**Packet of Michigan, Michigan State Students**

**Packet 7**

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Tossups

1. **In one novel by this author, a dentist with Nazi sympathies helps Howard W. Campbell evade capture for serving as a propagandist during World War II. This author of *Mother Night* wrote a novel in which Dwayne Hoover loses his mind in a bar. A waitress in that novel refers to a martini as (\*)** “the breakfast of champions.” This author wrote a novel in which a woman dies of carbon monoxide poisoning while visiting her husband. In that novel, workers hide spoons in a syrup factory. The protagonist of that novel becomes “unstuck in time” and is captured in the firebombing of Dresden. For 10 points, name this author of *Slaughterhouse-Five.*

ANSWER: Kurt **Vonnegut** Jr.

2. **Electrons solvated in a liquid form of this compound give off a characteristic blue color, and this compound is detected using Nessler’s reagent. This compound is mixed with silver nitrate in Tollens’ reagent. An umbrella inversion involves the flipping of this compound’s lone pair. A synthesis of this compound uses high-pressure heat ramping on an iron catalyst to combine (\*)** gaseous hydrogen and nitrogen; that synthesis is the Haber process. This trigonal pyramidal compound is commonly used as a weak base. For 10 points, identify this compound common in fertilizer, with the formula NH3.

ANSWER: **ammonia** (do not accept or prompt on ammonium)

3. **This monarch, along with his mother, established the Quedlinburg Abbey, which helped earn his mother sainthood. This monarch, the son of Matilda of Ringelheim, fought against the son of his first marriage, Liudolf, the Duke of Swabia. In this man’s greatest military triumph, his forces killed Harka Bulcsu.** **(\*)** That battle included the death of his ally Conrad the Red after Conrad was struck in the throat with an arrow. The Magyar westward expansion into Central Europe was stopped after this son of Henry the Fowler’s victory at the Battle of Lechfeld. For 10 points, name this “great” Saxon, who was crowned the first Holy Roman Emperor in 962.

ANSWER: **Otto** the **Great** (accept **Otto I**, prompt on Otto)

4. **A copycat of this man killed three people in New York City in the early Nineties. That man was Heriberto Seda. This criminal initially targeted young couples, but his behavior changed with his murder of the cab driver Paul Stine. A famous police sketch shows him with close cropped hair and glasses. (\*)** This outlaw was known for sending letters and ciphers to three newspapers where he bragged of his exploits and mocked the police investigating him. Of the four ciphers sent, only one has been conclusively solved. For 10 points, name this American serial killer whose identity remains unknown and who killed at least 5 people in California during the 1960s and ‘70s.

ANSWER: The **Zodiac** killer

5. **This musical instrument was featured in a D-minor Edouard Lalo piece where this instrument enters with a thrice-played ad lib theme. A solo piece composed for this instrument contains an adagio second movement which features a cadenza flute accompaniment. In addition to Dvořák’s concerto for this instrument, an E-minor solo concerto for this instrument was composed by (\*)** Edward Elgar and was famously performed by Jacqueline du Pré. One player of this instrument, which can come in full or 4/4 size, played “Air and Simple Gifts” at Barack Obama’s inauguration. For 10 points, identify this four-string instrument played by Yo-Yo Ma.

ANSWER: **Cello** (or **Violoncello**)

6. **One character in this novel imagines a woman made of sky who lures him to death with her beauty like a siren. A hated former teacher who got fired for her German ancestry becomes a born-again Christian in this novel. A kiss at Bourton with** (\*) Sally Sexton is nostalgically remembered by the protagonist of this novel who is married to a member of Parliament. The shell-shocked World War I veteran Septimus Smith jumps out of a window near the end of this novel. For 10 points, identify this stream of consciousness novel about Clarissa’s party preparation written by Virginia Woolf.

