

Harvard Fall Tournament VII

Finals 1

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Tossups

1. This scientist's last patent concerned an aircraft capable of vertical take-off, and he correctly determined Earth's resonant frequency. He designed the Wardenclyffe Tower, intended for wireless power transmission and worldwide broadcast, but that project never came to fruition, just like a charged-particle beam weapon popularly known as this man's death ray. He is most famous for promoting an energy supply system that could travel farther without losing energy by utilizing a transformer. For 10 points, name this Serbian-American scientist best known for a feud with Edison in which he advocated for alternating current, the namesake of an electrical resonant transformer coil.

ANSWER: Nikola **Tesla**

2. One poet from this nation wrote about "shadows which only I see" in his "Ballad of the Two Grandfathers," and another poet from this country penned the line "My lyre! Give me my lyre!" in an ode to Niagara Falls. A novelist from this home nation of Nicolas Guillen created the metamorphosing slave Mackandal as well as Ti Noel in a novel set during the Haitian Revolution, *The Kingdom of this World*. This country produced the poem "I am a sincere man," part of its poet's *Versos Sencillos*, lines of which were taken to form the lyrics to the song "Guantanamera." For 10 points, name this home nation of Alejo Carpentier and Jose Marti.

ANSWER: Republic of **Cuba** (or Republica de **Cuba**)

3. This philosopher discussed the impossibility of understanding interactions via what he called "sense data." In another work, this philosopher argued that it was a fallacy to suppose that goodness could be defined in terms of pleasure or evolutionary desire. This thinker invented the paradox "it's raining outside but I don't think it is," which Wittgenstein considered one of philosophy's most important statements. This philosopher raised both of his hands in order to prove the existence of the outside world, and invented the naturalistic fallacy. For 10 points, name this British philosopher of "A Defence of Common Sense" and *Principia Ethica*.

ANSWER: George Edward **Moore**

4. The Audience Songs appear in this man's opera for children titled *The Little Sweep*. In one work by this composer, a character sings to himself, "Now the Great Bear and Pleiades." That character is defended in the aria "Let her among you without fault" and told to flee by Balstrode. That work by this composer also sees John die after falling off a cliff, leading Mrs. Sedley and the villagers to hunt for the title character who eventually sinks his boat at sea. This composer also wrote a work introducing the instruments of the orchestra to children. For 10 points, identify this British composer of *Peter Grimes*, and *The Young Person's Guide to the Orchestra*.

ANSWER: (Edward) Benjamin **Britten**

5. The Quran'ic account of this figure remarks that upon seeing him women at a banquet he attended cut themselves with the knives they were holding because he was so beautiful. With Asenath, this man had two children, Manasseh and Ephraim. This figure had a dream in which eleven stars, the sun, and the moon bowed before him. This man's brother Reuben advocated throwing him down a well, but this grandson of Isaac was eventually taken to Egypt where his gift of prophecy earned him a station second only to the pharaoh. For 10 points, name this son of Rachel and Jacob who owned a coat of many colors.

ANSWER: **Joseph** [Accept **Yosef** or **Yusuf**.]

6. The last ruler from this dynasty was deposed by a decree issued by Pope Zachary, after which his head was shaved by his successor. A series of “do nothing kings” from this family ruled starting with the reign of Sigebert III, who succeeded the last independent ruler of this dynasty, Dagobert I. Supposedly descended from a sea beast known as the Quinotaur, this dynasty established Salic Law. After defeating the Alemanni at Tolbiac, a king from this family was baptized by Saint Remigius through the influence of his Burgundian wife Clothilde. For 10 points, name this Frankish dynasty that gave up power to the Mayors of the Palace and was ruled at one point by Clovis.

