**VCU Closed** 

February 2, 2013

Packet by Delaware (Joe Brosch, Alex Gross, Ben Herman, Nick Lacock) and Michigan State A (Shan Kothari, Joe Nutter, Connor Teevens, Chris Wolfe)

1. This country's President Jorge Pacheco began to use torture techniques in response to labor uprisings, leading to the rise of the Tupamaro movement. This country's victory at the Battle of Las Piedras helped secure its independence from Spain, and its forces were led by national hero José (\*) Artigas at that battle. A civil war in this country saw one side supported by another country's dictator Juan Manuel de Rosas until the intervention of Justo José de Urquiza, and that war in this country involved the liberal forces of Fructuoso Rivera squaring off against Manuel Oribe, who led the Blancos. That same civil war in this country involved Giuseppe Garibaldi, who led its navy. For 10 points, name this South American country located on the north bank of the Río de la Plata.

ANSWER: Uruguay

2. In one short story by this author, a Christian missionary is captured in Taghaza and eventually renounces God and begins to worship in the House of the Fetish. In a play by this man, the narrator is killed by his mother and sister after disguising himself as a lodger. In addition to "The Renegade" and The Misunderstanding, this man wrote a novel in which Patrice kills Roland Zagreus. This author of A Happy Death is better known for a short story collection that includes "The (\*) Adulterous Woman" and "The Growing Stone," as well as a novel in which Jean-Baptiste Clamence reflects upon his life. In another novel by this author, the title event is described as the "flail of God" by Father Paneloux, and Bernard Rieux investigates the deaths of hordes of rats due to that condition. For 10 points, name this author of The Fall and The Plague who wrote about the Arab-killing Meursault in The Stranger.

ANSWER: Albert Camus

3. The frame of one painting in this series contains reliefs of human and cow skulls connected by tree roots. Another entry in this series contains red faced figures underneath a depiction of the crucifixion, which appeared along with *The Empty Cross*. Besides *Golgotha* and *Metabolism*, this series contains a painting in which a man (\*) clutches his head to the left of a woman in a white dress with flowing orange hair. This series of *Ashes* also contains a painting sometimes titled *Love and Pain* which depicts a vampire, as well as another that shows a grieving woman next to Johanne Sophie, the artist's sister. For 10 points, identify this cycle of paintings including *The Sick Child*, a group subtitled "A Poem about Life, Love, and Death" by Edvard Munch.

ANSWER: The Frieze of Life

4. One process of this type can explain why processes that occur at the stoichiometric equivalence point burn the hottest and at the highest temperatures. This type of process lends its name to an effect in which a changing magnetic field is used to heat or cool a substance; that effect is known as this kind of demagnetization. In the atmosphere, a descending parcel of air undergoes this kind of process. On P-V diagrams, processes of this type are represented by decreasing (\*), concave up lines. The Joule-Thompson effect occurs in one process of this type, free expansion. The Carnot cycle includes isothermal processes along with two processes of this type. For 10 points, name this type of processes, in which a system exchanges no heat.

ANSWER: Adiabatic Processes

5. One of this band's songs notes that "just when the boat is sinking," "a little light is blinking." That song, "Apple Blossom," follows a song in which the singer asks the title person to "turn the oscillator/twist it with a dollar bill." This band released a concept album around the "death of the sweetheart" which included a song in which "my mother (\*) baked a little cake for you," "I Want to be the Boy to Warm Your Mother's Heart," and their drummer frequently sang "Passive Manipulation" in a medley with "Screwdriver" during live performances. This band released one single about a place where "all they've got inside is vacancies," the "Hotel Yorba," and another which asks "when you gonna ring it" and appears on *Get Behind Me Satan*, "My Doorbell." In another of their songs, the singer claims that "I'm gonna fight 'em off." For 10 points, name this Detroit band which included "Seven Nation Army" on their album *Elephant*, and consists of Jack and Meg.

