# Bulldog High School Academic Tournament 2015 (XXIV): It's more than good...it's Grace!

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## Packet 1 Tossups

1. In one poem, this poet finds comfort that a creature is "lone wandering, but not lost" after asking "Whither...dost thou pursue thy solitary way?" In another of this man's poems, he urges his reader to "Go forth under the open sky, and list to Nature's teachings." That poem concludes with the exhortation to joyfully join "the innumerable (\*) caravan" and act "like one who wraps the drapery of his couch about him, and lies down to pleasant dreams" when meeting death. This author of "To a Waterfowl" wrote a poem addressed "to him who in the love of nature holds communion with her visible forms" when he was just 17. For 10 points, name this American poet, who wrote "Thanatopsis."

ANSWER: William Cullen Bryant <FM>

2. One composer from this modern nation developed a simplified style of polyphonic choral music that allowed the words to be heard clearly. Another composer from this nation wrote violin concertos with nicknames like "Pleasure and "The Storm At Sea" and depicted a crying village boy and a barking dog in other concertos. The composer of the (\*) Pope Marcellus Mass came from this nation. A composer from this nation wrote a violin concerto that ends using fast repeated notes to represent a violent summer storm. Concerto and opera were invented in this nation, home to the composer of *The Four Seasons*. For 10 points, name this nation home to Palestrina and Vivaldi.

ANSWER: **Italy** [or **Italia**] <JR>

3. Under this dynasty, Zhang Zeduan created the painting Along the River During the Qingming Festival, and Bi Sheng made the first moveable type. This dynasty was the first to create a standing navy, which was destroyed at the Battle of Yamen. It was the first in the world to use paper money. Under Zhu Xi, Neo-Confucianism became prominent under this dynasty. Sima Guang opposed Wang (\*) Anshi's reforms of this dynasty. It moved to Hangzhou after the Jurchens took its capital, Kaifeng, in its "Southern" period. Gunpowder was invented during this dynasty. For 10 points, name this Chinese dynasty that ruled from 960 until it was taken by the Mongols in 1279.

ANSWER: **Song** Dynasty <LL/JR>

4. In one work by this author, the narrator claims that "fourteen" means "infinite;" later in that story, Theseus says, "Would you believe it Ariadne? The Minotaur scarcely defended itself." Another of this author's characters refuses to show compassion to poet David Jerusalem at Tarnowitz. Besides writing "Deutsches Requiem," this author penned a story in which Stephen (\*) Albert notes that another character may come as a friend or as an enemy before he is shot to reveal the location of an artillery park. His killer is the descendant of Tsui Pen, a Chinese magistrate who combined a novel and a labyrinth. For 10 points, identify this Argentine author of "The Garden of Forking Paths."

ANSWER: Jorge [Francisco Isidoro] Luis **Borges** ["BOAR-hays"] <GL>

5. These organelles are moved around by SRPs. The structure of these organelles was determined using X-ray crystallography by Venki Ramakrishnan. They have an "exit tunnel" and A, P, and E sites. Cloverleaf-shaped molecules attach to this organelle in a process that works from the five-(\*) prime end to the three-prime end. In eukaryotes, the 70S type of this organelle is found inside mitochondria and chloroplasts and is formed in the

nucleolus, while the 80S type is attached to the rough endoplasmic reticulum. For 10 points, mRNA carries the genetic information to what organelle, the site of translation and protein synthesis?

ANSWER: ribosomes <NW>

- 6. "Created Equal" and "What's Wrong with our Schools" were two episodes in a PBS series hosted by this man. He speculated that spending depends on expected, not current income. He included the permanent income hypothesis in A Theory of the Consumption Function, and he advocated a floating exchange rate.

  Along with Edmund Phelps, he developed the idea of a (\*) natural rate of unemployment. He collaborated with his wife on Free to Choose, and, with Anna Schwartz, wrote A Monetary History of the United States. For 10 points, name this free-market economist and author of Capitalism and Freedom, a member of the Chicago school.

  ANSWER: Milton Friedman <NW>
- 7. A poet from this period popularized paradoxical lines like "I...fear, and hope; and burn, and I am ice." Many incunabula belong to this period. Jules Michelet popularized its name, and a major history of it was written by Jacob Burckhardt. During this period, the Donation of Constantine was proven to be a forgery. Well-born men of this time period were supposed to have (\*) sprezzatura, according to The Book of the Courtier. It was fed by an influx of Greek scholars after the fall of Byzantium. During this period, scholars like Pico della Mirandola promoted Humanism. For 10 points, name this "rebirth" of Classical learning that "ended" the middle ages.

