1. **In the multivariable version of this rule, a derivative equals the sum of products of derivatives. This rule is used to find the derivative of a function with respect to a different variable than the one used to write it. (\*)** Implicit differentiation relies on this rule, which can be written as ”*dy*/*dt* [“D-Y-D-T”] equals *dy*/*dx* times *dx*/*dt*.” For 10 points—name this rule used to differentiate a composition of functions like *f* of *g* of *x*.

answer: chain rule

<SCI, OTHER>

2. **These type of people are shown with the cat Percy in a David Hockney painting. One of them carries a rifle under his arm while the other sits on a bench in a Thomas Gainsborough work. A painting of this type of people includes a chandelier with one candle, and shows them wearing a giant black (\*)** hat and a green dress, holding hands. For 10 points—give this relation between the people in Jan van Eyck's [yahn vahn “ike's”] *Arnolfini Portrait*.

answer: husband and wife (accept accept any answer indicating couples or married people or wedded people or newlyweds or spouses or equivalents; accept Mr. and Mrs. Clark and Percy or designers before “rifle”)

<FA, VISUAL>

3. **Lehava, a right-wing group in this country, has been investigated by this country's internal security force, the Shin Bet. In 2015 the E.U. changed the country of origin on the labels of goods produced in territories occupied by this nation. A string of recent attacks in this nation described as the “Knife (\*)** Intifada” [in-tih-FAH-duh] was sparked by protests over the Temple Mount. For 10 points—name this nation led by Benjamin Netanyahu.

answer: (State of) Israel (or Medinat Yisra'el)

<CE, CE>

4. **In a novel titled for this city, a composer and a newspaper publisher fulfill a suicide pact made after the death of Molly Lane. That Ian McEwan novel is named for this city, where the painting *The Jewish Bride* is on display at the Rijksmuseum** [RYKES-“museum”]**. A chronicle of life in a concealed (\*)** attic called the ”Secret Annex” was written by a resident of this city, Anne Frank. For 10 points—name this capital city of the Netherlands.

answer: Amsterdam

<LIT, EURO>

5. **In a novel by this man, Moraes Zogoiby** [mor-AY-ess zoh-GOY-bee] **suffers from a condition in which he ages twice as quickly as a normal person. A character created by this man loses his supernatural powers after having sinus surgery. Shiva is switched at birth with (\*)** Saleem Sinai [sah-LEEM see-NYE] in a novel by this man titled for youths born within an hour of India's independence. For 10 points—name this author of *The Moor's Last Sigh* and *Midnight's Children*.

answer: (Ahmed) Salman Rushdie [“RUSH”-dee]

<LIT, WORLD>

6. **This man fought a defensive action against Guy Carleton at the Battle of Valcour Island after he was forced to abandon his invasion of Quebec and retreat to Lake Champlain. A year earlier, this man had helped Ethan Allen capture Fort Ticonderoga from the British. In 1779 he began (\*)** discussions with the British spy John Andre to hand over West Point. For 10 points—name this notorious traitor of the American Revolution.

answer: Benedict Arnold

<HIST, AMER>

7. **Neurocysticercosis** [NOO-roh-“CYST”-ih-ser-KOH-siss] **is the most common acquired cause of this condition worldwide; rarer congenital causes include Lennox-Gastaut** [LEN-uks-gah-stoh] **syndrome. It used to be treated with potassium bromide, and now can be treated with Keppra** [KEP-prah] **or valproic** [val-PRO-ik] **acid. It can cause (\*)** “spikes and waves” on an EEG [“E-E-G”]. For 10 points—name this disorder whose sufferers have episodes of abnormal synchronized neuron firing, called seizures.

answer: epilepsy (accept answers including epileptic; accept seizures before “seizures”)

<SCI, BIO>

8. **A Shakespeare sonnet about “the marriage of true minds” declares that love is not the “fool” of this phenomenon. Andrew Marvell's** [“mar”-VEL'Z] **“To His Coy Mistress” suggests “devouring” this phenomenon. The advice “gather ye rosebuds while ye may” appears in a Robert Herrick poem that implores “the (\*)** virgins” to “make much of” this phenomenon, which is “a-flying.” For 10 points—name this phenomenon that *carpe diem* [“CAR”-pay DEE-um] poems urge readers not to waste.

answer: time (accept To the Virgins, to Make Much of Time) [Shakespeare wrote “let me not to the marriage of true minds / admit impediments” in Sonnet 116.]