ANSWER: The White Stripes

6. One Representative from this state issued a video where he was bleeped out while criticizing SOPA and PIPA. Another Congressman from this state, who fought off an armed thief with his shotgun, is Leonard Boswell, who was defeated in an incumbent-on-incumbent contest by Tom Latham. Another of this state's representatives said that "radical Islamists would be dancing in the streets" if Obama were elected, but still defeated Christie (\*) Vilsack; that representative is Steve King. David Wiggins was retained in 2012 despite his support for *Varnum v. Brien*, which legalized same-sex marriage in this state and resulted in three other judges being removed in 2010. This state is currently represented in the Senate by Tom Harkin and a notorious tweeter of nonsense such as "3" and "PantsBurnLegWound," Chuck Grassley, and it is governed by Terry Branstad. For 10 points, name this swing state, the site of the first quadrennial Presidential caucus.

ANSWER: **lowa** 

7. A plot in this novel hinges on the discovery of a miniature portrait of Caroline. A character in this novel is wounded by a gunshot after rescuing a young girl from drowning in a stream. Later, that character makes a promise to flee to South America if his request is granted. The protagonist is wrongly accused of the murder upon returning from the Orkney Islands, but is soon acquitted. The antagonist of this novel spends part of the story living near the (\*) DeLacey family while becoming educated. A nanny, Justine, is unjustly hanged for the murder of the protagonist's younger brother, William. The entire story is recounted to Captain Walton on a ship in the North Pole in, for 10 points, what novel by Mary Shelley?

ANSWER: **Frankenstein**; or, The Modern Prometheus

8. Functions with a special type of this property make up Holder spaces. The fundamental theorem of Lebesgue integral calculus relates the existence of a derivative-like function with one type of this property. Preimages of open sets on functions with this property are open. This property is not fulfilled by the (\*) Cantor function. The uniform type of this property is held by any function with this property on a compact set. A function has this property at a point if its limit at that point is equal to its value at that point. For 10 points, name this mathematical property that implies that sufficiently small changes in a function's input can create arbitrarily small changes in its output.

ANSWER: <u>Continuity</u> [accept word forms; accept <u>Lipschitz continuity</u>, <u>sequential continuity</u>, <u>absolute</u> <u>continuity</u>, or <u>uniform continuity</u>]

9. One person during this incident was thought to be too cautious because of involuntary manslaughter charges he had faced following a bank robbery the year before. This event was prolonged when several people ran away from a Boeing 727, and an attempt to end it, Operation Sunshine, failed after this event's perpetrators saw the preparations on TV. This event's aftermath involved the (\*) Lillehammer Affair, in which Ahmed Bouchiki was murdered. That was a part of Operation Wrath of God, an attempt to exact revenge for this incident, which was resolved at the Furstenfeldbruk airport. The aforementioned murder was conducted by the Mossad, while this event was conducted by Black September, a Palestinian organization. For 10 points, name this killing of Israeli athletes at the 1972 Olympics.

ANSWER: <u>Munich Massacre</u> [or obvious equivalents relating to <u>killing</u> people at the <u>Munich</u> Olympics before it is read]

10. In one work, this thinker argues that truth arises from "a mobile army of metaphors, metonyms, and anthropomorphisms." This thinker attacks the "New Faith" of David Strauss in one essay, which appears in a collection with a work that distinguishes the antiquarian, monumental, and critical methods of history. This thinker argues in another work that metaphysics comes from dreams and warns against worshipping genius. This philosopher writes that (\*) beasts of prey are not evil because their actions originate in their strength, and that morality arises from ressentiment in On the Genealogy of Morals. This philosopher explains behavior through the "will to power" and used eternal recurrence to illustrate the idea of the Ubermensch For 10 points, name this German author of Twilight of the Idols and Thus Spoke Zarathustra who wrote "God is dead" in The Gay Science.

