

1. In the 17th century in this country, merchants were at the bottom of a four-tiered social order, two rungs below peasants. Nobles in this country were bound by its system of alternate attendance. Pleasure seekers in this nation were derided as members of the “Floating World.” Dutch learning occurred in one of its ports. This nation venerates three great unifiers of the 16th century. (\*) 47 warriors in this country vowed to revenge their master’s death by killing Kira. Matthew Perry’s Black Ships sailed into this nation, opening it to Western trade. For 10 points, name this country where the Meiji Restoration occurred after the fall of the Tokugawa Shogunate.  
ANSWER: Japan [or Nippon]

2. The Bond number is ratio of this force to surface tension. The right-hand side of the Navier-Stokes equations contains pressure forces, viscous forces, and this force. Benard cells form because this force dominates at lower temperatures in natural convection. In a static fluid, the pressure gradient is proportional to this force. The (\*) elevation head in Bernoulli’s equation is a potential caused by this force. It is the only net force that acts on an Atwood machine. An object’s buoyant force equals this force on the displaced volume of fluid. Drag balances it at terminal velocity. For 10 points, name this force that gives objects weight.  
ANSWER: gravity [or gravitational force; or weight before it is read; don’t accept or prompt on “buoyant” force or “buoyancy”]

3. In one recording, this man duets on octave runs with “Dizzy” Gillespie and adapts the clarinet solo from “High Society.” One of this musician’s songs lays a new melody over the chord progression of the song “How High the Moon.” A set of chord changes in 12-bar blues are named for this man’s song “Blues for Alice.” Jon Hendricks added lyrics to this man’s jazz standard (\*) “Billie’s Bounce.” This man’s namesake “Septet” recorded his songs “Anthropology” and “Ornithology.” This musician adapted Ray Noble’s “Cherokee” in his own song “Ko Ko,” the first song written in the bebop style. For 10 points, name this saxophonist nicknamed “Yardbird.”  
ANSWER: Charlie Parker [accept “Yardbird” or “Bird” until mention]

4. This nation was targeted by a Twitter look-a-like called ZunZuneo. It scrapped its unpopular dual-currency system in late 2013. Cuentapropistas are entrepreneurs in this nation. This country provides, by far, the most doctors to the developing world. Michael Moore’s *Sicko* controversially (\*) praised this nation’s healthcare system. This nation’s president overturned a longstanding prohibition on buying new cars in December 2013. Marco Rubio’s parents emigrated from this country. For 10 points, name this country still under a trade boycott from the US, since Raul Castro is keeping it Communist.  
ANSWER: Republic of Cuba

5. A character in this novel claims that “the reason for living was to get ready to stay dead a long time” in a chapter which describes how she gave birth to a “negative” child. A terrified pregnant character in this novel complains “He could do so much for me if he just would”. That character’s father takes the ten dollars she earned selling cakes in order to buy a pair of false teeth. After breaking his leg while trying to cross a river, (\*) Cash is given a cement cast. At the end of this novel, Darl is sent away to an insane asylum for burning down a farm, after Addie is buried in Jefferson. For 10 points, name this novel by William Faulkner about the Bundrens.  
ANSWER: As I Lay Dying

6. Lck activates these cells. The alpha-beta class of these cells has a dimer of alpha and beta chains in its namesake receptor. After they’re formed, about 98% of these cells die in the naive state due to positive and negative selection. These cells are absent in SCID patients. Like NKCs, a class of these cells express granzymes and perforin. Class I major histocompatibility complexes bind to (\*) CD8 receptors on the cytotoxic type of these cells. These cells mature in the thymus. CD4 positive ones are infected by HIV and are called “helpers”. For 10 points, name these lymphocytes often contrasted with B cells.  
ANSWER: T cells [or T lymphocytes; or helper T cells; or cytotoxic T cells; or other types of T cells; prompt on lymphocytes; prompt on white blood cells; prompt on leukocytes]