ANSWER: the **Renaissance** [or **Rinascimento**; prompt on any answer that indicates a time period between 1300 and 1600, e.g. "the 16th century" or "the 1400s"] <JR>

- 8. In a film titled for one of these places, Steve Guttenberg's character makes his fiancé pass an intense trivia quiz about the Baltimore Colts. That film titled [this] was Barry Levinson's first and Kevin Bacon's breakout role. "Pumpkin" and "Honey Bunny" rob one of them at the beginning and end of Pulp Fiction. In another of these locations, Biff Tannen is tripped onto the floor by Marty McFly (\*) in Back to the Future. Often run by Greek-American families, some of these restaurants are located in old railcars and serve malted milkshakes. For 10 points, name these restaurants that often harken back to the 1950s and serve 24-hour breakfast.

  ANSWER: diners [prompt on "restaurant" or "greasy spoon"] <JR>
- 9. A biological process that produces this compound relies on an iron-molybdenum cofactor. When alkali metals are dissolved in a solution of this compound, it turns deep blue. This compound is the gas in most syntheses of hydrazine. Silver ions form complexes with this compound in the mirror-forming Tollen's reagent. A process for forming it is catalyzed by iron oxide, and it is also synthesized by diazotrophs like (\*) rhizobia. Its central atom has one lone pair, so it is trigonal pyramidal and a weak base. This compound reacts with oxygen in the Ostwald process to form nitric acid. For 10 points, name this gas formed by nitrogen fixation and the Haber process, with formula NH3.

ANSWER: ammonia [or NH3 until mentioned; accept ammonium; accept NH4+] <JR>

10. In the front center of a painting made with this technique, a kneeling man in a yellow robe with his back to the viewer lifts his arms up to try to stop the title *Fire in the Borgo*. This technique was used for *Parnassus*, *Disputation of the Holy Sacrament*, and the other paintings in the (\*) Stanza della Segnatura. This technique was used for *The School of Athens*, Michelangelo's *Last Judgment*, and the ceiling of the Sistine Chapel. Da Vinci's modification of this technique has led to *The Last Supper* peeling off the wall. For 10 points, name this technique of painting on wet plaster directly on a wall.

ANSWER: fresco es [prompt on "mural," "wall painting" or "ceiling painting"] <JR>

11. At one of these places, the Gunnison River's canyon bottom receives sunlight only a few hours per day, and another one is called "Capitol Reef" despite being nowhere near the ocean. Constitutional scholars have debated whether the "perfect crime" could be committed at part of one of these sites in Idaho, and another one includes thousands of natural rock (\*) arches. The majority of "America the Beautiful" Quarters show these areas, including one home to El Capitan and others named Olympic and Acadia. Distinguished from national preserves and monuments, this is, for 10 points, what highest level of federally protected areas, including Yosemite and Yellowstone?

ANSWER: <u>national parks</u> [or <u>National Park</u> System; or <u>NPS</u>; prompt on "parks"; do NOT accept or prompt on "national preserve(s)," "national monument(s)," etc.] < JW>

12. In this film, a character gets change by shooting a vending machine. A phone call in this film includes the lines, "Well, it's good that you're fine, and I'm fine. I agree with you. It's great to be fine!" It ends with the song "We'll Meet Again." Near its end, one character becomes worried about a possible "mineshaft gap." A character in this film is worried about his (\*) "precious bodily fluids"; another shouts "Gentlemen, you can't fight in here! This is the War Room!" Near its end, Slim Pickens' character falls to earth atop an atom bomb. For 10 points, name this Stanley Kubrick film in which Peter Sellers plays a British officer, the President, and the title scientist, who can't stop making the Nazi salute.

ANSWER: Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb <JR>

13. [Note to moderator: please read the gray-highlighted text SLOWLY]

This mathematician introduced a function that, for a prime p to the power k gives "p to the k-minus-one times the quantity p minus one." He introduced notation like "sigma" for sums, "sin," "cos," "tan," and "f of x." He introduced a function that returns the number of integers less than or equal to n that are coprime to it, his (\*) totient function, "phi." He identified the fact that "e to the i-pi equals negative one." He founded graph theory by solving the Seven Bridges of Königsburg problem. For 10 points, name this eighteenth-century Swiss mathematician who names the number e.