ANSWER: Friedrich Wilhelm Nietzsche

11. LDA is used to transform propargyl diol into one of these compounds in the Whiting reaction. A useful one of these compounds is synthesized using zinc chloride to combine trimethylsilyl chloride with methoxybutenone. The namesake value of these compounds is expressed as the mass of iodine equivalent to the amount of (\*) maleic anhydride reacting with a unit mass of one of these. The cumulated type of these compounds are less stable than other types. Electrophilic addition can result in both 1,2 and 1,4 additions in the conjugated type of these molecules. That type also undergoes a type of reaction that follows the endo addition rule and forms cyclohexenes, the Diels-Alder reaction. For 10 points, name these hydrocarbons that contain two carbon-carbon double bonds.

ANSWER: **diene**s [or **diolefin**s]

12. An early scene in this novel sees Dr. Breed make a comparison to a stack of cannonballs or oranges. In this novel, H. Lowe Crosby is a bicycle manufacturer who complains about "pissants." The final scene in this book depicts a man noting how he would lay down and thumb his nose at God. A dictator who executes heretics by hanging them on a giant hook, Papa (\*) Monzano, appears in this novel as the ruler of San Lorenzo; its other characters include the founder of a new religion, Bokonon. At the end of this novel, a crystal of ice-nine falls into the ocean, freezing over the world. For 10 points, name this Kurt Vonnegut novel which is named after a children's game.

ANSWER: Cat's Cradle

13. One of this composer's works features such musical oddities as 840 repeats and a complete lack of tempo and volume markings; that piece is called *Vexations*. Another set of piano works by this composer attempts to mimic the sound of a church organ by using octave doubling; that set of pieces is called *Ogives*. This composer wrote a trio of pieces about different (\*) sea creatures, including of a Holothurian, an Edriophthalma, and a Podophthalma. Another of his pieces features such tempo markings as "with astonishment" and "with conviction and with a rigorous sadness", and this composer's most famous set of piano works are named for an ancient Greek war dance. For 10 points, name this French avant-garde musician of *Gnossiennes*, *Desiccated Embryos*, and the three *Gymnopédies*.

ANSWER: Erik Satie

- 14. An important victory in this war was achieved after besieging Clupea, and this war's course was nearly changed by a devastating storm which killed all the battle survivors being transported home at around the time of the Battle of Adys. One side in this conflict began their campaign by taking the city of (\*) Messana while recovering from an insurrection at Rhegium. This conflict began when the Mamertines requested aid following a defeat to Hiero II at the Longanus River. Under the command of Appius Claudius Caudex, Roman forces marched to Agrigentum in this war, which involved the first use of the corvus at the Battle of Mylae. After an unsuccessful attempt by Hamilcar to take back lost Sicilian territory, Carthage accepted defeat in, for 10 points, what 264 BCE war, the first of a series of conflicts? ANSWER: First Punic War [prompt on Punic Wars]
- 15. This man's only work in the Czech Republic has a glass window that can slide into the basement like a car's window and is called the Villa Tugendhat. This man oversaw the construction of the Weissenhof Estate for the Deutscher Werkbund. He was hired by the Armour Institute to replace the French-derived curriculum and design buildings such as (\*) Crown Hall. Along with Felix Candela, this man designed the Bacardi coporate headquarters, and he also designed many of the buildings on Lakeshore Drive. This man designed the Barcelona Pavilion for the 1929 International Exposition, and he was the last director of the Bauhaus. For 10 points, name this man that designed the Seagram building and coined the term, "Less is more."

ANSWER: Ludwig **Mies** van der Rohe

16. The palm frond is the symbol of one of these entities that is married to Atisou, the patron of trees. Besides Ayizan, a different example of these beings is alternately known as "The Tadpole in the Pond," Agoueh. Another of these beings is married to a rainbow serpent, (\*) Ayida Weddo, and is considered a primordial creator god of the sky, Damballa. One family of these beings embodied the powers of fertility and death and included Masaka and Nibo, the Ghede. These beings act as intermediaries between Bondye and humanity, and one prominent example of them is known for his top hat and work at the crossroads. For 10 points, name these deities, including Papa Legba and Baron Samedi, which exist in Voodoo.

