**Packet of Michigan, Michigan State Students**

**Packet 12**

Packet by: Harris Bunker, Dillon Edwards, Austin Foos, Lucas Weingartz, Trent Koch, Sarah Wrase, Dominic Aluia, Alan Hettinger, Jasmine Czajka, Briana Magin, Tony Incorvati, Erik Bubolz, Siddhant Dogra, Rahul Keyal, Jonathan Suh, Kevin Yu and Vishal Puppala with assistance from many others

Tossups

1 **Microbes release siderophores to bind to one element in this group. The spectrochemical series ranks compounds on their ability to increase the splitting energies of these elements. Octahedral geometries are formed when elements of this group interact with ligands, as explained by crystal field theory. Variable oxidation states** (\*) and high catalytic activity are properties of these elements, which have incomplete d-orbitals. Lying between the metalloids and the alkaline earth metals on the periodic table is—for 10 points—what group of elements that includes chromium and copper?

ANSWER: **Transition metals** (prompt on “metal”)

2. **One movement in this piece is only four measures long and features the soprano soloist singing descending triplets over the rest of the ensemble, which plays only whole notes. One section of this five-part work, “On the Green,” is sung in German, and the rest of the piece is sung in Latin. There are two movements of this work, called “Veris leta facies,” and “Olim lacus colueram,” in which no (\*)** violins play. The opening and closing of this piece are addressed to the Empress of the World who, “waxes and wanes like the moon.” For 10 points, name this work whose best-known section is “O Fortuna,”—a cantata by Carl Orff.

ANSWER: ***Carmina Burana***

3. **This deity patronized the hero Starkad and heroes of the Volsung family. Along with Freya, this god is associated with the shamanistic seidr [pr. “Say-der”] ritual. This consumer of only wine once seduced the daughter of Suttung to receive the (\*)** mead of poetry. In one myth, this god traveled to the underworld on his eight-legged horse Sleipnir. This god, whose ravens Hugin and Munin allow him to see events in Midgard, gained knowledge from the well of Mimir and gave up an eye to do so. For 10 points, name this “all father” of the Norse Aesir.

ANSWER: **Odin** (or **Wotan**, **Woden**)

4. **One part of this component stores the mapping of virtual to physical addresses in its page table. That part is the MMU. These objects follow the fetch, decode and execute steps. This object is inserted pin-side down into the motherboard. This component is made up of both an (\*)** ALU and CU, which gets instructions from the memory. The frequency in which these components operate is known as the clock rate. AMD and Intel often produce—for 10 points—what computer element that can do basic mathematical computations and reads program instructions?

ANSWER: **CPU** (or **Central Processing Unit**, accept MMU or Memory Management Unit before mention)

5. **During a storm, the then-exiled protagonist of this novel dreams of his late father before a wealthy gentleman invites him to a residence along the shore. Three young men rate women during a rainy night in “The Broom Tree” chapter of this book. After being unable to choose between two suitors, one character in this novel drowns herself in the** (\*) Uji river. A blank chapter in this book is interpreted to represent the protagonist’s death. That protagonist had earlier slept with the empress of his father while he is married to Aoi. For 10 points, name this early novel about a Heian noble written by Lady Murasaki.

ANSWER: ***The Tale of Genji*** (or ***Genji Monogatari***)

6. **In a painting of this artistic movement by the artist of *Young Woman Powdering Herself* a girl does tricks off a white horse at the circus. An artist in this movement depicted several orange and blue sailboats in a harbor in his *The Red Buoy*, and painted another work which features a man holding a flower in front of kaleidoscopic swirls. That painting is *Portrait of Félix* (\*)***Fénéon*. Another painting contains a border done in this technique as well as a monkey next to a dog who are underneath a woman holding a parasol. For 10 points, what technique was used by Paul Signac and by the artist of *A Sunday Afternoon on the Island of La Grande Jatte*, Georges Seurat in which artists use tiny dots?

