The Illinois Mathematics and Science Academy of Aurora, IL presents

IMSANITY 4

-ROUND 5-

Editors	Writers	
Noah Prince	Waleed Ali	Rajiv Patel-O'Connor
	Willie Chang	Dan Pechi
Sabrina Lato	Lael Costa	Noah Prince
Saieesh Rao	Siva Gangavarapu	Saieesh Rao
	Anton Karpovich	Andrew Salij
	Sabrina Lato	

with special contributions from. . .
Jonah Greenthal
Eric Ordonez

Tossups

(1)   One method of synthesizing these substances involves quenching an iminium salt in water, while another method produces these compounds from the reduction of an acid halide using hydrogen gas via a poisoned palladium-on-carbon catalyst. Their base-induced disproportionation occurs to yield an alcohol and the salt of a carboxylic acid in the Cannizzaro reaction. Accounting for the pleasant odor of vanillin and cilantro, these non-ketones form a(*) silver mirror on the wall of a test tube in the presence of the Tollens' reagent. For ten points, name these compounds containing a terminal carbonyl group whose simplest member, with formula CH_2O, is often used as a preservative.

ANSWER: <u>aldehydes</u>

(2)   In this work, several characters are convinced they were followed "nine fathom deep… from the land of mist and snow." A bride in this work "paced into the hall / red as a rose," and one character in has locks "yellow as gold" and skin "as white as leprosy." That character, Life-in-Death, wins a game of dice, and another character rose the next morning "a sadder and wiser man." One character describes(*) "Water, water, everywhere / Nor any drop to drink" to a wedding guest when he "stoppeth one of three." For ten points, identify this poem where the title character shoots an albatross, a poem by Samuel Taylor Coleridge.

ANSWER: The <u>Rime of the Ancient Mariner</u>

(3)   One character in this musical sings "Our mothers are all junkies/ Our fathers are all drunks/ Golly Moses, natcherly we're punks" to gain sympathy from the title figure in *Gee, Officer Krupke*. One character in a bridal shop sings "It's alarming how charming I feel" in the song(*) *I Feel Pretty*, while the lines "Nobody knows in America/ Puerto Rico's in America!" are sung in alternating 6/8 and 3/4 time signatures in the song *America*. This musical sees Bernardo stab Riff and Tony falls in love with Maria. For ten points, identify this Leonard Bernstein musical adaptation of *Romeo and Juliet* which sees the Sharks and Jets feud.

ANSWER: <u>West Side Story</u>

(4)   On this holiday, in some regions, men receive kisses or a silver coin for lifting up women three times. This holiday sees the singing of the *Haec Dies*. The Synod of Whitby addressed controversy over this holiday that was earlier addressed by the First Council of Nicaea. In reference to the(*) Pasch, houses are blessed on this holiday, which occurs three days after the ritual washing of feet on Maundy Thursday. The event it commemorates was doubted by Thomas. For ten points, name this holiday that occurs fifty days before Pentecost and celebrates the resurrection of Jesus Christ.

ANSWER: <u>Easter</u> (accept <u>Pascha</u> before "Pasch")

(5) **Stede Bonnet joined this occupation in order to escape a nagging wife. The Wokou of Japan were known as the "dwarves" of this profession. Mary Read and Anne Bonny served John Rackham in this occupation. The United States fought three namesake wars against North African members of this profession, whose members acknowledged by the crown were**(*) privateers. This profession experienced a Golden Age around the beginning of the eighteenth century, during which people such as Edward Teach and Calico Jack roamed the waters. For ten points, name this occupation whose members raided ships and flew the Jolly Roger, whose notable members included Blackbeard.

ANSWER: piracy (accept equivalents such as pirates)

(6) **This artist painted *Lady in a Mantilla* as a variation of one of his works in which a woman in white gloves and a black veil stares at the viewer titled *The Lady with a Fan*. Two halves of a cow were included in Francis Bacon's depiction of this artist's portrait of Pope Innocent X. This artist was inspired by the victories of Ambrogio Spinola to create his**(*) *Surrender at Breda*. Cupid holds a mirror into which the titular nude goddess looks in his *Rokeby Venus*. For ten points, name this Spanish artist who painted the company of the Infanta Margarita in *Las Meninas*.