ANSWER: Loa [or Mysteres; prompt on Invisibles]

17. This poet wrote that he heard "The Argo felt within her swelling sails/When Jason's dream the stars of heaven loved well" when he puts the title object to his ear in "A Shell." He laments his old age while recalling his previous encounters with various women in his "Song of Autumn in the Springtime." Another poem by this man refers to the title figure as "the deadly (\*) Rifleman and the dreadful Hunter", and in the same poem this poet sends a warning that "A thousand cubs of the Spanish lion are roaming free." That poem by this man criticizes the imperialistic behavior of the United States under the title President in "To Roosevelt." For 10 points, identify this poet who is considered the father of Modernism in Latin America and who hailed from Nicaragua.

ANSWER: Rubén Darío

18. In plants, *Tourist* and *Stowaway* are the main representatives of a class of these entities called MITES. The Tc1/*Mariner* superfamily of these entities was used to construct the synthetic *Sleeping Beauty* system of these. Locations where these entities had been are often identified by short direct sequence repeats. In primates, the most common of these belong to the (\*) Alu family. Members of Class I [one] of these entities sometimes contain long terminal repeats, and they may be classified as SINES if they are transcribed by RNA polymerase III or LINES if they encode reverse transcriptase. The first of these discovered was the Ac/Ds system found in maize by Barbara McClintock. For 10 points, name these mobile genetic elements often nicknamed "jumping genes."

ANSWER: <u>transposon</u>s [or <u>transposable element</u>s; accept "<u>Class II transposon</u>s" or "<u>DNA transposon</u>s" until "<u>Tourist</u>"; prompt on "<u>TE</u>"]

19. Doubts about the homogeneity of these entities led Lila Abu-Lughod to develop the idea of "writing against" them. Leslie White proposed the formula "P equals ET" as the "basic law" for the development of these entities. A superorganic view of these entities was advocated by Alfred Kroeber, who tried to identify areas where these are relatively uniform. A semiotic description of these entities was proposed by Clifford (\*) Geertz, who described them as "webs of significance." Franz Boas rejected the idea that they evolve and advocated relativism with respect to them. They were described as "personality writ large" by Ruth Benedict, who compared the Kwakiutl, Dobu, and Zuni in a book named for *Patterns of* them. For 10 points, name these shared, learned patterns of thought and behavior that name a branch of anthropology contrasted with the "physical" kind.

ANSWER: cultures

20. In this election, the Socialist Party USA won recognition from the FEC due to the performance of David McReynolds, the first openly gay presidential candidate. Ed Clark and David Koch gained the highest-ever share of the vote for the Libertarian Party in this election, in which the winner claimed that trees cause pollution. This election's debates were delayed by negotiations over whether or not to include an empty chair for the incumbent and whether or not to include independent candidate John (\*) Anderson. The incumbent president was criticized for saying that he consulted with his daughter on nuclear weapons policy, and survived a primary challenge from Ted Kennedy. During this election's one debate, the winner said "There you go again" in response to criticism of his record and asked "Are you better off than you are four years ago?" For 10 points, name this election, in which Jimmy Carter was defeated by Ronald Reagan.

ANSWER: United States Presidential election of 1980

## TIEBREAKER/EXTRA

21. This god was suckled by a male boar and seawater when he was born at the edge of the Nine Worlds. In the *Lokesenna*, Loki says that this god has a muddy back and this god is also said to be the palest of all the gods. The name Gullintanni refers to this god's golden teeth. This god fathered the three (\*) castes of man when he took the form of Rig. This god retrieves the Brisingamen for Freyja by transforming into a seal and defeating Loki. This god arrives at Baldr's funeral upon his horse Gulltopr and he wields the sword Hofund. This god is the son of nine mothers and kills and is killed by Loki at Ragnarok. For 10 points, name this Norse god that sounds his Gjallarhorn to signal Ragnarok, and is the guardian of Bifrost.

