

Detroit Country Day Academic Regular Tournament

Packet 1

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1. **The Schwartzian transform can improve the efficiency of performing this task. The “comb” algorithm of performing this task attempts to eliminate turtles. Herman Hollerith’s tabulating machines inspired the “radix” algorithm of performing this task, and one type of algorithm for this task which has a worst-case runtime of (*) big O of n squared divides an array in two and recursively places its elements on both sides of a pivot value. That algorithm was invented by Tony Hoare. The bubble variety of algorithms for doing this task compares adjacent values, making it less efficient than the insertion and selection varieties. For 10 points, name this task of arranging elements in a specific order.**

ANSWER: **sorting** [accept **sorting** an array] <Other Science, Sun, Ed.>

Answer the following about the Treaty of Hartford. For 10 points each,

[10] It ended this 1630s war between the Massachusetts Bay Colonies and a namesake native tribe. Captain John Mason killed Sassacus during this war’s “Mystic Massacre.”

ANSWER: **Pequot** War

[10] Following the Treaty of Hartford, the New England Confederation was formed to oppose territorial claims by this country’s colonies. Peter Stuyvesant expanded this country’s colony of New Amsterdam.

ANSWER: **Netherlands** [accept **Dutch Republic** or **Holland**]

[10] 40 years after the Treaty of Hartford, the Treaty of Casco was signed to end this war. Mary Rowlandson’s narrative details much of what is known about this war.

ANSWER: **King Philip’s** War [accept **Metacom’s** War or **Metacomet’s** War or **Pometacomet’s** Rebellion; prompt on **First Indian War**] <US History, Gayden, Ed.>

2. **This poem describes a black telephone that’s “off at the root” and that voices “can’t worm through.” This poem claims that the “snows of the Tyrol” and the “clear beer of Vienna” are not very pure or true. This poem’s title character is “marble-heavy, bag full of god,” and scares the speaker with his “gobbledygoo” and (*) “Luftwaffe.” The speaker of this poem declares, “there’s a stake in your fat black heart” after admitting, “every woman adores a fascist.” This poem’s subject is described as a “man in black with a Meinkampf look” and is told “you bastard, I’m through.” For 10 points, name this Sylvia Plath poem about her father.**

ANSWER: “**Daddy**” <US Literature, Gayden>

One of these animals could not be killed by mere weapons because its golden fur was impervious. For 10 points each,

[10] Name this kind of animal, one of which lived in Nemea. Heracles strangled that one of these animals with his bare hands, thus completing his first labor.

ANSWER: **lions**

[10] This god fell in love with Cyrene after watching her protect her father’s sheep by wrestling a lion. Later, this god and Cyrene became the parents of Aristaeus and Idmon.

ANSWER: **Apollo**

[10] This woman and her husband Hippomenes were both turned into lions after they inappropriately slept together in one of Zeus's temples. This woman was first to draw the blood of the Calydonian Boar.

ANSWER: **Atalanta** <Mythology, Suh>

3. **This ruler was humiliated by Pyotr Saltykov at the Battle of Kunersdorf. During one conflict, this ruler's nation was saved when he heard the news of Empress Elizabeth's death. This ruler, who won the Battle of Leuthen, created a league of Protestant princes known as the (*) Furstenbund.** This ruler's personal residence was the Sanssouci Palace in Potsdam. This ruler used the oblique order of battle while invading Maria Theresa's empire. For 10 points, name this "Great" Prussian ruler who fought during the War of the Austrian Succession and the Seven Years' War.

ANSWER: **Frederick the Great** [or **Frederick II** or **Frederick der Grosse**] <European History, Zhou and Pavlou, Ed.>

The negative sign in this law can be explained by Lenz's Law for determining the direction of the electromotive force. For 10 points each,

[10] Name this electromagnetic law relating the rate of change of the magnetic flux through a circuit to the induced voltage in that circuit.

ANSWER: **Faraday**'s Law of Induction

[10] Faraday's Law of Induction can be used to determine the direction of these currents. These induced electrical currents generate magnetic moments that oppose the source magnetic field.