<LIT, BRIT>

9. **The first ruler of this empire defeated the separatist Manuel de Andrade** [mahn-WELL day ahn-DRAH-duh]**, who formed the Confederation of the Equator. This empire abolished slavery with the *Lei Áurea*** [“lay” AW-ree-uh]**, or the (\*)** Golden Law. A coup led by Manuel Deodoro da Fonseca [mahn-WELL day-oh-DOR-oh fon-SEH-cuh] ended this empire, whose territory included much of modern-day Uruguay. Two rulers named Pedro were the emperors of—for 10 points—what South American empire whose inhabitants spoke Portuguese?

answer: Empire of Brazil (or Brazilian Empire or Império do Brasil)

<HIST, WORLD>

10. **This type of radiation is used to create a ”fingerprint region” between 1500 and 500 inverse centimeters in a namesake type of spectroscopy. 800 nanometers is a typical wavelength for this type of radiation, which is the form of most (\*)** thermal radiation. For 10 points—name this type of electromagnetic radiation that is slightly less energetic than, and whose wavelength range is slightly longer than that of, visible light.

answer: infrared radiation or infrared light (accept IR; prompt on “electromagnetic (radiation)” or “EM (radiation)” before “electromagnetic”)

<SCI, PHYS>

11. **In 2015 this state's legislature modified a “storm-water mitigation” fee opponents labeled a ”rain tax.” In 2015 its governor canceled a planned light rail “Red Line,” and activated the National Guard to quell protests after a “rough ride” was blamed for killing a 25-year-old in a police (\*)** van. Larry Hogan succeeded Martin O'Malley as governor of—for 10 points—what state where Freddie Gray died in police custody in Baltimore?

answer: Maryland

<CE, CE>

12. **In a 1955 farce by this playwright, a ”hay, feed, and provision store” owner named Horace Vandergelder plans to find a wife with the help of Dolly Gallagher Levi. This author of *The Matchmaker* also wrote a play in which the maid Sabina claims that she inspired George (\*)** Antrobus to invent the alphabet. For 10 points—what author of *The Skin of Our Teeth* depicted George's romance with his next-door neighbor Emily in *Our Town*?

answer: Thornton (Niven) Wilder

<LIT, AMER>

13. **In this country, Raymond Dart discovered the skull of the Taung Child in 1924. Most of the world's platinum is mined in this country's Bushveld. In 2013 researchers found fossils of a new human ancestor, *Homo naledi*, within a cave burial site in this country's Cradle of Humankind. Its (\*)** KwaZulu-Natal province borders both Lesotho [leh-SOO-too] and Swaziland [SWAH-zee-land]. For 10 points—name this African country that contains Johannesburg.

answer: (Republic of) South Africa (prompt on “RSA”)

<GEO, GEO>

14. **In 1613 members of this organization were tortured and executed by the Dutch in the Amboyna Massacre. The Mysore Kingdom and Maratha Confederacy opposed this European organization's influence, which increased after Robert Clive won the Battle of Plassey. This company built trading posts called ”factories” for exporting (\*)** opium and tea in Madras and Bombay. For 10 points—name this British company that colonized India.

answer: British East India Company or EIC (or Honorable East India Company or Governor and Company of Merchants of London trading into the East Indies; accept English East India Company)

<HIST, WORLD>

15. **Franco Alfano completed this man's final opera, in which “Tu che di gel sei cinta”** [too kay dee jell SAY-ee CHEEN-tuh] **is sung by Liu** [loo]**, who commits suicide rather than reveal the name of Prince Calaf, who answers three riddles and sings (\*)** “Nessun dorma” [NAY-soon DOR-mah]. He also wrote a work in which Lieutenant Pinkerton marries the title Japanese girl, Cio-Cio San [choh-choh sahn]. For 10 points—name the composer of the operas *Turandot* [TUR-an-doh] and *Madame Butterfly*.

answer: Giacomo Puccini [JAH-koh-moh poo-CHEE-nee] (or Giacomo Antonio Domenico Michele Secondo Maria Puccini)

