

Western Invitational Tournament 2013

Packet by Louisville B, Chicago A, and Imperial A (George Coombs, Rhys Davies, John Wheatley, and Daniela Weston)

Tossups

1. This painting was displayed along with a poem by Zacharie Astruc that describes the title figure awakening when “tired of dreaming.” Art historian Beth Brombert claims that this painting showed its artist’s “contempt for the public” and that the central figure has, unlike in similar works, full control over her body. A (*) “modern” version of this painting was made by Paul Cezanne. Secondary characters in this painting include a black cat to the right and a black servant giving flowers to the title figure. Based on *Venus of Urbino*, the title nude of this painting reclines on a bed looking directly at the viewer. For 10 points, name this scandalous painting of a prostitute by Edouard Manet.

ANSWER: Olympia

2. Ambassador Eugen Millington-Drake successfully induced one instance of this action by disseminating misinformation about the location of Force H. Ludwig von Reuter ordered another instance of this action in direct violation of the Armistice of Compiegne. After that event, Reinhard Scheer said it had “wiped the stain of surrender from the escutcheon.” One instance of this action occurred en route to Brest after a (*) torpedo attack from aircraft based on the HMS *Ark Royal* jammed the rudder, rendering its target unmaneuverable following the Battle of the Denmark Strait. The largest instance of this action occurred in Scapa Flow in 1919. For 10 points, name this recurring event in German naval history, the ultimate fate of the the battleships *Graf Spee* and *Bismarck*.

ANSWER: scuttling a German battleship [or scuttling German ships in general; prompt on intentionally sinking a ship or answers in that vein]

3. One member of this family succeeded Eugene Sawyer, appointed Paul Vallas as the first CEO of his city’s public school system, and was criticized for controversially ordering the demolition of Meigs Field and for the Hired Truck Program scandal. A different member of this family yelled (*) “Fuck you, you Jew son of a bitch” at Abraham Ribicoff and stated that the job of his city’s police was not to create, but to preserve, disorder. Both of the aforementioned comments were in response to accusations that that man had ordered the use of “Gestapo tactics” during the 1968 Democratic National Convention. For 10 points, name this family that produced the two longest-serving mayors of Chicago, one of whom was succeeded by the incumbent Rahm Emanuel.

ANSWER: Daley family

4. The fourth section of this novel begins by describing the tale of Slawkenbergius before going into a discussion about noses. In this novel, the description of two characters entering the house of Mrs. Wadman and Bridget are followed by two blank chapters. This novel opens with the protagonist wondering whether he would have been conceived differently if his mother had not asked about (*) winding a clock while having sex. The title character remembers the day when a window sash dropped by Susannah led to his circumcision. Recurring characters in this novel include Parson Yorick and Uncle Toby. For 10 points, name this novel about the “Life and Opinions” of the title character, written by Laurence Sterne.

ANSWER: *The Life and Opinions of* Tristram Shandy, Gentleman

5. This element was never present in the Canyon Diablo Troilite, which is why that body defines the origin for plotting the geochron. Ratios between isotopes of a daughter nuclide of this element were used by Clair Patterson to date the Earth. This element was the cause of reactions in the Oklo mine in Gabon. This element forms only in the r-process, and one of the main reasons the age of the galaxy is so imprecisely known is its uncertain production ratio relative to (*) Thorium in supernova emissions. Its decay to lead-206 and 207 is used in a radiometric dating scheme. Its 235 isotope is the only naturally-occurring fissile isotope. For 10 points, name this actinide, the heaviest naturally-occurring element.

ANSWER: uranium [or U]

6. Morton Smith claimed to have found evidence for a “Secret” version of this work described in the letters of Clement of Alexandria. That work, possibly a forgery, purports to explain a scene in this work where a young man wearing only a linen cloth is seized but able to escape by leaving the garment and fleeing naked. William

Wrede wrote about the motif of the Messianic Secret in this work. This work also includes a parable in which the (*) Kingdom of God is compared to a mustard seed. The Farrer hypothesis asserts the priority of this work as the solution to the synoptic problem, and the two-source hypothesis places it alongside Q as a source for the other synoptic Gospels. For 10 points, name this second and shortest of the Gospels, found between Matthew and Luke.
ANSWER: Gospel of Mark