ANSWER: Diego (Rodriguez de Silva y) Velazquez

(7) **In this novel, a man in an Achilles hat says "it's not the place" when he sees someone about to kill himself after announcing he is going to America. Dr. Zossimov declares the that protagonist is a hypochondriac, and possibly insane. Lebeziatnikov reveals that his friend had put money in the pocket of a prostitute when that friend, Luzhin, tries to expose Sonya as a thief. Because he has only psychology to prove it,**(*) Porfiry Petrovich cannot convict a man he knows to be a murderer, and at the end of this novel, Dounia and Razumikhin marry. A pawnbroker and her sister Lizaveta are murdered by Raskolnikov in, for ten points, what Fyodor Dostoyevsky novel?

ANSWER: Crime and Punishment (or Prestuplenie i Nakazanie)

(8) **The song *Island* by Mastodon is played by one of these characters who dances while doing laundry and marries a balding salesman named Don Carlton. Another one of these characters named Celia is forced to wear six E-Collars after a date at a sushi restaurant is interrupted. One who works in room A113 and is named Professor Knight works under Dean**(*) Hardscrabble in an institute founded in the year 1313. A girl named Boo is kept hidden by two of these creatures voiced by John Goodman and Billy Crystal. For ten points, identify these creatures created by Pixar that appear in film series about their namesake University and scaring company.

ANSWER: monsters (accept anything indicating characters from the Monsters series)

(9) **A monk known as the "Master of" this nation led the Shepherds' Crusade. One of this nation's kings gained power after fighting with the Aba family in the Battle of Rozgony; that king was Charles Robert. In the 20th century, this nation's borders were defined in the Treaty of Trianon, which led to it eventually siding with Nazi Germany. This nation, home to Saint**(*) Stephen, was merged with another in the Pragmatic Sanction of 1713, and its capital city formed from the merger of cities on opposite sides of the Danube. For ten points, name this nation that was part of a dual kingdom with Austria and which is currently led from Budapest.

ANSWER: Hungary (accept Magyarorszg)

(10) **The presence of Bloch electrons in one of these entities results in Hofstadter's Butterfly. A certain conductance is a function of the product of electron density and Planck's constant divided by the product of this value and charge in the quantum Hall effect. The Biot-Savart law can be used to calculate this value, equal to the product of permeability of free space, current, and number of turns for a**(*) solenoid. One of Gauss's Laws states that the divergence of this value is always zero, and particles travelling through it experience a force perpendicular to its direction. For ten points, name quantity measured in teslas, a vector field denoted by the letter B.

ANSWER: magnetic field (accept B field before mention)

(11) **The Yops virulence factors released by Yersinia pestis allow it to divide inside these cells during early stages of infection. In atherosclerosis, these cells become filled with lipids and become known as foam cells. These cells release interleukin-1 beta to mediate the inflammatory response, and specialized forms of these cells include the microglia and**(*) Kupffer cells. Along with dendritic cells, these derivatives of monocytes present antigens to helper T-cells. These cells, which live longer than neutrophils, move primarily by amoeboid movement. For ten points, name these white blood cells that use phagocytosis to engulf harmful pathogens.

ANSWER: macrophage

(12) **One character in this novel writes about the detective Hazle Weatherfield and hates her middle name, Josephine. The protagonist of this novel reads the short story _The Secret Goldfish_ and Isak Dinesen's _Out of Africa_. The protagonist is never in the mood to call Jane Gallagher, though he does go ice skating with**(*) Sally Hayes. A baseball glove with poetry written in green ink belonged to Allie, the dead brother of the Hollywood screenwriter D. B. Near the end of this novel, the protagonist watches a carousel ridden by his younger sister, Phoebe. For ten points, identify this novel about Holden Caulfield, a work by J. D. Salinger.