ANSWER: **eddy** currents

[10] Faraday's Law of Induction is grouped along with Ampere's Law and Gauss' Laws into this man's namesake equations of electromagnetism. This Scottish physicist's namesake demon violates the Second Law of Thermodynamics.

ANSWER: James Clerk **Maxwell** <Physics, Siddiqui>

4. **This state's flag depicts its state bird "in her piety" feeding three of its young. The Calcasieu River is in this state's Kisatchie National Forest, and the Sabine River makes up this state's border with its western neighbor. A former salt mine on this state's Avery Island is where Tabasco sauce is manufactured. Lake Maurepas and Lake (*) Pontchartrain are in this state, which is divided into 64 parishes. A dish from this state contains spiced meat or shellfish mixed with vegetables in a thick soup. Gumbo and other Cajun dishes are from, for 10 points, what US state containing the city of New Orleans.**

ANSWER: **Louisiana** <Geography, Gayden> [Ed.]

Manzo cuts his daughter Shino's hair to save her from this film's title group. For 10 points each,

[10] Name this film whose title group, led by Kambei, defends a farming village from a group of musket-wielding bandits.

ANSWER: **Seven Samurai**

[10] This Japanese filmmaker directed *Seven Samurai*. His other movies include *Rashomon*, *Ran*, and *Throne of Blood*.

ANSWER: Akira **Kurosawa**

[10] Akira Kurosawa is known for his use of this type of film transition, in which one shot replaces another by traveling across the screen. George Lucas made extensive use of this transition in *Star Wars*, with 55 appearing in *The Phantom Menace*.

ANSWER: **wipe** [accept horizontal **wipe**] <Other Fine Arts, Gayden>

5. **The keys of F major and F minor clash throughout one work in this genre that the composer exchanged for a pair of English razors. The musical acronym G-E-F-D-C appears throughout a work of this genre that**

contains variations on the Deutschlandlied. A three measure grand pause false ending lends one work in this genre the nickname (*) “The Joke”, while a set of six works in this genre are dedicated to Count Erdödy. Joseph Haydn’s 68 works for this ensemble lends him the nickname “the father of” this ensemble. For 10 points, name this chamber ensemble consisting of two violins, a viola, and a cello.

ANSWER: string quartets [accept more specific answers like string quartets by Joseph Haydn] <Auditory Fine Arts, Sun>

Answer the following about the world’s oldest international trade route, the Silk Road. For 10 points each,

[10] One major city along the Silk Road was this continually inhabited Central Asian city, which served as the capital of the Timurid Empire. This city contained a massive observatory built by Ulugh Beg.

ANSWER: Samarkand

[10] Travelers along the Silk Road often stopped at these inns, which were known in Mongolian as *khans*. These enclosed buildings were also built along the Royal Road.

ANSWER: caravanserais [or caravansary; accept wikala or funduq]

[10] One such traveler who may have stayed in *caravanserai* was this Venetian merchant who visited Yuan dynasty China. His memoir *Il Milione* was ridiculed due to his omission of practices such as foot-binding or the use of chopsticks.

ANSWER: Marco Polo <World History, Gayden>

6. **Sonogashira coupling employs a palladium catalyst and a catalyst of this metal. The Daniell cell consists of zinc and this metal, and it occurs alongside iron and sulfur in chalcopyrite [“CAL-koh-PIE-rite”]. This element’s sulfate is used to detect the presence of reducing sugars in (*) Benedict’s test. This element produces a blue-green color in its flame test, and it comes between nickel and zinc on the periodic table. This element can form verdigris when oxidized and alloys with tin in bronze. For 10 points, name this transition element with atomic number 29 and symbol Cu.**

ANSWER: copper [or Cu before mention] <Chemistry, Siddiqui>

The protagonist of a novel tells his mentor that for this entity, “no shadow of the past” or “shadow of the future” exists, but rather “only the present.” For 10 points each,

[10] Name this entity. Vasudeva teaches the protagonist of a novel to listen to this entity, which ultimately fulfills his quest for enlightenment.

ANSWER: river [accept any description involving a river]

[10] This title character strives to learn from the river while working as a ferryman. This character earlier becomes a rich businessman under the mentorship of Kamaswami.

