

2022-23 Solon-Adjacent Novice Set (SANDS)

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Packet 5

1. The phrases *ma non troppo* and *con moto* may be appended to terms describing this property. Using *rubato* allows a performer to adjust this aspect of a piece. The terms *accelerando* and (*) *ritardando* suggest a change in this musical property. A common term for marking this property of music, *allegro*, is typically realized at about 120 beats per minute. For 10 points, name this term describing how fast or slow a musician should perform music. ANSWER: **tempo** [accept **time**; accept **speed** before last line, prompt after; prompt on any specific tempo marking by asking “What general musical concept does that term belong to?”] <Auditory Fine Arts–Maiorana>

Answer the following about life-saving procedures for cardiac arrest, for 10 points each.

[M] You may need to use an AED to deliver this stimulus to restart the heart. This stimulus is transmitted by Purkinje cells in the heart and synchronizes the heartbeat.

ANSWER: **electricity** [accept **electric** shock; prompt on automated external **defibrillation** by asking “what stimulus does defibrillation provide?”]

[E] The first course of action should be to perform this procedure on the patient. This procedure requires compressing down on the chest over the heart at least 2 inches in an adult.

ANSWER: **cardiopulmonary resuscitation** [accept **CPR**]

[H] When the EMTs arrive, they may perform a procedure to open the airway by cutting into the neck and inserting a breathing tube into this structure, colloquially called the windpipe.

ANSWER: **trachea** <Biology–Kodali>

2. In 2007, a bridge carrying I-35 over this river near Saint Anthony Falls collapsed. This river begins at Lake Itasca, and later flows through cities such as Memphis and St. Louis. The Ohio River and (*) Missouri River flow into this river, which flows into the Gulf of Mexico near New Orleans. For 10 points, name this longest river in the United States, which shares its name with a Southern state.

ANSWER: **Mississippi** River <Geography–Maiorana>

The title character of this play calls life “a walking shadow” and delivers the “tomorrow, and tomorrow, and tomorrow” soliloquy. For 10 points each:

[M] Name this play, in which the title king murders King Duncan. It is prophesied that Fleance, the son of Banquo, will rule one country in this play.

ANSWER: **Macbeth**

[E] Three of these beings, called the “weird sisters,” make three prophecies in *Macbeth*. These beings are often said to wear black cloaks and ride broomsticks.

ANSWER: **witches**

[H] Since this Thane of Fife is “untimely ripped” from the womb of his mother, this character is able to circumvent a prophecy made by the Three Witches and murder Macbeth.

ANSWER: **Macduff** <British Literature–Ganguli>

3. **This author of *The Descent of Man* discovered his most famous theory independently of Alfred Wallace. Robert Fitzroy recruited this man as a naturalist for a voyage to South America on the (*) HMS Beagle. The different beak shape of the finches on the Galapagos islands inspired this man's theory of natural selection. For 10 points, name this naturalist, who is often considered the father of evolution.**

ANSWER: Charles **Darwin** <Biology–Feldman>

This figure is punished by being bound with the entrails of one of his sons below a snake whose venom drips onto this figure's face. For 10 points each:

[E] Name this trickster god from Norse myth.

ANSWER: **Loki**

[M] To hamper the construction of Asgard's walls, Loki became one of these animals and mated with another of these animals, which produced an eight-legged one of these animals named Sleipnir, who belongs to Odin.

ANSWER: **horse** [or **mare**]

[H] After Loki causes the death of Baldr, he prevents Baldr's resurrection by disguising as a giant and refusing to perform this action. When her husband is absent, a red gold substance results from Freyja performing this action.

ANSWER: **cry** [or **weep** or **tearing**] <Mythology–Kapadia>

4. **The protagonist of this novel refuses the marriage request of her cousin, St. John (Sin Jin) Rivers. The title character of this novel is forced to stand on a stool by Mr. Brocklehurst at Lowood School and befriends Helen Burns. In this novel, Grace Poole is blamed for a fire, which the madwoman (*) Bertha Mason started, resulting in the destruction of Thornfield Hall. The title woman marries Mr. Rochester in, for 10 points, what novel by Charlotte Brontë?**

ANSWER: **Jane Eyre** <British Literature–Ganguli>

This leader was nicknamed the “Iron Chancellor” for conducting diplomacy using the strategy of *Realpolitik*. For 10 points each:

[M] Name this Prussian statesman, who masterminded the Unification of Germany.

ANSWER: Otto von **Bismarck**

[H] Two answers required. In a speech arguing for an increase in military spending, Bismarck proclaimed that the “great questions of the day [would] be decided” by these two substances, which title the speech. Name both.