ANSWER: <u>Heimdall</u>r [accept <u>Rig</u> until mentioned]

22. This author wrote "Life's 'great things,' like the Syrian lord / our hearts can do and dare" in "The Cypress-Tree of Ceylon" In another poem, he wrote "Oh nebber you fear, if nebber you hear, / De driver blow his horn!" during the "Song of the Negro Boatmen," part of "At Port Royal," and he also wrote "When faith is lost, when honor dies / The man is dead!" in a poem condemning (\*) Daniel Webster's endorsement of the Fugitive Slave Act. The title character does not marry the Judge in a poem that says "Of all sad words of tongue and pen, the saddest are these: 'It might have been!'" The call "Boys, a path!" leads to the creation of "A tunnel walled and overlaid / With dazzling crystal" in another of his poems. For 10 points, name this author of "Ichabod," "Maud Muller," and "Snow-Bound," whose title character says "Shoot, if you must, this old gray head, but spare your country's flag" in "Barbara Frietchie."

ANSWER: John Greenleaf Whittier

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## February 2, 2013

Packet by Delaware (Joe Brosch, Alex Gross, Ben Herman, Nick Lacock) and Michigan State A (Shan Kothari, Joe Nutter, Connor Teevens, Chris Wolfe)

1. This man thrust his hand into the fire at his execution in order to disown his prior recantation of his Protestant beliefs. For 10 points each:

[10] Identify this Archbishop of Canterbury who developed new doctrinal standards for the early Church of England and compiled the first two Books of Common Prayer.

**ANSWER: Thomas Cranmer** 

[10] Cranmer came to prominence as part of a group of humanist scholars who solved the "King's Great Matter" and helped Henry VIII annul his marriage to this woman.

ANSWER: Catherine of Aragon [prompt on Catherine]

[10] Cranmer was replaced as Archbishop by this man, who led the failed attempt to restore Catholic religious zeal in England by restoring monasteries and burning heretics.

ANSWER: Reginald **Pole** 

2. With Joshua Waletzky, this man pioneered narrative analysis, and he created a conceptualization of a speech community as "participation in shared norms." For 10 points each:

[10] Name this sociolinguist, most famous for studying the influence of social stratification on language use in New York City.

ANSWER: William "Bill" Labov

[10] Labov argued that this English dialect is not substandard. Notable features of this dialect include copula dropping and the habitual "be," and it likely originated from a mixture of creoles and Southern regional speech.

ANSWER: <u>African American Vernacular</u> English [or <u>AAVE</u>; prompt on <u>Ebonics</u> or other stupid sort-of answers]

[10] Labov has also studied chain shifts in these sounds, which include the "Northern Cities" one. These sounds are the nucleus of syllables and are pronounced with an open vocal tract.

ANSWER: vowels

3. This quantity can be calculated through the lunar distance method. For 10 points each:

[10] Name this quantity, one's distance east or west of the Prime Meridian at Greenwich. It is often reported with one's latitude.

ANSWER: longitude

[10] This man's chronometer allowed ships at sea to accurately determine their longitude for the first time. He claimed a 20,000 pound prize offered by the Royal Navy for his work.

ANSWER: John Harrison

[10] This Astronomer Royal was a major proponent of the lunar distances method for calculating longitude. He tried to stop recognition of Harrison, even though his methods yielded greater errors.

ANSWER: Nevil Maskelyne

4. In this work, the ape-like Fifth Earl of Gonister is two hundred years old. For 10 points each:

[10] Identify this novel in which Jo Stoyte kills Peter after hiring Dr. Obispo to help research longevity.

ANSWER: After Many a Summer Dies the Swan

[10] This British author wrote *After Many a Summer Dies the Swan*, in addition to a dystopian novel about Bernard Marx and John the Savage, *Brave New World*.

ANSWER: Aldous Huxley

[10] This other Huxley novel takes place in a world where intelligent baboons have decimated the planet with nuclear warfare, and includes a confrontation between Dr. Poole and the head of the Church of Belial.

