BASK 2015 Packet 6

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Written and edited by Ben Zhang, Alston Boyd, Sean McBride, Kai Smith, and Eric Xu, with assistance from Charlie Dees, Jialin Ding, and Mohan Malhotra

Packet 6

Tossups

1. Five of these figures are described as "Dhyani," and the primordial one is named Vairocana. One of these figures from the Sakya family was tempted with visions of the daughters of Mara before leaving the Immoveable Spot. The Pure Land sect of a certain religion reveres one of these people named Amitabha. One of these people preached that life is (*) suffering, and that the way to overcome desire is the Eightfold Path, which are two of the Four Noble Truths revealed to him under a bodhi tree. These people are revered in the Mahayana and Therevada sects. For 10 points, name these figures exemplified by Siddhartha Gautama, who attained nirvana. ANSWER: Buddhas

<CD>

2. The worst-case for an algorithm developed by this man is when the two inputs are consecutive Fibonacci numbers. That algorithm named for this man repeatedly subtracts numbers to find their greatest common divisor. A system that goes beyond this man's ideas was developed Bolyai and Lobachevsky, and is called (*) hyperbolic geometry. The Playfair axiom, which says that given a point and a line, there is a line through that point parallel, is equivalent to this man's parallel postulate. For 10 points, name this Greek geometer and author of the

ANSWER: **Euclid** [or **Euclid**ean algorithm] <MaxS>

3. .This man was wary of Catholic Action, which he saw as a continuation of the People's Party that he had dissolved. This man's supporters fed castor oil to opposition priests and politicians. This leader's party secured power after automatically gaining a two-thirds majority due to the Acerbo Law. After his deposition, this man was installed as the head of the puppet (*) Salo Republic. Pius XI signed the Lateran Accords with this leader. Victor Emmanuel III failed to prevent this man's March on Rome from taking control of the government. For 10 points, name this Italian dictator during World War II.

ANSWER: Benito Mussolini

 $\langle AB \rangle$

4. The title object of one of this man's poems becomes "a sudden star" as it is "shot through liquid air." One of his poems asks "if greater Want of Skill, Appear in Writing or in Judging ill." That poem by this author contains the lines "Drink deep, or taste not the Pierian Spring" and "To err is human, to forgive is divine," and is titled (*) An Essay on Criticism. In this author's most famous work, the Baron steal the title object from Belinda. For ten points, identify this satirist and author of *The Dunciad*, and *The Rape of the Lock*,

ANSWER: Alexander Pope

 $\langle KS \rangle$

5. A type of this substance found in boreal forests is formed by podzolization. This substance's pH is affected by its cation exchange capacity. A form of this material can be formed via drainage of a lacustrine plain. This material is divided into 12 classes using a texture triangle. This material is divided into horizons symbolized by the letters O, A, B, C, and R. This material loses stiffness in response to an applied stress, such as when it

(*) liquefies during earthquakes. A type of this substance called loess results from aeolian processes. For 10 points, name this collection of minerals and organic matter on which plants grow.

ANSWER: <u>soil</u> [prompt on "dirt"] <SAM>

6. A member of this profession was sculpted "at fourteen years old" in a dark wax piece that used real clothes. Matisse painted two works showing five naked women performing this activity while holding hands. The painter of *The Cotton Exchange in New Orleans* was better known for works showing women in this profession, like in his work (*) *Rehearsal at the Barre*. Henri Toulouse-Lautrec painted women employed for this activity at the Moulin Rouge who performed the Can-Can. For 10 points, name this profession, whose members Edgar Degas often painted wearing tutus, practicing for the ballet.

ANSWER: <u>dancer</u>s [or <u>dancing</u>, or <u>dance</u>] <CD>

7. This author's only short story opens with the phrase "My mother danced all night," explaining why Twyla was placed in St. Bonny's home for girls with Roberta. This author of "Recitatif" wrote a novel in which the title character accidentally swings Chicken Little into a river. In another novel by this author, a woman names her daughter after her midwife Amy Denver. That novel by this author features Paul D, who shows up at (*) 124 Bluestone Road unannounced. Baby Suggs is the mother-in-law of Sethe in that novel by this author. For 10 points, name this female African-American author of novels like *Beloved*.