ANSWER: Siddhartha

[10] *Siddhartha* is by this German author. This author also wrote about Harry Haller in *Steppenwolf*.

ANSWER: Herman Hesse <European Literature, Siddiqui>

7. **This team’s coach went shirtless at the 2019 NFL Combine to meet with a top wide receiver prospect. That wide receiver went on to break this team’s record for receiving yards in a season, which was previously held by Hall of Fame receiver Steve Largent. In the middle of the 2019 season, this team reunited with a running back who bizarrely declared “I’m just here so I won’t get (*) fined” at a Super Bowl press conference. That running back, nicknamed “Beast Mode,” helped this Pete Carroll-coached team win the 2014 Super Bowl. For 10 points, name this team featuring stars like D.K. Metcalf and Russell Wilson.**

ANSWER: Seattle Seahawks [accept either underlined portion] <Trash, Liu>

This painting takes place one day after its companion, *The Charge of the Mamelukes*. For 10 points each,

[10] Name this painting. In this painting, a box lantern illuminates a scene in which a man dressed in yellow and white with a stigmata wound raises his arms in fear.

ANSWER: *The Third of May, 1808* [or *El tres de mayo de 1808 en Madrid* or *Los fusilamientos de la montaña del Príncipe Pío*; do NOT accept or prompt on partial answer]

[10] This artist of *The Third of May 1808* also produced 14 “Black Paintings” on the wall of the Villa of the Deaf Man. Those paintings include *Fight with Cudgels* and *Saturn Devouring his Son*.

ANSWER: Francisco José de Goya y Lucientes

[10] In this etching, the central figure who may be a young Goya sleeps at his desk while bats and owls swarm above him. Like the other *Caprichos*, this work was made using aquatint.

ANSWER: *The Sleep of Reason Produces Monsters* [accept *El sueño de la razón produce monstruos*] <Visual Fine Arts, Gayden>

8. **In a novel by this author, Perdita and Clara look for Lord Raymond in Greece. In that novel, Adrian drowns, making Lionel Verney the lone survivor of a worldwide plague. This author’s most famous novel was inspired by a competition at Lord Byron’s villa. That novel by this author involves a series of letters written by (*) Robert Walton while exploring the north pole. While visiting the Orkney Islands, Henry Clerval is killed by the title scientist’s creation in this author’s most famous novel. For 10 points, name this English author of *The Last Man* and *Frankenstein*, the wife of Percy Bysshe.**

ANSWER: Mary Shelley [accept Mary Godwin] <British Literature, Gayden>

Thomas More described this policy as a stream of government income “to every person, rich or poor” in his book *Utopia*. For 10 points each,

[10] Name this economic policy, which economists like Milton Friedman have advocated for in the form of a “negative income tax.”

ANSWER: Universal Basic Income [or UBI]

[10] Universal Basic Income was the flagship policy proposal of this Asian-American candidate in the 2020 Democratic Primary. His campaign focused on mitigating the effects of automation.

ANSWER: Andrew M. Yang

[10] Since 1982, this U.S. state has paid its adult citizens a Universal Basic Income using money from its natural resource industry. In 2020, this state became the second state to pass a ballot measure introducing ranked choice voting in statewide elections.

ANSWER: Alaska <US Current Events, Gayden, Ed.>

9. **This man’s grandson became the first Duke of Veragua. This man authored the *Book of Prophecies* with the help of Gaspar Gorricio. In a quest for financial support, this man asked King John II to be the “Great Admiral of the Ocean.” This man predicted a lunar eclipse so that (*) Jamaican Natives would give his men food. An exchange of food, ideas, and diseases between Eurasia and the New World is named after this explorer. Ferdinand and Isabella funded this explorer’s best known voyage, on which he brought the Niña, Pinta, and Santa María. For 10 points, name this Genoese explorer who sailed the ocean blue in 1492.**

ANSWER: Christopher Columbus [or Cristobal Colon; or Cristoforo Colombo]

<Ancient/Other/Mixed History, Pavlou>

This class of molecules contains a glycerol backbone and long hydrocarbon chains. For 10 points each,

[10] Name these macromolecules. In humans, they are used to store energy long-term and can bring about an increase in weight, and they are classified alongside waxes and steroids.