7. The execution of a man of this name by beheading was conflated with that of a ruler killed by garrote in folk plays. A man of this name sued the Betancourt family over his royal claims. Diego Cristobal recovered the remains of a man of this name; that man's revolt began with the execution of Antonio de Arriaga and included a victory at Sangarara. José Gabriel Condorcanqui (*) took this name and demanded the end of the *mita* system of draft labor. Garciloso da Vega ended his chronicle with the death of one man of this name. The other attempted to persuade Bishop Mosco to let him into Cuzco before his execution by the Spanish. For 10 points, give this name shared by a Peruvian rebel in 1780 and the last indigenous Inca monarch from Vilcabamba.
ANSWER: Tupac Amaru [prompt on partial answer]

8. Ludwig Gross was able to inoculate this disease into neonatal mice, proving that there existed a virus for it in that organism. One form of this disease involves the translocation of chromosomes 9 and 22, resulting in the so-called Philadelphia chromosome. This disease might be caused by the retrovirus HTLV-1 or by exposure to (*) benzene. This disease comes in varieties like “chronic myelogenous” and one named for the appearance of “hairy cells” under a microscope. It starts at the bone marrow and was common among children who survived the Hiroshima and Nagasaki atomic blasts. For 10 points, name this cancer which sees an increase in white blood cell count.
ANSWER: leukemia [accept specific forms mentioned in this question, such as chronic myelogenous leukemia or CML; and hairy cell leukemia; prompt on cancer]

9. The willingness to explore, reunion behavior, and separation anxiety exhibited by these subjects was observed in an experiment in which various people entered and left a room with them, proving that they demonstrate secure, ambivalent, and avoidant types of attachment. These subjects, the focus of Mary Ainsworth’s “Strange Situation” experiment, demonstrated “circular reactions” in the work of another psychologist. Eleanor Gibson and Richard Walk investigated the (*) depth perception of these subjects with the visual cliff apparatus. These people learn “object permanence” during the sensorimotor stage according to Jean Piaget. For 10 points, name these people who often say their first word at around 12 months.
ANSWER: infants [or babies; or toddlers; or really young children; or synonyms of those terms; prompt on children and synonyms]

10. One composer from this country wrote a piece whose opening Intrada movement contains a pedal F sharp throughout; that work was a *Concerto for Orchestra*. Another composer from this country wrote a massive choral work that begins with an “O Crux” movement and utilizes the B-A-C-H motif. That composer of the *St. Luke Passion* also used the technique of tone clusters in a piece written for exactly (*) 52 strings, his *Threnody for the Victims of Hiroshima*. A nineteenth century composer from this country included a B flat minor funeral march in his second piano sonata, and wrote many other piano works, such as his 57 mazurkas. For 10 points, name this home country of Witold Lutoslawski, Krzysztof Penderecki, and Frederic Chopin.
ANSWER: Poland

11. Herodotus describes a temple dedicated to this figure built on the river Ilissus after this figure was invoked in a defeat of a Persian fleet. Pausanias’ description of the chest of Cypselus unusually describes this figure as having snakes for feet. One of Avianus’ renditions of Aesop’s Fables describes this figure losing a bet with Phoebus when trying to force a traveler to remove his cloak. He is said to have fathered 12 (*) colts on the mares of Erichthonius, and in another story, he abducted a princess who later gave birth to the nymph Chione. He was the father of two men who saved Phineus from the Harpies during the Argonautica, named Calais and Zetes. For 10 points, name this personification of the North Wind.
ANSWER: Boreas

12. In one work, this author argues that a poem must be short enough to be read in one sitting, and that beauty is more important than truth or passion in poetry. In a poem by this author of “The Philosophy of

Composition,” the speaker wonders “can I not grasp [sand] with a tighter grasp?” In another poem, the speaker compares the title figure to a ship bringing home a “weary, way-worn wanderer.” This author of (*) “A Dream within a Dream” and “To Helen” described the “moaning and the groaning” and the “rhyming and chiming” of the title objects of another poem. “A wind blew out of a cloud, chilling” the title maiden, who lived “in a kingdom by the sea” in another of his poems. For 10 points, name this American poet of “The Bells” and “Annabel Lee.”