ANSWER: **Pointillism** (prompt on “impressionism” or “neo-impressionism”)

7. **A poem by this author mentions a “cider-press” and a “granary floor” and asks “Where are the songs of Spring”? One poem written by this man says “Ah, happy, happy boughs! that cannot shed/Your leaves, nor ever bid the Spring adieu”**. **Another poem by this poet ends by saying “Fled is that music: --Do I wake or sleep? (\*)** and describes the title animal as “immortal**”**. A famous poem by this poet contains the famous line “Beauty is truth, truth beauty” and concerns a vase. For 10 points, identify this Romantic poet who penned “To Autumn”, “Ode to a Nightingale” and “Ode on a Grecian Urn”.

ANSWER: John **Keats**

8. **A Freedom Plaza ANSWER coalition protest that was stopped by police was supposed to occur during this event. During this event, one group of people were told to smoke weed every 4 minutes and 20 seconds as weed was given out. Jackie Evancho performed the national anthem for this event, and after mentioning Pepe the Frog (\*)**, Richard Spencer was punched in the face near this event. This event’s address, largely written by Stephen Miller, said there would be a transfer of power from “Washington D.C. back to the People”. That speech also said that “We will make America Safe Again”. For 10 points, name this event in which the 2016 presidential election winner was sworn into office.

ANSWER: Donald **Trump’s** Presidential **Inauguration**

9. **The Pfaffian Brief united six states in what is now this modern-day country, which saw Niklaus Leuenberger lead peasants in a 1653 war after the devaluation of its money. Christopher Froschauer sparked outrage by serving sausages during Lent in a city in this country that fought the Kappel Wars. This country’s “Old Confederacy” met its doom at the hands of Napoleon, who instituted the (\*)** Helvetic Republic. The Pope is protected by this country’s guard, which wears striped uniforms and carry halberds. For 10 points, name this country known for its eternal neutrality that has its capital at Bern.

ANSWER: **Switzerland** (or **die Schweiz**, or **Swiss Confederation**)

10. **In one opera by this composer, the protagonist looks in the mirror and sings the aria “Un dì, felice, eterea” with Alfredo. Act 1 of an opera by this man features a duel between Manrico and the Count di Luna. The “Anvil (\*)** Chorus” appears in one opera by this composer, while in another, the “O Patria Mia" aria is sung by the title character who is in love with her captor. This composer of *Il Trovatore* composed an opera where Radames is buried alive after falling in love with an Egyptian princess. For 10 points, name this Italian operatic composer of the Alexander Dumas-inspired *La Traviata* and *Aida*.

ANSWER: Giuseppe Fortunino Francesco **Verdi**

11. **Liberati and Maccione hypothesized that space time itself may be a manifestation of this phenomenon. Lev Landau said that a “second sound”** **would be unique to this phenomenon**. **One value associated with this phenomenon is found on the temperature versus specific heat capacity graph. (\*)** This phenomenon might occur due to how many atoms become described by a single wave function. For liquid helium, this occurs bellows the lambda point of 2.17 Kelvin and allows helium to seep up walls. For 10 points, identify this phenomenon that occurs when there is no viscosity in a liquid.

ANSWER: **Superfluidity**

12. **This man was dubbed the “bridge wizard of Manila” and rejected an offer of the police chief position of Quezon City. One journalist dubbed this man’s cabinet as “eight millionaires and a plumber”. In his “Chance for Peace” speech, he listed peaceful alternatives to building a heavy bomber.** **Later, this man ordered the 101st Airborne Division to ensure the integration of** (\*) Little Rock Central High School. This president warned of the rise of the military-industrial complex in his farewell address. For 10 points, name this president who was the supreme commander of Allied forces in Europe during World War II.

ANSWER: Dwight D. “Ike” **Eisenhower**

13. **A Uni leads a group of the Catholic Chachi people in this country. This country’s coat of arms, which appears on its flag, contains a river in front of a large mountain. This country owns the volcano-produced Island of Isabela and is the only country in the world where penguins can be in their natural habitat in the (\*)** Northern Hemisphere. The inactive volcano Chimborazo in this country lies on the Occidental side of the Andes. The *HMS Beagle* visited a group of islands of this country where Charles Darwin researched finches. For 10 points, name this South American country found between Colombia and Peru, with capital at Quito.