ANSWER: triglycerides [accept triacylglycerol or triacylglycerides; prompt on lipids or fats]

[10] Statins are used to decrease this other lipid’s levels in the bloodstream. HDL and LDL carry this steroid lipid, an excess of which can lead to plaque buildup, or atherosclerosis.

ANSWER: cholesterol

[10] In this process, long chain fatty acids are broken down to form acetyl-CoA. If the fatty acid chain has an odd number of carbons to start off with, this process can also result in the formation of propionyl-CoA.

ANSWER: beta-oxidation <Biology, Siddiqui>

10. **A thinker from this country argued that the use of arguments based on “comprehensive doctrines” should be minimized in politics. Another thinker from this country used the example of paying a superstar athlete to criticize a maxim of distributive justice named for another thinker from it. A thinker from here held that justice should be decided from an “original position” behind a (*) “veil of ignorance” to fulfill the concept of “justice as fairness.”** *Anarchy, State, and Utopia*, by a thinker from this country, criticized another work from it, *A Theory of Justice*. For 10 points, name this country, home to the libertarian Robert Nozick and his liberal Harvard colleague John Rawls.

ANSWER: United States of America [accept either underlined parts or USA] <Philosophy, Liu>

The thief Kandata attempts to escape Hell by climbing a silvery thread of one of these creatures. For 10 points each, [10] Name these creatures. An E.B. White novel is named for the web of one of these creatures.

ANSWER: spiders

[10] The aforementioned Kandata is a character in this author’s short story *The Spider’s Thread*. This author also wrote a short story in which seven characters give accounts of a samurai’s murder titled *In a Grove*.

ANSWER: Ryunosuke Akutagawa

[10] This other author alluded to a spider’s web in a novel about Valentin and Molina in *The Kiss of the Spider Woman*.

ANSWER: Manuel Puig <World Literature, Siddiqui>

11. **A pyramidal one of these buildings with 105 floors is the tallest unoccupied building in the world. A 340 meter long SkyPark with an infinite swimming pool is held up by three buildings of this type in Singapore. Another building of this type built on an artificial island has a helipad on its roof, and was designed by Tom Wright to resemble a (*) sail. In addition to the Ryugyong, Marina Bay Sands, and the Burj Al Arab, another of these buildings built in the Maya Revival style survived the Great Kanto Earthquake of 1923 and was designed by Frank Lloyd Wright. For 10 points, name these buildings run by companies such as Hilton and Marriott.**

ANSWER: hotels [prompt on skyscraper until “helipad”; prompt on casino with “what is it used as now?”] <Other Fine Arts, Gayden>

For 10 points each, answer the following about the 18th century population spike in Europe.

[10] Arguably the biggest factor was the disappearance of this disease, which had periodically struck Europe since the 14th century. This disease killed up to one third of Europe’s entire population.

ANSWER: Black Death [or the Black Plague or bubonic plague; prompt on plague or pestilence]

[10] The population increase led to the development of the four-course kind of this practice. This farming practice was used to forgo the fallow period by planting nitrogen-rich crops like clover.

ANSWER: crop rotation [accept four-course crop rotation]

[10] Also resulting from population growth was the introduction of this system, which ended communal land use by building fences. The Midland Revolt opposed this system advocated for by Arthur Young.

ANSWER: enclosure

<European History, Gayden, Ed.>

12. **In a work by this author, the town of Goderville accuses the protagonist of stealing a pocketbook, but that protagonist dies protesting that he merely picked up the title object. In another work by this author, the title character shares food from a picnic basket with her fellow travelers. That character, (*) Elizabeth Rousset, is pressured into sleeping with a Prussian officer but is then shunned afterwards. This author’s most famous work tells of a woman who pays the full price for the title object, only to find out the object was a fake. For 10 points, name this French author of *Ball of Fat* and *The Necklace*.**

ANSWER: Guy de Maupassant <European Literature, Siddiqui>

The columnist Marilyn vos Savant reportedly holds the world record for a metric for this concept, of which a high score is the criterion for entry into the Mensa International Society. For 10 points each:

[10] Name this concept measured by the Stanford-Binet Scales. 100 is the average score on a test that produces a namesake “quotient” that purports to measure this concept.