ANSWER: **blood** and **iron** [accept **“Blood and Iron”** Speech; DO NOT PROMPT ON PARTIAL ANSWERS]

[E] Bismarck correctly predicted this conflict by saying that trouble in the Balkans would set off a major European war. This conflict was sparked by the assassination of Franz Ferdinand in 1914.

ANSWER: **World War I** [or **WWI** or the **Great War**] <European History–Rao>

5. **One improvement of a statement which describes these substances uses an a and b term to represent intermolecular forces and volume. These substances are described by the Van der Waals equation. Boyle's law states that pressure and volume are inversely related in these substances. Kinetic molecular (*) theory assumes that these substances exist at high temperatures and low pressures. For 10 points, name this theoretical substance whose namesake law states that $PV = nRT$.**

ANSWER: **ideal gases** [prompt on **gases**] <Chemistry–Sivaram>

This event has been won 27 times by the New York Yankees. For 10 points each:

[E] Name this annual championship series of the MLB, played between an AL and NL team.

ANSWER: MLB **World Series**

[M] Jackie Robinson played for this MLB team when it was located in Brooklyn. This Los Angeles team has won 7 World Series titles, most recently in 2020.

ANSWER: Los Angeles **Dodgers**

[H] After he won the 2021 World Series, the Dodgers signed Freddie Freeman, who plays this position. Lou Gehrig also played this position, which is often denoted number three.

ANSWER: **first baseman** <Popular Culture–Chae>

6. **This author declares “this land was ours before we were the land’s” in “The Gift Outright.” The speaker of another poem by this author notes that he has “miles to go” before he sleeps. This poet, who used the refrain “good fences make good neighbors” in (*) “Mending Wall,” wrote another poem that begins “two roads diverged in a yellow wood.”** For 10 points, name this American poet of “The Road not Taken.”

ANSWER: Robert **Frost** <American Literature–Ganguli>

The lithosphere contains all of this layer and a portion of the outer mantle. For 10 points each:

[E] Name this outermost layer of Earth, which lies above the mantle.

ANSWER: **crust**

[H] The phrases “Slab Pull” and “Ridge Push” can describe the movement of these structures. These structures move on the Earth’s crust and are created from mid ocean ridges in the process of seafloor spreading.

ANSWER: **tectonic plates**

[M] This process that takes place in the mantle causes tectonic plates to move on Earth’s surface. This process is the transfer of heat through the movement of particles in a fluid.

ANSWER: Mantle **convection** <Other Science–Chae>

7. **The creation myth of one civilization inspired the Benben stones that top these non-obelisk structures. A “bent” one of these structures was built for Sneferu. The architect Imhotep used stacked *mastabas* to design a (*) “step” one of these structures for Djoser. A noseless Sphinx statue sits near three “Great” examples of these structures in Giza.** For 10 points, what monumental structures were often the burial sites of Egyptian Pharaohs?

ANSWER: **pyramids** [accept bent **pyramids** or step **pyramids** or Great **Pyramid** of Giza] <Ancient/Other History–Kapadia>

A memorial to victims of the Holocaust located in this country consists of 2,711 concrete slabs. For 10 points each:

[H] Name this country, where the Bauhaus school existed until 1933.

ANSWER: **Germany**

[M] Bauhaus artist Herbert Bayer designed one of these systems based on the Bauhaus aesthetic. These systems have serif and sans-serif varieties.

ANSWER: **fonts** [accept **typefaces**]

[E] The Bauhaus was essentially forced to close in 1933 following the seizure of power by this Adolf Hitler-led regime.

ANSWER: **Nazi** Party [accept **Nazis**; accept The **Third Reich**] <Other Fine Arts–Maiorana>

8. **This text advises to “beat her and knock her about” when describing Fortune. This text claims that the title figure should master the conflict between cunning and strength represented by a lion and fox. This text uses the example of (*) Cesare Borgia to argue that it is better to be feared than loved as a ruler.** For 10 points, name this political text written by Niccolò Machiavelli.

ANSWER: *The **Prince*** <Philosophy–Kodali>

These institutions are often found in namesake “towns,” exemplified by Ann Arbor and Berkeley. For 10 points each:

[E] Name these academic institutions such as Rutgers and Ohio State, which are part of the Big 10.

ANSWER: **colleges** [accept **university** or **universities** or **collegetowns**]

[M] Purdue University, another Big 10 school, is located in this state. Purdue has a rivalry with the University of Notre Dame, which is also located in this state.

ANSWER: **Indiana**

[H] In 2022, UCLA and this nearby university announced that they will leave the PAC-12 for the Big 10. This school’s athletic teams are known as the Trojans.