7. A member of this art movement erased a canvas drawn by Willem de Kooning and presented the blank, new work as his own entitled *Erased de Kooning*. Claes Oldenburg, a sculptor from this movement, created an inflated lipstick tube at Yale University. Artists from this movement used Walter Benjamin's essays about the "age of mechanical reproduction" as inspiration to (\*) mass-produce Benday dot paintings and silk-screenings. An artist in this movement drew a fading diptych of Marilyn Monroe and also created paintings of Campbell's soup cans. For 10 points, name this 20th-century movement which included Roy Lichtenstein and Andy Warhol.  
ANSWER: Pop Art

8. William James' "The Will to Believe" considers "live" and "dead" examples of these things. The Duhem-Quine thesis argues that these things cannot exist in isolation, but require their own assumptions. One of these things makes up the middle step in a *modus tollens* argument. One of these things is called *ad hoc* if it is added specifically to prevent (\*) falsification. In logic, this term denotes the letter P, which comes before the consequent. The simplest of these things is chosen according to the principle of parsimony, or Ockham's razor. For 10 points, name these statements which are tested in the scientific method.  
ANSWER: hypothesis [or hypotheses; or theories; or antecedents; prompt on explanations; prompt on conjectures; prompt on statements, do not accept "premises"]

9. William Blake's "And did those feet in ancient times" comes from an epic poem titled for this person. William Wordsworth wonders about finding this person "living at this hour" in his poem "England, 1802." AE Housman wrote that "malt does more than" this person "can, to justify God's ways to man." This author, who resurrected (\*) blank verse after Shakespeare's death, wrote the line "took their solitary way" to end an epic poem in 12 books. This author wrote, "The mind is its own place" and can "make a heaven of hell, a hell of heaven" in a work about "Man's first disobedience." For 10 points, name this blind English poet who wrote *Paradise Lost*.  
ANSWER: John Milton

10. On a visit to the White House, this woman danced with John Travolta to the music from *Saturday Night Fever*. This woman was called "Squidgy" in some phone conversations with James Gilbey. This woman championed the Ottawa Treaty, visiting Bosnia to protest the use of landmines. Dodi Fayed, the heir to an Egyptian fortune, (\*) dated this woman. Camilla Parker-Bowles married this woman's first husband. At the Pont de l'Alma in Paris in 1997, drunk driver Henri Paul accidentally killed this woman in a car accident. For 10 points, name this first wife of Prince Charles.  
ANSWER: Princess Diana [or Diana, Princess of Wales; or Diana Spencer]

11. The efficiency of these devices is quantified by the fill factor. Diodes in these devices are often formed by cadmium telluride. Edmond Becquerel first invented these objects using silver chloride hooked up to a platinum electrode. The Shockley-Queisser limit bounds the efficiency of these devices at around 33.7%. The Agua Caliente farm in Yuma, (\*) Arizona contains more than five million of these devices. The Solyndra corporation manufactured these devices. The photovoltaic effect explains their operation. For 10 points, name these devices which convert sunlight into electricity, and provide an important source of renewable energy.  
ANSWER: solar cells [or photovoltaic cell; or solar panels]

12. This composer adapted his piece "Ruins" into the first movement of his *Fantasia in C*. A work by this man, initially called *Easy Pieces*, includes the movements "Blind Man's Bluff" and "Knight of the Hobbyhorse." He borrowed the melody from his own piece (\*) *Kreisleriana* for the final movement of his first symphony. This composer included sections named for Chopin and Paganini in a twenty-one movement piece. This creator of the A-S-C-H motif wrote the piano suite *Scenes from Childhood*. Many of his works for piano were performed by his wife Clara. For 10 points, name this German composer of *Carnaval* and the *Spring Symphony*.  
ANSWER: Robert Schumann

13. This writer discusses Katherine Mansfield with a “Mr. J” in one of the essays in her collection *Not Under Forty*. In a section titled “The White Mulberry Tree” by this author, Crazy Ivar finds the dead bodies of Marie and Emil. She wrote about Jean Marie Latour, who establishes a Roman Catholic church with Joseph Vaillant in (\*) New Mexico. This author wrote about aspiring opera star Thea Kronberg in *The Song of the Lark*. Jim Burden falls in love with the title character of another of her novels on a Nebraska farm. For 10 points, name this author of *Death Comes for the Archbishop*, *O Pioneers!* and *My Ántonia*.

