

## Penn Bowl 2018

### Packet 9

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### Tossups

1. **This philosopher inaccurately identified the Berlin Wall as a sign of a frozen, “anorexic” history in which communism and capitalism had reached a permanent stasis. This thinker explored the implications of cloning for sex and death and argued that art has penetrated all spheres of existence but lost its identity as a singular phenomenon, a situation that this philosopher called “transaesthetics.” This [emphasize] *philosopher* referenced the extremely detailed map in Borges’s “On Exactitude in Science” and the “play of illusions and phantasms” in Disneyland to discuss the concept of (\*) hyperreality. This semiotician criticized the asymmetry and propaganda of one conflict, claiming that it occurred in the media, not in reality. For 10 points, name this French postmodernist thinker who wrote *Simulacra and Simulation* and *The Gulf War Did Not Take Place*.**

ANSWER: Jean **Baudrillard** (“boh-dree-YARR”)

<NR, Philosophy>

2. **Portuguese PM Francisco Carneiro was killed with an airplane bomb to allow Portugal’s continued participation in this event. One of its main actors was accused of simultaneously furthering this event’s goals by employing dealers like “Freeway” Rick Ross to traffick crack cocaine in the *Dark Alliance* series of articles by Gary Webb. The shooting down of a Corporate Air Services flight piloted by Eugene Hasenfus led to the revelation of this event. Fawn Hall testified that she was ordered to (\*) shred National Security Council documents during this event. This event, the focus of the Tower Commission, arose over the administration’s violation of the Boland Amendment. Secretary of Defense Caspar Weinberger, John Poindexter, and Oliver North were all convicted for their roles in this event. For 10 points, name this Reagan-era scandal concerning the use of Middle Eastern arms sales to fund a Nicaraguan insurgency.**

ANSWER: **Iran-Contra** Affair [or **Nicaraguan Revolution**; or **Contra War**]

<AJ, American History>

3. **The coach of one of the teams that played in this game used a 300-question psychological test to help determine who made the team. Had Bill Baker not scored a tying goal in the final seconds of an earlier game, the winners of this game would not have won the tournament. In what his coach would later say was the greatest mistake of his career, a player who was considered to be the best goaltender in the world at the time was pulled after the first period of this game. This event, which took place at (\*) Lake Placid and saw Vladislav Tretiak pulled after allowing two goals, takes its name from an announcer asking the audience if they believed in the title event seconds before the end of the game. For 10 points, name this ice hockey game where the amateur US ice hockey team coached by Herb Brooks upset the reigning world champion Soviets at the 1980 Olympics.**

ANSWER: the **Miracle on Ice** [accept **1980 Olympics US–Soviet hockey game** or equivalents until “US”; do not accept or prompt on “1980 Olympics hockey gold medal game”]

<MT, Trash (Sports)>

4. **A common method of diagnosing and categorizing types of these disorders analyzes responses to the Boston Cookie theft task. Another type of this disorder that is characterized by *conduite d’approche* (“con-DWEET dah-PROSH”) was studied by Norman Geschwind and results from damage to the arcuate fasciculus. The**

**transcortical sensory and transcortical motor versions of it have preserved repetition, and one type of this disorder was first observed in a patient nicknamed (\*) Tan.** That type results from damage to the inferior frontal gyrus and is categorized by preserved comprehension but effortful speech. For 10 points, name this category of disorders, including Broca's and Wernicke's, that affect a person's ability to produce and/or comprehend language.

ANSWER: **aphasia** [accept **Wernicke's aphasia** until "conduite d'approche" is read; prompt on language disorders or language processing disorders or language production disorders or speech disorders]

<MT, Social Science (Psychology)>

**5. A statement of this belief is interpolated between a description of water and blood and was first cited by Cyprian; that statement, whose authenticity is doubted, is the Johannine Comma. A "shield" diagram illustrating this concept with a complete graph consisting of "est" and "non est" relationships is found in a document supporting this idea. This idea, which says that multiple (\*) hypostases comprise one ousia, is supported by a command to "teach all nations" and baptize them with this concept in Matthew 28. A doctrine opposed to this idea claims that one element of this concept was begotten by the other; that heresy is Arianism. For 10 points, name this Christian doctrine which states that God consists of the Father, the Son, and the Holy Ghost.**

ANSWER: the Holy **Trinity** [or **trinitarianism** or other word forms; prompt on Homoousianism]