ANSWER: **Merovingian** Dynasty

7. This man painted a side profile of a young girl in a bright saffron dress with a book in her hand in his *The Reader*. In another work by this man, a ray of light shines on a woman feigning a struggle with her lover, who is trying to kiss her while locking the door. This artist of *The Bolt* placed a statue of Venus and Cupid in a garden scene in which a couple have arranged the titular *Secret Meeting*. He is most famous for a work at the Wallace Collection in which a statue of Cupid holds its finger up to its lips and a small pink slipper flies off the foot of a woman whose skirt is open for a man lying on the ground to see. For 10 points, name this French Rococo artist of *The Swing*.

ANSWER: Jean-Honore (Nicolas) **Fragonard**

8. This piece was described by its conductor at its premiere as “simplice e bella.” Orchestrated by William Strickland for the solo organ, this work begins with the first violins playing a B flat in unison and grew out of its composer’s String Quartet in B Minor, Opus 11. Inspired by Virgil’s *Georgics*, this work was later used in its composer’s setting of his choral work *Agnus Dei*. This piece was premiered under conductor Arturo Toscanini and was played during the announcements of the deaths of Franklin D. Roosevelt and John F. Kennedy. For 10 points, identify this work for string orchestra by the composer of *Vanessa*, Samuel Barber.

ANSWER: **Adagio for Strings**

9. Two varieties of a prominent species in this region are named for Thomson and Grant. A proposed highway that would cut through this region known as “The Road” has been met with staunch opposition by conservation groups. This area is also home to a number of discoveries of early hominid remains, including the site of much of Mary and Louis Leaky’s investigations, Olduvai Gorge. Each June sees the beginning of a massive northward and westward migration across this region toward Lake Victoria. For 10 points, name this region of Kenya and Tanzania known for its rich diversity of animal species, including wildebeests, buffalo, and zebras.

ANSWER: the **Serengeti** Plain

10. In Norse myth, one of these objects was used by Gunther to ward off snakes in his dungeon, and the giant Eggther sits on a hill with one of these objects while watching Ragnarok unfold. One of these objects named Uaithne was used by the Dagda to keep the four seasons in order, while the jawbone of a large pike was used by Vainamoinen to create the first *kantele*, a Finnish variant of these objects. The first of these objects was created from a turtle shell by Hermes, after which he gave it to Apollo to appease his anger over the theft of his cattle. For 10 points, name these objects often used by Orpheus, musical instruments consisting of an array of framed strings.

ANSWER: **harps** or **lyres** [Accept **kantele** before it is read. Prompt on “musical **instruments**.”]

11. One politician with this name wrote under the pseudonym Cato in the anti-federalist papers and was defeated by John Adams in the vice presidential election of 1792. Another politician by this name proposed the grid layout of Manhattan and carried on a longtime rivalry with attorney general Martin Van Buren while governor of New York, and a third was investigated by Kenneth Starr in the Whitewater scandal. That president ordered the bombing of Kosovo, signed NAFTA, and defeated Bob Dole and George H. W. Bush to win two terms. For 10 points, give this last name shared by George, DeWitt, and William Jefferson III.

ANSWER: **Clinton** [Accept George **Clinton** before “proposed.”]

12. After studying forms of monkey intimidation, this man created and contrasted the concepts of B-values and D-values in the context of a concept that was partly inspired by Kurt Goldstein's *The Organism*. After his work *Religions, Values, and Peak Experiences*, he led a shift in his field studying the abnormal to the humanistic. This man's best-known formulation is outlined in *Motivation and Personality* and its components range from safety to a state achieved by few exemplary individuals known as self-actualization. For 10 points, name this American psychologist most famous for his formulation of a hierarchy of needs.

ANSWER: Abraham (Harold) **Maslow**

13. One king of this name was retreating across the Pyrenees when he was crushed by Peter III of Aragon at the Battle of Col de Panissars. The three daughters-in-law of the fourth man of this name were accused of cheating on their husbands in the Tour de Nesle Affair, and that king suffered defeat at the hands of William of Julich at the Battle of the Golden Spurs in 1302. The second king of this name defeated a coalition force including King John of England at the Battle of Bouvines and participated alongside Richard I and Frederick Barbarossa in the Third Crusade. For 10 points, give this name shared by six kings of France, including ones nicknamed "Augustus" and "the Fair."