ANSWER: Ape and Essence

5. In one myth, this goddess's severed fingers become walruses seals and whales. For 10 points each:

[10] Identify this sea goddess and daughter of Anguta who ruled Adlivun, the underworld.

ANSWER: Sedna

[10] This other deity from the same myth system decided the fate of hunters and punished taboos. His name literally translates as "Polar Bear."

ANSWER: Nanook

[10] Both Sedna and Nanook are members of the myth system of these people of Northern Canada and Alaska. They are one group of Eskimos.

ANSWER: Inuit

6. Not all famous Baroque composers were from Germany or France. For 10 points each:

[10] This composer from Italy notably taught violin at an orphanage in Venice. Compositionally, he may be best known for his *The Contest between Harmony and Invention*, which contains "The Four Seasons."

ANSWER: Antonio Vivaldi

[10] This composer is probably best known for an opera whose best aria repeats the line "Remember me, but ah, forget my fate."

ANSWER: Henry Purcell

[10] This Danish composer wrote the cantata cycle *The Limbs of Our Jesus* in which each cantata is addressed to a different part of Jesus's body. This composer may be better known for his organ works such as *Passacaglia in D minor*.

ANSWER: Dieterich Buxtehude

7. According to Gregory of Tours, this man joined forces with Odoacer to defeat the Alamanni. For 10 points each:

[10] Name this Frankish king, a Merovingian who succeeded his father Merovech in 457 and married Basina of Thuringia.

ANSWER: Childeric I

[10] Childeric was succeeded by this son of his who united the Franks. He was also the first Christian king in Gaul.

ANSWER: Clovis I

[10] The Merovingian Dynasty was succeeded by this dynasty, which was named for a man nicknamed "the Hammer."

ANSWER: **Carolingian** Dynasty

- 8. This opera's fist act sees the female lead pray for a knight in shining armour to appear. For 10 points each:
- [10] Name this opera, the origin of the "Bridal Chorus," where the son of Percival arrives in Antwerp and leaves after being asked a forbidden question.

ANSWER: **Lohengrin** 

[10] Lohengrin, along with Tannhauser and Tristan and Isolde, is an opera by this German composer.

ANSWER: Wilhelm Richard Wagner

[10] Like the Bridal Chorus, this piece from *Lohengrin* is often excerpted. It shows a woman travelling with King Heinrich to her marriage and is the fourth scene of Act II.

ANSWER: "Elsa's Procession to the Cathedral"

- 9. This story's narrator notes that his wife is "always trying to write a poem." For 10 points each:
- [10] Name this short story, in which the narrator, who is initially unhappy that a blind man is coming to visit him and his wife, ends up smoking a doobie with the blind man before watching a TV show about the title structure.

ANSWER: "Cathedral"

[10] Cathedral was written by this minimalist American poet and short story writer. He also wrote the short story collections Will You Please be Quiet, Please? and What We Talk About When We Talk About Love.

ANSWER: Raymond Clevie **Carver**, Jr.

[10] In "Cathedral," the blind man's visit is prompted by the death of this wife of his. She has died of cancer after being married to the blind man for eight years, and the narrator comments that her name is "a name for a colored woman." In a Rita Dove poetry cycle, a woman of this name marries Thomas.

ANSWER: Beulah

- 10. The density of this quantity is divided by epsilon naught in Poisson's Equations and is proportional to the divergence of the electric field by Gauss' Law. For 10 points each:
- [10] Name this quantity that is measured in Coulombs.

ANSWER: charge

[10] This special case of Poisson's Equation states that del squared of the electric potential equals zero.

ANSWER: **Laplace**'s Equations

[10] Laplace's equation can be used to prove this theorem, which in one formulation states that no collection of point charges is stable.

ANSWER: Earnshaw's theorem

11. In this text, the parable of the burning house explains that the three vehicles are only expedient means, and Manjushri and Maitreya discuss a light coming from a Buddha's brow in the Sphere of Limitless Means. For 10 points each:

[10] Name this popular sutra, the basis of the Tiantai school of Buddhism, which posits that the Buddha is an eternal being.