<JC, Religion>

**6. A method of visualizing deviations from this law is to plot intensity over omega. This law can be used to predict the position and orientation of Kikuchi lines. Rocking curves are used to plot deviations from this law, which also govern the VHGs used in widely tunable lasers. This law is used alongside a set of selection rules for allowed reflections. This law can be derived by taking a Fourier transform to (\*) reciprocal space and drawing an Ewald sphere. It can also be derived by setting the reciprocal lattice vector equal to the incoming wave vector minus the outgoing wave vector and substituting into the Laue ("LAO-uh") equations. This law states that an integer  $n$  times wavelength equals two  $d$  sine theta. For 10 points, name this law that describes diffraction by nuclei in a crystal.**

ANSWER: **Bragg's law**

<AP, Physics>

**7. A section of a work titled for this event berates "spoiled children," "tiresome rogues," and "stupid censors" after describing "a deserted house" where "the inmate is forever dumb." While talking about this activity to his girlfriend, a character "with a guitar" claims that he will open a restaurant before saying that this activity must make one "feel pretty silly." Before another of these events in the same book, a character strikes his servant before his brother's dying words spur him to a religious conversion. Father Zosima recounts one of these events in *The Brothers Karamazov*, and in another work, (\*) Guillot and Zaretsky participate in one. In that work, one of these events is spurred by the protagonist dancing with Olga at a name-day party, causing the death of Tatyana's love Lensky in *Eugene Onegin*. For 10 points, name this often-fatal activity that caused the death of Alexander Pushkin.**

ANSWER: **dueling** [prompt on fighting; prompt on murder]

<JC, European Literature>

**8. Proteins that transactivate these cells contain 41BB ("four-one-B-B"), OX40 ("O-X-forty"), and CD137 C-terminal domains. The formation of a zeta-zeta dimer is key to signalling in these cells. IPEX ("eye-pecks") syndrome is caused by a mutation in a transcription factor required for the differentiation of one subtype of these cells; that transcription factor is FoxP3. Tisagenlecleucel ("TISS-uh-jen-LECK-loo-sell") is a modified version of these cells that expresses a single-chain variable fragment on their surface. These cells express a protein that consists of either a gamma-delta or alpha-beta heterodimer, and binds to (\*) peptides presented on MHC I or MHC II. During their development, these cells express CD3, CD4, and CD8 on their surface, before**

becoming “single-positive” just before exiting the thymus. For 10 points, name this type of lymphocyte that comes in cytotoxic, regulatory, and helper varieties.

ANSWER: T cells [or T lymphocytes; accept more specific answers, like helper T cells, cytotoxic T cells, regulatory T cells, CAR T cells, chimeric antigen receptor T cells]

<EM, Biology>

9. This work was accused of “calling Tullia’s ape a marmosyte” in a review entitled “The Anatomy of Melancholy” by Conrad Aiken. A description of “each in his prison, / Thinking of the key,” an image of a “boat responding / Gaily, to the hand expert with sail,” and the question “what have we given?” are recited by three speakers in this work. “Vials of ivory and coloured glass” surround a woman who cries “Jug Jug” and sits on a “burnished throne” in this poem. This work cites Jessie (\*) Weston’s book *From Ritual to Romance* in extensive footnotes, and after describing an Unreal City, it asks whether a sprouted corpse will bloom. This work was dedicated to a man addressed as “il miglior (“meel-YOR”) fabbro,” Ezra Pound. It begins “April is the cruellest month.” For 10 points, name this seminal modernist poem about the Fisher King by T. S. Eliot.

ANSWER: “The Waste Land”

<JC, British Literature>

10. It’s not a song cycle, but a posthumous piece of this type begins with a long, soft G major chord that gently crescendoes into a surprise G minor chord, followed by a rhythm inspired by its composer’s opera *Fierrabras*. The previous piece of this type by the same composer ends with a presto tarantella in 6/8 time and D minor. A theme from the third movement minuet of one of these pieces quotes its composer’s song based on the Schiller poem “Die Gotter Griechenlands” (“dee GOT-er GREE-ken-lahnts”); that piece was dedicated to (\*) Ignaz Schuppanzigh (“EEG-nots SHOO-pont-sick”), who led one of these ensembles. One of these pieces was nicknamed after a poem by Matthias Claudius. Schubert’s Impromptu in B-flat major reuses a theme from his A minor piece of this type based on his incidental music to the play *Rosamunde*. Near his death, Schubert composed his 13th, 14th, and 15th pieces of this type. For 10 points, name this chamber genre of Schubert’s *Death and the Maiden*.