ANSWER: Willa Cather

14. George Rodney won a moonlit naval battle over Juan de Langara at Cape St. Vincent in this war’s Caribbean theater. Stephen Sayre, a friend of radical London mayor John Wilkes, tried to kidnap the king during this war. The Gordon Riots took place simultaneously with this conflict. William Pitt the Younger was installed as Prime Minister after it. In the buildup to this war, the term (\*) “virtual representation” described tariffs passed by Charles Townshend. Hessian mercenaries fought for Britain during this conflict. Lord North was Prime Minister during it. For 10 points, name this war fought under King George III against some pesky colonists.

ANSWER: American Revolutionary War [or the American Revolution]

15. Boris Turgenev briefly served as an incarnation of one of this character’s enemies after stealing the identity from Anton Vanko. During the Vietnam War, this character was captured by the warlord Wong-Chu, where he met the physicist Ho Yinsen. This hero’s rival Justin Hammer attempted to undermine him by using the Hypersonic Scan Transmitter. Two of this character’s villains, the (\*) Crimson Dynamo and Whiplash, were portrayed by Mickey Rourke in a 2010 film. Colonel James Rhodes allies with this hero as War Machine. For 10 points, name this superhero who uses a mechanized suit of armor, the alter ego of Tony Stark.

ANSWER: Iron Man [or Tony Stark before it is read]

16. The k-percent rule proposes that the rate of increase of this quantity should be constant regardless of cycles. This quantity multiplied by the velocity equals nominal GDP, or price times quantity, in Fisher’s equation. Quantitative easing lowers interest rates and increases this quantity from bond (\*) purchases. An increase in the reserve requirement causes this quantity, and its corresponding multiplier, to go down. The M0 is a common method of measuring this quantity. When it goes up, inflation usually follows. For 10 points, name this quantity regulated by the Federal Reserve, the amount of dollars in circulation.

ANSWER: money supply [or money stock; or M0 or M1 or M2 or M3 or MB before “M0” is read; prompt on money]

17. This element’s sulfate, hydrated with twelve water molecules, is a common flocculant in wastewater treatment. To mass produce this element, its oxide is mixed with a molten compound containing this element, sodium, and fluorine, and then electrolyzed. Like iron and boron, this element’s trihalides are common Lewis acids. This element’s electron configuration ends (\*) 3p<sup>1</sup>. This element, which always exists in a +3 oxidation state, has an oxide that forms corundum. The Bayer process extracts this element from bauxite, and then the Hall-Heroult process turns it into pure metal. For 10 points, name this element with atomic number 13.

ANSWER: aluminum [or Al; or aluminium]

18. In a scene set on the plains of the Battle of Pharsalus, this character is escorted by Chiron and Manto to the Underworld to find Helen of Troy. This character gives his lover a sleeping potion that she uses to accidentally poison her mother. He defeats Valentine in a duel and is relieved to find out that Gretchen is “saved” at the end of one play. On (\*) Walpurgisnacht, this character is taken to a witch’s Sabbath by a man that he and Wagner initially mistook for a black poodle. God challenges Mephistopheles to sway the heart of this scholar. For 10 points, name this protagonist of a two-part play by Goethe, who sells his soul to the Devil.

ANSWER: Faustus [or Doctor Faustus]

19. This man made peace with General Enrique Castillo during his time as provisional governor of Cuba. This man signed a secretive peace agreement with Japanese Prime Minister Katsura Taro. This man, who succeeded Elihu Root as Secretary of War, lost his final election campaign after his predecessor ran for the (\*) Progressive Party. He enacted a policy which involved giving loans to the “banana republics.” This engager in “dollar diplomacy” would become Supreme Court Chief Justice eight years after his one term as president ended. For 10 points, name this president whose policies mirrored those made by his predecessor Teddy Roosevelt.