ANSWER: ***Mrs. Dalloway***

7. **HD-ZIP III genes work with Brassinosteroid to differentiate elements in the formation of this tissue. A protein released during that process in this issue spreads in irregular pattern in mutant plants. When this tissue is developing, a secondary cell wall forms. Secondary growth of this tissue (\*)** toward the pith can occur in vascular cambium. The secondary form of this tissue is mainly found in conifers and angiosperms. The main cells found in this tissue are tracheid and vessel elements. The inner bits of trees are composed of—for 10 points— this plant tissue that moves water and is contrasted with phloem.

ANSWER: **Xylem**

8. **An island that is part of this state contains the Montauk Lighthouse on its East End and contains the city of Sag Harbor. Eleven lakes in this American state are known for their wine—particularly for Rieslings. Watkins Glen State Park (\*)** is also near those lakes. A massif in this state has its highest point at Mount Marcy. This state, the home of the Adirondack Mountains, also contains the Finger Lakes and the Eerie Canal flows primarily through this state’s city of Rochester. For 10 points, identify this Northeastern state whose capital is Albany.

ANSWER: **New York**

9. **One of this polity’s early rulers is depicted in limestone with birds feasting upon the corpses of his enemies in the Stele of the Vultures. The first ruler of a city in this state supposedly ruled for 80 years and was named Mesanepada. The priestess poet Enheduanna wrote hymns in a city in this civilization in which a stylus (\*)** was pressed into soft clay in this civilization’s cuneiform writing.During its height, this culture constructed many monuments— most famously the Great Ziggurat. For 10 points, name this early Mesopotamian civilization which was centered around cities such as Eridu, Uruk, and Ur.

ANSWER: **Sumer**ia

10. **A member of this movement depicted a man infatuated with the Lady of the Lake in his *The Beguiling of Merlin*. One painting from this school was criticized by Charles Dickens for its realistic depiction of Jesus in his parents’ house. Elizabeth Siddal was a model for a depiction of** **(\*)** Ophelia by a member of this movement. A member of this movement often illustrated books of poetry written by his sister Christina. Members of this school were critical of the work of Joshua Reynolds, and attempted to replicate the spirit of a Renaissance painter. For 10 points, identify this movement whose members included Dante Rossetti and John Everett Millais.

ANSWER: **Pre-Raphaelite Brotherhood** (accept **PRB**)

11. **Eötvös’** [pr: “yot-vush”] **rule can be used to predict this value if the density, molar mass and critical temperature of the substance are known. Many objects that affect this value contain sodium dodecyl sulfate. (\*)** The units usually associated with this value are dynes per centimeter. Soaps and detergents act as surfactants because they lower this value. This phenomenon is created because the cohesive forces act only on molecules adjacent to and below the molecules associated with this phenomenon. For 10 points, identify this phenomenon that allows for some insects to walk on water.

ANSWER: **Surface Tension**

12. **This man’s best friend intentionally overshot an arrow as a signal for him to escape. He acted insane and drooled on his beard to escape Achish, the king of Gath. Abishag the Shunammite cared for him near the end of his life. This man’s wife rebuked him for his public dancing, for which she died childless. (\*)** This man and his followers took refuge in the Cave of Adullam, where he spared the life of his father-in-law numerous times. Earlier, this youngest son of Jesse charged at an opponent who came with a sword, spear, and a javelin, and defeated that enemy by flinging a stone at him. For 10 points, name this second king of Israel who slew Goliath.

ANSWER: **David**

13. **In 1936, Congressman Caroline Love Goodwin O’Day commissioned Guy Pene du Bois to create a mural of this man in the Rye Post Office lobby. Votes from Otsego, Tioga and Clinton counties were thrown out in an election this man participated in. A piece of legislation named for this man was praised by the pseudonym Camillus and included provisions about** (\*) removing British soldiers from the American West**.** This man presided over the court case *Chisholm v Georgia,* which would later be superseded by the 11th amendment. For 10 points name this New York-born First Supreme Court Chief Justice.