<FA, AUDIO>

16. **A literary series named after this place depicts the lives of the “First Hundred” settlers, who dispute whether this place should become ”green.” This setting of a trilogy by Kim Stanley Robinson is visited by the crew of the *Hermes* in a 2011 novel by Andy (\*)** Weir, whose title describes the stranded Mark Watney as a resident of this place. For 10 points—name this extraterrestrial setting of Robert Heinlein's [“HINE-line's”] novel *Red Planet*.

answer: Mars (accept Mars trilogy or Mars series or Red Mars or Green Mars or Blue Mars; accept The Martian)

<LIT, AMER>

17. **This work argues that “no instructed person would be an ignoramus” and that no intelligent person “would consent to be a fool” in arguing that people prefer to employ their “higher faculties”; that argument follows a discussion of how to differentiate between pleasures. This work, which was published in the 1860s, discusses the (\*)** “greatest happiness principle.” For 10 points—name this work on ethics by John Stuart Mill.

answer: Utilitarianism

<RMPSS, PHIL>

18. **Lessons from this battle included resupplying aircraft on the flight deck rather than in the hangar due to the success of Wade McCluskey's Dauntless dive bombers. A strike launched from the *Hiryu* in this battle hit the *USS Yorktown*, which was already damaged from the Battle of the (\*)** Coral Sea. Admiral Yamamoto's attack on an atoll led to the loss of four Japanese aircraft carriers in—for 10 points—what June 1942 battle?

answer: Battle of Midway

<HIST, AMER>

19. **This artist offered, “Bring your cups baby, I could bring the drink” in his debut single, which appeared on his mixtape *House of Balloons*. This singer of “Wicked Games” had back-to-back number one hits in 2015, including one about cocaine-induced (\*)** numbness and one in which he claims to “only call you when it's half past five.” Abel Tesfaye [TESS-fay] is better known as—for 10 points—what singer of “Can't Feel My Face” and “The Hills?”

answer: The Weeknd [“weekend”] (accept Abel Makkonen Tesfaye before “Tesfaye”)

<TRASH, POP CULT>

20. **According to the Andamanese, this event was followed by Puluga's last direct interaction with humanity. Hindus believe that Vishnu took the form of Matsya and saved Manu during this event, which in Mesopotamian myth occurred early in the life of Utnapishtim** [OOT-nuh-PISH-tim]**. Prometheus** [proh-MEE-thee-us] **warned his son (\*)** Deucalion [doo-KAY-lee-un] about—for 10 points—what event which, according to the Abrahamic scriptures, was only survived by those on Noah's Ark?

answer: great flood (accept equivalents)

<RMPSS, MYTH>

21. **This U.S. state is home to the cocoplum** [KOH-KOH-“plum”] **tree and a relative of the soursop called the pond apple. Ghost orchids and this state's namesake subspecies of panther live in its Big Cypress National Preserve. This state's native species are threatened by the invasive Burmese python. Lake (\*)** Okeechobee [oh-kee-CHOH-bee] lies in—for 10 points—what state where many alligators and crocodiles live in the Everglades?

answer: Florida

<GEO, GEO>

22. **In the CARNIT** [KAR-nit] **and UCB** [“U-C-B”] **processes, this ion forms a salt with ammonium. In the mesophyll** [MEZ-uh-fill] **cells of plants a molybdenum** [muh-LIB-duh-num]**-containing reductase** [ree-“DUCT-ace”] **enzyme can remove one of this ion's three oxygen atoms. This trigonal** [TRIG-uh-nul] **planar ion's potassium salt is commonly known as (\*)** saltpeter. This anion [“AN-ion”], all of whose salts are considered soluble, is the conjugate base of nitric [NYE-trik] acid. For 10 points—name this ion whose molecular formula is NO3– [“N-O-three, minus”].

answer: nitrate [“NIGHT-rate”] ion (before “NO3–,” accept NO3– or NO31– or NO3–1)

<SCI, CHEM>

23. **This leader exiled a man named Tiridates** [“TEAR”-uh-“day”-teez] **to Britain for killing a king in Edessa. Cassius Dio** [KASS-ee-iss DEE-oh] **records this man's successful campaign against the Quadi** [QUAH-dee] **during the Marcomannic** [MAR-koh-MAH-nik] **Wars. Initially, he shared power with Lucius Verus, and he chose his son (\*)** Commodus [KAH-muh-diss] as his successor. The last of the Five Good Emperors was—for 10 points—what man, who also wrote a book of Stoic philosophy called the *Meditations*?