ANSWER: The Catcher in the Rye

(13) **Franz Liszt wrote a piano transcription of one section of this opera which was originally titled *The Malediction*. In the aria *Bella figlia dell'amore*, this opera's antagonist seduces another figure's sister and pretends to be Gualtier Maldé after sending the nurse Giovanna away. Countess Ceprano is the subject of the opening aria *Questo o Quella* in this opera, which also sees Monterone curse the title character. While in the**(*) assassin Sparafucile's house, the Duke of Mantua claims women to be flighty in the aria *La Donna e Mobile*. For ten points, identify this opera about a scheming hunchbacked jester composed by Giuseppe Verdi.

ANSWER: <u>Rigoletto</u>

(14) **This president denounced William Seward after for claiming that he was a member of the Knights of the Golden Circle. This man's wife was known as "the shadow in the White House" after seeing her son killed in a train accident. This president was once pinned under his horse at the Battle of Contreras, and this man's secretary of State, William L. Marcy, wanted to buy Cuba, leading to the**(*) Ostend Manifesto. This president signed a bill which would overturning the Missouri Compromise and causing "border ruffians" to fight, the Kansas-Nebraska Act. For ten points, name this American President who defeated James Buchanan in the 1852 election.

ANSWER: Franklin <u>Pierce</u>

(15) **Inventory can be modelled using the Markovian variety of this concept, whose compensated and uncompensated versions are related by the Slutsky equation. A "vacuum" named for this concept occurs when export markets have a higher value for it than local ones, and under oligopolies, this quantity can be**(*) "kinked". Giffen goods violate this quantity's namesake law, and this quantity's curve is classically downward-sloping. For ten points, name this economic concept, the willingness and ability to purchase a good at a certain price, often contrasted with supply.

ANSWER: <u>demand</u>

(16) **This figure dug up a mushroom at a place where he would later rule, Mycenae. This figure was set off to die in a wooden chest along with his mother, and he was eventually saved by the brother of the King Polydectes, the fisherman Dictys. This man fulfilled a prophecy by killing his grandfather, Acrisius, by hitting him in the head with a**(*) discus. In order to complete his most famous task, this figure stole the eye and tooth shared by the Graeae, and he used an adamantine sword, Hades's helm of darkness, as well as a reflective shield from Athena to accomplish it. For ten points, name this Greek hero who slew Medusa.

ANSWER: <u>Perseus</u>

(17) **The perpetrator of this event was caught by trooper Charlie Hanger for driving without a license plate. Lori Fortier obtained immunity for her testimony about this event, but her husband Michael was sentenced to 12 years in prison. In a famous photograph of this event, the infant Baylee Almon was held in the hands of firefighter Charles Porter. On April 19, 2000 a memorial was dedicated to this event on the site where it happened, the**(*) Alfred P. Murrah Federal Building. This event was motivated by the Ruby Ridge incident and Waco siege, for ten points, name this 1995 bombing of a federal building by Timothy McVeigh.

ANSWER: Oklahoma City bombing (accept bombing of Alfred P. Murrah building or bombing by Timothy McVeigh before stated, accept logical equivalents)

(18) **This set underlies the the fundamental group of a torus, and a circle is the quotient space of the real numbers by this set. Infinite cyclic groups are isomorphic to this set. The solutions to Pell's Equation must be from this set, as are all solutions to Diophantine equations. This is the domain of the totient function and the range of the**(*) floor and ceiling functions, which round their input up or down to the nearest one of these numbers. For ten points, name this set denoted by a capital Z whose members can be classified as even or odd and which includes all natural numbers and their negatives.

ANSWER: integers (accept Z until mention)

(19) **In one work by this writer, the title figure's lover yells "Klopstock" after playing a counting game. This man described green as useful in a work claiming that the title entity is "produced by light as well as by what stands against it." This author of _Theory of Colors_ wrote about a father "who rides so late through night and wind" and later finds his son killed by the**(*) Erl-King. The title character of one work by this author reads Ossian and commits suicide with two pistols provided by Albert. For ten points, identify this man who wrote about Lotte's lover in _The Sorrows of Young Werther_ and the seducer of Gretchen making a deal with Mephistopheles in _Faust_.