ANSWER: John **Jay**

14. **One celibate character in this work waits to die until the Winter Solstice. A group is exiled for twelve years after a character loses a dice game in this work. In a myth from this work, a character's head blows up when another character’s head lands in his lap. Dhritarashtra goes blind and Kunti asks the gods to give her children at the beginning of this story. The descendants of Kuru (\*)**, the Kauravas, battle against the Pandavas in this work. The *Bhagavad Gita* is contained within this larger work which features Arjuna and his charioteer Krishna. For 10 points, identify this Sanskrit epic.

ANSWER: ***Mahabharata***

15. **In a play by this author, a character says “Your words are a lovely insult to your god” during Episode 3. In a different play by this author, which opens at the palace of Trozean, the chaste title character hates Aphrodite. In that same play, a character promises to starve herself to avoid sleeping with her stepson. (\*)** This playwright depicted the punishment of Pentheus, the imprisoner of Dionysius, who is killed by his mother during her craze. In another play by this author, the title ex-wife of Jason kills her children and Jason’s new Corinthian wife. For 10 points, name this Athenian tragic playwright of *Hippolytus*, *Bacchae*, and *Medea*.

ANSWER: **Euripides**

16. **The “Two Whatevers” supported the leader of this event after it had taken place. One person central to this event was a Defense Secretary who died in a plane crash while trying to flee to the Soviet Union. A leader of this event was irked by the Soviet invasion of Czechoslovakia in 1968. This event ended with its leader’s death** **(\*)** and the arrest of Jiang Qing and the rest of the Gang of Four. The Red Guard helped perpetuate this event that targeted academics and followed the Great Leap Forward. For 10 points, identify this period of extreme anti-traditionalism in China which occurred under Mao Zedong.

ANSWER: Great Proletarian **Cultural Revolution** (or **Wuchanjieji Wenhua Dageming)**

17. **“Oh! is there not one maiden breast?” is sung by a character unfamiliar with women in this opera. This opera begins in Cornwall when a character says he is done with his apprenticeship and that character’s February 29th birthday causes him to reveal that the father of Mabel (\*)** is not an orphan. The title characters of this opera are revealed to be of noble birth after the song “in Queen Victoria’s Name”. One character in this opera says “From Marathon to Waterloo, in order categorical” and that he is a “modern Major-General”. For 10 points identify this Gilbert and Sullivan comical opera where Frederic works for maritime thieves.

ANSWER: ***The Pirates of Penzance***

18. **A work about this condition compared it to hunger in that this condition reduces something just as hunger reduces hunger. Participants who were turning pegs in a peg board were paid 20 dollars to say the experience was fun in a study on this phenomenon. (\*)** Cult memberswho thought the Earth was going to be flooded were studied as part of research into this phenomenon. Internal consistency was studied alongside this phenomenon by Leon Festinger. One example of this psychological process occurs when an environmentally conscious person drives a gas guzzling car. For 10 points, identify this psychological phenomenon that arises when an individual has conflicting beliefs.

ANSWER: **Cognitive Dissonance** (prompt on “holding conflicting beliefs” and descriptions)

19. **A character in this play requests that cucumber sandwiches be brought for his guests, but then eats them all before the guests arrive. Another character in this play shirks responsibility by pretending to care for an invalid friend in the countryside. In this play, a woman recalls forgetting a (\*)** baby at a train station while remembering her manuscript; that character is Miss Prism. At the end of this play, Jack Worthing becomes engaged to Gwendolyn, while Algernon Moncrieff becomes engaged to Cecily. For 10 points, identify this satire of Victorian society written by Oscar Wilde.

ANSWER: ***The Importance of Being Earnest***

20. **The normal variable in this function can be multiplied by a matrix A and connects a matrix Lie [pr. “Lee”] Algebra to its corresponding Lie Group. Integrating this function from 0 to infinity in terms of negative s t times a generic function *f* is defined as the** (\*) Laplace transform of *f*. This function can be written as the sum of x to the n over n factorial from n equals 0 to infinity. The derivative of this function with respect to x is itself, and its inverse is the natural logarithm. For 10 points, name this function that includes Euler’s number.