ANSWER: Toni <u>Morrison</u> [or Chloe Anthony <u>Wofford</u>] <AB>

8. The solvation of these particles imparts a blue color to solutions of alkali metals and water. The movement or transfer of a single one of these particles is designated by a fish hook arrow, according to arrow pushing notation. Abbreviated written configurations of these particles for an element begin with the symbol of the previous noble gas in brackets. Reduction involves a (*) gain of these particles, while oxidation results in a loss of them. For 10 points, name these particles which are transferred or shared in chemical bonds and which surround the nucleus of an atom.

ANSWER: <u>electron</u>s <BZ>

9. This city's recent development projects include Roppongi Hills and Shiodome, both of which are located in one of this city's 23 special wards. Two waterfronts in this non-American city are connected by the Rainbow Bridge. This city's Skytree is currently the second tallest structure in the world. Many of this city's subway stations are served by (*) pushers whose job is to push passengers into crowded trains. This city's Tsukiji Fish Market is being relocated in preparation for hosting the 2020 Summer Olympics. For 10 points, name this city with a view of Mount Fuji, the capital of Japan.

ANSWER: <u>Tokyo</u> <JD>

10. The Mayan Hero Twins killed a son of Seven Macaw who claimed to create these objects by luring him with a fake crab and crushing him under one. Krishna protected a group of villagers from Indra's wrath by holding up one of these objects. The giants Otus and Ephialtes attempted to join the gods by piling two of these named (*) Ossa and Pelion on top of each other. The monster Typhon was imprisoned under one of these objects in Sicily, which was also said to be the home of Hephaestus's forge. For 10 points, name these geographic features exemplified by Olympus, the home of the Greek gods.

ANSWER: <u>mountain</u>s [accept <u>mountain</u> ranges; accept <u>volcano</u>s; accept <u>hill</u>] <BZ>

11. Nerve fibers named after Howard Mummery are found deep within these structures. Birds and reptiles are born with one of these structures that they use to break open the shell of the egg. The bottom of these structures is covered by cementum, which is partially made of hydroxyapatite. The blood and nerve-rich (*) pulp is surrounded by yellow dentin in these structures. Fluoride is often added to the water supply to strengthen the enamel found on the outside of these structures. For 10 points, name these bony structures exemplified by canines, incisors, and molars.

ANSWER: <u>teeth</u> [accept specific teeth like <u>incisor</u>s or <u>molar</u>s] <BZ>

12. Stefan Lazarevic commanded the left wing of an army against this ruler at a battle where one side was crippled by the desertion of the Anatolian beyliks. This man called himself an Islamic warrior after taking Smyrna from the Knights Hospitalliers. This man captured Bayezid I and allegedly used him as a footstool after the Battle of (*) Ankara. That battle came after this ruler's sack of the Delhi sultanate. This man, who ruled from Samarkand, claimed descent from Genghis Khan and acquired his name from a hip injury he received as a youth while stealing sheep. For 10 points, name this ruler, known as "the Lame."

ANSWER: <u>Tamerlane</u> [or <u>Timur</u> the Lame, or <u>Tamburlaine</u>, or <u>Timur-e-Lang</u>] <AB>

- 13. In one of this man's novels, a character spends several hours studying the conjugation of Italian verbs. One of this man's novellas ends with three people taking an electric train to the countryside and discussing the prospect of sending a daughter to a conservatory. A character in one of this man's novels is told the 'Parable of the Law' and sees a figure with outstretched arms before he dies "like a (*) dog" by being stabbed to death. In this man's most famous work, the protagonist gets apples lodged in his back and dies after being transformed into a giant vermin. For 10 points, name this German author of *The Trial* and *The Metamorphosis*. ANSWER: Franz Kafka
- 14. In fluid dynamics, the continuity equation sets the time derivative of this quantity equal to the negative divergence of this quantity times velocity. The speed of sound in a material equals the square root of the bulk modulus divided by this quantity. The kinematic viscosity equals the dynamic viscosity divided by this quantity. This quantity is constant in (*) incompressible flow. The ratio of this quantity to that of water is the specific gravity. This quantity times g times depth equals pressure, according to Pascal's law. For 10 points, name this quantity equal to mass divided by volume.

ANSWER: fluid <u>density</u> [prompt on "rho"] <SAM>

<KS>

15. In one of this man's experiments, he asked subjects to adopt the viewpoint of a doll and choose what photograph best represented their perspective of three mountains. This psychologist theorized that new experiences and knowledge are integrated into existing schema via either assimilation or accommodation.