ANSWER: University of **Southern California** [or **USC**] <Geography–Maiorana>

9. **It's not a neutrino, but researchers at Super-Kamiokande seek to observe the decay of this particle into a neutral pion and a positron. 90% of cosmic rays are made of these particles, which decay into a neutron via beta plus decay. These particles are made of two (*) up quarks and one down quark. The atomic number is also the number of these particles. For 10 points, name these positively charged particles that make up the nucleus with neutrons.**

ANSWER: **protons** <Physics–Chae>

Ibn Battuta documented much of this region’s namesake trade route, which connected West African empires to the Mediterranean Sea. For 10 points each:

[E] Name this largest sand desert in the world, which occupies much of northern Africa.

ANSWER: **Sahara** Desert

[M] Merchants from this empire and the later Songhai Empire partook in the trans-Saharan trade. This empire’s ruler Mansa Musa disrupted the Egyptian economy by handing out gold during his trip to Mecca.

ANSWER: **Mali** Empire

[H] The trans-Saharan trade centered on gold and this other commodity. Much of the Songhai’s wealth came from mining this commodity at Taghaza.

ANSWER: **salt** <World History–Sareddy>

10. **One of these texts claims that “If men were angels, no government would be necessary.” The tenth of these texts warns about the harmful nature of “factions.” The pseudonym Brutus was among those used to write the (*) “Anti-[these texts].” The pseudonym Publius was collectively used by John Jay, Alexander Hamilton, and James Madison to author, for 10 points, what set of “Papers” promoting the ratification of the U.S. Constitution?**

ANSWER: *The **Federalist Papers*** <American History–Kapadia>

A character in this story screams “it isn’t fair!” after her name is drawn out of a wooden box. For 10 points each:

[M] Name this short story, in which Tessie Hutchinson is stoned to death during the title event.

ANSWER: “The **Lottery**”

[H] “The Lottery” is by this author of gothic horror, who also wrote *The Haunting of Hill House*.

ANSWER: Shirley **Jackson**

[E] A slip of paper with a spot of this color indicates death in “The Lottery.” Cats of this color are considered an omen of bad luck in gothic literature.

ANSWER: **black** <American Literature–Ganguli>

11. **In one episode, this character repeats the phrase “I don’t need it” before drinking a vase full of water. This character, who constantly fails his driver’s tests with Mrs. Puff at “Boating School,” sings the Goofy Goober Rock to defeat (*) Plankton at the end of his first movie.** This character works as a fry cook at the Krusty Krab alongside Squidward. For 10 points, name this Bikini Bottom resident who “lives in a pineapple under the sea.”

ANSWER: **SpongeBob SquarePants** [accept either underlined] <Popular Culture–Chae>

An expensive dye of this color was cultivated from Murex snails. For 10 points each:

[M] Name this color of togas worn by Roman generals celebrating a triumph. This “royal” color was eventually worn exclusively by the Roman Emperor.

ANSWER: **purple**

[H] The purple dye was alternatively named for this civilization or its city of Tyre. This seafaring civilization from modern-day Lebanon founded cities like Byblos and Carthage.

ANSWER: **Phoenician** Civilization

[E] The Phoenicians are credited with developing the first modern one of these systems. The English one of these systems has 26 letters.

ANSWER: **alphabet** <Ancient/Other History–Kapadia>

12. **A ruler with this name started the War of Spanish Succession by attempting to put his grandson on the Spanish throne. That ruler of this name apocryphally proclaimed “I am the state” and was known as the Sun King. A ruler of this name was executed by (*) guillotine in 1793, shortly before his wife Marie Antoinette.** The Palace at Versailles was commissioned by a ruler with, for 10 points, what regnal name, shared by eighteen kings of France.

ANSWER: **Louis** [accept **Louis** XIV or **Louis** XVI] <European History–Rao>

Ernest Rutherford oversaw an experiment often named for a foil of this metal in which the atomic nucleus was discovered. For 10 points each:

[E] Name this malleable metal with the atomic symbol Au.

ANSWER: **gold**

[M] Rutherford's gold foil experiment disproved the “plum pudding model” of the atom created by this scientist. This man discovered the electron using cathode ray tubes.

ANSWER: Joseph John **Thomson**

[H] To produce a beam of alpha particles, the Rutherford gold foil experiment used Radon, which decays into this element. This element with atomic number 82 is the heaviest with stable isotopes.