ANSWER: The **Exponential Function** (accept **e to the x**, or to some other variable such as “t” or “s”)

21 (TB). A sonnet by this author compares his love to a “salt rose” and a “topaz”. This author mentions a “crystal moon” and a “red branch” in a poem where the speaker threatens not to love his lover if she stops loving him. In the Felstiner translation, the beginning of a poem by this author says “From the air to the air, like an empty net”. In that same poem, this author asks his brother “rise to be born with me”. This poet of “If You Forget Me” and “The Heights of Macchu Picchu” said “tonight I write the saddest lines” in another poem. For 10 points, identify this Chilean poet of *The Canto General* and *Twenty Love Poems and a Song of Despair*.

ANSWER: Pablo **Neruda** (or Ricardo Eliécer Neftalí Reyes **Basoalto**)

22 (TB). An African-American janitor holds a mop in a photograph by Gordon Parks titled after this painting. The plants in this painting, including beefsteak begonia, were also seen in its artist’s other painting Woman with Plants. This painting notably depicts a window with a symmetrical pane. The male figure in this painting was modeled after the artist’s dentist. The two central figures in this painting stare at the viewer in front of an Eldon, Iowa farm, one of whom is a bespectacled man holding a pitchfork. For 10 points, identify this painting by Grant Wood.

ANSWER: ***American Gothic***

Bonuses

1. Answer the following about feminist thought in the 20th century for 10 points each.

[10] This woman described “the problem that has no name” and decries the feeling that woman only could be mothers and housewives in *The Feminine Mystique*.

ANSWER: Betty **Friedan**

[10] Before Friedan, there was Simon De Beauvoir, who wrote this work about how men oppress women by characterizing them as The Other.

ANSWER: ***The Second Sex*** (accept “***Le Deuxième Sexe***”)

[10] This other feminist book about menopause and sexuality was censored—as was *The Second Sex*. This 1971 book believed that women need information about their health.

ANSWER: ***Our Bodies, Ourselves***

2. The unifier of these islands, Kamehameha I, instituted the Law of the Splintered Paddle, which ensured safety for this civilization’s citizens. For 10 points each:

[10] Name that civilization whose monarchy was overthrown by men such as Sanford Dole in the 1890s.

ANSWER: **Hawaii**an Islands

[10] This woman was the last monarch of Hawaii before stepping down in 1895. She had previously opposed the Reciprocal Treaty and was the head of the “Stand Firm” movement.

ANSWER: **Liliuokalani** (or **Lydia Kamakaeha** or **Liliu** Kamakaeha)

[10] Another island-dwelling people lived in this archipelago that was settled, based on evidence from Mulifanua, approximately 3,000 years ago. These islands were named “The Navigation Islands” by Bougainville.

ANSWER: **Samoa**n Islands

3. The twenty-nine travelers and the narrator are traveling to St. Thomas Beckett’s grave in the prologue of this collection of stories. For 10 points each:

[10] Identify this collection of Middle English stories written by Geoffrey Chaucer.

ANSWER: ***The Canterbury Tales***

[10] This first Canterbury Tale comes in four parts. In Part II of this story, the god Mercury orders Arcite back to Athens and Arcite later wins a jousting tournament against Palamon but dies at its conclusion.

ANSWER: “The **Knight’s Tale**”

[10] In the crude “Miller’s Tale”, after Nicholas convinces John that a Biblical flood will be coming, he is stabbed in this body part with a hot poker while trying to sleep with Alison.

ANSWER: His **butt** (accept obvious equivalents)

4. This technique makes use of an indicator. For 10 points each,

[10] Identify this technique in which a solution of known concentration is slowly added to a solution of unknown concentration until the end-point is reached.