ANSWER: **intelligence**

[10] Generational increases in intelligence as measured by IQ, requiring recalibration of IQ tests, are referred to collectively as this phenomenon.

ANSWER: **Flynn** effect

[10] Measuring intelligence is a tricky subject, and intelligence has often been split into different aspects. This psychologist made one such notable partition, as he theorized that intelligence could be divided into fluid and crystallized forms.

ANSWER: Raymond **Cattell** <Social Science, Liu>

13. **A simulated invasion of this country called “If Day” was organized in order to sell war bonds. During a war in which its troops captured Vimy Ridge, a conscription crisis was prompted by Robert Borden’s introduction of mandatory military service in this country. The soldiers in the Dieppe Raid were mostly from this country, as were the soldiers attacking (*) Juno Beach on D-Day. The SS *Mont Blanc* exploded in this country in 1917. This country was led by William Lyon Mackenzie King during World War Two. Pierre Trudeau once led, for 10 points, what North American country now led by his son Justin?**

ANSWER: **Canada** <World History, Gayden>

This instrument’s *da caccia* variant has a curved tube and is pitched a fifth below a typical one of these instruments. For 10 points each,

[10] Name this instrument. Orchestras typically tune to an A played by this instrument.

ANSWER: **oboe**

[10] This composer composed his oboe concerto for the American oboist John de Lancie. The oboe indicates a liaison between the title character and his lover in *Don Juan*, the first major tone poem by this composer.

ANSWER: **Richard Strauss** [prompt on **Strauss** alone, do NOT accept or prompt on “Johann Strauss”]

[10] This composer referenced the ringing of the Westminster Quarters in the *Andantino* first movement of his Oboe Sonata in D Major. This composer also depicted a swan gliding over the water in his humorous musical suite *Carnival of the Animals*.

ANSWER: Camille **Saint-Saens** <Auditory Fine Arts, Sun>

14. **It’s not the brain, but this organ’s blood flow malfunctions in Budd-Chiari syndrome. Angiotensinogen and albumin are produced by this organ, which receives lactate produced in muscles in the Cori cycle. Ito [“EE-toh”] cells store Vitamin A in this organ, which also contains special macrophages called Kupffer cells that break down (*) bilirubin. Blood enters this organ through the portal vein and leaves through the hepatic vein. Chronic alcohol abuse can cause scarring of this organ called cirrhosis. For 10 points, name this largest internal organ that detoxifies the blood.**

ANSWER: **liver** <Biology, Siddiqui>

This poet wrote, “Let the bird of loudest lay / On the sole Arabian tree” in a poem that ends, “For these dead birds sigh a prayer.” For 10 points each,

[10] Name this poet of *The Phoenix and the Turtle*, and *Venus and Adonis*.

ANSWER: William **Shakespeare**

[10] Shakespeare wrote many poems in this form, which contain 14 lines. In 1609, he published 154 of these works addressed to subjects like the “Fair Youth” and the “Dark Lady.”

ANSWER: **sonnets**

[10] This Shakespearian sonnet notes “Rough winds do shake the darling buds of May.” After asking the title question of this sonnet, the speaker remarks “thou art more lovely and more temperate.”

ANSWER: Sonnet **18** [or “**Shall I compare thee to a summer’s day?**”] <British Literature, Gayden, Ed.>

15. 1 [“first”] Thessalonians commands the reader to do this action “without ceasing.” A man tells his followers to not do this action on street corners, but rather in their rooms in secret. Paul commands Timothy to do this action on behalf of others, which is known as intercession. It’s not singing, but doing this action often ends by invoking a (*) word meaning “truly” or “let it be so.” When his disciples ask him to teach them to do this action properly, Jesus teaches them to say, “Our Father in heaven, hallowed be your name.” For 10 points, what Christian practice is often ended by saying “Amen”?

ANSWER: **prayer** <Religion, Suh>

An airburst from a meteoroid in this region produced an explosion known as the Tunguska Event in 1908. For 10 points each,

[10] Name this region, which is divided into Western and Eastern regions by the River Yenisei.

