Maryland Spring 2014 - Get Your Pencil and Paper Ready for Round 12
Packet 9
Questions by Dan Puma, Isaac Hirsch, Jordan Brownstein, Chris Manners, Brian McPeak, Sohan Vartak, Chris Ray, Eric Mukherjee, Daniel Galitsky, Jeff Amoros, Stephen Meyer, Victor Prieto, Stavros Greenbatcha, and Arun Chonai

Tossups

1. **A footnote to this poem includes the line "Everything is holy! everybody's holy! everywhere is holy!" One section of this poem describes figures who were "burned alive in their innocent flannel suits on Madison Avenue" and "threw potato salad at CCNY lecturers on Dadaism." A section of this poem asks "What sphinx of cement and aluminum bashed open their skulls and ate up their brains and imagination?", while its final section addresses Carl** (*) Solomon and repeats the phrase "I'm with you in Rockland!" For 10 points, name this poem that begins "I saw the best minds of my generation destroyed by madness, starving hysterical," the most famous poem of Allen Ginsberg.
ANSWER: "**Howl**"

2. **This amino acid is iodinated in the thyroid to form the T3 and T4 hormones, and its namesake hydroxylase converts it to l-DOPA, making it essential for dopamine and a precursor to melanin. Imatinib inhibits the namesake** (*) kinases of this amino acid. It can be synthesized from adding a hydroxyl group to phenylalanine, and defects in that process result in PKU. It was first discovered in casein, and thus takes its name from the Greek for "cheese." For 10 points, name this t-initialed amino acid, whose symbol is Y.
ANSWER: **tyrosine** (or **Tyr**; accept **Y** before mentioned)

3. **The Great Saxon Revolt was prompted by the resolution of this conflict, which led to the Norman sack of Rome. The Battle of Langensalza inspired the most famous episode in this conflict, which was resumed decades later by Paschal II and Henry I of England. Leading to the appointment of** (*) Antipope Clement III and ultimately resolved by the Concordat of Worms, this conflict saw the famous groveling in the snow at Canossa. For 10 points, name this conflict between Henry IV and Pope Gregory VII over who would appoint church officials.
ANSWER: Lay **Investiture** Controversy

4. **Early roles for this actor include the "outlaw" J.D. in *Thelma and Louise* and a starring role as Mills in David Fincher's *Se7en*. This man played a dim personal trainer who attempts to blackmail Osbourne Cox in *Burn After Reading*, and this man played Westray in the 2013 Ridley Scott picture *The Counselor*. This man played a United** (*) Nations employee named Gerry Lane in one recent film, and in another role, he played the real-life General Manager of the Oakland Athletics. This man's roles in *World War Z* and *Moneyball* were preceded by a recurring role as Rusty Ryan in the *Ocean's* movies and his role as Lieutenant Aldo Rayne. For 10 points, name this American actor who starred in *Inglorious Basterds* and as Tyler Durden in *Fight Club*.
ANSWER: William Bradley **Pitt** (or Brad **Pitt**)

5. **This figure's son slew the stag of Sylvia, provoking a war. According to Ovid, this figure became a god after bathing in the river Numicus. This father of Ascanius flew into a rage upon seeing the belt of Pallas, leading him to kill the king of the Rutuli, Turnus. This figure carried his** (*) father from the burning city of Troy, and the Cumaean Sibyl later guided him to the underworld to visit that father, Anchises. This eventual husband of Lavinia had an affair with a Carthaginian queen who killed herself using his sword. For 10 points, name this ancestor of Romulus and Remus who spurned Dido, the protagonist of an epic written by Virgil.
ANSWER: **Aeneas**

6. **Early in life, this leader and a man he mentored were allegedly members of the Green and Red Gangs who then helped this man in a future conflict. This man followed the doctrines of Henry George in his platform of Minsheng which combined with Minza and Minquan to make up this man's Three Principles of the** (*) People. This man came to power after the Xinhai Revolution, and was succeeded in his highest office by Yuan Shikai. The founder of the Kuomintang, for 10 points, name this man who helped overthrow the Qing Dynasty, the first president of the Republic of China.
ANSWER: **Sun** Yat-Sen