ANSWER: **titration**

[10] A common indicator in acid-base titrations is this one, which changes from clear to pink as a solution becomes basic.

ANSWER: **phenolphthalein**

[10] In a common non-acid-base titration, a chelating agent such as EDTA reacts with a metal, forming one of these compounds. These compounds are usually colored due to *d* orbital splitting. Therefore, no indicator is necessary.

ANSWER: coordination **complex**es

5. Giovanni di Bicci de’ Medici moved his family’s part of this industry to Florence. For 10 points each:

[10] Identify this industry that supplied currency and funds to the Roman Catholic Church and others in 15th century Europe.

ANSWER: **bank**ing (prompt on “lending” or “saving”)

[10] Though some claim that Benedikt Kotruljević [pr. Koh truel zhu vich] invented this form of bookkeeping, it was heavily used by the Medici in their Florentine banks— perhaps before Pacioli published a book about this practice.

ANSWER: **Double-entry** accounting (prompt on accounting)

[10] In 1402, the Medici bank loaned 3,000 florins to finance the production of this good. This material was often made by guild workers and was among the biggest exports of Renaissance Florence

ANSWER: **wool** (or **cloth**)

6. Answer the following about the battle between the titans and the Olympians for 10 points each:

[10] This Titaness presented her husband Cronus with a stone instead of her son Zeus so he could not swallow Zeus.

ANSWER: **Rhea**

[10] The Olympians enlisted the help of the Hecatoncheires [pr. “Hek uh ton ky reez”] who had this many arms. Rhea said that the Hecatoncheires would aid Zeus and the Olympians in their war against the Titans.

ANSWER: **Hundred** (accept **Hundred**-Handed Ones)

[10] A notable account of the so-called Titanomachy was presented in this Greek’s author *Theogony*. This author described the creation of the world out of Chaos in the beginning of that text.

ANSWER: **Hesiod**

7. British band Midnight Beast performed a parody of one of this artist’s song for an episode of *The Simpsons*. For 10 points each:

[10] Name this singer behind hits such as “Tik Tok” and “Die Young”.

ANSWER: **Ke$ha**

[10] Ke$ha is currently embroiled in a legal battle with this former Sony Music producer. She has filed suit to be released from her contracts with Sony Music and Kemosabe Records to avoid working with this man.

ANSWER: **Dr. Luke**

[10] Before her big break, Ke$ha snuck into this singer’s home and left behind a demo for him to listen to. She later told Jimmy Fallon that everything in the home of this artist of *Sign O’ The Times* was covered in purple velvet.

ANSWER: **Prince**

8. This religion was part of the New Thought Movement, and its founder was satirized by Mark Twain. For 10 points each;

[10] Name this American religious movement founded by Mary Baker Eddy. It is known for refusing medical treatment.

ANSWER: **Christian Science**

[10] The headquarters of the Church of Christian Science are in this city. The city’s archdiocese was investigated by a team of reporters working for the “Spotlight” column.

ANSWER: **Boston**, Massachusetts

[10] Mary Baker Eddy was a patient of this earlier doctor and theologian. Eddy is sometimes considered to have plagiarized this man’s ideas about the mental causes of disease.

ANSWER: Phineas **Quimby**

9. Answer the following about the human immune response for 10 points each:

[10] The “memory” type of these cells supposedly remembers a specific antigen and target it by producing antibodies. These cells are produced in the bone marrow.

ANSWER: **B** Leukocytes or Cells (prompt on White Blood Cells)

[10] This type of T cell releases specific cytokines and interact with antigen presenting cells. They have a CD4 receptor on their surface.

ANSWER: **Helper** T cell

[10] Usually associated with bulging eyes, this autoimmune disorder results in hyperthyroidism and occurs when an antibody that presents when around the thyroid is produced.

ANSWER: **Grave’s** Disease (or **toxic diffuse goiter**)

10. For 10 points each answer questions related to Bill Clinton appointee Janet Reno.

[10] Reno was the first women to be appointed to this position where she headed the United States Justice department. Obama appointed Loretta Lynch to this position.