ANSWER: Leonhard **Euler** ["oiler"] <JM/JR>

14. This ruler's desire for musical reform probably spurred the creation of the first musical symbols, "neumes." This ruler promoted education, especially literacy for monks, in documents like the *Admonitio generalis*. His reign included the birth of what became modern lowercase letters. He made (\*) Alcuin of York the head of his court's school in Aachen, bringing about his namesake "Renaissance." His biography was written by Einhard. One of his subordinates was killed at the Battle of Roncevaux Pass and became the star of the *Chanson de Roland*. For 10 points, name this grandson of Charles Martel, a Carolingian ruler who was crowned "Emperor of the Romans" in 800.

ANSWER: <u>Charlemagne</u> [or <u>Karl der Grosse</u>; or <u>Carolus Magnus</u>; or <u>Charles the Great</u>; or <u>Charles I</u> of France; prompt on just "Charles"] < JR>

15. Home decorations for this holiday usually include *rangoli*. Its main celebration occurs on the 15th night of Kartika. The day after this holiday is *padwa*. Guru Hargobind was released during it, so it is celebrated as the Sikh holiday Bandi Chhor Divas. During this holiday, *mithai* are offered in a special (\*) *puja*, and brothers give gifts to their sisters. This holiday marks a new year for merchants. *Dhanteras* is its first day. Eating tons of sweets on this holiday celebrates the defeat of Ravana and the birth of Lakshmi. During this holiday, *diyas* are lit. For 10 points, name this Hindu festival of lights.

ANSWER: <u>Diwali</u> [or <u>Divali</u>; or <u>Deepavali</u>; prompt on "Festival of Lights" <u>before</u> it's mentioned] <FM/JR>

16. A character in this work makes "a trumpet of his ass" before he sends the protagonist toward some Jovial Friars. The narrator of this work wrathfully curses a Guelph named Filippo Argenti while crossing a river

with Phlegyas. This poem depicts Ali and Muhammad cleaved in two; that suggests that they are schismatics rather than (\*) heretics, who lie in fiery sepulchers. The narrator of this work, who is lost in a dark wood "midway along our life's journey" at its beginning, sees Brutus and Judas tormented in the frozen maw of Satan after Virgil guides him to the ninth circle. For 10 points, name this first section of Dante's *Divine Comedy*, in which the poet descends into Hell.

ANSWER: <u>Inferno</u> [prompt on "The Divine Comedy" until mention; do not prompt or accept Purgatorio or Paradiso] <GL>

17. Alexander Speirs and John Glassford, who made their fortunes from this good, were part of a group of its namesake "Lords" in Glasgow. John Hawkins brought this good across the Atlantic. A 1730 Inspection Act allowing the destruction of low-quality stocks of this good was prompted by the House of Burgesses. John (\*) Rolfe was the first American merchant of this good, developing it around the James River. Sir Walter Raleigh helped popularize it in England. This crop was most dominant in the Tidewater—around the Chesapeake and North Carolina—as opposed to the Deep South's cotton. For 10 points, name this cash crop of the American colonies used in cigarettes.

ANSWER: tobacco [or *Nicotiana tabacum*; or *N. tabacum*] <JW>

18. This effect can be used to produce drag or heating by creating eddy currents. A quantity related to this phenomenon equals voltage over the time-derivative of current. A law about this phenomenon can be written "curl E equals negative partial B partial t." This phenomenon opposes the original change in flux by Lenz's Law. One equation about it states that the negative time-derivative of magnetic flux is the (\*) EMF. A circuit part that relies on this phenomenon resists changing electric current. This phenomenon makes transformers, generators, and motors possible. For 10 points, name this electromagnetic effect modelled by Faraday's law, in which a changing magnetic field creates an electric current.

ANSWER: **induction** [accept **inductance**] <JR>

19. In a story by this author, two boys meet a creepy man who says that they should be whipped for lying about sweethearts. One of his characters hears "The Lass of Aughrim," at the Misses Morkans' dance. The narrator of a short story by this author fails to get a gift for Mangan's sister at an oriental bazaar. Another of his characters learns about Gretta's love for Michael (\*) Furey. One of this author's characters calls himself "baby tuckoo" and sees a "moocow" on the road. This author followed Stephen Dedalus' alienation from the Catholic Church and wrote about Gabriel Conroy in "The Dead." For 10 points, name this Irish author of *Dubliners* and *A Portrait of the Artist as a Young Man*.