ANSWER: William Howard Taft

20. Cimon mythically retrieved some of these objects from Scyros and brought them back to Athens. These objects were used by Ymir to form mountains. Quetzalcoatl retrieved some of these objects made of jade from Mictlan to fashion humanity. La Catrina is made of these objects. Thjalfi becomes a servant of Thor after eating one. Prometheus first gained Zeus’ enmity when he wrapped some of these objects in (\*) fat. Deucalion threw rocks over his shoulder to repopulate humanity after hearing a riddle about these objects belonging to his mother. For 10 points, what objects are symbols of the Day of the Dead, since they compose skeletons?

ANSWER: bones [or bone marrow; or skeletons before it is read]

TB: A character in this novel immediately strangles her newborn daughter during a famine, then leaves the corpse to a hungry dog. During a riot, a woman in this novel hides valuable pearls between her breasts, but the pearls are forced away from her and given to a concubine. This novel’s protagonist hires a slave named (\*) Cuckoo and constantly complains about his good-for-nothing, opium-addicted uncle. At the end of this novel, a group of unfaithful sons decide to sell the land their father purchased from the House of Hwang. This novel opens on the wedding day between O-Lan and Wang Lung. For 10 points, name this novel by Pearl S. Buck.

ANSWER: *The* Good Earth

1. This quantity is approximated for a normal distribution as the mean plus or minus Z-score times standard deviation over the square root of sample size. For 10 points each:

[10] Name this set of points which approximate the true sample mean within a given significance level.

ANSWER: confidence interval [or CI]

[10] If you don't know the true population variance, then rather than using a normal distribution, you should use this other distribution when doing hypothesis testing. It was partly named for the pen name of William Sealy Gosset.

ANSWER: Student's t distribution [or t testing; prompt on Student's distribution]

[10] The t distribution converges to the normal distribution when the number of degrees of freedom approaches this value. The probability density function goes to zero as a bell curve approaches this value.

ANSWER: infinity [or negative infinity; or word forms]

2. Answer the following about *She Stoops to Conquer*, by Oliver Goldsmith, for 10 points each:

[10] It's a play in this genre. Shakespearean plays in this genre typically end in marriages. Farces are typically classified as this type of play.

ANSWER: comedy [or comedies]

[10] The play follows two out of three of these "rules" laid out by Aristotle in his tract *Poetics*. Greek plays were obligated to follow these rules for action, time, and place.

ANSWER: the three Classical unities [or word forms]

[10] The play likely gets its title from a poem by this earlier English poet. This Restoration poet wrote the plays *All for Love* and *Marriage a la Mode*.

ANSWER: John Dryden

3. The sponsor of this act also sponsored the bill which banned polygamy in the United States. For 10 points each:

[10] Name this 1862 act which provided states with public land for the use of creating colleges and universities.

ANSWER: Morrill Land-Grant Act [or the Morrill Act of 1862]

[10] The Morrill Land-Grant Act and other education reform was ushered in by the work of this Massachusetts politician, the "father" of the Common School movement.

ANSWER: Horace Mann

[10] This fellow Massachusettan called for America to "[o]pen the doors of the school houses to all the children in the land" in an 1837 speech. He also proclaimed "Liberty and Union, now and forever, one and inseparable!"

ANSWER: Daniel Webster

4. Fifteen chapters in the middle of this book of the Old Testament make up a namesake law code which provides instructions on how to celebrate festivals, as well as the laws of kashrut. For 10 points each:

[10] Name this final book of the Torah. At its end, Joshua becomes the leader of the Israelites.

ANSWER: Book of Deuteronomy [or Devarim]

[10] Much of Deuteronomy consists of speeches given by this man, who led the Israelites out of Egypt but was unable to enter the Promised Land because he hit a rock instead of talking to it.