ANSWER: Johann Wolfgang von Goethe

(20) **Bolzano's Theorem guarantees that this value is output by certain continuous functions. Rolle's Theorem assumes that this number is the difference in the function values at the endpoints and concludes that the derivative at some point is equal to this number. Newton's Method can be used to find points where a function takes this value. This real number divided by itself creates an indeterminate form, in which case**(*) L'Hôpital's Rule can be used. In a definition of a derivative, h approaches this value. Local extrema occur where a function's derivative is equal to this number. For ten points, name this number that is the slope of a horizontal line.

ANSWER: zero

(21) **Over half a million of these people almost toppled the Abbasid Empire in the Zanj Revolt, and the Baptist and Maroon Wars were primarily fought between members of this occupation. The Qajar Dynasty banned these people coming to Iran by water. In 1315, Louis X declared this occupation illegal on French soil, although it was practiced in colonies. A group of these people led by**(*) Jacques Dessalines and Toussaint L'Ouverture revolted to earn Haitian independence. Transferred to the Americas along the Middle Passage, for ten points, name these people, sold as property, who were forced into working.

ANSWER: slaves (accept clear equivalents, do not accept "serfs")

Bonuses

(1) Answer the following about the works of John Osborne, for ten points each:
[10] The promotion for John Osborne's play *Look Back in Anger* inspired the name of this movement. John Osborne was a member of this movement, as were Alan Sillitoe and Kingsley Amis.
ANSWER: Angry Young Men
[10] John Osborne wrote a play about this German monk, who clashes with the "ecclesiastical huckster" Johann Tetzel .
ANSWER: Martin Luther
[10] Osborne's play about the Crimean war had this title. A Tennyson poem with this title said "Half a league, half a league / Half a league onward. / Into the valley of Death / Rode the six hundred."
ANSWER: The Charge of the Light Brigade

(2) This national park includes Kolob Arch. For ten points each:
[10] Name this national park in Utah, whose namesake canyon is formed by an arm of the Virgin River. A uniquely-shaped canyon at this park is known as the Subway, and the Navajo Sandstone runs through most of this park.
ANSWER: Zion National Park
[10] This other large canyon was carved out by the Colorado river, and is a major tourist attraction in Arizona. It is considered sacred by several Native American tribes from the region, including the Zuni and Pueblo.
ANSWER: Grand Canyon
[10] This other canyon, the deepest in the United States, straddles the Idaho border with Oregon and Washington. It was formed by erosion due to the Snake River.
ANSWER: Hells Canyon

(3) It consists of two isothermal and two adiabatic steps. For ten points each:
[10] Name this theoretical thermodynamic cycle devised by an eponymous 19th century French scientist in his work *Reflections on the Motive Power of Fire*.
ANSWER: Carnot cycle
[10] A Carnot cycle can be implemented as one of these devices if it used to produce work on its surroundings. Carnot's Theorem governs the efficiency of these devices, some of which use internal or external combustion.
ANSWER: heat engine (prompt on "engine")
[10] This other thermodynamic cycle replaces the isothermal steps in the Carnot cycle with isobaric ones, allowing it to be implemented in steam engines. This cycle's efficiency is related to its working fluid, typically water.
ANSWER: Rankine cycle

(4)   The term "night music" is usually attributed this composer's works, as in his *Music for Strings, Percussion, and Celesta.* For ten points each:
[10] Name this Hungarian composer who wrote 153 progressive piano pieces in *Mikrokosmos.*
ANSWER: Bela Bartok (accept in either order)
[10] Bartok may be best-known for this one-act opera, in which seven locked doors light up the titular location when they are opened by the estate's owner's wife, Judith. Near the end, Judith opens the final door to reveal the titular figure's three former wives.
ANSWER: Bluebeard's Castle (or The Castle of the Blue-Bearded Duke)
[10] This scandalous Bartok ballet sees the title figure glow after a group of thugs attempt to kill him. This ballet opens with a seductive lockspiel dance seen from a window.
ANSWER: The Miraculous Mandarin