ANSWER: string quartet [prompt on quartet]

<PL, Music>

11. One Hindu goddess known for carrying this object stands on a couple having sex, while another of these objects, Rahu, causes eclipses. A man’s annoying habit of always saying “Let others decide” results in the Vanir creating one of these things, which another god preserves with chanting and herbs. Another of these objects is legendarily buried under the Tower of London; that one of these objects belonged to a “blessed crow” who once literally served as a bridge and sacrificed himself in a cauldron; that giant was Bran. An eye is demanded from Odin by one of these entities who owns a (\*) spring of wisdom, Mimir. One of these body parts belonging to Orpheus floats downstream singing after the Maenads rip him apart. For 10 points, Athena’s *aegis* is decorated with one of these objects that turns people to stone, which Perseus got by decapitating Medusa.

ANSWER: severed head [accept Chhinnamasta or Chhinnamasta’s head or Mimir’s head or Bran’s head or Orpheus’s head or Medusa’s head; accept scimitar until “Rahu” is read]

<JC, Mythology>

12. In a work from this country, the image of the Emperor’s black beard is repeated in a poem that summarizes the desire of the virgin Ofensia. An essay about the “transfiguration of taboo into totem” declares “Tupi or not Tupi, that is the question”; that is this country’s “Cannibal Manifesto” by Oswald de Andrade (“OHZ-vald jee ahn-DRAH-jee”). In a novel from this country, the Bastos (“BAH-stoose”) clan and Mundinho Falcão (“moon-JEEN-yoo fao-COW”) struggle for control of the town of Ilhéus (“eel-YEH-oos”) while (\*) Nacib Saad begins an affair with his cook. In another novel from this country, a boy travels across the

Sahara on the advice of the King of Salem in order to achieve his Personal Legend. This country is home to the authors of *The Alchemist* and *Gabriela, Clove and Cinnamon*. For 10 points, name this South American country home to writers like Paulo Coelho and Jorge Amado, who wrote in Portuguese.

ANSWER: Federative Republic of **Brazil** [or República Federativa do **Brasil**]

<JC, World Literature>

13. A leader in this war was lampooned as a coward for leaving his army under the command of the foreigner Charles Eugène de Croÿ (“sharl uh-ZHEN duh kro-EE”) the night before a major battle. An incident in this war in which a man marked a site by arranging two strips of peat into a cross is described in the first paragraph of a cultural history by Orlando Figes (“FIDGE-iz”). After this war’s Battle of Fraustadt (“FROW-shtott”), the Treaty of (\*) Altranstädt was signed to force Augustus the Strong to abdicate his throne. Years after the leader of one side during this war escaped to Turkish Moldavia, he was shot in the head and killed during the Siege of Fredriksten. The victorious side of this war won its first naval victory at the Battle of Gangut before concluding it with the Treaty of Nystad. For 10 points, the Battle of Poltava was fought during what clash between Charles XII of Sweden and Peter the Great?

ANSWER: **Great Northern** War [or **Second Northern** War; prompt on **Northern** War]

<AJ, European History>

14. A variant of one example of this type of reaction uses 1,3-dichloro-cis-2-butene to avoid undesirable polymerization products; that reaction was critical to isolating the Wieland–Miescher ketone. It’s not a cascade reaction, but according to the Stork–Eschenmoser hypothesis, squalene epoxide undergoes the cationic form of this process. The selectivity of this kind of process depends on whether the carbon being attacked has a tet, trig, or dig geometry according to (\*) Baldwin’s rules. A base-mediated intramolecular condensation of di-esters to form beta-keto esters is a famous example of one of these reactions named for Dieckmann. A Michael addition followed by an aldol condensation is a reaction of this type named for Robinson. For 10 points, name this class of reactions that create ring compounds.