ANSWER: Edgar Allan Poe

13. One commonly used method for determining the age of these bodies relies on measuring the abundance of lithium and beryllium within them. By comparing photographic plates of one of these bodies taken at different times, Adriaan van Maanen was able to measure proper motion within that body. These bodies are classified under a scheme developed by Robert Trumpler. One alternate name for these bodies is due to the fact that they are often located in or near (*) galactic planes. These bodies are not found in elliptical galaxies, since there is very little star formation there. Examples of these objects include the Praesepe, the Hyades, and the Pleiades. For 10 points, name these low-density groups of relatively young stars.

ANSWER: open clusters [or galactic clusters; prompt on star clusters; prompt on clusters]

14. In one work, this poet compares himself to a shipwreck survivor thanking the god of the sea and pities the “graceful, perfumed boy” who is now entranced by his former love. The speaker of another poem by this man prays to a ship that it “deliver” a contemporary “safe to Attic Shores.” One work by this man is addressed to the sons of his patron (*) Piso and recapitulates the teachings of Neoptolemus. Other works claim “I have created a monument more enduring than bronze,” are about the Bandusian Fountain, and contain the lines *nunc est bibendum*. In another work, this poet coined the phrase “in medias res.” For 10 points, name this Roman poet who wrote *Ars Poetica* and wrote the aphorism “carpe diem” in one of his *Odes*.

ANSWER: Horace [or Quintus Horatius Flaccus]

15. Over two thousand years after this battle, Alexander Suvorov led a joint Russo-Austrian force to victory over the French Revolutionary army of Jacques MacDonald at the same site during the War of the Second Coalition. Prior to this battle, the victorious side won a clash at Ticinus, while the eventual losers set up camp at Placentia. It began with a harassing action by Numidian cavalry and saw a contingent of Cenomani tribesmen devastated by a charge of (*) war elephants, but its decisive moment came when Mago ambushed from the rear and routed the army of Tiberius Sempronius Longus. For 10 points, name this first major battle of the Second Punic War, which saw Hannibal Barca best the Roman Republic at the namesake stream in northern Italy.

ANSWER: Battle of the River Treb(b)ia

16. One song by this musician begins with him alternating between the notes G and C and was first composed for an album named after his “trio.” Another song by this musician of “Bemsha Swing” begins with alternating C sharp and D seventh chords and was composed with Kenny Clarke; that song was “Epistrophy.” Trumpeter Clark Terry and saxophonist (*) Sonny Rollins were among the several performers who joined this man on the album *Brilliant Corners*. This performer frequently used dissonance and often played with a percussive banging on the keys of his instrument. For 10 points, identify this jazz pianist who composed “Round Midnight” and “Straight, No Chaser.”

ANSWER: Thelonious Monk

17. This novel’s central character ponders an alternative to his misery while hearing “Some of These Days” at the Railwaymen’s Rendezvous, before which his former lover describes her satisfaction as a “kept” woman. The Corsican punches one of this novel’s characters, causing a nosebleed as tries to read all of the books in a library in alphabetical order. The narrator of this novel spends years in (*) Bouville working on the biography of the Marquis de Rollebon, a project that he considers futile after losing both the love of his life, Anny, and his only friend, The Self-Taught Man. This novel ends with a planned move to Paris by diarist Antoine Roquentin. For 10 points, name this novel by Jean-Paul Sartre about a “sweetish sickness”.

ANSWER: Nausea

18. This archipelago is the site of the M25 magnetic anomaly, which is found on the ocean crust on its western side. Antonio Cubillo formed a separatist group that sought independence for residents of this

archipelago. The largest one of these islands is home to the Achamán-worshipping Guanche people. The world's tallest volcano outside of Hawaii, Mount Teide, can be found on this archipelago, whose unsuccessful conquest by the (*) British in 1797 cost Lord Nelson an arm. These islands were granted autonomy by King Juan Carlos I and are located off the coast of Morocco. For 10 points, Tenerife is the largest island in what archipelago, which shares its name with a type of colorful bird?