ANSWER: **Philip** of France [Accept **Philip III** until "fourth" is read.]

14. Coordination complexes with this geometry are generally high spin, as its splitting energy is 4/9 that of octahedral. In an hcp lattice, the centers of four mutually touching atoms form this geometry. Atoms with this molecular geometry can become chiral centers if all four substituents are unique. Although its not square planar, it has four equal bond angles between substituents. Each of those angles is 109.47 degrees if substituents on the central atom are the same. The hybridization of the central atom in this geometry is sp³. For 10 points, name this VSEPR geometry which is characteristic of the ammonium ion and methane.

ANSWER: **tetrahedral**

15. The journalist Orlando Martinez Howley was assassinated by agents of this country, one of whose rulers supported the puppet president Joaquin Balaguer and was succeeded by his son Ramfis. The secret police force here called the SIM was led by Johnny Abbes and was responsible for murdering the writer Jesus Galindez. The La Trinitaria society under Juan Pablo Duarte pushed for its independence, and the Mirabal sisters were assassinated in this nation. Its troops killed people on its border in the Parsley massacre during the rule of a man known as "El Jefe," Rafael Trujillo. For 10 points, name Caribbean nation that shares Hispaniola with Haiti.

ANSWER: **Dominican Republic** [Accept **Republica Dominicana**.]

16. The speaker of this poem remarks of his addressee's face that is "where thoughts serenely sweet express / how pure, how dear, their dwelling place," and the poet praises the addressee for "A mind at peace with all below / A heart whose love is innocent." He notes that "All that's best of dark and bright / Meet in her aspect and her eyes" before remarking upon the "nameless grace which waves in every raven tress." For 10 points, name this poem, in which the darkness is that of "cloudless climes and starry skies," and a woman performs the titular action "like the night," by Lord Byron.

ANSWER: "**She Walks in Beauty**"

17. After viewing a now-obese former flame board a train in this novel, the protagonist imagines that both he and she have outlived their usefulness. One character in this novel asks to see the protagonist's pictures from his travels through Europe and North Africa, and that character is ejected from a library for touching small children. In addition to the Self Taught Man, this novel features the cafe owner Françoise, with whom the protagonist has casual sex. That protagonist is researching a famous diplomat, the Marquis de Rollebon in the French town of Bouville. For 10 points, name this novel in which Antoine Roquentin suffers the titular malady by Jean-Paul Sartre.

ANSWER: **Nausea** [Accept *La Nausee*.]

18. Several characters in this novel all die in a great oak chair beneath a portrait of a prominent ancestor. Minor characters in this novel include Ned Higgins, who eats gingerbread cookies, and the ghost Alice, who died of shame after being hypnotized in an attempt to locate deeds to Indian land. The patriarch of the central family in this novel was cursed by the wizard Matthew Maule. Jaffrey is the uncle of Hepzibah and Clifford, and the youngest member of the central family, Phoebe, marries a daguerreotypist named Holgrave. For 10 points, name this novel about the titular home of the Pyncheon family, written by Nathaniel Hawthorne.

ANSWER: *The **House of the Seven Gables***

19. The alternating group of this degree is the smallest simple non-abelian group. The smallest non-planar graph has this number of vertices, while this integer's square root has a continued fraction representation consisting of a two followed by an infinite number of fours, and that square root is found in the expression of sine of pi over ten. This is the smallest number n for which polynomials of degree n are not generally solvable, according to the Abel-Ruffini theorem. The golden ratio is equal to one half plus its square root divided by two, and regular polygons with this number of vertices have internal angles of 108 degrees. For 10 points, name this number of sides in a pentagon.