ANSWER: James [Augustine Aloysius] Joyce <GL>

20. This man was fostered by Phoenix, who tells him about Meleager as part of an embassy that promises him many gifts. This warrior slew the ugly cripple Thersites for gouging out the eyes of the dead Amazon Penthesilea, whom this man had also earlier slain. His hands are kissed by Hecuba's husband after this man returns a corpse that he dragged around a (\*) city. This warrior was offended by the seizure of his concubine, Briseis, and he fathered Neoptolemus. Though this best friend of Patroclus was dipped in the Styx, he was still killed by Paris' arrow. For 10 points, name this son of Thetis with a vulnerable heel, a Greek hero who slew Hector at Troy.

ANSWER: Achilles [or Achilleus; prompt on "Pelides;" prompt on "Aeacides"] <FM>

### Tiebreaker

21. The time derivative of this quantity's density equals the negative divergence of current density. The energy stored in a capacitor equals one half times this quantity squared, divided by capacitance. The magnetic force on a moving particle is equal to this quantity times the cross product of (\*) velocity and

magnetic field by the Lorentz force law. Capacitance is equal to this quantity divided by voltage. The electrostatic force on an object equals this quantity times the external electric field. For 10 points, name this quantity, often symbolized by the letter Q, which is measured in Coulombs.

ANSWER: electric <a href="mailto:charge">charge</a> [prompt on "Q"] <JR/BS>

#### Packet 1 Bonuses

- 1. Answer the following questions about heartbeats, for 10 points each.
- [10] Each cardiac cycle consists of two phases. This phase is the resting one; the lower number in a blood pressure reading represents the arterial pressure during this phase.

ANSWER: diastole [accept diastolic]

[10] At the end of diastole, *this* rapid depolarization and repolarization of cell membranes spreads through the heart muscle, inducing the contraction of the myocardium, to begin systole. This event travels along axons in neurons.

**ANSWER:** action potentials

[10] Movement of the blood during systole pushes out on the walls of the arteries, causing this phenomenon. It is usually measured at the wrist or side of the neck as an approximation for heart rate.

ANSWER: pulse <HX>

- 2. Answer some questions about gods of intemperate weather, for 10 points each.
- [10] This Vedic god of storms wields a thunderbolt from his home atop Mount Meru. He rides the white elephant Airavata and slew the serpent Vritra.

ANSWER: Indra

[10] This Norse god controls thunder and attacks his enemies with his hammer, Mjolnir.

ANSWER: Thor

[10] This Aztec rain god was the husband of Chalchiutlicue and required child sacrifices before he would unleash his waters. He rules over the drowned in Mictlan.

ANSWER: Tlaloc <GL>

- 3. Maryland played an important role in the politics of the 60's and 70's. For 10 points each:
- [10] Spiro Agnew, a former governor of Maryland, resigned from this other office after allegations of bribery and tax evasion surfaced. Per the Twenty-Fifth Amendment, he was succeeded in this office by Gerald Ford.

ANSWER: <u>Vice President</u> of the United States of America [or <u>Vice Presidency</u> of the United States of America; accept <u>VP</u>]

[10] Agnew gained national fame for his response to this group's tumultuous 1967 activism in Cambridge,

Maryland. Led at the time by H. Rap Brown, this group included other activists like Robert Parris Moses.

ANSWER: <u>SNCC</u> ["snick"] [or <u>Student Nonviolent Coordinating Committee</u>; or <u>Student National</u> Coordinating Committee]

[10] In 1972, this Southern politician was shot by Arthur Bremer in Laurel, Maryland. Four years earlier, he ran for president on the segregationist American Independent Party ticket.

ANSWER: George [Corley] Wallace, [Junior] <JW>

- 4. This molecule is metabolized into formic acid, which has as many carbons as this molecule does. For 10 points each:
- [10] Name this simplest alkane. It has a tetrahedral molecular geometry.

ANSWER: **methane** [or **CH4**]

[10] This theory helps determine the molecular geometry of molecules, including methane. The basic premise of this theory is that electrons want to be as far away from each other as possible.