ANSWER: Canary Islands [or Canaries]

19. Woody Allen meets two of these figures in a movie that ends with a nose being steamrolled. Those characters have clear, bulbar heads and one of them says "we have simple, we have complicated" and that we "are having a big sale". These figures then use an x-ray to take Allen's measurements in the movie in which they appear, (*) *Sleeper*. In one episode of a television show, these figures are introduced and one notes that Jesus was a "very well built" one of these. Later in that episode, these figures prevent Zoidberg from attending a "Bot Mitzvah" due to the fact that he is a shellfish. For 10 points, name these mechanical members of a certain Abrahamic faith who celebrate Robanaku, which Daniel Hothem does not think includes RoboCop.

ANSWER: Robot Jews [prompt on partial answers, accept Tailors or Robot Tailors before "Future Stock", accept equivalents for Robots like Mechanical or Android, accept any known Jew making mechanical noises in a suitably comical manner]

20. In more than two dimensions, this quantity's namesake group is a universal cover of $SO(n)$. The wavefunction is multiplied by -1 raised to twice this quantity under exchange of identical particles. The first sign of the existence of this property was the (*) splitting of beams of atoms directed through a non-uniform magnetic field. Because the wavefunction of electrons is antisymmetric under exchange, two electrons in the same orbital must take opposite values for this property by the Pauli exclusion principle. All fermions have a half-integer value of this property, and all bosons have an integer value. For 10 points, name this property considered an intrinsic form of angular momentum.

ANSWER: spin

Tiebreakers

21. This man's party began one debate by considering the book *The Case of The Army Stated*. This man asked if his country would be made "Like Switzerland" and his principal supporter repeatedly asked if an unjust or dangerous agreement need be kept. Colonel Thomas Rainsborough contended with this man's party in that disputation. This man's initial charter of government restricted the franchise to those with more than (*) 200 pounds' worth of property; that document was the Instrument of Government. This man supported by Henry Ireton contended with the Levellers at the Putney Debates and famously said "In the Name of god, Go!" to the Long Parliament. For 10 points, name this commander of the New Model Army, an English Lord Protector.

ANSWER: Oliver Cromwell

22. For a Fock state, this quantity is well defined. This expected value of this quantity is given by the degeneracy of the corresponding energy level over the exponential function applied to the difference of energy and chemical potential over Boltzmann's constant times temperature, according to the Maxwell-Boltzmann statistics. In the canonical ensemble, temperature, volume and this quantity are held constant. A slight change in Gibbs free energy over a slight change in this quantity yields the (*) chemical potential. It can be calculated by multiplying the number of moles by Avogadro's number. For 10 points, name this thermodynamic quantity, a dimensionless extensive quantity usually symbolized big N.

ANSWER: particle number [accept number of particles and synonymous answers; do not accept or prompt on "number of moles"]

23. Judith Shklar wrote that this system is conducive to cruelty, society's greatest evil, in *The Liberalism of Fear*, and E.H. Carr wrote that this system was spreading due to its policy successes in *The Twenty Years' Crisis*. This system believes that history is immutable and can be explained by discoverable laws according to Karl Popper's *The Poverty of Historicism*. Hayek used this word to categorize (*) Italy, Russia, and Germany in the first chapter of *The Road to Serfdom*. An important work about this system asserts that it requires vulnerable scapegoats to cast blame upon. For 10 points, what political system's ideology offers a comforting answer to life's questions and hence a justification for limitless state authority in Hannah Arendt's book about its origins?

ANSWER: **totalitarianism** [or word forms; prompt on **authoritarianism**, **autocracy**, and **dictatorship**]

Bonuses

1. Since the canonical equations require that the associated vector field have zero divergence, this theorem follows. For 10 points each:

[10] Name this theorem stating that the flow in phase space of the solutions to the canonical equations behaves like an incompressible fluid.

ANSWER: **Liouville's** theorem

[10] For incompressible fluids, this equation corresponding to conservation of mass simply states the divergence of the velocity is 0. In electrodynamics, it is used as a statement of local conservation of charge.

ANSWER: **continuity** equation

[10] Since incompressible fluids have constant density, conservation of mass is equivalent to conservation of this quantity, the amount of space occupied by the fluid.