answer: Marcus Aurelius [aw-REE-lee-us] (Antoninus Augustus) (prompt on partial answer)

<HIST, OTHER>

Bonuses

1. Calculations suggest that unlike all other elements in its group, this element should be a solid at standard temperature and pressure. For 10 points each—

A. Give the systematic name *or* atomic number of this element, the heaviest one for which experimental evidence has been verified.

answer: element 118 or ununoctium [un-un-OCK-tee-um] (or Uuo)

B. Element 118 was synthesized by bombarding another noble gas, krypton, with this heavy metal. It is used as shielding by X-ray technicians.

answer: lead (or Pb)

C. The known isotopes of element 118 are near, but not within, this theoretical region on a graph of atomic number versus mass number that is predicted to contain relatively long-lived heavy isotopes.

answer: island of stability

<SCI, CHEM>

2. For 10 points each—answer the following about dodgers:

A. This left-handed starter won the National League's Cy Young Award in 2011, 2013, and 2014, and was also its MVP in 2014.

answer: Clayton (Edward) Kershaw

B. Duck Dodgers—an alternate persona of Daffy Duck—manages to destroy Planet X while trying to outwit this antagonist “in the 24½th [“twenty-four and a half-th”] century.” This character wears a Roman helmet.

answer: Marvin the Martian (prompt on ”(the) Martian”)

C. Jack Dawkins, better known as “the Artful Dodger,” is a pickpocket who works for Fagin [FAY-gun]—a “receiver of stolen goods”—in this Charles Dickens novel.

answer: Oliver Twist

<MISC., MISC.>

3. The TV series *Alfred Hitchcock Presents* had many connections with marionettes. For 10 points each—

A. Its theme was the “Funeral March of a Marionette” by this Romantic composer, who based his setting of the *Ave Maria* on a C major prelude by J. S. Bach.

answer: Charles(-François) Gounod [goo-noh]

B. Its season four episode “Design for Loving” was based on “Marionettes, Inc.”, a short story about robotic duplicates of humans by this author of *Dandelion Wine*.

answer: Ray Bradbury (or Raymond Douglas Bradbury)

C. In the episode “And So Died Riabouchinska [REE-ah-boo-SHEEN-skah],” the title character comes to life despite being just a marionette operated by this kind of performer, who “throws his voice” to make the puppet seem to talk.

answer: ventriloquist (accept ventriloquists or ventriloquism)

<TRASH, POP CULT>

4. In this play, Maggie claims “victory” for the title creature is “just staying on” the title surface. For 10 points each—

A. Name this play in which Big Daddy Pollitt learns that his illness, which he has been told is a ”spastic colon,” is actually terminal cancer.

answer: Cat on a Hot Tin Roof

B. Maggie is married to this former football star, who repeatedly complains that he hasn't drunk enough to make his brain “click.”

answer: Brick Pollitt (prompt on “Pollitt”)

C. This playwright of *Cat on a Hot Tin Roof* wrote about Laura's collection of figurines in *The Glass Menagerie* [meh-NAZH-uh-ree].

answer: Tennessee Williams (or Thomas (Lanier) Williams (III))

<LIT, AMER>

5. This economist said that “inflation is always and everywhere a monetary phenomenon.” For 10 points each—

A. Name this libertarian economist who championed monetarism and wrote the book *Capitalism and Freedom*.

answer: Milton Friedman

B. Friedman worked with other economists to devise the “withholding” system for collecting this source of government revenue, which is subject to many “deductions.”

answer: (U.S.) income tax(es) (prompt on “tax(es)”)

C. In 1968 Friedman criticized this curve that suggested that there was an inverse relationship between unemployment and inflation in an economy.

answer: Phillips curve

<RMPSS, SOC SCI>

6. For 10 points each—answer the following about events in the U.S. in the year 1822:

A. This national symbol was officially updated in 1822 to include 24 stars, reflecting Missouri's admittance to the Union the previous year.

answer: (U.S. or American) flag (prompt on “Stars and Stripes” or “Old Glory”)

B. This man was executed on July 2, 1822 for his role in planning a slave rebellion in Charleston, South Carolina.

answer: Denmark Vesey [VEE-see] (accept Telemaque)

C. This future president was born in 1822. He vetoed the Bland-Allison Act and won the presidency through the Compromise of 1877.