ANSWER: **cyclization** [or **annulation**; accept **ring formation** or **ring closure** until “ring” is read; prompt on **intramolecular** reactions]

<PL, Chemistry>

15. An artist from this country showed three women in blue having a snowball fight in one work, and he showed a bustling backstage split across six paintings in *Dressing Rooms in the New Theater*, typical of his “actor portraits.” Another series from this country showed a woman being carried in a litter across the water and a crowded footbridge. An artist from this country depicted many scenes of fishermen, including ones working by torchlight and holding nets under a waterfall, and created a series that frames the title location in a barrel and colors it deep red in (\*) *South Wind, Clear Sky*. A style from this country is named for “pictures of the floating world” and was used to depict fifty-three stations along a road, as well as three boats caught in the title upwelling. For 10 points, name this country, home to the woodcut style of *ukiyo-e* (“oo-kee-yoh-EH”) practiced by artists like Utagawa Kunisada, Ando Hiroshige (“hee-ro-SHEEN-geh”), and Katsushika Hokusai.

ANSWER: **Japan**

<JC, Painting>

16. This man ordered the construction of the Job 600 complex for the meeting of an international organization. While a teacher at Lincoln University, this man was named president of the African Students Organization of America and Canada. This man married a woman selected by Gamal Nasser, named Fathia Rizk, and he also enjoyed a close platonic relationship with his secretary Erica Powell. This man united trade unions, women’s groups, and cocoa farmers into the (\*) Convention People’s Party. This man accepted Soviet help to create the world’s largest artificial lake by constructing the Akosombo Dam. The CIA probably aided in the

coup of this man's government by the National Liberation Council, which occurred while he was on a state visit to China. For 10 points, name this man, the first prime minister and president of an independent Ghana.

ANSWER: Kwame Nkrumah

<AJ, World History>

17. In a possible proto-break-dance, this man was rumored to have spun on his head while simulating the death throes of the Golden Slave. This man was the first to dance the titular role in a ballet about the title character and the Moor, who vie for the love of the Ballerina. A ballet by this man was alternately supposed to be about a *ménage à trois* or an airplane crash, but ended up depicting a boy and two girls looking for a tennis ball. This choreographer of (\*) *Jeux* was accused of indecency due to a work in which he suggestively lay down on a veil and danced in bas-relief-like sideways poses. This schizophrenic collaborator with Diaghilev danced with nymphs in *Afternoon of a Faun*, and his choreography caused a riot in a work in which a girl dances herself to death by Stravinsky. For 10 points, name this dancer and choreographer of *The Rite of Spring*.

ANSWER: Vaslav Nijinsky

<JC, Other Arts (Dance)>

18. A play by this author begins with a character described as the “Muhammad Ali” of checkers and the “checker champ of ‘Nam,” playing against Turnbo. In another play by this author, characters sing a song about the possum-treeing dog Blue and the protagonist refers to death as “nothing but a fastball on the outside corner.” Youngblood saves up to buy Rena a house after Booster takes over Jim Becker’s unofficial (\*) taxi cab business in *Jitney*, a play by this author. In another play by this author, men burned alive in a train car become the Ghosts of Yellow Dog, and Berniece and Willie Boy try to exorcise Sutter’s ghost. The mentally disabled Gabriel blows his horn to end another of this man’s plays, in which Cory and Rose bury the patriarch Troy Maxson. For 10 points, name this African-American playwright of the Pittsburgh Cycle, including *The Piano Lesson* and *Fences*.

ANSWER: August Wilson

<JC, American Literature>

19. Inscriptions on the Vicarello Cups contain information about these things. Ulpian classified these things into *terrena*, *glareata*, or the elaborate *munita*. Procopius criticized Justinian for eliminating most of an institution based on the *angarium*, which used these things to carry out its services. The death of Prasutagus and an attack on Camulodunum led to a battle named for one of these things. One of these things named Ickniel is thought to be named for the (\*) Iceni, while another names a battle that saw Gaius Suetonius Paulinus defeat Boudica. Julius Caesar commissioned the first known master map of these things, which was located near the Pantheon for merchants to copy onto itineraria. For 10 points, name these classical routes, the “queen” of which was the Appian Way.

ANSWER: Roman roads [or viae; accept Roman and streets or routes or trade routes or thoroughfares or equivalents in place of “roads”; anti-prompt on Watling Street; prompt on roads or equivalents by asking “what civilization are they from?”]