ANSWER: **Siberia**

[10] Nerpa Seals live in this southern Siberian lake, whose only outlet is the Angara River. The Buryat people inhabit Olkhon Island in this deepest lake in the world.

ANSWER: Lake **Baikal**

[10] Along with the Ob’ and Yenisei, this is the third and easternmost major river of Siberia. This river flows through the city of Yakutsk into the Arctic Ocean.

ANSWER: **Lena** River <Geography, Gayden>

16. Nigel Seddon and Trevor Bearpark were the first to detect the inverse version of this phenomenon, which was first predicted by Victor Veselago. In the Dicke [“Dickey”] effect, collisions between particles counteracts the effect of this phenomenon on spectral lines. Canal ray tubes were used to measure the (*) transverse type of this phenomenon in the Ives–Stillwell experiment. In astronomy, this phenomenon can cause blueshift or redshift depending on which direction a star is moving. For 10 points, name this effect named after an Austrian physicist, which explains why the pitch of a sound drops when its source is moving away from an observer.

ANSWER: **Doppler** effect [anti-prompt on redshift before “Ives–Stillwell”] <Physics, Sun>

During the Reconstruction era, Radical Republicans in Congress clashed fiercely with the President over Southern policy. For 10 points each, answer the following:

[10] This Democrat served as President immediately after the end of the Civil War. He previously served as Abraham Lincoln’s Vice President.

ANSWER: **Andrew Johnson** [prompt on Johnson]

[10] After he fired Secretary of War Edwin Stanton, Johnson was impeached on the grounds that the dismissal of Stanton violated this law.

ANSWER: **Tenure of Office** Act

[10] This longtime Pennsylvania Congressman, nicknamed “The Old Commoner” and leader of the Radical Republicans helped push Johnson’s Articles of Impeachment through the House of Representatives.

ANSWER: Thaddeus **Stevens** <US History, Liu, Ed.>

17. In December 2020, this company fired the leader of its Ethical A.I. team for her research into bias in artificial intelligence. This company abandoned the Department of Defense-affiliated Project Maven after employees protested applications of artificial intelligence to military drones. This former employer of Timnit Gebru was accused of using (*) algorithms that bury conservative websites, allegations which were the subject of Congressional testimony by CEO Sundar Pichai. Alphabet is the parent company of, for 10 points, what company that names the Internet’s most popular search engine?

ANSWER: **Google** [prompt on Alphabet] <Current Events, Liu>

This layer of the atmosphere contains an “anacoustic zone” in which sound cannot be transmitted due to the low density. For 10 points each,

[10] Name this layer of the atmosphere above the mesosphere and below the exosphere, which contains the ionosphere.

ANSWER: **thermosphere**

[10] Since 1998, the thermosphere has been home to this artificial satellite that contains the Kibō module and the Stykovochny Otesek 1. Part of its MSS is named after Canada.

ANSWER: **International Space Station** [or **ISS**]

[10] Energy can be transferred into the thermosphere by extreme UV radiation or this other phenomenon. These streams of charged particles from the sun can be trapped in the Van Allen belts.

ANSWER: **solar wind** [prompt on stellar wind] <Other Science, Siddiqui>

18. **Tim Jenison claimed that this artist used a camera obscura and a “comparator mirror” to create his paintings. A woman holds a cittern and the title correspondence while conversing with her servant maid in this artist’s painting *The Love Letter*, and this artist depicted a girl in blue holding a trumpet and a book in another work. This painter of *The (*) Art of Painting* depicted a girl dressed in yellow and blue pouring milk in *The Milkmaid*. Another of this artist’s subjects wears a blue turban and turns toward the viewer, exposing the title piece of jewelry. For 10 points, name this Dutch painter of *Girl with a Pearl Earring*.**

ANSWER: Johannes **Vermeer** <Visual Fine Arts, Gayden and Sun>

The song *Crocodile Rock* topped this artist’s album *Don’t Shoot Me I’m Only the Piano Player*, which was his second straight No. 1 album in the US. For 10 points each,

[10] Name this British artist of *Your Song*, *Tiny Dancer*, and *Rocketman*. Bernie Taupin wrote most of this artist’s lyrics.