ANSWER: **VSEPR** ["vesper"] [or **valence shell electron pair repulsion**; or **Gillespie-Nyholm** theory]

[10] Sulfur hexafluoride assumes this somewhat unusual molecular geometry.

ANSWER: octahedral <JR>

5. Five of these objects are used in *Yahtzee!* For 10 points each:

[10] Name these objects, the oldest of which were found in a 5000-year-old backgammon set.

ANSWER: six-sided dice [or die; accept number cubes]

[10] This is the die used most commonly to resolve actions in Dungeons and Dragons. It names a trademarked role-playing system developed by Wizards of the Coast.

ANSWER: **d20** [or **twenty-sided die**]

[10] In Yu-Gi-Oh! Duke Devlin introduces this complicated game, which involves rolling 3 dice from a set of 15 and using crests to summon monsters.

ANSWER: <u>Dungeon Dice Monsters</u> [or <u>DDM</u>; or <u>Doragon Daisu ando Danjonzu</u>; or <u>DDD</u>] <IKD>

6. Its second scene includes a virtuoso piano solo. For 10 points each:

[10] Name this ballet about a puppet. In that second scene, it includes a chord made by stacking C Major on F-Sharp Major, an effect so cool that it's named for this ballet.

ANSWER: Petrushka

[10] This Russian twentieth-century composer wrote *Petrushka* in his early, "Russian" period. His other works from that period include *The Firebird* and *The Rite of Spring*.

ANSWER: Igor [Fyodorovich] Stravinsky

[10] *The Rite of Spring* begins with an infamously high solo for this instrument, which isn't exactly known for playing high.

ANSWER: bassoon <JR>

7. His most famous novel includes a description of dipping a madeleine into some lime tea and then having the memory of his whole childhood spring out of it. For 10 points each:

[10] Name this author who created characters like the Verdurins and the composer Vinteuil in his *In Search of Lost Time*.

ANSWER: [Valentin Louis Georges Eugène] Marcel Proust

[10] Marcel Proust was an author from this country, which was also home to Emile Zola.

ANSWER: France

[10] The first volume of *In Search of Lost Time* is named for Charles Swann, who marries this disreputable woman. This woman later becomes Gilberte's mother, and, in the last volume, is known as Madame de Forcheville.

ANSWER: Odette de Crécy [or Odette Swann; do NOT accept or prompt on just "Swann"] < JR>

8. These things transfer energy from point to point. For 10 points each:

[10] Name these oscillations or vibrations. Simple ones can be modelled with trigonometric functions like sine.

ANSWER: waves

[10] A stationary wave, one that stays in position, is given this name. These can be formed by waving a rope that's held at both ends at the right frequency or by blowing through an organ pipe.

ANSWER: standing waves

[10] In a standing wave with frequency 120 Hertz, what is the frequency of the second *overtone*?

ANSWER: <u>360</u> Hertz [if anyone says "240 Hertz" remind them that the second *overtone* is the *third* harmonic] <JR>

9. A character in this play describes ballroom dancing as "A world without collisions." For 10 points each:

[10] Name this play in which Hally runs away from home, leaving his childhood servants Sam and Willie.

ANSWER: "Master Harold"...and the boys

[10] Hally's father lost his leg in this war. A Bell for Adano and The Caine Mutiny are both set during this war.

ANSWER: World War II [or WWII]

[10] "Master Harold"...and the boys is set in this country, and its author Athol Fugard also hails from this country. Other writers from this country include J.M. Coetzee and Nadine Gordimer, both of whom wrote about apartheid.

ANSWER: Republic of <u>South Africa</u> [or Republiek van <u>Suid-Afrika</u>; or iRiphabhuliki yase <u>Ningizimu Afrika</u>; or iRiphabliki yom<u>Zantsi Afrika</u>; accept equivalents] <LL>

- 10. After landing in Botany Bay in April of 1770, explorer James Cook claimed the land that now comprises this state for Britain and gave this state its modern name. For 10 points each:
- [10] Identify this Australian state. The First Fleet under Arthur Phillip founded this state's first colonial settlement, a penal colony, at Sydney.

ANSWER: New South Wales [or NSW]

[10] The discovery of this material led to a massive influx of immigrants to Australia in the 1850's. The increase in license fees for the extraction of this substance led to a workers' rebellion at the Eureka Stockade in 1854.