7. **This artist depicted a black car and a red truck barrelling towards each other in one painting. In another work, a red curtain is pulled back in front of a man holding down a tree and rebuking his axe-wielding son. Another of his paintings features a symbolic potted snake plant and includes a** (*) woman wearing a cameo brooch. That painting by him is sometimes characterized as a "mourning portrait" because of the drawn curtain in the arched window near its top. This artist of scenes of American folklore is best known for a painting featuring his sister and a pitchfork-wielding dentist. For 10 points, name this Regionalist artist of *American Gothic*.
ANSWER: Grant **Wood**

8. **A homotopy equivalence between two functions from spaces X to Y is the existence of an invertible mapping of this type between the two functions. The Lipschitz form of this quantity is not possessed by the square root and exponential functions because the slope becomes arbitrarily steep. One definition of this property is that each** (*) epsilon has a delta such that if x minus c is within delta, then f of x minus f of c is within epsilon. This property may also be defined as the statement that the limit of f as x goes to c is equal to f of c. For 10 points, name this property of a function which means that there are no discrete jumps or breaks in the line.
ANSWER: **continuous** (accept word forms like continuity)

9. **A character in this novel falls into a gravel pit and dies after injuring the horse Wildfire while drunkenly performing a jump. Jem Rodney is accused of a theft in this novel, which features a man who is engaged to Nancy Lammeter. After leaving** (*) Lantern Yard, the title character of this novel has his gold stolen by Dunstan and is placed in charge of the foundling Eppie, the daughter of Godfrey Cass and Molly Farren. For 10 points, name this novel about a "Weaver of Raveloe" written by George Eliot.
ANSWER: *Silas Marner: The Weaver of Raveloe*

10. **This term was coined in Executive Order 10925, signed by President Kennedy in 1961. California banned this practice for the public sector in 1996, and Clarence Thomas once called this policy "a cult of victimization." This was the issue at hand in the Grutter and Gratz cases, as well as Bakke, in which a sixteen-seat** (*) quota was found unconstitutional. The April 2014 Schuette ruling found that banning this practice does not violate the equal protection clause. For 10 points, name this policy in which preference is given to previously disadvantaged groups, such as in college admissions.
ANSWER: **affirmative action**

11. **This man praised "the unbounded determination of our people" in one speech. This man made the analogy of using a garden hose to put out a house fire to support one legislation, and he coined the term "Arsenal of Democracy." One of his speeches describes a figure who "resolutely respects himself and… respects the rights of others" and introduced his** (*) "Good Neighbor" policy. He opened speeches with the phrase "good evening, friends" and declared that "the only thing we have to fear is fear itself" in his first inaugural address. The deliverer of radio addresses called "fireside chats," for 10 points, name this wheelchair-bound president.
ANSWER: Franklin Delano **Roosevelt**

12. **This composer's associate Johann Vogl inspired one of his song cycles, which evokes images of the "Will o' the Wisp" and "The Hurdy-Gurdy Man." This composer wrote some incidental music for the Helmina von Chézy play *Rosamunde*. A Matthias Claudius poem inspired the name of a string quartet this man wrote while suffering from syphilis in** (*) 1824. Another of this man's chamber works omits the second violin in favor of a double bass and includes a fourth movement containing variations on his lied "Die Forelle." For 10 points, name this Austrian composer of the string quartet *Death and the Maiden* and the *Trout Quintet*.
ANSWER: Franz **Schubert**

13. **The object that this quantity is derived from can undergo any transformation that adds the gradient of a scalar function, and this function will still remain unchanged. One device measures this quantity with a loop containing two Josephson junctions: that device is a SQUID. This quantity is the curl of a certain vector** (*) potential, and cyclotron radiation results from particles moving through these objects. The Lorentz force law states that force is proportional to the velocity cross this field, and this field is divergenceless. For 10 points, name this field that causes a force on moving charges and whose change creates an electric field.
ANSWER: **magnetic field** (accept **B field** or **H field**)