Centration and (*) Egocentrism are aspects of the Pre-Operational stage of this psychologist's most famous theory. For 10 points, identify this Swiss child psychologist who formulated the four stages of cognitive development. ANSWER: Jean Piaget <KS>

16. A scholar of a civilization centered on this island determined that due to their unfortified center, they had a namesake non-Roman "pax." Quintus Caecilius Metellus gained his epithet by driving pirates off this island. While under Venetian control, this island was called the Kingdom of Candia. Bull-leaping iconography was found on frescos from this island. (*) Linear A and Linear B were discovered by Arthur Evans on this island, where he unearthed the palace of Knossos. For 10 points, name this Mediterranean island, once the home of the Minoan civilization.

ANSWER: Crete

 $\langle AB \rangle$

17. This character is referred to as "lamp of the inventor" in a poem that repeatedly asks this person to "take pity on my long misery." A cat named Behemoth accompanies this person as he visits Moscow under the name of Professor Woland in *The Master and Margarita*. A poem in *The Flowers of Evil is* titled after the "Litanies" of this character. This character causes the (*) "first disobedience," afterwards claiming that it is "better to reign in hell than serve in heaven" in Milton's *Paradise Lost*. For 10 points, name this person who makes a deal with Faust in a Goethe play.

ANSWER: the **devil** [or **Satan**; or **Mephistopheles**]

 $\langle AB \rangle$

18. A film in this series features a character missing his eyes, who wears a mask made of his mother's skin, playing a guitar equipped with a flamethrower. The Doof Warrior appears in the follow-up to a film where the title character is exiled from Bartertown by Aunt Entity, played by Tina Turner. In the second film of the series, it is discovered that (*) oil tanks were actually filled with sand. The title character allies with Imperator Furiosa, who is pursued when the five wives of Immortan Joe are missing. For 10 points, name this series of George Miller films including *The Road Warrior*, *Beyond Thunderdome*, and *Fury Road*.

ANSWER: Mad Max

<CD>

19. This composer's final symphony was originally premiered as a 'symphonic fantasia' and is a single movement in C major. After composing his seven symphonies, this man entered the "Silence at Järvenpää" where he produced little music during his final 30 years. He used the English horn to depict the title creature in the waters of the (*) underworld in a tone poem, and another opens with a brass chorale in f# [f-sharp] minor. He was forced to use the title *Impromptu* for one of his pieces to avoid Russian censors. This man's *Lemminkainen Suite* contains *The Swan of Tuonela*. For 10 points, name this Finnish composer of *Finlandia*.

ANSWER: Jean <u>Sibelius</u> [or Johan Julius Christian <u>Sibelius</u>]

<KS>

20. The Republican convention in this year was held at the Front Street theatre, where the "Radical Democracy" party split from the Republicans. George Pendleton was the Vice Presidential candidate for the Democratic party during this election. The winner of this election declared (*) "malice toward none" and "charity for all" in his inauguration address. The loser of this election had been relieved of command after mistakes like failing to chase Lee's army after their defeat at Antietam. For 10 points, name this election in which George McClellan was defeated by Abraham Lincoln.

ANSWER: Election of <u>1864</u>

<AB>

Bonuses

1. Bonus: In isotropic examples of them, hydraulic conductivity is the same in all directions. For 10 points each:

[10] Name these underground layers of permeable rock that hold groundwater.

ANSWER: aquifers

[10] Aquifers can be contaminated by the intrusion of this substance, which mixes with freshwater in estuaries.

ANSWER: **salt**water [accept **brackish** water]

[10] Aquifers are recharged via the deep form of this process, which is defined as the gravity driven movement of water through a porous medium.

ANSWER: **percolation** [prompt on "drainage"]

<SAM>

2. Bonus: Shapur I captured Valerian during this century. For 10 points each:

[10] Name this century, in which the Palmyrene and Gallic empires were formed as breakaway states from Rome. Aurelian helped end the crisis named for this century by bringing those empires back under Roman control.

ANSWER: third century [or 200s]

[10] The Crisis of the Third Century was followed by the rule of this emperor, who reformed the empire by splitting it into the Tetrarchy. He sacked Ctesiphon, the Sassanid capital.

ANSWER: Gaius Aurelius Valerius Diocletianus Augustus

[10] The Plague of Cyprian, probably this disease, worsened the crisis. This disease, one of two to be eradicated, was last seen in 1979 due to its vaccine, which was originally made from a similar disease that affected cows.