<NR, European History>

20. One step of the Isomap algorithm for dimensionality reduction requires solving this problem to estimate the distance along a manifold between data points. An algorithm for this task can also be used to find currency arbitrage opportunities by connecting pairs of currencies by the log-exchange rate. The fastest implementation of an algorithm for this problem was developed by Fredman and Tarjan, and uses a (\*) Fibonacci heap. In the presence of negative cycles, the Bellman–Ford algorithm can be used to solve this problem. In the first step of one algorithm for this problem, the distance of all nodes except the start is assigned a value of

infinity. For 10 points, name this graph problem solved by Dijkstra's ("DIKE-stra's") algorithm that requires finding the path with the lowest total weight between two vertices.

ANSWER: finding the **shortest path** [accept equivalents; do not accept or prompt on "traveling salesman problem" or "finding a Euclidean path" or "finding a Hamiltonian path"]

<JC, Other Science (Computer Science)>

## Bonuses

1. Robert Nozick cast the reader as a rock in the story of the Princess of the Frog in a section titled “Essence as [this concept]” in *Philosophical Explanations*. For 10 points each:

[10] Name this concept that, according to Buddhism, is determined by “five aggregates,” including form, feeling, and perception. The central Buddhist tenet of *anatta* refers to the negation of this concept.

ANSWER: **self** [or **non-self**]

[10] The Buddhist theory of the self is similar to the bundle theory proposed by this Scottish philosopher and atheist in his *A Treatise of Human Nature*.

ANSWER: David **Hume**

[10] Derek Parfit defended Hume’s bundle theory of self in this book by proposing a thought experiment that questions whether an atomically identical teletransported version of himself on Mars is the same as the one that left Earth.

ANSWER: **Reasons and Persons**

<NR, Philosophy>

2. A character in this novella berates another for offering “advice... on a cosmic scale and of quite cosmic stupidity, on the redistribution of wealth... and at the same time you eat toothpaste.” For 10 points each:

[10] Name this novella in which the professor Philip Philippovich gives Sharik a human pituitary gland and testicles, turning him for a time into Polygraph Polygraphovich.

ANSWER: **Heart of a Dog** [or **Sobachye syerdtseye**]

[10] *Heart of a Dog* was written by this Soviet author, who wrote about an author of a novel on Pontius Pilate and a woman who flies naked over Moscow in *The Master and Margarita*.

ANSWER: Mikhail **Bulgakov**

[10] In this satirical play by John Hodge, the USSR coerces Bulgakov into writing a play glorifying Stalin and ends up writing the play with him, eventually swapping work with the dictator and inadvertently causing the Great Purge.

ANSWER: **Collaborators**

<JC, European Literature>

3. This country’s first king chose steel instead of gold for his crown to symbolize the bravery of his soldiers. For 10 points each:

[10] Name this Eastern European country, ruled by King Carol II until the Second Vienna Award led to his overthrow and replacement by the Conducător Ion Antonescu with the help of the Iron Guard.

ANSWER: Kingdom of **Romania**

[10] After Antonescu entered World War II by joining his country with the Axis, this Romanian city became the target of an allied bombing campaign called Operation Tidal Wave to destroy its oil fields and refineries.

ANSWER: **Ploiești** (“ploy-ESHT”)

[10] As the Red Army marched into Romania, this King launched a coup against Antonescu and joined the Allies. The Soviet post-war occupation forced his abdication and exile until the overthrow of Nicolae Ceaușescu.

ANSWER: King **Michael I** [or **Mihai I**]

<NR, European History>

4. Italian geoscientists made miniature replicas of this statue and spun them in centrifuges to model damage that could be done to this statue’s weak ankles. For 10 points each:

[10] Name this 17-foot-tall Michelangelo statue of a youth with a slingshot before his battle with Goliath.

ANSWER: **David**

[10] In this bronze Cellini sculpture commissioned by Cosimo de Medici, one of the title characters holds a curved sword as he stands on the decapitated body of the other.

ANSWER: **Perseus with the Head of Medusa**

[10] Both a copy of Michelangelo's *David* and Cellini's original *Perseus with the Head of Medusa* are located in this square, the traditional center of government in Florence. The Uffizi ("oo-FEET-see") Gallery is located here.

ANSWER: **Piazza della Signoria**

<MT, Other Arts (Sculpture)>

5. In this poem, children "catch the burning sparks that fly like chaff" as they watch the title character, who "looks the whole world in the face, / For he owes not any man." For 10 points each:

[10] Name this poem whose title worker, a "mighty man... with large and sinewy hands," stands "under a spreading chestnut tree" and takes his children to church while remembering his dead wife.