ANSWER: **Ecuador**

14. **The crusader Torello is recognized by the ring his wife gave him after being returned to a town outside Pavia with the help of Saladin in this work. A character in this work stays faithful to her husband Gualtieri despite him pretending to kill their children. (\*)** Dioneo ends this work with his "tale of the patient Griselda." At this work's opening, a *brigata* of 7 women and 3 men escape from the Black Death by traveling to a villa outside Florence. For 10 points, name this collection of a hundred stories told over 10 days, a work of Giovanni Boccaccio.

ANSWER: *The* ***Decameron***

15. **The Ziehl-Neelsen stain is used to detect the causative agent of this disease. Pott disease can occur when this condition spreads to the spine. The administration of the Bacillus Calmette-Guérin or BCG vaccine to treat this disease can lead to a false positive Mantoux [pr. “Man-too”]** (\*) skin test. If a person has one copy of the gene for Cystic Fibrosis, they may be protected slightly against this disease that is caused by a mycobacterium infection and is associated with rapid weight loss, leading it to be also known as Consumption. For 10 points, name this airborne infectious disease of the lungs often contracted through smoking that is abbreviated TB.

ANSWER: **Tuberculosis** (accept TB and Consumption before mentioned)

16. **A character in this play decides not to go agricultural school after going to the drugstore with a character who apologized for calling him “conceited and stuck-up”. Though the horse “Bessie” is pantomimed in by the actor, milk is delivered by Howie in this play. After (\*)** dying, a character in this play decides to try to relive the morning of her twelfth birthday. In the beginning of this play, the stage is empty except for tables and chairs representing the Gibbs and Webb families. For 10 points, identify this play narrated by the Stage Manager which is set in Grover’s Corners and was written by Thornton Wilder.

ANSWER: ***Our Town***

17. **Bertrand du Guesclin was ransomed for 1000 francs by forces partially commanded by a Duke named John IV after one battle in this conflict. Primitive cannons were used in several battles in this war including one where Sir John Chandos led forces near the Somme. Another battle in this larger conflict took place on (\*)** St. Crispin’s day and was notable because of Welsh and English use of the longbow. That battle, Agincourt, took place during this war in which Joan of Arc convinced Charles of Valois to let her lead a French cavalry at Orléans. For 10 points, name this long war in which the English claimed the no-longer-Capetian French throne.

ANSWER: **Hundred Years’** War

18. **Though not a *Homo Habilis*, the *Garhi* member of this taxonomic group had a small brain but could open up animal bones. Containing grinding herbivorous teeth, the *Paranthropus* genus was likely descended from this genus. Johanson and White named one member of this species and 300** **(\*)** skeletons of that member of this species have been found. The skull of the Taung Child indicates it was likely a member of this species. The remains of one member of this species were discovered in the Hadar Formation by Maurice Taieb and was named “Lucy”. For 10 points, identify this extinct hominid that lived in Eastern Africa that is a possible human ancestor.

ANSWER: ***Australopithecus*** *Afarensis* (also accept ***A. Africanus***, or ***A. bahrelghazali*** as there is not a consensus on different species, accept Paranthropus before mention)

19. **King Baasha tried to build the fortress of Ramah near this city, but abandoned the attempt due to an invasion by Ben-Hadad I. A mountain near this city was the location of the threshing floor of Araunah, which was purchased by a man after an angel brought three days of plague upon the land. Earlier, that same mountain near this city was the site of a human sacrifice attempt (\*)** that was aborted when an angel provided a ram for Abraham instead. Nebuchadnezzar II of Babylon sacked this city, which marked the end of the Kingdom of Judea. For 10 points, name this city that housed the Jewish temples.

ANSWER: **Jerusalem** (accept **Yerushalayim**; accept **al-Quds**)

20. **After suffering a surprise attack by his northern neighbor, this man made a failed appeal to the US for armed support and his country asked for free food from the US following poor harvests. This leader favored a uniform law code for his country, which became article 44 of his country’s Constitution. During a crisis over Kashmir, this man instructed his defense minister (\*)** V.K. Menon to undertake an 8-hour filibuster in front of the U.N. Security Council. This man had a rivalry with the Muslim League under Muhammad Ali Jinnah which led to the partition of their country along religious lines. For 10 points, name this first prime minister of India famous for his jackets.