ANSWER: smallpox

 $\langle AB \rangle$

3. Bonus: His album 'Round About Midnight took it's name from a Thelonius Monk standard. For 10 points each: [10] Name this musician. He collaborated with Gil Evans on Quiet Nights and his other albums include Sketches of Spain, Nefertiti, and Kind of Blue.

ANSWER: Miles Dewey **Davis** III

[10] Miles Davis played this instrument. The performer of "Salt Peanuts," Dizzy Gillespie, was known for his use of a 'bent' one of these instruments, which was also played by Louis Armstrong.

ANSWER: trumpet

[10] On Miles Davis's album *Kind of Blue*, this instrument was performed by Paul Chambers, where he is featured in the song "Mr. P.C." Charles Mingus played this instrument, sometimes with a bow.

ANSWER: contrabass [or upright bass; or string bass]

<KS>

4. Bonus: This man wrote a poem that became known as the "negro national anthem." For 10 points each:

[10] Name this author, who also wrote about a biracial man who decided to pass for white in *The Autobiography of An Ex-Colored Man*.

ANSWER: James Weldon **Johnson**

[10] James Weldon Johnson was a part of a literary and artistic movement named for a "renaissance" of this neighborhood. That movement also included Langston Hughes.

ANSWER: Harlem

[10] Hughes wrote a poem that asks what happens to one of these things "deferred." The title of Lorraine Hansberry's *A Raisin in the Sun* is taken from that poem these things.

ANSWER: a dream

 $\langle AB \rangle$

5. Bonus: This man was punished by being placed in a pool of water he could not drink. For 10 points each:

[10] Name this man who cooked and served his son Pelops to the gods.

ANSWER: **Tantalus**

[10] Tantalus had earlier stolen these items from Olympus after being invited to dine with the gods. All or nothing, name both the food of the gods and the drink of the gods.

ANSWER: <u>ambrosia</u> and <u>nectar</u> [accept answers in either order]

[10] Tantalus told Pandareus to steal a golden one of these animals from Zeus's temple, thus earning divine retribution. Laelaps was one of these animals that could always successfully hunt down its prey.

ANSWER: <u>dog</u> [accept equivalents like <u>hound</u>] <BZ>

6. Answer some questions about the genre of still-life painting, for 10 points each:

[10] Four Cut Sunflowers is a still life by this artist, who is known for his Sunflowers series as well as for a piece painted from an asylum at Saint Remy, titled The Starry Night.

ANSWER: Vincent van Gogh

[10] This other artist's more modern *Violin and Candlestick* was inspired by cubism, a movement that this man helped found along with Pablo Picasso. His other works include *Man with a Guitar*.

ANSWER: Georges Braque

[10] A subgenre of still life painting known as vanitas frequently incorporated these body parts as a reminder of death. A large, stretched out one of these objects appears on the floor of Holbein the Younger's *The Ambassadors*.

ANSWER: skulls

 $\langle EX \rangle$

7. Bonus: A high value of it means that a substance spends most of its time in the mobile phase. For 10 points each:

[10] Name this quantity, which is calculated as the distance traveled by the molecule of interest divided by the distance traveled by the mobile phase in the "paper" form of a certain technique.

ANSWER: **Rf** value [or **retention** factor; or **retardation** factor]

[10] The aforementioned Rf value is calculated after performing the paper type of this chemistry technique, in which substances are separated according to whether they have a higher affinity for the mobile or stationary phase.

ANSWER: chromatography

[10] A common solvent used as the mobile phase in paper chromatography is this simplest ketone, which is also used in nail polish remover.

ANSWER: acetone [or propanone]

 $\langle BZ \rangle$

8. Bonus: He controversially said that "three generations of imbeciles are enough" in the case *Buck v. Bell*. For 10 points each:

[10] Name this long-serving Supreme Court Justice. This man's father, a prominent Boston poet, penned a paean to the *USS Constitution* in the poem "Old Ironsides".

ANSWER: Oliver Wendell Holmes Jr. [do not accept "Oliver Wendell Holmes Sr."]

[10] In this 1919 Supreme Court case, Holmes declared that attempts to distribute leaflets urging resistance to the draft violated the terms of the Espionage Act. The "clear and present danger" test was established by this case.

ANSWER: Schenck v. U.S.

[10] Holmes compared Schenck's actions to a man "falsely" performing this specific action "in a crowded theater". This term is now commonly used to illustrate the limits of free speech.