ANSWER: The <u>Lotus</u> Sutra of the Wonderful Law [or <u>Sutra on the White Lotus</u> of the Sublime Dharma; or Sanddharma Pundarika Sutra]

[10] The Lotus Sutra is also the basis of this school of Buddhism, which emphasizes that all creatures have an innate Buddha-nature and venerates the Shakyamuni Buddha.

ANSWER: **Nichiren** Buddhism [or **Nichiren**-kei sho shuha]

[10] The Lotus Sutra is especially influential in this "greater ferry" of Buddhism, which also includes the Zen and Pure Land schools and is contrasted with Theravada.

ANSWER: Mahayana

12. This term was coined by Harry C. Butcher, an employee at CBS. For 10 points each:

[10] Identify this series of radio addresses given by Franklin Roosevelt where he appealed directly to voters on topics such as the banking crisis.

**ANSWER: Fireside Chats** 

[10] This then-Secretary of Commerce created the FCC to regulate the burgeoning industry in 1927.

ANSWER: Herbert Clark **Hoover** 

[10] The early days of radio also saw this Catholic priest go on anti-Semitic tirades and support the fascists in his weekly radio broadcasts during the 30s, though he had earlier been a Roosevelt supporter.

ANSWER: Charles Edward Coughlin

13. Among the tools used in this field is formaldehyde cross-linking combined with high-throughput sequencing in order to map histone modifications and find regulatory regions. For 10 points each:

[10] Name this sub-field of biology that is primarily concerned with heritable changes in phenotype other than changes in DNA. Modification of histones are among the changes studied.

ANSWER: epigenetics (accept word forms)

[10] DNA methylation most commonly occurs on this pyrimidine nucleotide, which deaminates to uracil and forms three hydrogen bonds with guanine.

ANSWER: cytosine or cytidine

[10] In this technique, nuclear DNA-protein complexes are sheared, then an antibody to a particular histone modification or transcription factor is added to pull out bound DNA fragments.

ANSWER: <u>chromatin immunoprecipitation</u> or <u>ChIP</u> [prompt on partial answer, accept <u>ChIP-chip</u> or <u>ChIP-seq</u>]

- 14. This one of the Four Great Classic Novels of Chinese literature was written during the Ming Dynasty and is attributed to Wu Cheng'en. For 10 points each:
- [10] Name this novel in which the Monkey King, Sun Wukong, follows Xuanzang on a pilgrimage to India.

ANSWER: Journey to the West [or Xiyouji]

[10] The Monkey King had previously angered his master Subhodi by transforming into one of these things. One of them is "uprooted" in the title of a Chikamatsu play about Azuma's love for Yojibei.

ANSWER: a **pine** tree [prompt on a **tree**]

[10] The Monkey King acquired his magic iron staff from the "sea treasury" of this deity, who rules over the Pacific Ocean from his palace guarded by shrimps and crabs.

ANSWER: the **Dragon King** of the Eastern Sea [or **Ao Guang**]

- 15. Answer these questions about classy beverages. For 10 points each:
- [10] This beverage is traditionally made by distilling raw spirits with juniper berries and other herbs.

ANSWER: gin

[10] Gin is mixed with this fortified wine to make a martini. It gets is name from the German word for wormwood, an ingredient no longer typically found in this drink.

ANSWER: vermouth

[10] Vermouth, sherry, and Campari are all this sort of beverage served before a meal to stimulate appetite. The term takes its name from the Latin for "to open".

ANSWER: **apéritif** [do not accept "digestif"]

- 16. Answer the following about Yosemite National Park, for 10 points each.
- [10] Yosemite is located within this mountain range in Western California. This mountain range is home to Mount Whitney, this highest point in the contiguous 48 states.

ANSWER: Sierra Nevada

[10] This famous, oft-photographed granite formation in Yosemite is named for its distinctive shape. Hikers must now obtain a permit to hike up the cable route due to its popularity among hikers.