ANSWER: **J**awaharlal **Nehru** (prompt on Nehru)

21. (TB) In one of Bridgman’s equations, the partial derivative of this quantity with temperature held constant is equal to negative volume. In the derivation of the Nernst equation, this quantity is equivalent to the negative number of electrons transferred times Faraday’s constant times the electrochemical potential. A reaction is favorable, or spontaneous, when the change in this joule-measured quantity is negative. The change in this quantity is defined as the change in heat minus temperature times the change in entropy. For 10 points, identify this thermodynamic value that is the maximum reversible work for a system that is symbolized G.

ANSWER: **Gibbs free energy** (accept f**ree enthalpy**, prompt on free energy)

22. (TB) In a novel by this man, the devil shatters a mirror which sends splinters all around the world that enter people’s eyes and hearts and turn people vindictive. Gerda and Kai appear in that story by this author. The title character of another story by this man has five older sisters and a widowed father. That title character, longing after a soul and a husband to marry, makes a deal that if she cannot get a man to fall in love with her, she will die and become sea foam. Another story by this author of *Snow Queen* features a protagonist who is bullied for his appearance until he grows into a beautiful swan. For 10 points name this Danish author of “The Ugly Duckling,” and “The Little Mermaid.”

ANSWER: Hans Christian **Andersen**

Bonuses

1.This A major symphony was inspired by its composer’s tour of Europe. For 10 points each:

[10] Identify this symphony that combines two of the folk dance styles of saltarello and tarantella in its fourth and final movement. This symphony also contains the clarinet and piano scored “Pilgrim’s March”.

ANSWER: ***Italian Symphony*** (or **Symphony No. 4**, **Mendelssohn’s Op. 90** but do not reveal Mendelssohn)

[10] This German Romantic composer composed the *Italian Symphony* as well as *The Hebrides* Overture and the *Scottish Symphony*.

ANSWER: Felix **Mendelssohn** Bartholdy

[10] Mendelssohn also created incidental music to Shakespeare’s *A Midsummer Night’s Dream*, which included a march named after this event where the march is frequently played.

ANSWER: **weddings** (or **Wedding March in C major**, accept wedding equivalents such as “**marriages**” or “**nuptials**”)

2. These entities are a set of elements that contains a binary operation.

[10] For 10 points, identify these mathematical objects that also satisfy the four properties of closure.

ANSWER: **Groups**

[10] Unlike groups, rings have two binary operations. One is addition, and the other is this operation that comes in dot product or cross product forms for vectors.

ANSWER: **Multiplication**

[10] This ring lacks a multiplicative inverse. Examples of these numbers include negative 1, 0, and 2 and this set is symbolized by a blackboard bold Z.

ANSWER: **Integers**

3. A Washington Post article about this CBS sitcom said its finale “betrayed the series’ ideals” because it turned out one character had died before the main events of the show. For 10 points each:

[10] Name this show that stars Josh Radnor as the main character Ted. It also stars Jason Segel as Marshall and Neil Patrick Harris as the womanizing Barney.

ANSWER: ***How I Met Your Mother***

[10] In *How I Met Your Mother*, Barney Stinson is known for his many catchphrases. He often describes his exploits using this adjective, often interjecting “wait for it” into the middle of this word.

ANSWER: “**legendary**”

 [10] In the final episode of *How I Met Your Mother* after a divorce from Robin, Barney regresses to his previous womanizing ways but tells this character “You are the love of my life. Everything I have and everything I am is yours. Forever.”

ANSWER: **Ellie Stinson** (accept anything suggesting **his daughter**)

4. A book about this hero was translated by Seamus Heaney. For 10 points each:

[10] Identify this hero who is mentored by Hrothgar before becoming king of Geatland [“yate” land].

ANSWER: **Beowulf**

[10] Before he slays the dragon, Beowulf kills this monster and its mother. This monster is exiled to the swamp lands and is said to be a descendent of Cain in the poem.

ANSWER: **Grendel**

[10] This friend of Beowulf helps him fight the dragon. This son of Weohstan is told to “watch his people’s needs” by the dying Beowulf.