ANSWER: **five**

20. Its paraventricular nucleus contains magnocellular and parvocellular cells that project into the median eminence. This organ's arcuate nucleus uses dopamine to suppress prolactin, which is unique since this organ normally has a stimulatory role, such as its release of GnRH leading to FSH and LH release. By communicating with the anterior pituitary gland, it is able to maintain homeostasis and metabolism by controlling body temperature, hunger, and thirst. For 10 points, name this portion of the brain linking the nervous system to the endocrine system and located above the brain stem and below the thalamus.

ANSWER: **hypothalamus**

Bonuses

1. Name some geological time periods of the Earth. For 10 points each:

[10] This time period during the Age of Reptiles is in between the Triassic and Cretaceous periods and saw the appearance of the first birds.

ANSWER: **Jurassic** Period

[10] Large coal deposits formed during this geological period that is named after coal. It contains the Mississippian and Pennsylvanian periods, and amniote eggs developed during it.

ANSWER: **Carboniferous** Period

[10] This period that saw the first evidence of plant life on land ended with a pair of mass extinctions that resulted in the deaths of over sixty percent of marine invertebrates.

ANSWER: **Ordovician** Period

2. When her nurse Grace Poole drinks and falls asleep, this character escapes and sets fire to a bed. For 10 points each:

[10] Name this madwoman in the attic, whose family history of violent insanity was hidden from Rochester until after their marriage. She prevents him from marrying Jane Eyre.

ANSWER: **Bertha Mason** (accept either)

[10] Bertha Mason appears in this novel by Jean Rhys, in which she goes by the name Antoinette Cosway and makes her insanity look a lot more like Rochester's fault.

ANSWER: **Wide Sargasso Sea**

[10] Bertha Mason was originally created by this author, who wrote works like *Shirley*, *Villette*, and *The Professor*, which she published under the name Currer Bell.

ANSWER: Charlotte **Bronte**

3. This battle saw a failed charge of highlanders, who were defeated by government forces armed with muskets, while the MacDonald regiments refused to charge because they were put on the left flank. For 10 points each:

[10] Identify this battle during a 1745 uprising in which rebel forces were defeated by the Duke of Cumberland, who earned the nickname “Butcher” for actions following it.

ANSWER: Battle of **Culloden** Moor

[10] The forces of Bonnie Prince Charlie were defeated at Culloden during this movement, which aimed to return the House of Stuart to the throne of England.

ANSWER: **Jacobitism** [Accept word forms, i.e. **Jacobites**.]

[10] The Stuarts were overthrown in this event in 1688 that saw the removal of James II from the throne. William and Mary became co-rulers of England following it.

ANSWER: **Glorious Revolution**

4. The orange sky of this artist’s best-known work might reflect Krakatoa’s effect on the global atmosphere. For 10 points each:

[10] Name this Norwegian artist behind *The Scream* who also addressed his sister Sophie's death from tuberculosis in *Death in the Sickroom*.

ANSWER: Edvard **Munch**

[10] Like Munch, members of this German art movement were Expressionists. Including people like Ernst Kirchner and Emil Nolde, and were named for their aim to create a link between past and present.

ANSWER: **Die Brücke** [Accept **The Bridge**.]

[10] Kirchner painted himself as a member of this occupation through which his right hand has been severed off. A line of these people with their hands on each other's shoulders are the subject of John Singer Sargent's *Gassed*.

ANSWER: **soldiers**

5. Organizations created by this series of programs included the Tennessee Valley Authority and the Civilian Conservation Corps. For 10 points each:

[10] Name this series of relief and recovery efforts overseen by the Franklin Roosevelt administration in response to the Great Depression.

ANSWER: **New Deal**

[10] This 1933 act, which created a namesake administration, was the first piece of legislation to establish crop and livestock subsidies.

ANSWER: **Agricultural Adjustment Act**

[10] This 1936 Supreme Court decision shot down most of the Agricultural Adjustment Act. Justice Owen Roberts argued that the AAA violated the Tenth Amendment.