ANSWER: gold

[10] A major gold rush occurred in this current Australian state in 1893 at Kalgoorlie. It was founded as the Swan River Colony in 1829, named for the river flowing through Perth.

ANSWER: Western Australia < MW>

11. Answer some questions about John Steinbeck, for 10 points each.

[10] In *Of Mice and Men*, Lennie accidentally does *this* to Curley's Wife. George then decides to do *it* painlessly to Lennie, before a lynchmob does it.

ANSWER: killing [accept more specific methods, like shooting, breaking her neck, or hanging]

[10] In this Steinbeck novel, Mack and the boys of the Palace Flophouse, who love old tennis shoes whiskey, throw parties for Doc. *Sweet Thursday* is a sequel to this work, which is set on a sardine-processing street in Monterey.

ANSWER: Cannery Row

[10] In *Cannery Row*, Dora Flood owns one of *these* places. Another of these establishments is owned by Cathy after she abandons Adam Trask and her twin sons in Steinbeck's *East of Eden*.

ANSWER: **brothel**s [or **whorehouse**; accept reasonable equivalents] <NW>

- 12. This character unusually does not appear in the *Laws*. For 10 points each:
- [10] Name this character, who claims that the soul is immortal in the *Phaedo*.

**ANSWER: Socrates** 

[10] Socrates features in the dialogues of this Greek philosopher, his student. His many dialogues include the *Timaeus* and the *Republic*.

ANSWER: Plato [or Platon; or Aristokles]

[10] In this Platonic dialogue, Socrates recounts Diotima's speech about love, and a drunk Alcibiades barges in to talk about his attempted seduction of Socrates.

ANSWER: **Symposium** <JR>

- 13. Answer some questions about war in Ancient Greece, for 10 points each.
- [10] This nearly thirty-year-long war between Athens and Sparta was vividly recounted by Thucydides. The Athenian general Pericles died of plague early in this war.

ANSWER: the **Peloponnesian** War

[10] One of the major phases of the Peloponnesian War was the disastrous Alcibiades-led Athenian expedition to take Syracuse, which is on *this* island.

ANSWER: Sicily

[10] At this 405 BC battle of the Peloponnesian War, the Athenian navy was destroyed by Lysander's Spartan fleet, cutting off all imports and communication.

ANSWER: Battle of **Aegospotami** <FM>

- 14. This country's four major ethnic groups include the Yoruba, the Igbo, the Hausa, and the Fulani. For 10 points each:
- [10] Identify this African nation which is currently struggling against the Islamic fundamentalist group Boko Haram.

ANSWER: Federal Republic of Nigeria

[10] This starchy plant's roots are often dried in Nigeria to make fufu. A key staple food for Asian, South American, and African countries, this plant's root extract is called tapioca.

ANSWER: <u>cassava</u> [or <u>manioc</u>; or <u>Manihot esculenta</u>; or <u>M. esculenta</u>]

[10] A 64-ton cassava mill is housed in this largest and most populous city in Nigeria.

ANSWER: Lagos < JR>

- 15. Answer some questions about the work of Henri Cartier-Bresson, for 10 points each:
- [10] Like Margaret Bourke-White, Cartier-Bresson worked in this medium, which he used to depict a street scene of a smug boy holding wine bottles.

ANSWER: **photography** [or **photojournalism**; accept equivalents]

[10] Cartier-Bresson tried to capture the "decisive moment," as exemplified by his photo of this object from the top of a staircase. A Marcel Duchamp readymade is the front section of one of these things, mounted upside-down on a stool.

ANSWER: **bicycle** [accept *Bicycle Wheel* (the readymade); the photograph is just called *Hyères, France*]

[10] The cover of Cartier-Bresson's book *The Decisive Moment* was designed by this French artist. Late in life, this artist made cutouts like *Jazz* and *The Snail*; earlier, he painted Fauvist works like *The Dance* and *The Joy of Life*.

ANSWER: Henri[-Émile-Benoît] Matisse <JR>

- 16. Answer some questions about randomness, for 10 points each:
- [10] The molecular theory of Brownian motion was developed by this German-born physicist, who published a paper on it in 1905, the same "annus mirabilis" that saw him publish a paper on the photoelectric effect.

ANSWER: Albert Einstein

[10] Many random number generators actually use of this type of algorithm, which appears random but is actually created by a deterministic procedure like picking a number from a "book" based on the current date and time.