ANSWER: Sir Elton **John** [or Reginald Kenneth **Dwight**]

[10] This Elton John song, which he once sung in honor of Princess Diana, is the best selling single in US history behind *White Christmas*. This song’s chorus notes, “I would’ve liked to know you but I was just a kid.”

ANSWER: ***Candle in the Wind***

[10] In the 2019 film *Rocketman*, Elton John was played by this Welsh actor and singer. This actor starred as Johnny the gorilla in the 2016 film *Sing* and as Gary “Eggsy” Unwin in *Kingsman: The Secret Service*.

ANSWER: Taron **Egerton** <Trash, Gayden>

19. **In 1989, George H.W. Bush signed the Treaty on Open Skies initially proposed by this president. The Yellow Book contained the plans for one of this president’s policies, which he justified by claiming big cities were likely to be military targets. During his second term, this president issued Executive Order 10730 to force the (*) integration of the Little Rock Nine, and signed the Federal Aid Highway Act. This president’s victory over Adlai E. Stevenson II was the first Republican victory in 24 years, and likely resulted from his popularity as Supreme Allied Commander during World War II. For 10 points, name this 34th president, colloquially known as “Ike.”**

ANSWER: Dwight D(avid) **Eisenhower** [prompt on Ike until read] <US History, Gayden, Ed.>

In a semi-autobiographical play by this author, a Jewish intellectual from New York contemplates marrying a German woman named Helga. For 10 points each,

[10] Name this author who created the characters Quentin and Maggie in his play *After the Fall*.

ANSWER: Arthur **Miller**

[10] Maggie is based on this second wife of Miller’s. This woman starred in the film *Gentlemen Prefer Blondes*, and committed suicide one year after divorcing Miller.

ANSWER: Marilyn **Monroe** [or Norma Jean **Mortenson**]

[10] Another of Miller's personal tribulations was his persecution by the McCarthyist House Un-American Activities Committee, which inspired this allegorical play about the Salem Witch Trials.

ANSWER: *The Crucible* <US Literature, Liu>

20. **In a play by this author, a man claims he “does not hate progress,” but instead “only its nature, which makes all roofs and faces look the same.” That man desires to print stamps that depict photos taken by a Stranger of a woman he later marries. Characters enact the “Dance of the Lost Traveller” in a play by this author, before which the schoolteacher (*) Lakunle describes his love for Sidi. In another play by this author, Olunde sacrifices himself after his father Elesin is unable to complete his ritual suicide due to an intervention by Simon Pilkings. For 10 points, name this Nigerian playwright of *The Lion and the Jewel* and *Death and the King's Horseman*.**

ANSWER: Wole Soyinka <World Literature, Siddiqui>

An assumption made by this theory is that the atoms within a molecule will exist in the configuration that minimizes the repulsions between the valence electrons between atoms. For 10 points each,

[10] Name this theory used to predict the shapes of molecules from their Lewis structures.

ANSWER: VSEPR [or Valence Shell Electron Pair Repulsion theory]

[10] VSEPR [“VES-purr”] theory predicts that this compound takes a “bent” molecular geometry because the central oxygen atom is bonded to two hydrogen atoms and has two lone pairs.

ANSWER: water [prompt on H₂O]

[10] Due to relativistic effects, nihonium trifluoride likely takes this molecular geometry. Halogen trifluorides typically adopt this geometry with two equatorial lone pairs.

ANSWER: T-shaped [accept AX₃E₂] <Chemistry, Siddiqui>

TIEBREAKER: Clebsch-Gordan coefficients arise when this quantity is expanded in uncoupled bases. The magnetic moment is equal to this quantity times the gyromagnetic ratio. Rotationally invariant systems conserve this property according to Noether's theorem, and Kepler's second law implies the (*) conservation of this quantity, which can also be demonstrated by a figure skater tucking in their arms. This quantity is equal to the product of the moment of inertia and angular velocity. For 10 points, name this quantity symbolized L, the rotational analogue of linear momentum.

ANSWER: angular momentum [do NOT accept or prompt on “linear momentum” or “momentum”] <Physics, Sun>