ANSWER: **Wiglaf**

5. Answer the following about things related to the history of Tokyo for 10 points each.

[10] The Edo period, in which Tokyo was the capital of Japan, was ended by this man whose “Restoration” saw Japan industrialize and become a world power.

ANSWER: Emperor **Meiji** the Great

[10] From Tokyo in 1945, Emperor Hirohito said during this radio broadcast that Japan would unconditionally terminate its war efforts and accept the Potsdam Declaration

ANSWER: **Jewel Voice** Broadcast (or **Gyokuon-hōsō**)

[10] This leader of the Japanese military during the second World War was hung in 1948. He previously led Japanese forces in Inner Mongolia and became chief of the Army General Staff during the war.

ANSWER: Hideki **Tojo**

6. These ideas can only be understood by those who obtain Nirvana. For 10 points each:

[10] Identify these numerically-named philosophical concepts, one of which claims that the path that frees us from suffering is called magga.

ANSWER: **Four Noble Truths**

[10] The Four Noble Truths are central to this faith in which Siddhartha Gautama preached a way to end samsara.

ANSWER: **Buddhism** (accept specific forms such as **Theraveda** or **Mahayana Buddhism**)

[10] This concept, which is usually translated to mean “pain” is explained in the First Noble Truth. Also meaning stress, this word is related to life by the Buddha.

ANSWER: **dukkha**

7. These compounds cannot be synthesized by the body. Therefore, humans must add them into their diets. For 10 points each:

[10] Name these organic compounds, for which many people take a daily supplement. A deficiency in one of these compounds causes scurvy.

ANSWER: **vitamin** (accept **Vitamin C** specifically)

[10] This class of vitamins contains eight members and is commonly found in grains. The numerically first member of this class is known as thiamine and is used to remedy beriberi.

ANSWER: **B** vitamins

[10] This B vitamin plays a key role in the metabolism of lipids, proteins, and carbohydrates. Eggs, almonds, and milk are all a good source of this vitamin that promotes nail and skin health.

ANSWER: **B7** or **biotin** (prompt on vitamin H, coenzyme R)

8.This landmass is the driest, windiest continent on Earth, and is home to the world’s largest desert. For 10 points each:

[10] Name this continent, the fifth largest, which is home to research stations such as McMurdo, and Neumayer. It is also the location of the South Pole.

ANSWER: **Antarctica**

[10] This floating megalith of ice was discovered in 1841 and named after its discoverer. This massive ice shelf on the “southern” coast of Antarctica is approximately the size of France.

ANSWER: **Ross** Ice Shelf

[10] This northwestern bay in Antarctica is notable for its cover from heavy winds by Anvers Island and the Argentine cruisers that often show tourists this bay.

ANSWER: **Paradise Bay**

9. The SEAT 600 car was created during this leader’s regime, which was experiencing an “economic miracle” until 1974. For 10 points each:

[10] Name that autocrat that led the Nationalists to victory in the Spanish Civil War and ruled over Spain for over 39 years.

ANSWER: Francisco **Franco**

[10] After Francisco Franco elevated Luis Carrero Blanco to prime minister in 1973 the ETA killed Blanco in this operation to limit possible successors to the aging Franco.

ANSWER: Operation **Ogre** (also accept **Operación Ogro**)

[10] This party was the only legal party in Spain during Franco’s rule. This fascist political party merged with the Carlists and was dissolved in 1977.

ANSWER: **Falange** (or **Traditionalist Spanish Phalanx of the Committees of the National Syndicalist Offensive** or that in Spanish)

10. Answer the following related to the British philosopher Bertrand Russell, for 10 points each:

[10] Russell used this object named after a common household device in an analogy that refutes the idea that the skeptic must present proof. Russell said, in fact, the burden of proof rests on the person making the claim.

ANSWER: Russel’s **teapot**

[10] Russell is most famous for his work in the philosophy of this discipline and he wrote a text about it with Alfred North Whitehead. Russell said that the set of all sets is not a member of itself which was a paradox central to this field of study.

ANSWER: **math**ematics (prompt on answers like “first order logic”)

[10] Some, such as Jon Stewart, note that this Russell book created myths about Hegel. This book also contains a heavy critique by Russell of non-empirical or non-analytic philosophy overall—though it was intended to be neutral.