14. **A character created by this author saves men from being butchered by fashioning gunpowder out of nearby volcanic rocks. The title character of one of this author's novels meets a man in a work camp arrested for having sex with watermelons named Harrogate and lives alone on a houseboat on the Tennessee River. One of this author's novels ends with the judge confronting the** (*) kid in an outhouse and follows the scalp-hunting gang of Glanton. A character created by this author discovers a bag full of money under a tree after a busted drug deal and is pursued by a hitman who kills people with a bolt pistol named Anton Chigurh. For 10 points, name this author of *Blood Meridian*, *No Country for Old Men*, and *The Road*.
ANSWER: Cormac **McCarthy**

15. **In his book *The Scientific Image*, Bas van Fraassen proposed a "constructive" form of this viewpoint that opposes the "scientific realist" approach that theories should be understood literally. One essay with this word in its title criticizes the idea that any knowledge is epistemically independent, which its author called "The Myth of the Given." That essay was by Wilfrid Sellars and is titled for this concept and the** (*) philosophy of mind. The synthetic/analytic dichotomy and reductionism are the "dogmas" of this idea, according to an essay by Quine. British adherents to this philosophy include Hume, Berkeley, and Locke. For 10 points, name this philosophical viewpoint that everything we know comes from evidence given by the external world.
ANSWER: **empiricism**

16. **A leader of this country resigned after his son-in-law Daniel Wilson was caught trafficking medals, and the death of Alexander Stavisky caused another scandal here. The government of this country was accused of covering up the Panama company's financial troubles. During one event in this country, the police reconstructed a shredded note addressed to** (*) Major Ferdinand Esterhazy. During that scandal here, a man was sent to Devil's Island and *The Aurora* published a famous open letter by Emile Zola. For 10 points, name this country where the Jewish army captain Alfred Dreyfus was accused of espionage.
ANSWER: **France** (accept the **French Third Republic**)

17. **The DRM model suggests this behavior is partially governed by the accumulation of materials like chitin or cellulose in certain organisms. Handling and search times govern this behavior according to an "Optimal" theory about it. Arditi and Ginzburg challenged the classical equation modeling this behavior, which sometimes triggers trophic** (*) cascades. Responses to this behavior include mobbing, aposematic coloring, and both Mullerian and Batesian mimicry. Nonlinear differential equations named for Lotka and Volterra model this

behavior. For 10 points, name this central behavior of population ecology in which one organism hunts and consumes another.

ANSWER: **predation** (accept word forms; accept reasonable synonyms; accept "being **prey**ed upon" or equivalents, which necessarily implies the same behavior; prompt on "foraging," "eating," or similar answers)

18. **This text holds that the world is deluded by the three gunas, or fundamental tendencies. One figure in this work states, "One who remembers Me at the moment of death… achieves My nature" while explaining the attainment of salvation via bhakti. A character in this work discusses jnana and** (*) karma yoga as paths to moksha. One figure in this text expresses reluctance to fight his relatives, leading another to explain the importance of dharma and reveal his true form as a god. For 10 points, name this dialogue between Krishna and Arjuna that takes place on the battlefield in the Mahabharata.

ANSWER: Srimad Bhagavad-**Gita** (prompt on "Mahabharata")

19. **A satiric novel from this country follows an idiot soldier who enthusiastically fights for the Austro-Hungarian Empire. One novel from this country centers on a species discovered by Captain Van Toch that destroys all the continents on earth and is led by the Great Salamander. A play from this country features a nonsensical language speaking organization called the Liquidation Office and centers on Hugo** (*) Pludek. A couple in a novel from this country lament when their dog Karenin dies of cancer and are named Tomas and Tereza. For 10 points, name this country home to Vaclav Havel and the author of *The Unbearable Lightness of Being*, Milan Kundera.

ANSWER: **Czech Republic** (accept **Czechoslovakia**)

20. **A modification of this equation takes into account the presence of multiple ions by the natural log of outside ions over inside ions. That equation takes into account the permeability of a cell's membrane, and is named for Goldman, Hodgkin, and Katz. The namesake of this equation also posited that the entropy of a crystal approached zero as temperature approaches zero, which is the** (*) third law of thermodynamics. In this equation the ratio of the oxidation/reduction couple is represented by Q, or the reaction quotient, while F stands for the Faraday constant. For 10 points, name this equation that calculates the potential voltage of a cell, named for a German.