ANSWER: "shouting fire" [accept logical equivalents like saying the word "fire"] <EX>

9. Bonus: Mariano Azuela wrote the novel *The Underdogs* about the Mexican Revolution while living in this state. For 10 points each:

[10] Name this state, the setting of Larry McMurtry's western novel *Lonesome Dove*, as well as Buzz Bissinger's reporting about a football team from Odessa collected in *Friday Night Lights*.

ANSWER: Texas

[10] This author wrote about John Grady Cole, a native of Texas who works as a rancher in the novel All The Pretty Horses.

ANSWER: Cormac McCarthy

[10] This novel by Cormac McCarthy includes the assassin Anton Chigurh chasing Llewellyn Moss, who has taken a suitcase of money he found at the scene of a shootout between drug dealers.

ANSWER: No Country For Old Men

 $\langle CD \rangle$

- 10. Bonus: This interpretation of Judaism analyzes the ten Sephirot, or emanations, which are organized in the general shape of a body, with "Keter" or "Crown" on top. For 10 points each:
- [10] Name this mystic interpretation of the Jewish Bible, whose foundational text is the Zohar, attributed to Rashbi.

ANSWER: Kabbalah

[10] This form of Orthodox Judaism was founded when the Baal Shem Tov reacted against anti-Kabbalah scholars and attempted to bring the Kabbalah to wider study in the Jewish community..

ANSWER: **Hasid**ism [or **Hasid**ic Judaism]

[10] Chabad Lubavitch's last Rabbi, Menachem Mendel Schneerson, is believed by many followers to be this "anointed leader" of prophecy who would become king of the Jews.

ANSWER: Messiah [or Moshiach]

<CD>

- 11. Bonus: The Stolz-Cesàro theorem is the sequential analog of this rule. For 10 points each:
- [10] Name this rule in calculus that evaluates limits at indeterminate forms like zero divided by zero, or infinity divided by infinity.

ANSWER: L'Hôpital's rule

[10] L'Hôpital's rule applies this operation to the numerator and denominator of the quotient of two functions. This operation is the inverse of integration.

ANSWER: differentiation

[10] Cauchy and Riemann name a set of equations that determine the differentiability of these functions. When these functions are differentiable everywhere, they are termed holomorphic.

ANSWER: complex-valued function

<SAM>

- 12. Answer some questions regarding the Holocaust in literature, for 10 points each:
- [10] This Dutch girl's diary was published by her father after her death at Bergen-Belsen in 1945. In her diary, this girl describes her stay in a "Secret Annex" with her family and the van Damms.

ANSWER: **Anne Frank** [accept either underlined name]

[10] This nonfiction account by Elie Wiesel of his time in Auschwitz and Buchenwald was followed by two sequels. Moshe the Beadle attempts to warn his village of the impending doom in this book, with no success.

ANSWER: Night

[10] This author's memoir *If This Is a Man* begins with an invocation to "You who live safe/In your warm houses". This man's short story collection *The Periodic Table*, describes a section of a man's life in terms of an element.

ANSWER: Primo Levi

 $\langle EX \rangle$

13. Bonus: Her son, the Young King, pleaded for her release on his deathbed. For 10 points each:

[10] Name this woman, whose court in Poitiers was held as a center of the ideal of courtly love. She negotiated her son's ransom from Henry VI.

ANSWER: **Eleanor** of Aquitaine

[10] That ransomed son was the first king of England with this name, but he is better known as the Lionhearted.

ANSWER: Richard

[10] Richard I was succeeded by this man, who was known as "Softsword" and "Lackland" by the French after he signed the Treaty of Le Goulet. This king also signed an agreement with several nobles at Runnymede.

ANSWER: King John I

<AB>

- 14. Bonus: In some organisms, it is intrinsically terminated by a GC-rich hairpin loop. For 10 points each:
- [10] Name this process which is initiated in *E. coli* by the binding of a preinitation complex to the Pribnow box. In eukaryotes, the binding site for this process's preinitiation complex is the TATA box.

ANSWER: transcription

[10] Transcription is facilitated in eukaryotes by the acetylation of these proteins. DNA wraps around these proteins to form chromatin.

ANSWER: histones

[10] Following transcription and splicing, a tail containing a string of nucleotides with this base is added to the 3' ["three prime"] end of messenger RNA. In DNA, this base pairs with thymine.