ANSWER: "The **Village Blacksmith**"

[10] "The Village Blacksmith" is by this author, who wrote of the Acadian title character's separation and reuniting with Gabriel in *Evangeline* and also wrote "Paul Revere's Ride."

ANSWER: Henry Wadsworth **Longfellow**

[10] This Longfellow collection is framed "in Sudbury town / across the meadows bare and brown" with characters like the Landlord and the Student telling tales. It includes "the Saga of King Olaf" as well as "Paul Revere's Ride."

ANSWER: **Tales of a Wayside Inn**

<JC, American Literature>

6. These scenes often include the torch-carrying twins Cautes ("COW-teez") and Cautopates ("COW-toh-PA-teez"), as well as a scorpion attacking an animal's testicles. For 10 points each:

[10] Name these painted or sculpted scenes that often showed a god in a Phrygian cap straddling and slaying the namesake animal.

ANSWER: **tauroctony** ("tor-OK-tuh-nee") [or **tauroctonies**; do not accept or prompt on "taurobolium"; prompt on, but DO NOT REVEAL, descriptive answers like images of Mithras or killing a bull or Mithras killing a bull]

[10] This subject of tauroctonies ("tor-OK-tuh-nees") is often portrayed with Sol Invictus or near a naked lion-headed figure surrounded by snakes. This god was the subject of a Roman military mystery religion.

ANSWER: **Mithras**

[10] Mithras was also syncretized with Apollo and this sun-chariot-driving Greek god, who unfortunately let his teenage kid Phaethon borrow the car that one time.

ANSWER: **Helios**

<JC, Mythology>

7. After this experiment, it was debated whether the particles involved should have had  $L$  equal to 0 or 1. For 10 points each:

[10] Name this experiment in which a collimated beam of silver atoms was deflected by a magnetic field, demonstrating the quantization of spin.

ANSWER: **Stern-Gerlach** experiment

[10] In contrast to the orbital type of this quantity, spin is an intrinsic form of this quantity in quantum mechanics. The three components of this quantity's operator do not commute with each other.

ANSWER: **angular momentum** [prompt on  $L$ ; do not accept or prompt on "momentum"]

[10] A key aspect of the Stern-Gerlach experiment is that the magnetic field has this property, so the forces on the dipole don't completely cancel out.

ANSWER: **inhomogenous** [do not accept or prompt on "homogenous"]

<JC, Physics>

8. All male citizens were mandated to perform this program except for the firstborn sons of the Eurypontid and Agiad houses. For 10 points each:



[10] Name this rigorous education and military training program employed by Sparta that included the paides, paidískoi, and hēbōntes stages for boys starting at the age of 7 until they turned 29.

ANSWER: **agoge** (“ah-go-gay”)

[10] Promising *agoge* students were inducted into the secret *Krypteia*, where they were instructed to kill the strongest and best of this servile population that primarily worked the land and supported the Spartan economy.

ANSWER: **helots**

[10] The *agoge* was the primary method of instilling obedience to this oral Spartan constitution, which is sometimes said to have been given by the oracle of Delphi.

ANSWER: Great **Rhetra**

<NR, European History>

9. The Goff–Gratch and Arden–Buck equations are empirical methods of calculating this quantity. For 10 points each:

[10] Name this quantity that is dependent on the mole fraction of each component in an ideal solution according to Raoult’s law. This quantity equals the atmospheric pressure at a substance’s boiling point.

ANSWER: **vapor pressure**

[10] This empirical equation sets the base-ten logarithm of the vapor pressure equal to *A* minus *B* over the quantity *T* plus *C*.

ANSWER: **Antoine** equation

[10] These charts plot the vapor pressure on a logarithmic scale against an arbitrary temperature scale. They are typically crowded with many lines for various substances that terminate at each substance’s critical point.

ANSWER: **Cox** charts

<AP, Chemistry>

10. St. John of Damascus is referred to as the “Doctor of [this event]” for his writings on it. For 10 points each:

[10] Name this event preceded by the Dormition of the Theotokos in Eastern Orthodox tradition. The Immaculate Conception and this event are the subjects of the only two explicitly *ex cathedra* pronouncements.

ANSWER: **assumption** of Mary [or **Mary entering Heaven alive**; or equivalent]

[10] On the Lailat al-Mi’raj, some Muslims celebrate this prophet’s travel to Jerusalem and brief ascent into Heaven, where he negotiated the number of prayers per day down from fifty to five.