ANSWER: United States v. **Butler**

6. This equation’s time-independent variety can be written as $E\Psi = H\Psi$. (Ψ is “psi.”) For 10 points each:

[10] Name this equation that describes the quantum state of a physical system. It is named for an Austrian physicist and is often used to determine the wavefunction.

ANSWER: **Schrödinger’s Equation**

[10] Schrödinger’s Equation can be solved analytically in this simple system, in which a namesake entity is confined in a space from which it cannot escape. The wavefunction is sinusoidal.

ANSWER: **particle in a box** [accept **particle in an infinite square well** or **particle in an infinite potential well**]

[10] The particle in a box system can only fill certain positive levels of this quantity. The Hamiltonian in the Schrodinger equation is taken to be the sum of this quantity’s kinetic and potential types.

ANSWER: **energy**

7. One character in this novel, “a professional conversationalist,” attempts to engage the protagonist in a talk about Byzantine pornography. For 10 points each:

[10] Name this novel in which Hal Incandenza plays tennis, Don Gately goes through withdrawal, and the Quebecois Wheelchair Assassins distribute a movie that prevents its viewers from ever wanting anything again.

ANSWER: ***Infinite Jest***

[10] This incredibly popular American author wrote *Infinite Jest* as well as the short story collection *Brief Interviews with Hideous Men* and the pro-vegetarianism essay “Consider the Lobster.”

ANSWER: David Foster **Wallace**

[10] This unfinished and posthumous novel by David Foster Wallace includes sections centering on Internal Revenue Service employees in Peoria, Illinois and contains an “Author’s Foreword” in its ninth chapter.

ANSWER: *The **Pale King***

8. This work takes the form of a dialogue between the author and Lady Philosophy. For 10 points each:

[10] Name this work which was written while its author was imprisoned by Theodoric the Great awaiting execution. It is a Christian theodicy that heavily references Greek and natural philosophy.

ANSWER: *The **Consolation of Philosophy***

[10] This son of one of Rome’s last consuls wrote *The Consolation of Philosophy* and was executed by Theodoric for conspiring with the Eastern Roman Empire.

ANSWER: **Boethius**

[10] Boethius invented the concept of the “wheel of” this allegorical figure. She brings the “top to the bottom and the bottom to the top” as her wheel turns. She personifies luck and random occurrences.

ANSWER: **Fortune**

9. The first part of this novel sees the literary critics Pelletier, Espinoza, and Norton travel in search of the elusive author Benno von Archimboldi. For 10 points each:

[10] Name this work in five volumes by the Chilean author Roberto Bolaño, released a year after his death in 2003.

ANSWER: **2666** [Accept **Dos Mil Seiscientos Sesenta y Seis**. Be lenient as long as they say the numbers in some arrangement.]

[10] *2666* centers around the serial murders of women in Santa Teresa, a fictional city intended to be an analogue of this real-world Mexican city plagued by drug violence that lies across the Rio Grande from El Paso.

ANSWER: Ciudad **Juarez** [HWAR-ez]

[10] *2666* also sees Oscar Fate, a journalist, travel to Santa Teresa to cover this type of event, an historical example of which was Muhammad Ali and Joe Frazier’s “Thrilla in Manila.”

ANSWER: **boxing** match [Accept equivalents, including a **fight**.]

10. The protagonist of this film constructs an enormous launch structure for a spaceship scene in his film, and later imagines shooting himself during a press conference. For 10 points each:

[10] Name this Federico Fellini film in which the director Guido Anselmi tries to complete a film based on his own life but ends up scrapping it because he realizes he needs to learn how to love.

ANSWER: **8½** [Accept **Otto e mezzo**.]

[10] Perhaps the most famous scene that Fellini filmed is from *La Dolce Vita* and shows Anita Ekberg wading into this largest fountain in Rome.