ANSWER: **volume**

2. The speaker of this poem wonders why he is “disturbing the dust on a bowl of rose-leaves” and it begins “Time present and time past/ Are both perhaps present in time future,” for 10 points each:

[10] Name this poem followed by “East Coker,” “The Dry Salvages” and “Little Gidding” in its author’s *Four Quartets*.

ANSWER: **“Burnt Norton”**

[10] In this other poem by the author of “Burnt Norton,” the speaker declares that he has “measured out my life with coffee spoons” and wonders “Do I dare to eat a peach?”

ANSWER: “The **Love Song of J. Alfred Prufrock**”

[10] Both “Burnt Norton” and “The Love Song of J. Alfred Prufrock” are by this Anglo-American poet most famous for “The Waste Land.”

ANSWER: Thomas Sterns **Eliot**

3. This thinker dissed Robert Wallace and David Hume for committing “probable error[s]” in his major work. For 10 points each:

[10] Name this reverend and political economist who expressed his worries about the growing human population in his book *An Essay on the Principle of Population*.

ANSWER: Reverend Thomas Robert **Malthus**

[10] In that book, Malthus grouped abstinence, contraception, and homosexuality into this category of checks, which lower the birth rate, as opposed to positive checks, which raise the death rate.

ANSWER: **preventative** checks

[10] Malthus described his central thesis about population with this term. Ferdinand Lassalle used this term to describe his argument that real wages paid to workers approximate the minimum wage over the long term.

ANSWER: **iron law** of population [or **iron law** of wages]

4. This Old Testament book concerns the reform of the Jewish community by a cup-bearer to King Artaxerxes. For 10 points each:

[10] Name this Biblical book in which the title man is accused by Sanballat of attempting to undermine Artaxerxes. Artaxerxes, however, earlier gave this man leave to rebuild Jerusalem’s walls.

ANSWER: **Nehemiah**

[10] After completing the walls of Jerusalem, Nehemiah institutes this Feast of Booths, which modern Jews celebrate every 15th of Tishrei.

ANSWER: **Sukkot**

[10] Following the Babylonian Captivity, this Persian ruler who is highly regarded among Jews allowed them to

rebuild the Temple of Jerusalem. He founded the Achaemenid Dynasty.

ANSWER: Cyrus the Great [or Cyrus II; prompt on Cyrus]

5. This city is the setting of a work of literature recounting an affair between an expatriate British schoolteacher and a wealthy, mysterious woman named Justine. For 10 points each:

[10] Name this city, which the title character “loses” in the poem “The God Abandons Antony.”

ANSWER: Alexandria

[10] Although the poet of “The God Abandons Antony”, Constantine Cavafy, lived in Alexandria for his whole life, his poetry is written in the language of this nation.

ANSWER: Greece

[10] Another novel with multiple narration set in Alexandria is *Miramar*, penned by this Egyptian author of *The Cairo Trilogy*.

ANSWER: Naguib Mahfouz

6. Name some South American items found in abundance at the Berkeley Student Food Collective, for 10 points each.

[10] Liberals love this “superfood” classified as a pseudo-cereal and not a grain, because only its seeds are used. Presumably, they are less thrilled that this staple of the Incas has become too expensive for many of its growers.

ANSWER: quinoa

[10] Another yuppie delight is this antioxidant-rich berry, which has similarly turned much of the Amazon into a cash crop harvest site. This fruit’s presence on the Internet consists largely of ads promoting weight loss pills.

ANSWER: acai berry [pronounced uh-SIGH, but accept similar pronunciations and don’t be a jerk]

[10] At the back of the Food Collective are the characteristic hollow gourds and silver straws used to consume this strong drink, made by chopping the namesake leaves and mixing them in hot water.

ANSWER: yerba mate

7. This sect called for an egalitarian distribution of land and women, which contributed to the later apostasy associated with the Khurramites. For 10 points each:

[10] Name this sect founded by Zardusht and named after a follower, which displayed Manichean tendencies and gained the temporary adherence of Shah Kavadh I, who closed the fire temples and opened the state granaries.

ANSWER: Mazdakism

[10] The nobility overthrew Kavadh for his support of Mazdakism, and when he returned to power, this son and eventual successor suppressed the sect. This ruler signed the Treaty of Perpetual Peace with Justinian the Great.