ANSWER: Half Dome

[10] This waterfall on the Merced River is located downstream from Nevada Fall. A steep hiking trail next to this waterfall leads to Emerald Pool at the top.

ANSWER: Vernal Fall

- 17. A language with this property is also known as a Type-0 language in the Chomsky hierarchy. For 10 points each:
- [10] The characteristic function of these sets is a partial function that halts when testing membership for an element of the set and is undefined otherwise. Computable sets are trivially this type of set.

ANSWER: <u>recursive</u>ly enumerable [accept computably <u>enumerable</u>, <u>half-decidable</u>, or <u>semidecidable</u>; do not accept or prompt on <u>computable</u>]

[10] The first problem shown to be uncomputable was this one. Turing and Church independently furnished proofs that it is impossible to determine whether or not an algorithm will run forever.

ANSWER: <u>Halting problem</u> [prompt on <u>Entscheidungsproblem</u> or <u>decision problem</u>]

[10] The Halting problem was shown to be equivalent to deciding whether there were solutions to a given set of these polynomial equations, in which the variables can only take on integer values.

ANSWER: **Diophantine** equations

- 18. This painting includes a depiction of a dove resting on a ladder, which represents the Holy Spirit. For 10 points each:
- [10] Identify this work in which shows several figures around a carpentry table, including John the Baptist and Mary, as well as Jesus, whose hand is bleeding.

ANSWER: **Christ in the House of His Parents** 

[10] Christ in the House of His Parents was created by this Pre-Raphaelite of Peace Concluded and The Order of Release, as well as a famous depiction of Ophelia.

ANSWER: John Everett Millais

[10] This other artist created a companion piece to *Christ in the House of His Parents*, A *Converted British Family Sheltering a Christian Missionary from the Persecution of the Druids*, as well as *The Hireling Shepherd*, *The Light of the World*, and *The Awakening Conscience*.

ANSWER: William Holman Hunt

- 19. The son of Nare Maghann Konate, this man is famed for his defeat of the Sosso king, Soumaoro Kante. For 10 points each:
- [10] Name this victor of the 1253 Battle of Kirina.

ANSWER: Sundiata Keita

[10] Sundiata Keita founded this dynasty in Western Africa. It shares its name with a modern country with a capital at Bamako.

ANSWER: Mali Empire

[10] Sundiata Keita is said to be a hero of these people of West Africa, a subgroup of the Mandé people.

ANSWER: Mandinka

- 20. When Dante and Virgil arrive here, they encounter Saladin. For 10 points each:
- [10] Name this area of the *Inferno* that contains the classical poets as well as unbaptized children.

ANSWER: Limbo

[10] Fallen angels are the guardians of this city in the *Inferno*. This city houses the Furies and Medusa, and it mosque-dominated neighborhoods contains the sixth through ninth circles.

ANSWER: Dis

[10] At this area on the Mount of Purgatory, Virgil and Dante see such men as Philip III, Henry of Navarre, and Peter of Aragon. This area is for those ordained by God that spend too much time on worldly affairs.

ANSWER: Valley of the Negligent Rulers

- 21. In 2011, the AP reported that this organization sent spies on a whitewater rafting trip taken by Yale's Muslim student association. For 10 points each:
- [10] Name this organization, led by Raymond Kelly, which partnered with the CIA to monitor Muslims, and has been criticized for its "stop and frisk" policy targeted at minorities.

ANSWER: NYPD [or New York City Police Department, or obvious equivalents]

[10] The NYPD's electronic surveillance activities likely violated this law, originally passed in 1978, that governs wiretapping by the government and sets up a namesake court to oversee requests for wiretaps.

ANSWER: FISA [or Foreign Intelligence Surveillance Act of 1978]

[10] FISA was overhauled in 2008 following the uncovering of this organization's warrantless wiretapping program. Under the program, the executive branch approved requests for wiretaps, rather than FISA court.

ANSWER: National Security Agency [or NSA]