ANSWER: **Trevi** Fountain

[10] A Fellini character by this name is the protagonist of a film titled [this woman] *of the Spirits*. Another woman with this name was played by Claire Danes opposite Leonardo DiCaprio's Romeo in a Baz Luhrmann film.

ANSWER: **Juliet**

11. This man's brother raped Goewin, the lap-virgin of Math, for which both brothers were punished by being turned into animals and forced to mate with each other. For 10 points each:

[10] Name this magician from Caer Dathyl who killed Pryderi after stealing his pigs. He was also the foster-father of Llew Llaw Gyffes.

ANSWER: **Gwydion**

[10] Gwydion is a figure from the mythology of this British country with capital at Cardiff. Its most famous stories are collected in *The Mabinogion*.

ANSWER: **Wales**

[10] The story of this Welsh bard is only sometimes included in *The Mabinogion*. He was originally a servant named Gwion Bach before Ceridwen swallowed him for stealing her potion of wisdom.

ANSWER: **Taliesin**

12. This state was the site of the Vel' d'Hiv Roundup, which was nicknamed Operation Spring Breeze and saw mass arrests of French Jews, many of whom were kept in the namesake Winter Velodrome. For 10 points each:

[10] Name this Nazi puppet regime presided over by Philippe Petain and ruled from the namesake city in southern France.

ANSWER: **Vichy** France

[10] The occupation of France meant that the Allies and the Free French had to fight to gain a beachhead in French-controlled Morocco and Algeria, which they achieved through this November 1942 operation.

ANSWER: Operation **Torch**

[10] The liberation of France began with Operation Overlord, which included this operation undertaken by the 1st US Army under Omar Bradley with the goal of securing Northern France in preparation for the liberation of Paris. This maneuver resulted in the formation of the Falaise pocket.

ANSWER: Operation **Cobra**

13. One of three most important figures in this religion claimed to be the Gateway to Truth before being killed by a firing squad in Tabriz. For 10 points,

[10] Name this religion which revered the Bab as a sort of John the Baptist figure and claims to be the most recent incarnation of a series of God's teachings, including Christianity and Islam

ANSWER: **Baha'i**

[10] The Baha'i House of Justice is located in Haifa, a city in this country. Other holy sites in this nation include the Mount of Olives and the Dome on the Rock.

ANSWER: **Israel**

[10] This Guardian of Baha'i served as the head of the faith from 1921-1957. This son of Abdul-Baha launched the Ten Year Crusade to increase global membership in the Baha'i church

ANSWER: Shoghi **Effendi** Rabbani

14. This work begins with the study of the indigenous Bororo of Brazil and discusses "categorical opposites drawn from everyday experience." For 10 points each:

[10] Name this first book of *Mythologiques* which examines the culinary triangle.

ANSWER: *The **Raw and the Cooked** [Le **Cru et le cuit**.]*

[10] *The Raw and the Cooked* is by this French anthropologist who founded structuralism and wrote *Tristes Tropiques* and *The Elementary Structures of Kinship*.

ANSWER: Claude **Levi-Strauss**

[10] Levi-Strauss famously stated that the world began without this group, and will certainly end without it. Anthropology is the study of this species.

ANSWER: the **human** race [Accept **homo sapiens sapiens**.]

15. This country, which saw an Orange Revolution in 2005, is currently ruled by a Party of Regions. For 10 points each:

[10] Name this country in which opposition leader Yulia Tymoshenko went on a hunger strike after being jailed following the 2010 election. This country's capital is Kiev.

ANSWER: **Ukraine** [Accept **Ukrayina**.]

[10] This current president of Ukraine defeated Tymoshenko in that contested election.

ANSWER: Viktor (Fedorovych) **Yanukovich**

[10] The controversy surrounding Yanukovich led many world leaders to boycott the Ukrainian portion of this sporting tournament that saw Spain defeat Italy 4-0 in its championship match.