ANSWER: ***The History of Western Philosophy***

11.This ruler was the target of Margaret Nicholson’s half-hearted assassination attempt. For 10 points each:

[10] Name this Hanoverian British monarch whose last nine years saw him rule in the infamously known period of time called the Regency. He is best known for reigning during the American Revolution.

ANSWER: **George III** of Hanover

[10] This man, who was Prime Minister of Great Britain while George III was supposedly competent, succeeded Charles Townsend as the Chancellor of the Exchequer and led Parliament during the Falklands Crisis with Spain.

ANSWER: Lord **North** (or Frederick **North**, 2nd Earl of Guilford)

[10] The Regency period was ruled over by George IV, who signed this treaty that ended the War of 1812.

ANSWER: Treaty of **Ghent**

12. Answer the following about poetry in the Roman Empire for 10 points each:

[10] This poet of *Ars Poetica* coined the term “carpe diem” in his “Ode to Leuconoe”.

ANSWER: **Horace** (or Quintus **Horatius** Flaccus)

[10] This other Roman poet wrote several sexually inflammatory poems and a eulogy for his brother in which he claimed “And forever, brother, hail and farewell” at its end.

ANSWER: Gaius Valerius **Catullus**

[10] Catullus wrote several poems to this woman including ones entitled “Tears for [her] Sorrow” and “The Death of [her] Sparrow”. That latter poem says this woman’s eyes were “swollen and red with weeping”.

ANSWER: **Lesbia**

13. This field’s name is derived from the Greek words for “measure” and “element.” For 10 points each:

[10] Name this branch of chemistry that deals with the relative quantities of products and reactants in a chemical reaction. It is most often used in balancing equations with its namesake coefficients.

ANSWER: **stoichiometry**

[10] This term refers to any reactant that is consumed at some point in a reaction but is later regenerated in the same reaction. These reactants differ from stoichiometric reactants, which are not present once the reaction has proceeded to completion.

ANSWER: **catalyst** (accept **catalytic** reactant)

[10] Stoichiometry is based in part upon this principle, which states that a given chemical compound will always have its elements in a fixed mass ratio. Every molecule of water will be roughly eight-ninths oxygen and one-ninth hydrogen by mass according to this law.

ANSWER: l**aw of constant composition** (accept any of **Proust’s law**, **law of definite composition**, l**aw of definite proportions**)

14. Answer some questions about questionable election results for 10 points each:

[10] In 2014, this country held its first election since the death of Kim Jong Il. In that election, this country posted an “amazing” 99.97 percent voter turnout for the winning Worker’s Party.

Answer: **North Korea** (or **DPRK**)

[10] 96 percent of voters in this area supported joining the Russian Federation in 2014 in what was seen internationally as a violation of Ukrainian sovereignty.

Answer: **Crimea**

[10] The British Natural Environment Research Council disregarded this name submission for an online poll that would decide the name of a ship. This winning name was passed over for the *HMS David Attenborough*.

ANSWER: **Boaty** **McBoatface**

15. Answer the following questions related to the cult of a certain Roman goddess for 10 points each:

[10] This virginal goddess was worshipped by six full-time priestesses who were supposedly buried alive if they broke their chastity oaths.

ANSWER: **Vesta** (prompt on “Vestal virgins”)

[10] Vesta, and her Greek equivalent Hestia were goddesses of this phenomenon and the home which is why fire was sacred to Vesta.

ANSWER: **hearth** (or equivalents such as **fireplace**)

[10] Vesta’s mother was this figure who was a goddess of wealth and was married to Saturn. Other children of this goddess include Neptune and Pluto.

ANSWER: **Ops** (or **Opis**)

16. Answer the following about painters from the Dutch Golden Age for 10 points each:

[10] This Dutch artist was famous for his self-portrait where he is wearing a top hat and painted the inaccurately-named *The Laughing Cavalier*.

ANSWER: Frans **Hals**

[10] Jacob van Ruisdael was famous for his art depicted this kind of scenery. Paintings in this style by him include *A Waterfall at the Foot of a Hill near a Village* and *Bentheim Castle* which both depict trees and the skyline.