ANSWER: Moses [or Moshe]

[10] This Jewish prayer first appears in Deuteronomy. This prayer, which is often said right before bed, and often with the eyes closed, is loosely translated as "Hear O Israel: The Lord thy God, the Lord is one."

ANSWER: Shema Yisrael [or the Sh'ma]

5. This character repeatedly shrieks, "I speak according to the book! Book! Book!" in an earsplitting aria where she apparently pleads to be a grain of sand so that she can taste eternal joy. For 10 points each:

[10] Name this coloratura soprano who escorts Pat to a performance of the opera *The Red Detachment of Women* and, near the end of the opera, joins her husband in a foxtrot after he climbs down out of his portrait.

ANSWER: Madame Mao [or Jiang Qing; or the wife of Mao Tse-Tung]

[10] "I am the wife of Mao Tse-Tung" is an aria from this composer's minimalist opera *Nixon in China*. He also wrote *On the Transmigration of Souls*.

ANSWER: John Coolidge Adams

[10] Both Nixon and Mao are performed by singers of this voice type. This most common male voice lies between tenor and bass.

ANSWER: baritone

6. Ghazan, a ruler of this empire, converted to Islam in 1295. For 10 points each:

[10] Name this khanate in Central Asia and Iran which experienced economic turmoil due to its failed tax farming policies. It was founded by Hulagu.

ANSWER: Il-khanate

[10] The Il-khanate was a successor state to this massive empire conquered by Genghis Khan in the thirteenth century.

ANSWER: Mongol Empire [or the Mongolian Empire]

[10] The Il-khans were stopped by the Mamluks at the Battle of Ain Jalut in 1260 from invading this modern-day country. The Mamluks' center of strength was in this country, which was also the center of the Fatimid caliphate.

ANSWER: Egypt

7. This is the number of sites in the ribosome where tRNAs can bind. For 10 points each:

[10] Give this number of nucleotides required to specify one codon, and therefore, one amino acid.

ANSWER: three

[10] During transcription, this type of mutation involves a single deletion or insertion of a nucleotide, which mutates every successive residue in the protein, because the original groups of three have been disrupted.

ANSWER: frameshift mutation [or reading frame shift; or framing mutation]

[10] Insertions of sets of three nucleotides, however, produce more or less functional proteins; for instance, this three-base-pair repeat is extremely common in Huntington's disease and other neurological conditions.

ANSWER: CAG [or cytosine adenine guanine]

8. Answer the following about 2014 Supreme Court decisions, for 10 points each:

[10] The court sided with Hobby Lobby Stores, against Sylvia Burwell, in a decision which found that this law did not apply to corporations. This type of law requires employers to cover the costs for employees' birth control.

ANSWER: contraceptive mandate [or contraception mandate; prompt on mandate; prompt on birth control mandate]

[10] In *Harris v. Quinn*, the Court amended its decision on the *Abood* case and dealt grave harm to teachers' unions by effectively endorsing this principle. These laws prevent unions from forcing all employees to pay dues.

ANSWER: "right to work" [prompt on partial answer]

[10] In *Hall v. Florida*, the Court extended its ruling on *Atkins* by saying that an IQ threshold was unacceptable for this procedure. In July, an Arizona man might have been in agony for two hours during this procedure.

ANSWER: capital punishment [or the death penalty; or lethal injection; or execution; or obvious equivalents]

9. One composer from this country wrote a terrifying work which uses graphic notation to instruct 52 string players to play in quarter tones and other dissonant chords. For 10 points each:

[10] Name this homeland of Frederic Chopin and the composer of *Threnody to the Victims of Hiroshima*, Krzysztof Penderecki. The work for narrator and orchestra *A Survivor From Warsaw* is set in this country.

ANSWER: Republic of Poland [or Rzeczpospolita Polska]

[10] *A Survivor From Warsaw* is a piece by this Austrian composer. This man's 21-part song cycle featuring a sad clown, *Pierrot Lunaire*, was an atonal work which predated his creation of the twelve-tone technique.