ANSWER: **Nernst** equation

Bonuses

1. Answer the following about Luigi Pirandello and his work. For 10 points each:
[10] Pirandello is best known for this play in which The Director's staging of *The Rules of the Game* is interrupted by the title group.
ANSWER: *Six Characters in Search of an Author* (or *Sei personaggi in cerca d'autore*)
[10] At the end of *Six Characters in Search of an Author*, The Boy performs this action with a revolver after The Little Girl drowns in a fountain.
ANSWER: commits **suicide** (or **kills himself**; accept **shooting oneself**; prompt on "dying")
[10] Pirandello was a predecessor of the Theater of the Absurd, which included among its ranks this Swiss playwright of *The Visit* and *The Physicists*.
ANSWER: Friedrich **Dürrenmatt**

2. In light of the Donald Sterling scandal, name some things about America's racism through the ages. For 10 points each:
[10] When racists couldn't decide whether to count enslaved black people as either one-fourths of a person or three-fourths of a person, trusty racist James Madison came in and proposed to count slaves as this proportion between one-fourths and three-fourths.
ANSWER: **3/5** Compromise (or **Three-Fifths** Compromise)
[10] Racism wasn't just for the Founding Fathers, it was also for this man, a Supreme Court Chief Justice who wrote the majority decision in *Dred Scott v. Sandford*.
ANSWER: Roger Brooke **Taney**
[10] Racists like James Vardaman and Benjamin Tillman attacked Teddy Roosevelt after he invited this African-American man to dine at the White House.
ANSWER: Booker T. **Washington**

3. Name some things from music theory and composition. For 10 points each:
[10] The notes in a musical composition are placed on these things, which consist of five horizontal lines and four spaces, each representing a different pitch.
ANSWER: **staff** (or **staves**)
[10] This accidental is used to cancel out previous accidentals in a composition. All of the notes in the C major scale are these kinds of notes.
ANSWER: **natural**s
[10] This is the property of a musical note that distinguishes it from a different sound at the same pitch and loudness. Adding a mute to a brass instrument can change this property of the notes.
ANSWER: **timbre** (or **tone color** or **tone quality**)

4. Answer the following about mechanics, Newtonian and beyond. For 10 points each:
[10] Newtonian mechanics starts with $F = ma$, which is his law of this number.
ANSWER: **second** law (or **two** or equivalents)
[10] The derivative of this quantity with respect to time is force. This quantity is often more convenient in calculations than force.
ANSWER: linear **momentum** (do not accept "angular momentum")
[10] Lagrangian mechanics is based on the Euler–Lagrange equations, which are usually derived from this statement. This statement means that the correct trajectory is the one where the variation of the integral of the Lagrangian is zero.

ANSWER: principle of **least action** (accept things that imply that the action is minimized, accept **Hamilton**'s principle or principle of **stationary action**)

5. This patron of scribes was the husband of Ma'at. For 10 points each:
[10] Name this god sometimes known as Djehuty. He provided Isis with the magic required to fashion a phallus for Osiris and conceive Horus.
ANSWER: **Thoth**
[10] Thoth gambled with the god of this domain to extend the length of the year, allowing Nut to give birth. The Greek goddess of this celestial object is Selene, the sister of Helios.
ANSWER: the **moon**
[10] This Egyptian moon god lost five days' worth of moonlight to Thoth in the aforementioned gambling incident. This son of Amun and Mut has a name that could also be translated as "king's placenta."
ANSWER: **Khonsu** (accept **Khonshu** or **Khensu**)

6. Name some Nobel-winning economists. For 10 points each:
[10] This 1976 winner was a Monetarist and anti-Keynesian from the Chicago School of economics. He notably worked with Ronald Reagan's administration.
ANSWER: Milton **Friedman**
[10] This co-winner of the 1972 prize with Hicks famously names a voting-related "Impossibility Theorem" and other contributions to social choice theory.
ANSWER: Kenneth **Arrow**
[10] This recently deceased Chicago School economist described a situation where externalities don't matter in determining an efficient outcome in his namesake theorem. He also wrote "The Problem of Social Cost" and "The Nature of the Firm."
ANSWER: Ronald **Coase**