ANSWER: **lead** <Chemistry–Chae>

13. **The protagonist of this work observes the skull of Archbishop Ruggieri getting chewed on by Count Ugolino. This work features the murdered lovers Paolo and Francesca. The protagonist of this work is guided to a gate reading (*) “abandon all hope ye who enter here.”** The narrator travels through the nine circles of hell in this work’s first section, *Inferno*. For 10 points, name this Italian epic poem by Dante.

ANSWER: **Divine Comedy** [or **La Divina Commedia**; accept **Inferno** before mentioned] <European Literature–Ganguli>

Twelve avenues radiate out from the Place de l'Étoile, which contains one of these structures at its center. For 10 points each:

[M] Name this kind of monumental structure exemplified by a “Triumphal” one in Paris. Paris’s La Défense district contains a “Grand” one of these structures, which evokes a giant passageway.

ANSWER: **arch** [accept Grand **Arch** or Triumphal **Arch** or **Arc** de Triomphe]

[E] France’s “Tomb of the Unknown [type of these people]” lies directly beneath the Arch de Triomphe. The tomb is dedicated to these people whose remains have not been found after they fought and died in World War I.

ANSWER: **soldier** [accept Tomb of the Unknown **Soldier**]

[H] This avenue radiates out from the Arch de Triomphe’s eastward face. This avenue, named for a paradise in the Greek afterlife, is the site of the annual Bastille Day parade and is known for its luxury shops.

ANSWER: Avenue des **Champs-Élysées** [prompt on **Elysian Fields**] <Geography–Kapadia>

14. The namesake DNA of this organelle is only maternally inherited. It’s not chloroplasts, but the endosymbiotic theory believes these organelles originated as separate prokaryotes. The matrix of this organelle contains folds called (*) cristae. These organelles contain ATP synthase, which they use in the final step of cellular respiration. For 10 points, name this organelle which is the powerhouse of the cell.

ANSWER: **Mitochondria** <Biology–Feldman>

On “Black Sunday” during this period, so-called “black blizzards” swept through the plains states. For 10 points each:

[M] “Okies” migrated west during what period of severe drought and agriculture damage in the 1930s?

ANSWER: **Dust Bowl**

[E] The Dust Bowl exacerbated this extended period of economic downturn, which began with a stock market crash in 1929.

ANSWER: **Great Depression**

[H] During the Great Depression, many homeless people erected and live in these shanty towns, derisively named for the president under whose term the depression began.

ANSWER: **Hooverville** <American History–Kapadia>

15. One warrior in this conflict refused to fight after a leader took his concubine Briseis. The death of that person’s companion Patroclus caused him to drag around the body of his opponent Hector in this conflict. This conflict ended after a (*) fake wooden horse filled with soldiers was given to its central city. For 10 points, name this conflict described in *The Iliad*, which was sparked by Paris’ abduction of Helen.

ANSWER: **Trojan War** <Mythology–Kodali>

Ben Rogers offers one character an apple to do this task after he is convinced that this task is better than swimming. For 10 points each:

[H] Name this task assigned by Aunt Polly, which one character convinces his friends to do for him.

ANSWER: **whitewashing** a fence [or **painting** a fence]

[M] Aunt Polly originally tells this character to whitewash the fence. This character, who witnesses Injun Joe’s murder of Muff Potter, gets lost in a cave with his love interest, Becky Thatcher.

ANSWER: **Tom Sawyer** [accept either underlined part]

[E] Tom Sawyer was created by this author, who also wrote about his friend’s travels with Jim down the Mississippi river in *The Adventures of Huckleberry Finn*.

ANSWER: Mark **Twain** [or Samuel Langhorne **Clemens**] <American Literature–Ganguli>

16. **This function's output is 1 minus theta squared over 2 in its small angle approximation. The reciprocal of this function is known as the secant function. This function's derivative is negative sine, and it represents the (*) x-coordinate in the unit circle. Tangent equals sine over this function. For 10 points, identify this function which, in a right triangle, is the ratio of the adjacent side to the hypotenuse.**

ANSWER: cosine <Other Science–Chae>

These objects are typically featured in *Memento mori* paintings. For 10 points each:

[E] Name these human remains that frequently symbolize death in art. This skeletal structure protects the brain and supports the face.

ANSWER: skulls

[H] This American artist painted skulls of horses, cows, and deer. After living in New York, she moved to New Mexico and painted many depictions of its landscape.

ANSWER: Georgia Totto O'Keeffe

[M] Skulls were sometimes featured in paintings of this genre. More popular subjects in this genre include flowers and baskets of fruit.