(5)   This country declared its independence in the Vlore Declaration. For ten points each:
[10] Name this country, once protected against ottoman encroachment by the dragon of this country, Skanderbeg, who later found the League of Lezhë to protect its independence. It was ruled in the early twentieth century by King Zog.
ANSWER: Albania (accept the additions of "Kingdom of" or "Republic of")
[10] One longtime ruler of Albania was this First Secretary who was succeeded by Ramiz Alia. During his forty-year reign, he practiced severe isolationism and eliminated enemies through the Sigurimi police.
ANSWER: Enver Hoxha
[10] Enver Hoxha broke off ties with this leader of the U. S. S. R. who denounced Stalin in the "Secret Speech" and was succeeded by Brezhnev.
ANSWER: Nikita Khruschev

(6)   This god is served by famously slow servants, Ganglati and Ganglot, both known as "Lazy Walker". For ten points each:
[10] Name this sister of Fenrir and Jormungandr, the Norse goddess of the Underworld.
ANSWER: Hel
[10] Hel's father was this trickster god, who also gave birth to the eight-legged horse, Sleipnir.
ANSWER: Loki
[10] This goddess placed a venomous snake over Loki's face, the pain from which causes earthquakes. This goddess of skiing and winter married Njoror on the basis of his feet.
ANSWER: Skadi (also accept Shathi)

(7)   They are more likely to be found at high temperatures and low pressures, and their compression factor always equals one. For ten points each:

[10] This type of gas is used to model all gases under the unrealistic assumptions that molecules have no volume and that neighboring molecules do not interact. A law named for these gases states that P times V equals n times R times T.

ANSWER: ideal gas

[10] This equation, named for a Dutch physicist, introduces the parameters A and B, which account for attractive forces and the size of the molecules, respectively, to correct for deviations from the Ideal Gas Law.

ANSWER: van der Waals equation

[10] Although it fails to yield analytical solutions, this is the most accurate gas equation. Its righthand side is a power series of the quantity N over V, each term of which can be interpreted as interactions between N gas particles.

ANSWER: virial equation or Kamerlingh Onnes equation (do not accept "virial theorem")

(8)   Two foreign ministers of this country were captured during the Trent Affair. For ten points each:

[10] Name this nation which failed to garner acknowledgements of its independence through its "King Cotton" Diplomacy. Its capital was moved from Montgomery to Richmond.

ANSWER: Confederate States of America (accept Confederacy or CSA)

[10] This man was the first and only president of the Confederate States of America. He was alleged captured dressed as a woman while trying to flee after the Civil War.

ANSWER: Jefferson Davis

[10] Jefferson Davis's Secretary of State at the end of the Confederacy was this man, a "Hebrew with Egypt Principles." This Louisiana Senator previously served as the Confederacy's Secretary of War and Attorney General.

ANSWER: Judah P. Benjamin

(9)   Answer the following about things that are true for ten points each.

[10] This Shakespeare play, called a "True Chronicle", begins with the title character dividing his assets between the ungrateful Goneril and Regan, disinheriting his far more deserving daughter Cordelia.

ANSWER: The True Chronicle of the History of the Life and Death of King Lear and His Three Daughters

[10] This Chinese author wrote about the title character's "spiritual victories" in *The True Story of Ah Q*.

ANSWER: Lu Xun

[10] This author wrote about Ned Kelly in *The True History of the Kelly Gang*, and he also wrote about transporting a glass church several hundred miles in *Oscar and Lucinda*.

ANSWER: Peter Carey

(10)   Identify the following about the Law of Cosines for ten points each.
        [10] In the case of a right triangle, the Law of Cosines is equivalent to this theorem, which says that sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse.
        ANSWER: Pythagorean Theorem
        [10] The Law of Cosines is also equivalent to the statement that this operation on two vectors is equal to the product of their magnitudes times the cosine of the angle between them.
        ANSWER: dot product (or scalar product)
        [10] One advantage of the Law of Cosines in solving triangles is that it does not admit this situation in which more than one possible solution exists. This situation arises when using the Law of Sines to solve a triangle given two sides and an angle not between them.
        ANSWER: ambiguous case