ANSWER: pseudorandom process

[10] Monte Carlo algorithms make use of random samples. One common example calculates the value of *this* constant by generating a lot random points and looking at how many fall inside a circle.

ANSWER: pi [do not accept or prompt on "3.14159..."] <HX>

- 17. Answer some questions about English poetry in the sixteenth and seventeenth century, for 10 points each.
- [10] This poet used the metaphor of a compass in "A Valediction Forbidding Mourning." His works vary from heavy religious meditations to whimsical and scandalous love poems, like "The Flea."

ANSWER: John Donne

[10] Donne has been included in *this* group of poets, who used fancy analogies and wrote about love and religion. They included Cowley, Herbert, and Marvell.

ANSWER: metaphysical poets

[10] Andrew Marvell is most famous for "To His Coy Mistress," which begins by noting that coyness "were not crime," "had we but world enough" and *this*. He also hears *this* thing's wingèd chariot hurrying near.

ANSWER: <u>time</u> [accept "had we but world enough and <u>time</u>"; accept "<u>Time</u>'s wingèd chariot hurrying near"] <FM>

- 18. The only "general" one of these events in Great Britain occurred in 1926. For 10 points each:
- [10] Name these events in which workers refuse to work.

ANSWER: labor **strike**s [accept other types of **strike**s]

[10] The 1926 general strike came partially as a result of Winston Churchill reintroducing the Gold Standard. At the time, Churchill held *this* office, which is responsible for the economic and financial affairs of Britain.

ANSWER: **Chancellor** of the **Exchequer** [they need to say both underlined parts]

[10] Upon ascending to the prime ministership in 1940, Churchill moved into this building, the traditional headquarters of the British government and the residence of the prime minister. Give the house number and street name.

ANSWER: Number 10 Downing Street <LL/JR>

- 19. Answer some questions about the number five in Islam, for 10 points each.
- [10] Known as *salat* in Arabic, this action is done by Muslims five times a day and ritually involves bowing and rising in a cycle called *rak'at*. At mosques, people performing this act face the *qibla* niche after the *mu'azzin's* call. ANSWER: **prayer** [or **pray**ing; accept equivalents]
- [10] Fivers, or Zaidis, are a sect of this branch of Islam. The Zaidis, along with the Isma'ilis, are outnumbered by the majority Twelvers in this denomination.

ANSWER: Shi'as [or Shi'ites; or Shi'a Islam; or Shi'ism]

[10] The Five Pillars of Islam require alms-giving, a munificent practice with this Arabic name, which is contrasted with voluntary *sadaqah* and the *jizya* imposed on non-Muslims.

ANSWER: zakat [or zakah] <JW>

- 20. Name these structures that can be found on the Via del Fori Imperiali, for 10 points each.
- [10] At the eastern end sits *this* large amphitheater constructed during the reigns of Vespasian and Domitian. It was used for mock sea battles, animal hunts, and gladiatorial matches.

ANSWER: Colosseum [or Coliseum; or Flavian Amphitheatre]

[10] At the other end of road is this structure built in honor of the first king of unified Italy. Often referred to as "the typewriter" or "the wedding cake," it also houses a Tomb of the Unknown Soldier.

ANSWER: <u>Altare della Patria</u> [or <u>Altar of the Fatherland</u>; or Il <u>Vittoriano</u>; or <u>Monumento Nazionale a</u> <u>Vittorio Enamuele II</u>]

[10] Near the Altare della Patria sits this forum. Its temple to Venus Genetrix was built by its namesake after the defeat of Pompey at Pharsalus.

ANSWER: Forum of Caesar [or Forum Julium; or Forum Iulium; Forum Caesaris] < NW>

### Tiebreaker

- 21. Answer some questions about the breakdown of logic, 10 points each:
- [10] This type of dubious argument involves attacking someone's personal qualities instead of responding to his or her argument. It comes from the Latin for "to the man."

ANSWER: argumentum ad hominem

[10] Ad hominem attacks are one of these kinds of logical errors. Examples of them include "straw man," "slippery slope," and "begging the question."

ANSWER: formal **fallacy** [or logical **fallacy**]

[10] This author, who won the Nobel prize in 2002, wrote about common cognitive biases and fallacies in the 2011 book *Thinking*, *Fast and Slow*.

ANSWER: Daniel Kahneman < JR>