answer: Rutherford B(irchard) Hayes

<HIST, AMER>

7. For 10 points each—answer these questions about Uzbekistan [ooz-BEK-ih-stan]:

A. Uzbekistan borders this “sea,” which is technically a saline lake that is fed by the Syr Darya [sir DAR-yah] and Amu Darya [AH-moo DAR-yuh] Rivers. This sea shrank severely due to Soviet irrigation projects.

answer: Aral Sea (or Aral Teñizi or Orol Dengizi)

B. Uzbekistan has an extensive land border with this largest landlocked nation in the world, whose major cities include Astana [ass-TAH-nah] and Almaty [al-MAH-tee].

answer: (Republic of) Kazakhstan [KAH-zak-STAN] (or Qazaqstan Respublikasy)

C. Three madrassahs [muh-DRAH-suhz] surround the Registan public square in this Uzbek city, which was once an important stop along the Silk Road. Tamerlane made this city the capital of his empire in the late 14th century.

answer: Samarkand

<HIST, WORLD>

8. For 10 points each—answer the following about subatomic particles:

A. These subatomic particles orbit the much larger nucleus in atoms. The Millikan oil drop experiment measured the charge of these particles.

answer: electrons

B. Unlike fermions [“FAIR”-mee-ahnz], which obey the Pauli [PAW-lee] exclusion principle, two or more of these particles may occupy the same quantum state. One example of these particles was discovered at CERN [surn] in 2012.

answer: bosons [BOH-zahnz] (accept Higgs bosons)

C. These bosons are hypothesized to mediate the strong nuclear force, holding together the quarks within protons and neutrons.

answer: gluons [GLOO-ahnz]

<SCI, PHYS>

9. In January 2016 the federal government issued travel guidelines to help protect pregnant women from this disease. For 10 points each—

A. What virus may cause microcephaly, or abnormally small brains, in newborns if a woman contracts it while pregnant?

answer: Zika(virus) [ZEE-kah]

B. The Zika virus is transmitted by the *Aedes* [ay-EE-deez] genus of this insect. It also spreads yellow fever and dengue [DEN-gay] fever.

answer: mosquito(e)s

C. The travel alert was issued by this government agency, since it is tasked with monitoring and limiting the spread of infectious diseases.

answer: CDC or Centers for Disease Control and Prevention (do not accept or prompt on answers containing “Center”)

<CE, CE>

10. The three parts of this novel are called “The Telemachiad” [tel-uh-MAH-kee-ud], “The Odyssey” [AH-dih-see], and “The Nostos.” For 10 points each—

A. Name this James Joyce novel in which the character of Leopold is based on the mythological Odysseus [oh-DIH-see-uss].

answer: Ulysses [yoo-LIH-seez]

B. Fans of *Ulysses* celebrate a holiday known by a term that references this surname of Leopold and his wife Molly.

answer: Bloom (accept Bloomsday; accept Blooms)

C. In *Ulysses*, this character breaks a chandelier while at Bella Cohen's brothel. Earlier, he fights with his friend Buck Mulligan.

answer: Stephen Dedalus [DED-uh-luss] (accept either underlined portion)

<LIT, EURO>

11. For 10 points each—answer the following about events that happened in 1492:

A. On behalf of the “Catholic Monarchs,” Ferdinand and Isabella, this Genoese [JEN-oh-eez] explorer landed in the New World in 1492.

answer: Christopher Columbus (or Cristoforo Colombo or Cristóbal Colón)

B. Earlier in 1492, Ferdinand and Isabella had captured the city of Granada, completing this centuries-long period of Christian campaigns against Muslim rule in the Iberian Peninsula.

answer: Reconquista [ray-kohn-KEES-tah]

C. Also in 1492, this member of the Borgia family was elected pope; his children included Lucrezia [loo-KRET-see-uh] and Cesare Borgia [chay-ZAR-ay BOR-juh]. Give *either* his birth name *or* his papal name.

answer: Alexander VI [“the 6th”] (or Rodrigo Borgia or Roderic Borgia; prompt on “Alexander”)

<HIST, EURO>

12. The price of this commodity hit a twelve-year low, below $28 per barrel, in January 2016. For 10 points each—

A. Name this natural resource. Many nations that export it are members of OPEC [oh-“peck”].

answer: crude oil or petroleum [OPEC stands for Organization of the Petroleum Exporting Countries.]