ANSWER: Arnold Schoenberg

[10] Polish composer Henryk Gorecki is best-known for his *Symphony of Sorrowful Songs*, his symphony of this number. Mendelssohn's symphony of this number is known as the "Scottish."

ANSWER: third symphonies [or Symphony No. 3]

10. Answer the following about English short stories, for 10 points each:

[10] Hercule Poirot and Miss Marple narrate some of the detective fiction by this author. She also wrote mystery novels like *Murder on the Orient Express*.

ANSWER: Dame Agatha Christie

[10] A governess teaches her pupils to act out the rape of the Sabine Women in a story by this author. This author of "The Interlopers" and "The Open Window" loved twist endings.

ANSWER: Saki [or H. H. Munro]

[10] In this story by WW Jacobs, Mr. and Mrs. White use a talisman to wish for 200 pounds--which they receive, in the form of a compensation payment for the death of their son Herbert. Rough.

ANSWER: "The Monkey's Paw"

11. The first gladiator match in ancient Rome took place in one of these locations where cattle were sold. For 10 points each:

[10] Give this term for the center of the Roman social and economic life. The main one was located at the center of the city, too.

ANSWER: Roman **Forum**

[10] These public celebrations of military victories marched through the Forum on the way to the Temple to Jupiter on Capitoline Hill.

ANSWER: Roman **triumphs**

[10] The forum in Rome also housed this platform on which speakers gave great speeches. This platform, which stood next to the Senate *curia*, was built from the mast of a Roman ship.

ANSWER: **rostra** [or **rostri**; do not accept “*rostrum*”]

12. This man appears tearing his hair apart in *The Desperate Man* and lies in a pool of blood in *The Wounded Man*. For 10 points each:

[10] Name this Realist French artist who painted two men working with hammers in order to break rocks in his *The Stone Breakers*.

ANSWER: Gustave **Courbet**

[10] Gustave Courbet also painted this scene of a gathering of French citizens mourning a death. A white dog appears next to the grave in the center of this painting.

ANSWER: A **Burial at Ornans**

[10] A *Burial at Ornans* is currently on display at this Paris, France art museum, situated next to the Seine. Manet's *Olympia* is currently on display at this museum.

ANSWER: Musee d' **Orsay**

13. This author wrote a poem called *Pale Fire*, and then commented on it in the persona of Charles Kinbote. For 10 points each:

[10] Name this Russian author best known for writing about Humbert Humbert in *Lolita*.

ANSWER: Vladimir **Nabokov**

[10] Nabokov wrote *Lolita* not in Russian, but in this language. Nabokov also translated the works of Pushkin into this language.

ANSWER: **English**

[10] Humbert first falls in love with a nymphet with this first and last name, but she dies of typhus. Another character with this name, from an 1849 poem, is buried in a “sepulchre there by the sea, in her tomb by the sea.”

ANSWER: **Annabel Leigh** [or **Annabel Lee**; prompt on partial answer]

14. Moderator note: Read the first part of this bonus slowly.

Name some things that refuse to dissolve no matter how much you stir them, for 10 points each:

[10]. If you add barium nitrate to sodium sulfate, what compound, formed from the double-displacement reaction, precipitates out?

ANSWER: **barium sulfate** [or **BaSO4**]

[10] This main component of limestone is very sparingly soluble in water. This compound decomposes into calcium oxide when it's heated.

ANSWER: **calcium carbonate** [or **CaCO3**]

[10] Although most halides are soluble, halide salts of silver, lead, and this other cation are insoluble. This diatomic, metallic cation's chloride is called calomel. Give the element and its oxidation state.

ANSWER: **mercury (I)** [pr. **mercury one**; or **mercurous** chloride; or **Hg2 2+**; prompt on just **mercury**]

15. Though I couldn't find anybody in Greek myth who used their private parts as piranha bait, there were plenty of other dumb ways to die. For 10 points each:

[10] This boy really wishes that he didn't try to “teach [himself] how to fly”, because he ended up too close to the Sun and his wax wings melted.