ANSWER: 2012 UEFA **European Football Championship** or **Euro** 2012

16. This author wrote a variant of the Don Juan story entitled *The Stone Guest*. For 10 points each:

[10] Name this Russian poet and author of stories like "The Queen of Spades" and *Ruslan and Ludmila* in addition to a verse novel in which the titular character kills his friend Lensky over Tatyana, *Eugene Onegin*.

ANSWER: Alexander (Sergeyevich) **Pushkin**

[10] This Ukrainian poet of *Zima Junction* wrote a poem condemning Nazi/Stalinist atrocities which laments "we are denied the leaves, we are denied the sky" and notes that "no monument stands over the titular site," Babi Yar.

ANSWER: Yevgeny (Aleksandrovich) **Yevtushenko**

[10] This Russian playwright wrote a work in which Vaska Pepel fights Mikhail Kostilyoff over Vassilissa and Natasha, all denizens of the titular flophouse, *The Lower Depths*.

ANSWER: Maxim **Gorky** [Accept Alexi Maximovich **Peshkov**.]

17. It is located between the Western Baray and the Eastern Baray, and was constructed during the reign of Suryavarman II. For 10 points each:

[10] Name this temple located in the capital of the Khmer Empire. It should not be confused with a similarly named temple called "Thom."

ANSWER: **Angkor Wat**

[10] Angkor Wat is located in this modern-day country in southeast Asia with capital at Phnom Penh that was ruled by Pol Pot, leader of the Khmer Rouge.

ANSWER: **Cambodia**

[10] Another south Asian temple is this huge complex located on Java. It was built by the Saliendra Dynasty and is a site of pilgrimage for Mahayana Buddhists.

ANSWER: **Borobudur**

18. Answer the following questions about the biochemistry of proteins. For 10 points each:

[10] Name these monomer building blocks of proteins, which include lysine, tryptophan and phenylalanine. Each contains an "R"-group which changes its chemistry and influences protein tertiary-structure.

ANSWER: **amino acids**

[10] Name this secondary-structure building block of proteins, which is formed by hydrogen bonding between every fourth amino acid. It has DNA-binding properties and is contrasted with beta sheets.

ANSWER: **alpha helix**

[10] These diagrams, named after an Indian scientist, help visualize dihedral angles of amino acid residues in protein structure. They are also often called ψ - ϕ (psi-phi) plots.

ANSWER: **Ramachandran** plots

19. One example of this is seen in the high prevalence of polydactyly in the Amish and another example can be seen in cheetahs due to population size contraction. For 10 points each:

[10] Name this phenomenon which changes allele frequencies due to random sampling, seen in the Founder Effect and the Bottleneck Effect.

ANSWER: **genetic drift**

[10] The absence of genetic drift is necessary for this state of no-evolution. This theoretical state also requires random mating, no mutations, no selection, and no gene flow.

ANSWER: **Hardy-Weinberg** Equilibrium

[10] Determining whether or not one is in Hardy-Weinberg Equilibrium utilizes the goodness of fit variety of this test by Pearson. It calculates the deviation from the null hypothesis.

ANSWER: **chi-squared** test

20. Ravel was said to have composed the “Scarbo” movement of his *Gaspard de la Nuit* in order to compose a piece more difficult than one of this man’s pieces. For 10 points each:

[10] Identify this composer of an “oriental fantasy” titled *Islamey* as well as the orchestral poem *Tamara*.

ANSWER: Mily (Alexeyevich) **Balakirev**

[10] Balakirev instructed this man in conducting. This man wrote the opera *Prince Igor* and depicted horses’ and camels’ hooves through pizzicato in the symphonic poem *In the Steppes of Central Asia*.

ANSWER: Alexander (Porfiryevich) **Borodin**

[10] Both Balakirev and Borodin were members of a group of Russian composers known as the “Mighty Five,” along with this composer of *Pictures at an Exhibition* and *Night on Bald Mountain*.

ANSWER: Modest (Petrovich) **Mussorgsky**