B. Due to the falling price of oil, this nation led by Sheikh Khalifa removed fuel subsidies in 2015. It is currently the second-largest oil producer in OPEC, after Saudi Arabia.

answer: United Arab Emirates or UAE (or al-Imarat al-Arabiyah al-Muttahidah)

C. Falling oil prices are forecast to cause this economic condition in Venezuela, in which a massive rise in both prices and money supply causes an extreme devaluation of currency. Zimbabwe experienced this phenomenon in the 2000s.

answer: hyperinflation (prompt on “inflation”)

<CE, CE>

13. This word, derived from Russian, simply means “friend.” For 10 points each—

A. Give this Nadsat word that Alex uses to introduce his companions Pete, Georgie, and Dim at the beginning of *A Clockwork Orange*.

answer: droogs (accept droogies or droogy)

B. This author of *A Clockwork Orange* divided the novel into 21 chapters to represent Alex's journey toward “adult responsibility.”

answer: Anthony Burgess (or John (Anthony) Burgess Wilson)

C. Alex describes the “gorgeosity and yumyumyum” of this German composer's Ninth Symphony, which contains a “lovely blissful tune all about Joy.”

answer: Ludwig van Beethoven

<LIT, BRIT>

14. Pencil and paper ready. Set *A* has 6 elements, while set *B* has 9 elements. For 10 points each—

A. What is the *maximum* number of elements that can exist in the *intersection* of *A* and *B*?

answer: 6 elements [The intersection contains all elements that appear in *both* *A* and *B*; if every element of *A* was also in *B*, the intersection would have 6 elements.]

B. If *A* is a subset of *B*, how many elements are in the *union* of *A* and *B*?

answer: 9 elements [The union contains every element in *either* *A* or *B*, but, since *A* is a subset of *B*, every element in *A* already exists in *B*, and thus their union simply equals *B*.]

C. If the elements of *A* are the positive integers that can be expressed in base 3 using *exactly* 2 digits with no leading zeroes, what is the *largest* member of *A*? You have 10 seconds, and must express your answer in base 10.

answer: 8 [In base 3, the largest two-digit number is 223, which is equivalent to the base 10 number (2 × 3) + (2 × 1) = 6 + 2 = 8.]

<SCI, OTHER>

15. After many psychiatrists responded to a survey about this man by suggesting he was unfit to be president, the American Psychiatric Association ruled that it was unethical to offer such opinions. For 10 points each—

A. Name this 1964 Republican presidential nominee who ran under the slogan “In your heart, you know he's right.”

answer: Barry (Morris) Goldwater

B. Goldwater won the Republican nomination by defeating this politician, who went on to serve as vice president under Gerald Ford.

answer: Nelson (Aldrich) Rockefeller

C. Rockefeller's loss led to the defection of many moderate Republicans to this Democrat, who defeated Goldwater in a landslide.

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

<HIST, AMER>

16. The soloist in this violin concerto enters by playing trills on the note B, representing a bird. For 10 points each—

A. Name this concerto, the first in the collection *The Contest Between Harmony and Invention*. Its second movement includes the sound of a barking dog, and the third represents a rustic dance.

answer: Spring (or La Primavera)

B. “Spring” is the first of these four concerti by Antonio Vivaldi [vih-VAHL-dee].

answer: The Four Seasons (or Le Quattro Stagioni)

C. “Spring” is written in this major key. Its relative minor is C-sharp.

answer: E major (or mi maggiore)

<FA, AUDIO>

17. For 10 points each—answer the following about the NBA three-point shootout:

A. This Chicago Bull set the record for the lowest score in a round when he only scored five points in 1990. He won the 1987 and 1988 dunk contests.

answer: Michael (Jeffrey) Jordan

B. This Boston Celtic won the first three competitions. He won three NBA titles with Boston as a player before going on to coach the Indiana Pacers.

answer: Larry (Joe) Bird

C. The 2013 champion was this player for the Cleveland Cavaliers, who in 2012 won Rookie of the Year.

answer: Kyrie (Andrew) Irving

<TRASH, SPORTS>

18. For 10 points each—answer the following about selenium [suh-LEN-ee-um]:

A. Chemically, selenium resembles this other Group 16 element whose pure form is known for its foul odor and yellow color.

answer: sulfur (or S or sulphur)

B. Selenium can be used to increase the contrast of photographic prints, in which use it is this kind of substance. Another version of this process changes a black-and-white photo to sepia.