ANSWER: **Attorney General**

[10] During her tenure as Attorney General, Reno convicted this domestic terrorist who gained notoriety after mailing bombs from his bunker in Montana.

ANSWER: Ted **Kaczynski** (or The **Unabomber**)

[10] Janet Reno later lost a gubernatorial bid in this state to Bill McBride in 2002. One of this state’s current senators was elected after Connie Mack retired in 2000.

ANSWER: **Florida**

11. In this painting, the subject glances at a painting and his right hand while holding a palette with his left hand. For 10 points each:

[10] Identify this oil painting where a red background contains a depiction of the Eiffel Tower and shows its subject’s unique physical feature.

ANSWER: ***Self-Portrait with Seven Fingers***

[10] This Belarusian artist painted *Self-Portrait with Seven Fingers* and painted a goat and a green man in *I and the Village*.

ANSWER: Marc **Chagall**

[10] Chagall also painted a version of this Biblical scene in white and another one in yellow. This scene was also featured in a painting by Gauguin [pr. “Go-gawn”] where its central figure has yellow skin and there are red trees in the background.

ANSWER: **Crucifixion** of Jesus Christ (prompt on “death of Christ” or similar)

12. For 10 points each answer the following about standout Caribbean literature.

[10] The main character of this novel builds several abodes for his family and wife Shama in and around Port of Spain while pursuing various careers including journalist and Community Welfare Officer.

ANSWER: ***The House for Mr. Biswas***

[10] Nicolás Guillén and José Martí were poets from this former Spanish colony in the Caribbean. Martí wrote the poetry collection *Versos sencillos* while living in this nation.

ANSWER: Republic of **Cuba**

[10] This St. Lucian wrote the *Illiad*-inspired *Omeros* in 1990. This author said “The drunken officer of British rule, how choose / Between this Africa and the English tongue I love?” in his poem “A Far Cry from Africa”.

ANSWER: Derek **Walcott**

13. This composer wrote a work whose last section is called “The Mystics”. For 10 points each:

[10] Identify this English composer who wrote *The St. Paul’s Suite* and is also notable for several marches including his First Suite in E flat for Military Band.

ANSWER: Gustav **Holst**

[10] Holst is most famous for composing this astronomically-inspired work which includes “Neptune” and “Mars, Bringer of War”.

ANSWER: ***The Planets*** (or **Opus 32**)

[10] The third movement of *The Planets* is named after this planet. The movement this planet titles is the shortest movement in the work and notably contains the two keys of B-flat and E as well as two rhythms.

ANSWER: “**Mercury**, the Winged Messenger”

14. The protagonist of this novel travels to Freeland, where he learns of Islam Incorporated. For 10 points each;

[10] Name this novel in which drug addicted Lee goes to the Interzone after fleeing to Mexico to meet Dr. Benway.

ANSWER: ***The Naked Lunch***

[10] Burroughs’s *The Naked Lunch* is a Beat generation novel as is this one in which Sal Paradise meets up with Dean Moriarty to go on journey across America, during which they meet Bull Lee in New Orleans.

ANSWER: ***On the Road***

[10] *On the Road* was written by this author who wrote several haikus late in life and published *Vanity of Dulouz*.

ANSWER: Jack **Kerouac**

15. Answer the following questions about a dynamic computer language that is way easier to debug than C++ for 10 points each.

[10] Identify that computer language that is a successor to the ABC language which uses simple and sometimes colored text to encourage readability and simplicity. This programming language takes its name from a snake.

ANSWER: **Python**

[10] In Python, using square brackets creates one of these objects. The number of things in these objects can be counted using the len command.

ANSWER: **Lists** (accept different kinds of lists such as “**linked lists**”)

[10] Gmail can be read from Python after enabling this kind of support in Gmail. This “protocol” allows email clients to get email from a remote web server.

