' Ayiti)

- C. This Republican senator from Iowa issued a July 2015 ultimatum to the Red Cross to answer questions about the money. He attracted a large Twitter following for posts such as “pants burn leg wound.”

answer: Chuck Grassley (or Charles Ernest Grassley)

<385614>

14. Marquette [mar-KET] is the most populous city in this region, referred to as the land “above the bridge” due to its position north of the Mackinac [MAK-ih-naw] Bridge. For 10 points each—

- A. Name this region whose other cities include Sault Ste. Marie [soo “saint” muh-REE] and whose residents are sometimes known as Yoopers.

answer: Upper Peninsula of Michigan (prompt on “U.P.”; prompt on “Michigan” or “Upper Michigan” or “Great Lakes (Region)”)

- B. Upper Michigan is south of this largest Great Lake.

answer: Lake Superior

- C. Although it is not part of the peninsula, Upper Michigan technically includes this largest natural island in Lake Superior. The wolf and moose population on this island has been the focus of a long running study investigating predator-prey relationships.

answer: Isle Royale [“royal”]

<373557>

15. For 10 points each— give the following about works containing bears:

- A. Antigonus [ann-TIG-uh-nuss] exits, “pursued by a bear,” after abandoning Perdita [pur-DEE-tuh] at the behest of King Leontes [lee-AHN-teez] in this Shakespeare play.

answer: The Winter's Tale

- B. At the suggestion of Esmerelda, Vasek fills in for a dancing bear at a traveling circus after the bear falls down drunk in this opera by Bedrich Smetana [BED-rik SMEH-tah-nah].

answer: The Bartered Bride (or Prodana nevesta; accept The Sold Fiancée)

- C. Another dancing bear appears in *Petrushka* [peh-TROOSH-kuh], a ballet by this composer of *The Rite of Spring*.

answer: Igor (Fyodorovich) Stravinsky [struh-VIN-skee]

<332903>

16. In 1971 he asked “how do you ask a man to be the last man to die for a mistake?” while appearing before the Senate Foreign Relations Committee. For 10 points each—

- A. Name this politician who commanded a Swift Boat in Vietnam during the 1960s. He ran for president in 2004.

answer: John (Forbes) Kerry

- B. Kerry currently serves in this cabinet position; he was preceded by Hillary Clinton.

answer: Secretary of State

- C. Kerry represented this state in the Senate for nearly three decades.

answer: (Commonwealth of) Massachusetts

<340797>

17. For 10 points each—name these long-winded literary characters:

A. This character calls himself “the man who loves his life” while delivering a lengthy speech in Ayn [“ine”] Rand's novel *Atlas Shrugged*.

answer: John Galt (accept either underlined name)

B. Hamlet complains “these tedious old fools!” after talking to this courtier, who often fails to heed his own maxim that “brevity is the soul of wit.”

answer: Polonius

C. In Homer's *Iliad* [ILL-ee-ud], this aged king of Pylos reminisces about deceased heroes while delivering a speech that is “sweeter than honey.”

answer: Nestor (of Gerenia or Nestor Gerenios)

<381088>

18. A summer 2015 outbreak of this disease in New York City has been linked to dirty water cooling towers. For 10 points each—

A. Name this disease, first reported after a 1976 meeting of the American Legion.

answer: Legionnaires' disease (or legionellosis or Legion fever; do not accept or prompt on “Legionnaire disease”)

B. Legionnaires' disease is a type of this general class of diseases in which the air sacs of the lungs become inflamed.

answer: pneumonia

C. The bacteria that cause Legionnaires' disease attacks these white blood cells, which engulf and destroy foreign microbes that enter the body.

answer: macrophages [“macro”-FAYJ] (accept monocytes; prompt on “leukocytes”)

<386446>

19. This man painted an eye that contains an image of clouds floating in the sky within its iris. For 10 points each—

A. Name this artist of *The False Mirror*, who showed dark streets lit by a streetlamp in his *Empire of Lights* series.

answer: René Magritte [reh-nay mah-greet] (or René François Ghislain Magritte)