answer: toning or toner

C. These tropical nuts are the richest source of dietary selenium. Capuchin [“CAP”-yoo-chin] monkeys have been reported to crack open these very hard nuts using rocks.

answer: Brazil nuts (or Bertholletia excelsa)

<SCI, CHEM>

19. This man's linear battle formations contributed to his victory at Breitenfeld. For 10 points each—

A. Name this Swedish king and military commander known as the “Lion of the North.”

answer: Gustavus Adolphus (Magnus) (or Gustav II Adolf or Gustav Adolf or Gustavus II or Gustavus the Great; prompt on partial answer)

B. Gustavus Adolphus led a Protestant army during this long 17th-century war between Protestants and Catholics in modern-day Germany.

answer: Thirty Years' War

C. Gustavus Adolphus was killed in this 1632 battle of the Thirty Years' War, which began when he attempted a surprise attack on the forces of Albrecht von Wallenstein.

answer: Battle of Lützen [LOOT-sun]

<HIST, EURO>

20. This character declares that he is not a “civilized man,” because he has rejected the laws of terrestrial society. For 10 points each—

A. Name this captain of the submarine *Nautilus*.

answer: Captain Nemo [NEE-moh] (or Prince Dakkar)

B. This French science fiction writer created Captain Nemo in the novel *Twenty Thousand Leagues Under the Sea*.

answer: Jules (Gabriel) Verne [zhool vurn]

C. In this sequel to *Twenty Thousand Leagues Under the Sea*, escaped prisoners learn about Nemo's Indian origins after crashing a balloon onto the title location.

answer: The Mysterious Island (or L'Ile mystérieuse)

<LIT, EURO>

21. This body's name was proposed by a British schoolgirl named Venetia Burney. For 10 points each—

A. Name this object that used to be considered a planet but is now called a dwarf planet.

answer: (134340) Pluto

B. The prominent heart-shaped region photographed by New Horizons has been named in honor of this astronomer who discovered Pluto in 1930.

answer: Clyde (William) Tombaugh

C. This organization determined the reclassification of Pluto as a dwarf planet. This group of professional astronomers is abbreviated the IAU.

answer: International Astronomical Union (or Union astronomique internationale; prompt on “UAI”)

<SCI, OTHER>

22. For 10 points each—name these animals in Norse mythology:

A. Odin owned two of these animals named Geri and Freki; another one named Fenrir will kill Odin at Ragnarok.

answer: wolf or wolves

B. Two of these animals named Tanngrisnir and Tanngnjostr [tahn-N'YAW-sturr] pull Thor's chariot, while one named Heidrun is milked to produce the mead drunk by the warriors in Valhalla.

answer: goat or goats

C. Freya uses one of these animals named Hildisvini [HILL-diss-VEE-nee] as her mount, and Frey owns a glowing, golden one.

answer: boar or boars

<RMPSS, MYTH>

23. In the latter half of the 20th century, this country experienced a period of martial law called the White Terror that followed the February 28 Incident. For 10 points each—

A. Name this island country that was once known as Formosa.

answer: Taiwan (or Republic of China or Zhonghua Minguo; do not accept or prompt on “China” or “People's Republic of China”)

B. The White Terror began during the rule of this man, who led the nationalist government of China and ruled Taiwan until his death in 1975.

answer: Chiang Kai-shek (or Jiang Jieshi or Jiang Zhongzheng)

C. In 1946 Chiang's forces met with this U.S. general, who tried to negotiate a settlement between Nationalist and Communist forces. Earlier, this man had served as the Chief of Staff of the U.S. Army during World War II.

answer: George C(atlett) Marshall (Jr.)

<HIST, WORLD>

24. Mycorrhizae [MYE-koh-RYE-zee] are symbiotic relationships between these organisms and plant roots. For 10 points each—

A. Name these organisms, examples of which include molds and mushrooms.

answer: fungi [FUN-jye or “FUN-guy”] (or funguses)

B. The primary component of cell walls in fungi is this nitrogen-containing polysaccharide [PAH-lee-“SACK-uh-ride”] that can also be found in exoskeletons of arthropods.

answer: chitin [KYE-tin]

C. This generic term describes unicellular fungi such as *Candida albicans* [KAN-dih-duh AL-bih-“cans”].

answer: yeasts

<SCI, BIO>