(11)   Answer the following about religious diets for ten points each.
        [10] Adherents to this faith do not eat pigs and follow a diet which supports "livity" called Ital. Some of this Jamaican religion's adherents smoke ganja to cleanse their body.
        ANSWER: Rastafarianism (also accept Rastafari Movement)
        [10] The Edenic diet is a vegan practice mimicking the diet of these first two humans in the Book of Genesis.
        ANSWER: Adam and Eve (do not prompt on a partial answer, accept in either order)
        [10] A different diet is proposed in *How to Eat to Live*, which was written by Elijah Muhammad, a leader from this faith.
        ANSWER: Nation of Islam (do not prompt on or accept "Islam")

(12)   The title entity is described as laughing "as a young man laughs" and "as an ignorant fighter who has never lost a battle." For ten points each:
        [10] Identify this poem, which states "They tell me you are wicked, and I believe them, for I have seen your painted women under the gas lamps" and addresses the title "Tool Maker, Stacker of Wheat, / Player with Railroads" and "Hog Butcher for the World."
        ANSWER: Chicago
        [10] *Chicago* is a poem by this poet, who wrote "Pile the bodies high at Austerlitz and Waterloo... Let me work" in *Grass* and about the title phenomenon coming "on little cat feet" in *Fog*.
        ANSWER: Carl Sandburg
        [10] Carl Sandburg wrote this long poem, published during the Depression, which stated "The learning and blundering people will live on," and described American culture, including Abraham Lincoln and Paul Bunyan.
        ANSWER: The People, Yes

IMSANITY 4

(13)   This work also includes *A Prelude in Rhymes* and *An Appendix of Songs*. For ten points each:
[10] Identify this philosophical work which included the first instance of the phrase "God is dead." This work also includes the Parable of the Madman.
ANSWER: The <u>Gay Science</u>
[10] *The Gay Science* is a work by this nihilist German philosopher, who discussed the prejudices of philosophers in his *Beyond Good and Evil*.
ANSWER: Friedrich <u>Nietzsche</u>
[10] In his work *On the Genealogy of Morality*, Nietzsche distinguishes this form of morality, which judges based on the goodness of the intentions versus the consequences. This concept arises as a result of suffering and oppression.
ANSWER: <u>slave</u> morality

(14)   The Chandrasekhar limit controls how large these objects can be. For ten points each:
[10] Name these galactic objects that are on the lower-left of the H-R diagram and are created when a star exhausts its nuclear fuel.
ANSWER: <u>white dwarf</u> (prompt on partial answer)
[10] One white dwarf, discovered by Alvin Clark, is the B star in this binary system. This binary system is colloquially known as the "Dog Star" and is the brightest star system in the night sky.
ANSWER: <u>Sirius</u> (accept <u>Sirius B</u>, reluctantly accept <u>Sirius A</u>)
[10] Another white dwarf is this star, which, at 14.1 light years away, is the closest solitary white dwarf to Earth. Part of the constellation Pisces, its namesake discovered it while trying to find Lalande 1299.
ANSWER: <u>van Maanen</u>'s star (accept <u>van Maanen B</u>)

(15)   This man's wife led in the Gang of Four. For ten points each:
[10] Name this first chairman of the Communist Party of China, who fought the Kuomintang under Chiang Kai-shek until they fled to Taiwan. He initiated programs such as the Great Leap Forward and the Cultural Revolution.
ANSWER: <u>Mao</u> Zedong (accept <u>Mao</u> Tse-tung)
[10] Mao Zedong was succeeded by this man who had served under Mao as Premier. He organized the release of Chiang Kai-Shek in the Xian incident and held meetings with Henry Kissinger.
ANSWER: <u>Zhou</u> Enlai (accept <u>Chou</u> En-lai)
[10] Along with writing *New Democracy and Philosophy of Revolution*, Mao wrote a 1937 book named for this military tactic. He argued for the same tactics to be applied against Japan in *On Protracted War*.
ANSWER: <u>guerrilla</u> warfare (accept <u>On Guerrilla Warfare</u>)

(16)   Simeon of Bulgaria held this title, but so did many Russian monarchs. For ten points each:
[10] Name this title, derived from the word "ceasar" that was held by such leaders as Peter the Great.
ANSWER: Tsar (or Czar)
[10] This tsar met with Napoleon at Tilsit and ordered Moscow burned so that Napoleon would have to retreat.
ANSWER: Alexander I (accept Alexander the Blessed or Aleksandr Pavlovich, prompt on "Alexander")
[10] Alexander I disliked these German laws which curtailed academic freedoms and also censored the press.
ANSWER: Karlsbad Decrees