7. These people were defeated at the Battle of Waterberg by Lothar von Trotha. For 10 points each:
[10] Name this African tribe that was then forced into concentration camps in places like Shark Island.
ANSWER: **Herero**
[10] The Herero Genocide took place in a colony controlled by this country. This European country helped begin the Scramble for Africa by hosting the Berlin Conference.
ANSWER: **Germany** (or Federal Republic of **Germany**; or **Deutschland**)
[10] German South-West Africa would eventually become this country that won its independence things to the SWAPO organization. Its capital and largest city is Windhoek.
ANSWER: Republic of **Namibia**

8. This building formerly occupied the two block space between 7th and 8th streets and 31st to 33rd streets. For 10 points each:
[10] Name this Beaux-Arts style train station designed by McKim, Mead, and White, which opened in 1910.
ANSWER: **Penn**sylvania Station
[10] That Penn Station is located in this American city, which was home to a pair of Minoru Yamasaki-designed towers destroyed on September 11, 2001.
ANSWER: **New York** City
[10] The design for One World Trade Center included the suggestion of *this height* for the building by Daniel Libeskind, in reference to the nation's founding.
ANSWER: **1776** feet

9. The title creature of this poem is described as a "light-winged Dryad of the trees, in some melodious plot of beechen green." For 10 points each:
[10] Name this poem about an "Immortal Bird" that was "not born for death," which ends with the question "do I wake or sleep?"
ANSWER: "**Ode to a Nightingale**"
[10] This Romantic English poet of "Ode to a Nightingale" wrote an "Ode on Melancholy," and was a lover of Fanny Brawne.
ANSWER: John **Keats**
[10] Keats is perhaps best known for writing this other ode which describes the title object as "thou still unravish'd bride of quietness".
ANSWER: **Ode on a Grecian Urn**

10. The Mark–Houwink equation can be used to find the molecular mass of these materials from measurements of their intrinsic viscosity. For 10 points each:
[10] Name these macromolecules made from stringing together multiple smaller units.
ANSWER: **polymers**
[10] Chain polymerization is often initiated and propagated through reactions containing these special molecules. These species have unpaired electrons, making them very reactive.
ANSWER: free **radical**s
[10] This term describes polymers that have all of their substituents on the same side.
ANSWER: **isotactic** (accept word forms)

11. Serena Joy is jealous of the fertility of the protagonist of this novel, who is a friend of the lesbian Moira. For 10 points each:
[10] Name this dystopian novel which centers on the the concubine Offred, who works as a slave for the Commander.
ANSWER: The ***Handmaid's Tale***
[10] *The Handmaid's Tale* is set in this fictitious theocratic nation that replaces the United States.
ANSWER: Republic of **Gilead**
[10] *The Handmaid's Tale* was written by this Canadian author of *The Blind Assassin* and *Oryx and Crake*
ANSWER: Magaret **Atwood**

12. This man apocryphally stood an egg on its end to demonstrate that anyone can do a feat after it is accomplished. For 10 points each:
[10] Name this explorer who is usually credited with "discovering" the New World in 1492.
ANSWER: Christopher **Columbus**
[10] This unrelated explorer claimed Brazil for King Manuel I in 1500 after landing on the Island of the True Cross.
ANSWER: Pedro Alvares **Cabral**
[10] Finish this uninspired bonus by naming the light ship with lateen sails that Portuguese and Spanish explorers used.
ANSWER: **caravel**s

13. Answer the following about Michelangelo's art in the Sistine Chapel. For 10 points each:
[10] The most famous section of the chapel's ceiling depicts the "creation" of this man. God, surrounded by his entourage of angels, is seen reaching out to touch this man's finger.
ANSWER: **Adam** (or **Adan**)
[10] Michelangelo painted himself as the flayed skin of St. Bartholomew in this fresco in the chapel. During the "Fig-Leaf Campaign," Daniele da Volterra censored its depiction of nudity.