ANSWER: **POP** (accept **Post Office Protocol**)

16. These objects are the smallest units that can differentiate words and correspond to specific utterances. For 10 points each:

[10] Name those linguistic objects that are pronounced in different ways depending on allophones.

ANSWER: **Phoneme**

[10] This type of vowel contains two vowel sounds. These linguistic objects are also called gliding vowels.

ANSWER: **Diphthong**

[10] A “universal grammar” was posited by this MIT Linguist who is also known for his anarcho-syndicalist beliefs.

ANSWER: Noam **Chomsky**

17. In this farcical short story, a character chases after a former body part that has become a civil servant. For 10 points each:

[10] Name that short story where Kovalev’s indecision about marriage is blamed for his facial malady.

ANSWER: “**The Nose**” (accept “**Hoc**”)

[10] This Ukrainian author wrote “The Nose”, “The Overcoat” and the so-called “Russian *Odyssey*”, *Dead Souls*.

ANSWER: Nikolai **Gogol**

[10] This protagonist of *Dead Souls* tries to buy the dead souls of serfs. This bungling conman eventually leaves town after encountering characters like the lazy Manilovs.

ANSWER: **Pavel** Ivanovich **Chichikov** (accept either underlined name)

18. For 10 points each answer some questions about writer Briton Hadden.

[10] Briton Hadden founded this magazine with Henry Luce. It was the first weekly newspaper in the US and gives out a “person of the year” honor.

ANSWER: **Time** Magazine

[10] Briton Hadden was a part of this secret undergraduate society at Yale University. Other famous members have included George W. Bush and John Kerry.

ANSWER: **Skull** and **Bones** Society

[10] Britton Hadden was mentored by this first winner of the Pulitzer Prize for Reporting. This *New York World* writer authored a series of articles entitled “Inside the German Empire” in 1917.

ANSWER: Herbert Bayard **Swope**

19. This theoretical framework was partially based on the S matrix and attempts to combine the discoveries of quantum mechanics with Einstein’s general relativity. For 10 points each:

[10] Identify this branch of theoretical physics, sometimes called “The Theory of Everything”, that says the universe is made of vibrating filaments and membranes.

ANSWER: **String** Theory

[10] This related phenomenon predicts a particle for each particle that exists in the Standard Model. So far this proposition has been accurate and predicts that bosons have an associated fermion.

ANSWER: **Supersymmetry**

[10] In *superstring* theory, there are said to be this many dimensions. This number was reached to be consistent with the mathematics of string theory and is based off the proposed dimensions of space-time.

ANSWER: **10** Dimensions

20. This Prime Minister was Chief of his country’s Armed Forces during the Six Day War. For 10 points each:

[10] Name this world leader who was assassinated in 1995 after he signed the Oslo Accords.

ANSWER: Yitzhak **Rabin**

[10] Rabin was a Labor Prime Minister of this Mediterranean-bordering country that was established after a 1947 UN Resolution.

ANSWER: State of **Israel**

[10] Before Israeli leaders signed the Oslo Accords, Anwar Sadat and Israeli PM Menachem Begin signed these agreements negotiated by Jimmy Carter in his presidential retreat.

ANSWER: **Camp David Accords**

21 (TB). For 10 points each, answer the following about the effects of brain damage.

[10] Traumatic acceleration or deceleration can cause a diffuse injury to this part of a neuron. Traumatic lesions can also develop in this long component that make up nerve fibers.

ANSWER: **axon** (or diffuse **axonal** injury)

[10] These incidents can also lead to brain damage. Football players may be more susceptible to these injuries caused by a blow to the head.

ANSWER: **concussion**

[10] This degenerative disease with similar symptoms to Parkinson’s develops after repeated blows to the head. Irritability and dementia can result from this disease that is diagnosed after an autopsy.

ANSWER: **Chronic traumatic encephalopathy** (or **CTE** prompt on “dementia pugilistica”)