(17)   Diseases caused by these agents are sometimes classified as transmissible spongiform encephalopathies, or TSEs. For ten points each:
[10] Name these disease-causing agents that infamously caused an epidemic of Kuru in some Papua New Guinean tribes due to their cannibalistic rituals.
ANSWER: prions
[10] Prions also cause this fatal TSE neurodegenerative disease in certain cattle. Animals infected with this disease transmit it to humans, in which case it is known as Creutzfeldt-Jakob disease.
ANSWER: mad cow disease (or bovine spongiform encephalopathy, do not accept "Creutzfeldt-Jakob disease")
[10] Prions such as the ones that cause mad cow disease are misfolded types of these macromolecules. The most common cause of prion disease is contortion of a normal alpha helix to a fatal beta pleated sheet in these molecules, which are composed of amino acid monomers.
ANSWER: proteins

(18)   Answer the following about a paladin under Charlemagne, Orlando, for ten points each.
[10] Orlando is in love with Angelica, Bradamante, and Ruggiero in this author's *Orlando Furioso*.
ANSWER: Ludovico Ariosto
[10] Orlando had a different name in this French epic, in which the title character is in love with Aude and bursts his temples blowing the oliphant horn.
ANSWER: Song of Roland (or Chanson de Roland)
[10] This author wrote about Roland in *Childe Roland to the Dark Tower Came*, but is more famous for writing about a woman with a heart "too soon made glad" in *My Last Duchess*.
ANSWER: Robert Browning (prompt on partial answer)

(19)   Songs like *All Apologies* and *Heart-Shaped Box* appear on this band's last album *In Utero*. For
         ten points each:
         [10] Identify this grunge band from Seattle whose album *Nevermind* includes the song *Smells
         Like Teen Spirit*. This band dismantled after the suicide of its lead singer, Kurt Cobain.
         ANSWER: Nirvana
         [10] This drummer for Nirvana and member of Them Crooked Vultures went on to found the
         band The Foo Fighters, for which he is lead guitarist and singer.
         ANSWER: David "Dave" Grohl
         [10] Seven interconnected gray spheres appear on the cover of this second Foo Fighters album,
         which includes the songs *Monkey Wrench*, *My Hero*, and *Everlong*.
         ANSWER: The Colour and the Shape

(20)   Kaaterskill Falls appears in the middle of this work, whose central figures stand on a cliff. For
         ten points each:
         [10] Identify this work by Asher Durand which depicts two of his friends, Thomas Cole and poet
         William Cullen Bryant.
         ANSWER: Kindred Spirits
         [10] Both Cole and Durand belonged to this American artistic school, named after the geographic
         region whose landscapes they preferred. Works in this school include many portrayals of the
         Adirondack and Catskill mountain ranges in upstate New York.
         ANSWER: Hudson River School
         [10] This series by Thomas Cole traces society from *The Savage State* through *Destruction* and
         Desolation. This series may have been inspired by the early Roman and Greek empires.
         ANSWER: Course of Empire

(21)   After some trees are set on fire, one character realizes that they need to learn each other's names,
         because others barely remember the existence of a boy with a mulberry-colored birthmark who
         had been playing nearby. For ten points each:
         [10] Identify this novel in which Piggy and Simon are caught up and killed while Ralph and Jack
         rival for control.
         ANSWER: Lord of the Flies
         [10] *Lord of the Flies* is a novel by this author, who described science, art, and religion through
         the characters of Mamillius, Euphrosyne, Phanocles, and the Emperor in his only play, *The
         Brass Butterfly*.
         ANSWER: Sir William (Gerald) Golding
         [10] Another Golding novel about being abandoned on an island was this one, which followed the
         struggle for survival of the title character after his torpedo destroyer is sunk and his crewmates
         drown.
         ANSWER: Pincher Martin: The Two Deaths of Christopher Martin