ANSWER: adenine [accept adenosine; prompt on "A"]

 $\langle BZ \rangle$

- 15. This text introduced its author's transcendental idealism. For 10 points each:
- [10] Name this philosophical text, which contrasts analytic statements like "the object takes up space" with synthetic statements like "the object is heavy", in addition to introducing the *a priori-a posteriori* distinction.

ANSWER: Critique of Pure Reason

[10] The *Critique of Pure Reason*, along with *Critique of Practical Reason* and *Critique of Judgment*, was written by this German philosopher, who formulated the categorical imperative.

ANSWER: Immanuel Kant

[10] Kant credited this philosopher with waking him from his "dogmatic slumber". This Scottish philosopher discussed the is-ought problem in relation to morality in his book *A Treatise of Human Nature*.

ANSWER: David **Hume**

<SAM>

- 16. Bonus: King Gojong was both the first emperor from this dynasty and the last king. For 10 points each:
- [10] Name this dynasty, during which the Silhak movement occurred. It ended following Japan's annexation of its home country, and it replaced the Goryeo empire.

ANSWER: **Joseon** Dynasty [or **Choson** Dynasty]

[10] The Joseon Dynasty ruled this peninsula, which was split during the 20th century into the north and south constituents that make it up today. Those two countries on this peninsula are separated by the DMZ.

ANSWER: Korean Peninsula

[10] The far earlier Gojoseon dynasty was invaded by this Chinese dynasty. It was interrupted by the reign of Wang Mang and succeeded by the Three Kingdoms period.

ANSWER: Han Dynasty

<AB>

17. Bonus: Answer these questions about sarin attacks, for 10 points each:

[10] This religious cult launched a sarin gas attack on the Tokyo subway in 1995, killing 13 passengers. After the arrest of its leader Shoko Asahara, this group has rebranded itself as Aleph.

ANSWER: Aum Shinrikyo

[10] During a war against Iran, this man used sarin gas and mustard gas on a Kurdish community in Halabja. This member of the Ba'ath party was attacked by a US coalition in Operation Desert Storm.

ANSWER: **Saddam Hussein** abd al-Majid al-Tikriti [accept either underlined name]

[10] This country's president, Bashar al-Assad, was accused of stockpiling chemical weapons such as sarin gas during a revolution in this country. The capital of the Islamic State, ar-Raqqah, is in this country.

ANSWER: Syria

 $\langle BZ \rangle$

18. Bonus: A poem of this name mentions the shaving of Tom Dacre's head. For 10 points each:

[10] Give this title shared by two poems in the collection *Songs of Innocence and Experience*. A second poem with this title opens by describing "A little black thing among the snow / Crying 'Weep!' in notes of woe."

ANSWER: "The Chimney Sweeper"

[10] In this other William Blake poem, the title creature is addressed as "burning bright in the forests of the night" and asks, "What immortal hand or eye/ Dare frame your fearful symmetry?"

ANSWER: "The Tyger"

[10] Blake asks "Did he who made" this creature "make thee" in "The Tyger." In another poem, he asks this creature if it knows "who made thee."

ANSWER: lamb

 $\langle AB \rangle$

19. Bonus: For 10 points each, answer the following about media portrayals of Spartacus:

[10] The 1960 film *Spartacus* was directed by this man, who may be better known for directing *Dr. Strangelove* and 2001: A Space Odyssey.

ANSWER: Stanley Kubrick

[10] This actor starred as Spartacus in Kubrick's film. This man's son Michael portrayed the corporate raider Gordon Gekko in the 1987 film *Wall Street*.

ANSWER: Kirk **Douglas** [or Issur **Danielovitch**]

[10] The 2010 series *Spartacus: Blood and Sand*, as well as its sequels *Vengeance* and *War of the Damned*, premiered on this premium cable network, which also premiered *Boss* and currently shows *Outlander*.

ANSWER: Starz

<SAM>

20. Bonus: For 10 points each, answer the following about vectors in electromagnetism:

[10] This vector quantity exerts a force on a moving charged particle. This vector is perpendicular to the electric field in radiation waves.

ANSWER: **magnetic field** [prompt on "B"]

[10] The Poynting vector measures the amount of this quantity that an electromagnetic wave carries per unit area. For a current-carrying wire, this quantity equals current times voltage.

ANSWER: power

[10] The bound charge density is the negative divergence of this vector quantity, which represents the electric dipole moment per unit volume in a material.

ANSWER: electric **polarization** density [prompt on "P"]

<SAM>