B. Magritte was a member of this movement, which showed absurd and fantastical images using realistic painting techniques. Salvador Dalí also adhered to this style.

answer: surrealism (accept surrealistic or surrealists)

C. In *The Treachery of Images*, an object that appears to be one of these smoking devices is shown, but the text in the painting emphasizes that the painting is not itself one of these objects.

answer: pipe (accept pip; accept This Is Not a Pipe or ceci n'est pas une pip)

<362509>

20. In 1990, a study found that teenagers in this neighborhood had only a 37% chance of surviving to age 65, comparable to the life expectancy in Angola. For 10 points each—

A. Name this African-American neighborhood, where an artistic and literary “Renaissance” took place in the 1920s.

answer: Harlem (accept Harlem Renaissance)

B. This theater in Harlem hosted a “Showtime” television program for 20 years. The careers of dozens of jazz, swing, gospel, rock, and other performers started here.

answer: Apollo Theater (accept Showtime at the Apollo)

C. Harlem has experienced this cultural phenomenon, in which wealthier residents move into a place, causing long time residents becoming unable to afford to stay in that place.

answer: gentrification (accept gentrifying or becoming gentrified; prompt on “(urban) renewal”)

<381686>

21. This sequence is defined recursively by setting a_n ["A sub N"] equal to a_{n-1} ["A sub N minus 1"] plus a_{n-2} ["A sub N minus 2"] and defining its first two values as 1 and 1. For 10 points each—

A. Identify this sequence named for a 13th-century mathematician.

answer: Fibonacci [FIH-buh-NAH-chee] sequence (accept Fibonacci series or Fibonacci numbers)

B. Because the sequence's defining equation involves its previous values, it is this type of "relation."

answer: recurrence relation (prompt on "recursive (relation)")

C. There is a closed-form expression for the n th term; it equals the n th power of the golden ratio, minus the n th power of the golden ratio's conjugate, all divided by the square root of this number.

answer: 5 (accept square root of 5)

<387198>

22. The main force in this campaign landed at the Playa Girón ["PLY"-uh hee-ROHN]. For 10 points each—

A. Name this campaign that began with an April 17, 1961 amphibious landing, in which a CIA-backed force attempted to oust a Communist leader.

answer: Bay of Pigs invasion (or Bahía de Cochinos)

B. The Bay of Pigs landing targeted Fidel Castro, the leader of this island country.

answer: (Republic of) Cuba (or República de Cuba)

C. In 1959 Castro overthrew this U.S.-backed dictator of Cuba, who ruled the country for most of the 1950s.

answer: Fulgencio [fool-HAYN-see-oh] Batista (y Zaldívar)

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23. Hurons shout "La Longue Carabine" ["long" kaa-ruh-bin] after this character shoots a man struggling with Duncan Heyward. For 10 points each—

A. Name this scout, whose other aliases include "Hawkeye" and "Leatherstocking."

answer: Natty Bumppo (or Nathaniel Bumppo; accept any underlined portion)

B. Bumppo is the protagonist of *The Last of the Mohicans* and four other *Leatherstocking Tales* written by this author.

answer: James Fenimore Cooper

C. The last of the *Leatherstocking Tales* to be published was this book, whose title refers to the young Bumppo's skill as a hunter.

answer: The Deerslayer(, or The First Warpath)

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24. For 10 points each—name these physical quantities measured in joules ["jewels"]:

A. This "energy of motion" equals one-half an object's mass times the square of its speed.

answer: kinetic energy (prompt on "KE")

B. This quantity equals the dot product of a force and the distance through which the force is applied.

answer: mechanical work (do not accept or prompt on "net work")

C. This thermodynamic potential is defined as the sum of a system's internal energy and the product of its pressure and volume.

answer: enthalpy [EN-thul-pee]

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