ANSWER: **Muhammad**

[10] The Book of Genesis reads that this father of Methuselah and namesake of a non-canonical book “walked with God,” which some interpret as entrance into Heaven alive.

ANSWER: **Enoch**

<NR, Religion>

11. This man’s work inspired the film *Tim’s Vermeer*, a documentary which chronicles Tim Jenison’s attempt to reproduce *The Music Lesson*. For 10 points each:

[10] This experimental physicist worked with the artist of *Mr. and Mrs. Clark and Percy* and *A Bigger Splash* on the “thesis” that Old Masters like Jan van Eyck used the camera obscura to improve their linear perspective.

ANSWER: Charles **Falco**

[10] Falco curated the enormously popular industrial design exhibit *The Art of the Motorcycle* at this Upper East Side museum, housed by a spiraling white building designed by Frank Lloyd Wright.

ANSWER: Solomon R. **Guggenheim** Museum

[10] At the Guggenheim, Falco was a technical advisor for an installation by this founder of video art, whose “TV sculptures” include “Electronic Superhighway,” “TV Buddha,” and “TV Cello.” He once attacked John Cage.

ANSWER: Nam June **Paik** [or **Paik** Nam June]

<JC, Painting>

12. The amino acid consensus sequence for this process is asparagine-X-serine or threonine. For 10 points each:  
[10] Name this cotranslational process that begins with an attachment of a preformed 14-sugar carbohydrate to a protein. Glycan branches that result from this process can be classified as high mannose, hybrid, and complex.

ANSWER: **N-linked glycosylation** [prompt on partial answer; do not accept or prompt on “O-linked glycosylation”]

[10] Unlike its O-linked counterpart, which occurs in cis-golgi, N-linked glycosylation occurs in this organelle. Its “smooth” variety plays an important role in lipid synthesis.

ANSWER: **endoplasmic reticulum** [or **ER**]

[10] Mannose is also used for a tag that directs proteins towards this organelle. This organelle’s namesake “storage” disorders include Hunter syndrome and Hurler syndrome.

ANSWER: **lysosome**

<PL, Biology>

13. The creation of this field was preceded by a mixed strategy solution to the Waldegrave problem. For 10 points each:

[10] Identify this field that deals with interactions between rational decision-makers.

ANSWER: **game theory**

[10] In the 1980s, a computerized study found that this strategy was optimal for playing the iterated prisoner’s dilemma. In this strategy, a player chooses to cooperate or defect depending on its opponent’s previous move.

ANSWER: **tit-for-tat**

[10] In later studies, this method has often been shown to outperform the “tit-for-tat” strategy. This strategy, developed by Nowak and Sigmund, keeps the same policy if it is effective, but discards it if it is ineffective.

ANSWER: **Pavlov** strategy [accept “**win–stay, lose–shift**” or “**win–stay, lose–switch**” or **WSLS**]

<AJ, Social Science (Economics)>

14. Germany recognized this polity as a British protectorate in exchange for receiving the island of Heligoland. For 10 points each:

[10] Name this country whose Afro-Shirazi Party overthrew Sultan Jamshid bin Abdullah and massacred Arabs shortly after receiving independence.

ANSWER: **Zanzibar**

[10] Zanzibar’s first president, Abeid Karume, agreed to unite his country with this leader’s to form Tanzania. This leader outlined his African socialist concept of ujaama in the Arusha Declaration.

ANSWER: Julius **Nyerere**

[10] After this country invaded the Tanzanian region of Kagera, Nyerere marched forces into Kampala and deposed its dictator Idi Amin.

ANSWER: **Uganda**

<NR, World History>

15. The profiles of this substance are divided into layers called horizons. For 10 points each:

[10] Name this substance that is classified by its percentage composition of sand, silt, and clay.

ANSWER: **soil**

[10] This term refers to decayed organic matter in soil that has been decomposed by microorganisms. It contains many useful nutrients for healthy soil such as nitrogen.

ANSWER: **humus** (“HYOO-mus”)

[10] Since the 1930s, the USDA has described soil color technically using these charts named for an American artist and color theorist. These charts separate color into components of hue, value, and chroma.