ANSWER: still lifes <Visual Fine Arts–Maiorana>

17. **Special “donut” types of these items for use in emergencies are less durable than their normal counterparts. To improve performance in colder climates, these items are often outfitted with chains. These items are sold by companies like (*) Bridgestone, Michelin, and Goodyear. The effectiveness of these items decrease with use since their treads wear out. For 10 points, what rubber items cover a car's wheels?**

ANSWER: tires <Other Academic/Miscellaneous–Kapadia>

This crime was discovered when security guard Frank Willis noticed tape on some of the door latches of this crime's central building. For 10 points each:

[M] What crime involved members of the Committee for the Re-Election of the President infiltrating the DNC's headquarters in a Washington D.C. hotel?

ANSWER: Watergate break-in [accept Watergate spying or Watergate Scandal]

[E] The Watergate Scandal affected the presidency of what man, who resigned in its aftermath?

ANSWER: Richard Nixon [accept Tricky Dick]

[H] In the ensuing case *U.S. v. Nixon*, Nixon claimed that executive privilege allowed him to withhold these entities. The “Rosemary Stretched” erased nearly 18 minutes from these entities.

ANSWER: White House tapes [or White House recordings] <American History–Kapadia>

18. **This artist depicted Jesus crossing his fingers while holding a glass orb in the painting *Salvator Mundi*. A male nude is inscribed within a circle and a square in this artist's *Vitruvian Man*. This artist painted a portrait of (*) Lisa del Giocondo with a mysterious smile, as well as a scene in which Jesus dines with his disciples. For 10 points, name this Italian polymath who painted *The Last Supper* and the *Mona Lisa*.**

ANSWER: Leonardo da Vinci [accept either underlined portion] <Visual Fine Arts–Maiorana>

A store that provided this kind of service declined in the face of a competitor that provided this service through the mail via red envelopes. For 10 points each:

[M] Name this service once provided by the now-defunct store Blockbuster.

ANSWER: **video rental** [or **movie rental** or **DVD rental** or **video game rental**; prompt on **selling**]

[E] The aforementioned competitor to Blockbuster was this company, which is now the most successful streaming service in the world with shows like *The Witcher* and *Stranger Things*.

ANSWER: **Netflix**

[H] The automated kiosks of this video rental company can be found in places like grocery stores, gas stations, and pharmacies.

ANSWER: **Redbox** <Other Academic/Miscellaneous–Kapadia>

19. *Two answers required.* The “Peace Village” is on the border between these two countries, which was created by a 1953 armistice signed in Panmunjom. The Sunshine Policy attempts to improve relations between these two countries. The 38th parallel was used to demarcate (*) the Demilitarized Zone that separates, for 10 points, what two Asian nations that share a peninsula that contains cities like Seoul and Pyongyang?

ANSWER: **North Korea** and **South Korea** <World History–Kapadia>

Hess's law can be used to calculate the total change of this quantity in a reaction. For 10 points each:

[M] Name this quantity, which is equal to the internal energy plus the product of pressure and volume. It is symbolized H.

ANSWER: **enthalpy**

[H] This quantity can be calculated by subtracting the product of temperature and entropy from enthalpy. This quantity is named for an American scientist and can be used to determine if a reaction is spontaneous.

ANSWER: **Gibbs free energy** [prompt on **free energy**]

[E] The change in Gibbs free energy can be calculated by taking the negative product of this function of the equilibrium constant and RT. This function is symbolized “ln” and is a logarithm with the base of e.

ANSWER: **natural** logarithm <Chemistry–Chae>

20. This country's cuisine includes the Portuguese-influenced dish *vindaloo*. Blocks of cottage cheese known as *paneer* are a common ingredient in dishes in this country. The *tandoor* style of cooking originated in this country's state of (*) Rajasthan. Many of this country's curries are eaten with breads like *naan* and *roti*. For 10 points, name this large South Asian country home to the cities of Mumbai and Delhi.

ANSWER: **India** <Geography–Sareddy>

Thomas Hobbes stated that humans existed in a state of “war of all against all” prior to this concept. For 10 points each:

[M] Name this so-called “contract” between a government and individuals, in which the individuals agree to give up some rights in exchange for protection of other rights.

ANSWER: **social** contract

[H] The phrase “Man is born free, yet everywhere is in chains” opens *The Social Contract*, a work by this Swiss Enlightenment philosopher, who also wrote *Emile* and *Discourse on Inequality*.

ANSWER: Jean-Jacques **Rousseau**

[E] In *Discourse on Inequality*, Rousseau discussed the rise of the “private” form of this concept. John Locke's natural rights included life, liberty, and this concept, which refers to something owned by someone.

ANSWER: **property** [accept **possession**] <Philosophy–Kapadia>