ANSWER: **landscapes** paintings (accept clear knowledge equivalents)

[10] This mythological figure was depicted by Dutchman Dirck van Baburen *being Chained by Vulcan* as Mercury stands in the background. This chained figure is also attacked by a bird in a painting by the Flemish Peter Paul Rubens.

ANSWER: **Prometheus**

17. While you may have missed it, we’ve had a question on the musical *Hamilton*, so answer some questions about the unrelated Hamiltonian operator for 10 points each:

[10] When using the Hamiltonian operator on the wave function, this equation can be found. This differential equation, named for an Austrian, describes how the wavefunction changes over time.

ANSWER: The **Schrödinger Equation**

[10] The Hamiltonian is an operator corresponding to the total energy of a system. The total energy is the sum of the kinetic energy and this other type of energy represented by a rock on top of a hill.

ANSWER: **Potential** Energy

[10] The Hamiltonian operator can help one find these kinds of “states” because an energy one of these states is the Hamiltonian. These states arise when an object’s position can be “pinned down”.

ANSWER: **Eigenstate**

18. This author's one-act play *The Real Inspector Hound* satirizes the murder mysteries of authors like Agatha Christie with its play-within-a-play set in Muldoon Manor. For 10 points each:

[10] Name this author who also described a play-within-a-play in his work paralleling the downfall of actors Max and Charlotte's fictional marriage with their actual marriages, *The Real Thing*.

ANSWER: Tom **Stoppard**

[10] Hannah Jarvis discovers that Septimus Hodge was the "hermit of Sidley Park" at the end of this Stoppard play. It begins with Septimus discussing the phrase "carnal embrace" with his pupil Thomasina Coverly.

ANSWER: ***Arcadia***

[10] Stoppard co-wrote the screenplay to a 1998 movie about this Elizabethan playwright "in love." Stoppard's most famous play, *Rosencrantz and Guildenstern are Dead*, adapts the tragedy this man wrote about a Prince of Denmark.

ANSWER:William **Shakespeare**

19. Answer some questions about the exploits of George McClellan, for 10 points each.

[10] McClellan first made his name with two small victories in this state founded in 1863. These included the Battle of Philippi, considered the first land action of the American Civil War.

ANSWER: **West Virginia**

[10] These small victories propelled McClellan to commander-in-chief of the Union Armies, where he undertook this first major offensive by the Army of the Potomac since Bull Run. This campaign included the Seven Days Battles, where Robert E Lee drove McClellan from Virginia.

ANSWER: **Peninsula**rCampaign

[10] McClellan faced Lee again at this battle in Maryland, the single bloodiest day of the war. McClellan failed to destroy Lee’s army at this battle, even though his unused reserves outnumbered Lee’s force.

ANSWER: Battle of **Antietam (**also accept Battle of **Sharpsburg**)

20. This poet described his experiences as an ambulance driver in his *The Enormous Room.* For 10 points each:

[10] Identify that American poet, known for eschewing punctuation, who wrote “anyone lived in a pretty how town”.

ANSWER: e.e. **Cummings**

[10] Cummings also wrote this poem about a “conscientious object-or” who is thrown into a “dungeon” and presumably dies in prison.

ANSWER: “**i sing of Olaf glad and big**”

[10] Cummings, along with other American luminaries who lived in Paris, was part of this generation that was named by Gertrude Stein. Other writers from this generation that grew up during the first World War include Hemingway and Dos Passos.

ANSWER: **Lost** Generation

21. For 10 points apiece, answer the following about an American industrialist:

[10] This Scottish-American steel magnate led a company that was opposed by the Pinkerton strikers. This man sold his steel company to J.P. Morgan for 480 million dollars.

ANSWER: Andrew **Carnegie**

[10] Carnegie wrote in this essay that rich business owners had an obligation to do philanthropy and improve the world.

ANSWER: “**Gospel of Wealth**”

[10] This Carnegie steel manager was primarily responsible for handling the Pinkertons. Almost assassinated by Alexander Berkman, this man also owned a whiskey company with Andrew Mellon.

ANSWER: Henry Clay **Frick**