ANSWER: **Icarus**

[10] Arcas really wishes he didn't poke a stick at a grizzly bear, since the bear was really this woman, his mother, who was transformed by Artemis after seeing the goddess bathing. She got turned into Ursa Major.

ANSWER: **Callisto**

[10] Most Greeks should have been safe with “inviting a psycho killer inside”, since this code of hospitality was a strong influence on Greek culture. Zeus punished people who violated this concept.

ANSWER: xenia

16. Name some terms applied to the government of the Soviet Union, for 10 points each:

[10] This term refers to the highest organization of the Communist Party, elected by the Central Committee and led by the General Secretary. This body made most of the policy for the Soviet Union.

ANSWER: the Politburo [or the Presidium]

[10] Central planning in the Soviet Union was achieved by instituting “plans” named for this many years. Thirteen of these plans were instituted under Soviet control.

ANSWER: five-year plans

[10] This patron-client system governed advancement in Soviet society and applied to bureaucrats in higher social echelons than normal *apparatchiks*. It gets its name from the Latin for “list of names.”

ANSWER: nomenklatura

17. This nation was the first to propose that a First World inhabitant could get by on 2000 watts of electricity per day. For 10 points each:

[10] Name this non-EU member nation which was embroiled in the UBS controversy in 2008. Both the Rhine and Rhone rivers have their source in this country.

ANSWER: Switzerland [or the Swiss Confederation; or Schweiz]

[10] The UBS controversy dealt with this historically secret Swiss industry which permitted some US taxpayers to evade taxes. This industry makes up more than 10% of the country’s GDP.

ANSWER: banking [or obvious equivalents]

[10] The Swiss banking industry is mostly centered in this city, also Switzerland’s most populous. Though not Geneva, it’s on a namesake lake in the northern part of the country.

ANSWER: Zürich

18. For 10 points each, name some things in psychology you should be wary about when performing an experiment:

[10] To avoid placebo effects, make sure you specify one of these groups, which are used as a comparison to the treatment groups. These groups usually receive no treatment at all.

ANSWER: control groups

[10] In order to account for bias, a researcher might employ this type of study in which information that might cause bias is withheld from *both* the experimenter and participants.

ANSWER: double-blind study/experiment

[10] This extraneous variable is the name given to a situation in which participants of a study try and guess the aim of an experiment, and subsequently change their behavior to better reach that aim or “beat” the experiment.

ANSWER: demand characteristic

19. A character uses the pseudonym “George Jackson” while being pulled out of a river by members of this family and later witnesses the men hold guns while listening to a sermon on brotherly love. For 10 points each:

[10] Name this literary family, whose feud with the Shepherdsons has lasted for about thirty years.

ANSWER: the Grangerford family [or the Grangerfords; accept equivalents]

[10] The Grangerford-Shepherdson feud is featured in this Mark Twain novel, which follows a friend of Tom Sawyer and an escaped slave named Jim as they ride a raft down the Mississippi.

ANSWER: The Adventures of Huckleberry Finn

[10] Huck and Jim eventually encounter the duke and the king, who stage a scam revolving around this fake play. They eventually get tarred and feathered for this at the end of the novel.

ANSWER: The King’s Cameleopard, or the Royal Nonesuch [or the Nonesuch; accept either underlined answer]

20. Two parallel wires carry current in the same direction. For 10 points each:

[10] The force acting between the two wires equals their current, times their length, times this quantity. The line integral of this quantity is proportional to enclosed current by Ampere’s Law.

ANSWER: magnetic field [or B field]



[10] [READ SLOWLY] If the magnetic force on the first wire from the second wire is 5 Newtons to the right, then according to Newton's Third Law, the force on the second wire from the first wire has what magnitude and direction?

ANSWER: 5 Newtons to the left [prompt on partial answer]

[10] Maxwell amended Ampere's original law to include this term. It equals the permittivity times the time derivative of electric field, plus the time derivative of the polarization density.

ANSWER: displacement current [prompt on partial answer]