ANSWER: **Munsell** charts [or **Munsell** soil color charts]

<AP, Other Science (Earth Science)>

16. A candidate in this election transformed his campaign organization into a group that lobbied against the passing of NAFTA. For 10 points each:

[10] Name this election in which future Reform Party candidate Ross Perot received nearly 19 percent of the popular vote but zero electoral college votes. In this election, Bill Clinton defeated incumbent president George H. W. Bush.

ANSWER: 1992 US Presidential Election

[10] This man was the Reform Party candidate in the 2000 Presidential election. He described a “culture war” in his speech at the 1992 Republican National Convention.

ANSWER: Patrick “Pat” **Buchanan**

[10] This Massachusetts Senator won the New Hampshire Democratic Primary in 1992, but ultimately lost to Bill Clinton. He said “I’m not trying to play Santa Claus” in regard to his proposed tax policy.

ANSWER: Paul Efthemios **Tsongas**

<AJ, American History>

17. Name some works by Beethoven in his beloved C minor, for 10 points each.

[10] This overture was written to accompany a tragedy by Heinrich Joseph Von Collin. The opening C minor theme of this piece, representing the protagonist’s resolve, contrasts with an E major theme representing his mother.

ANSWER: ***Coriolan*** Overture

[10] While this symphony is in E-flat major, its second movement “funeral march” opens with a C minor theme. This very long symphony marks the start of Beethoven’s middle period as well as Romantic music as a whole.

ANSWER: “**Eroica**” Symphony [or Symphony No. **3** in E-flat major; or Beethoven’s **Third** Symphony]

[10] The *adagio cantabile* second movement from this C minor piano sonata is believed to have been inspired by Mozart’s Piano Sonata No. 14. This sonata shares its nickname with Tchaikovsky’s Sixth Symphony.

ANSWER: “**Pathetique**” Sonata [or Piano Sonata No. **8** in C minor]

<PL, Music>

18. This movement’s manifesto listed things to be “blasted,” such as England’s climate “for its sins and infections,” and things to be “blessed,” like hairdressers and mariners, since they both fight nature. For 10 points each:

[10] Name this British literary and artistic movement, whose manifesto was published by Wyndham Lewis and published in the magazine BLAST.

ANSWER: **vorticism**

[10] The first edition of BLAST published a short story that would grow into this novel, which begins “This is the saddest story I have ever heard.” It ends with the narrator passively letting Edward cut his throat with a pen-knife.

ANSWER: *The **Good Soldier***

[10] This man’s wife, Dorothy Shakespear, published some paintings in BLAST. He named the movement of vorticism as well as using its influence in *The Cantos*.

ANSWER: Ezra **Pound** (Yes, Ezra Pound’s wife’s maiden name really was “Shakespear.” Her mother, Olivia Shakespear, was also a novelist and had an affair with Yeats.)

<JC, British Literature>

19. In one show broadcast on this network, Jefferson Pierce is a high school principal who moonlights as the superhero Black Lightning. For 10 points each:

[10] Name this channel whose other superhero fare includes the shared universe of Greg Berlanti and Marc Guggenheim’s shows *Arrow*, *Flash*, and *Legends of Tomorrow*.

ANSWER: The **CW**

[10] This master of the occult appears on several different shows in the Arrowverse, played by Matt Ryan. On *Arrow*, he recovered Sara Lance’s soul after her resurrection, and he was played by Keanu Reeves on film.

ANSWER: **John Constantine** [accept either name]

[10] On *Legends of Tomorrow*, the AI Gideon controls this timeship used by the Legends. It was originally captained by Rip Hunter but is now commanded by Sara Lance.

ANSWER: the ***Waverider***

<EM, Trash (TV)>

20. A section of this poem that describes Toussaint Louverture contains the lines “Death traces a shining circle above this man / death stars softly above his head.” For 10 points each:

[10] Name this book-length poem that contains a section that repeats the phrase “at the end of daybreak.”

ANSWER: “***Notebook of a Return to the Native Land***” [or “***Cahier d’un retour au pays natal***”]

[10] This postcolonial literary movement advocated for a common racial identity for all native Africans. It was established by the author of “Notebook of a Return to the Native Land” along with Léopold Senghor and Léon Damas.

ANSWER: ***Négritude***

[10] This man wrote the influential essay “Discourse on Colonialism” as well as “Notebook of a Return to the Native Land.”

ANSWER: Aimé ***Césaire*** (“ay-MAY say-ZAIR”)

<MT, World Literature>