ANSWER: The **Last Judgement**
[10] The northern wall of the chapel features Pietro Perugino's version of this scene, which is set on a open square and features a kneeling man taking an object from Christ.
ANSWER: The **Delivery of the Keys** (accept obvious equivalents indicating "Christ giving keys to Saint Peter")

14. This protein occurs with Aequorin, which was also isolated with *Aequorea victoria*. For 10 points each:
[10] Identify this beta-barrel protein, and it's a common fluorophore in microscopy where other sources of fluorescence might be harmful to living cells .
ANSWER: **Green fluorescent protein** (or **GFP**)
[10] *Aequorea victoria* is a glowing member of this phylum, which includes hydras and jellyfish.
ANSWER: **Cnidaria**
[10] Brainbow mapping using GFP relies on Cre recombinase, an enzyme isolated from the P1 organism of this type. Major examples of this kind of organism include the lambda and T4 varieties.
ANSWER: bacterio**phage**s

15. A line from this poem provided the title of Lorraine Hansberry's most famous play. For 10 points each:
[10] Name this poem that describes an object that may "stink[s] like rotten meat" and "sag like a heavy load," "a dream deferred."
ANSWER: "**Harlem**"
[10] "Harlem" was a poem by this influential Harlem Renaissance poet, who wrote "Life for me ain't been no crystal stair" in his poem "Mother to Son."
ANSWER: Langston **Hughes**
[10] In another Langston Hughes poem, one of these people tells another character that "life for me ain't been no crystal stair."
ANSWER: "**Will V-Day Be Me-Day Too**"

16. The Uffizi Gallery was built for a ruler of this city and this city won the Battle of Marciano. For 10 points each:
[10] Name this city that was ruled for a long time by the Medicis.
ANSWER: **Florence** (or **Firenze**)
[10] The ruler for whom the Uffizi Gallery was built shares his name with this first ruler of the Medici who was succeeded by his son with the excellent epithet "the gouty."
ANSWER: **Cosimo** di Medici
[10] One member of the Medici family was murdered in a church during this plot led by the namesake family, although Lorenzo the Magnificent escaped.
ANSWER: **Pazzi** Conspiracy

17. This player is currently backed up by The Professor, Andre Miller. For 10 points each:
[10] Identify this college teammate of Demarcus Cousins at Kentucky, the lighting-fast point guard of the Washington Wizards.
ANSWER: John **Wall**
[10] Wall is coached by this man, a former shooting guard with the Hawks. Prior to the current season, this man actually had the worst record in NBA history among coaches who had coached at least a full season.
ANSWER: Randy **Wittman**
[10] This gigantic idiot and host of the unsurprisingly terrible *The Herd* issued a much-panned diatribe after John Wall's debut game, noting that Wall would never succeed because he liked dancing the Dougie and grew up in a single-parent household.
ANSWER: Colin **Cowherd**

18. This letter names a point where liquid helium transitions to a superfluid. For 10 points each:
[10] Identify this letter which represents a number equal to about one over one hundred and thirty seven, the fine structure constant. This letter also represents wavelength.
ANSWER: **lambda**
[10] Lambda also represents this constant postulated by Einstein to explain the static universe, but later called it his greatest mistake after Hubble demonstrated that galaxies were moving away from us.
ANSWER: **cosmological** constant
[10] The Lambda-CDM model describes the universe with a cosmological constant and this theorized kind of dark matter, which has low kinetic energies.
ANSWER: **cold** dark matter

19. This city's transportation system experienced two suicide bombings in December 2013, resulting in thirty-four deaths. For 10 points each:
[10] Name this city on a namesake river in Russia.
ANSWER: **Volgograd**
[10] This massacre occurred after people in a school in Chechnya were taken hostage by ethnic Ingush and Chechens. Over 350 people after Russian troops stormed the school with tanks.
ANSWER: **Beslan** School Massacre
[10] Luckily, this city was not involved in a bombing, despite the threats that we heard surrounding the 2014 Winter Olympics.
ANSWER: **Sochi**

20. This collection contains a bunch of mitzvot. For 10 points each:
[10] Name this collection that includes commandments to wear things like a *tzitzit* and contains works like the *Mishneh* and *Mishneh Torah*.
ANSWER: **Halakha**
[10] The Halakha is a collection of laws from this religion that celebrates holidays like Chanukkah and Tisha B'av.
ANSWER: **Judaism** (accept sects of Judaism like "Conservative" or "Orthodox")
[10] Some sects of Judaism believe that you have to wear this while doing your morning prayers. It consists of a black box to be worn on the head and a black tape-like substance that is wrapped around the arm.
ANSWER: **tefillin** (or **phylacteries**)