ANSWER: Khosrau I (the Great) Anushiravan [or Khosrau I, Khosrau the Great, Khosrau Anushiravan, or just Anushiravan are all acceptable. “Chosroes” is the Greek version of Khosrau]

[10] Kavadh and Khosrau were emperors of this Zoroastrian dynasty, which ruled Persia from the third century until the Muslim invasion. Its capital was Ctesiphon.

ANSWER: Sassanid [or Sassanian]

8. The title land is discovered by Higgs after he ventures past the mountains where he is usually confined to herding his sheep in this novel. For 10 points each:

[10] Name this Samuel Butler satire in which Higgs explores a place which possesses Musical Banks. Its characters, such as Senoj Nosnibor, have names that might be more familiar spelled backwards.

ANSWER: Erewhon

[10] Erewhon is a satire of this genre of novels about ideal societies, whose opposite is the dystopia.

ANSWER: utopian literature

[10] Inspired by *On the Origin of the Species*, Butler wrote this essay in which he argued that technology evolved alongside the humans that it aided.

ANSWER: “Darwin Among the Machines”

9. This polity won major military victories during Operation Durge’s Lance, a thrust at the Core Worlds, but would eventually be driven back to a handful of strongholds during the Outer Rim Sieges. For 10 points each:

[10] Name this polity that was founded at a secret meeting of megacorporations on Geonosis and fought the Galactic Republic during the Clone Wars.

ANSWER: Confederacy of Independent Systems or Separatist Alliance [accept any answer that mentions

Separatists; accept **CIS**, **Confederacy**, **Seps**, and **Seppies**

[10] The Separatists made their first appearance in *The Phantom Menace*, part of the much-maligned *Star Wars* “prequel trilogy” directed by this man.

ANSWER: George **Lucas**

[10] Nute Gunray, the last remaining head of the Confederacy after the deaths of Dooku and Greivous, maintained a secret fortress on this home planet of his. Plo Koon was shot down over this planet when Order 66 was enacted.

ANSWER: **Cato Neimoidia**

10. This man and his associate Billing initially support the central character of the play in which he appears because they want to see a get Liberal elected. For 10 points each:

[10] Name this associate of Aslaksen and editor of the *People’s Herald* who ultimately refuses to publish a report stating that the city’s baths are contaminated.

ANSWER: **Hovstad**

[10] Hovstad’s actions contribute to the ostracism of Dr. Thomas Stockmann in this play.

ANSWER: An **Enemy of the People** [or En **Folkefiende**]

[10] An *Enemy of the People* was written by this Norwegian playwright of *The Master Builder* and *The Wild Duck*.

ANSWER: Henrik **Ibsen**

11. Answer the following about blood typing, for 10 points each.

[10] The earliest blood group to evolve was this one, which lacks antigens on its red blood cells and is therefore known as the “universal donor.”

ANSWER: **O-** [do not accept or prompt on “O+”]

[10] The ABO blood group system is illustrative of this genetic phenomenon, in which an individual who is heterozygous for a given trait will express the dominant and recessive phenotypes side-by-side.

ANSWER: **codominance** [accept word forms]

[10] Rarely, if a pregnant mother has a different blood type than her fetus, then antibodies with this isotype can cross the placenta and attack the fetal red blood cells, causing hemolytic disease of the newborn.

ANSWER: **IgG** [or **Immunoglobulin G**]

12. By the law of large numbers, the mean of samples of a random variable converge to this value. For 10 points each:

[10] Name this value, the first moment, which for a discrete random variable is the sum over the values taken by a random variable, weighted by their probabilities.

ANSWER: **expected** value [or **expectation** value]

[10] Jensen’s inequality concerns this type of function applied to the expected value. These functions are so named because given two points above one’s graph, the line connecting them stays in the region above the graph.

ANSWER: **convex** functions

[10] The union bound in probability is similar to this combinatorial theorem, which states that the cardinality of the union of two sets is equal to sum of the cardinalities of each set minus the cardinality of their intersection.

ANSWER: **inclusion-exclusion** principle [or **IEP**]

13. Prior to this event, its instigator would conduct what he called “White Nights,” in which he gave the people involved in this event the option to flee to either the Soviet Union, or the jungle. For 10 points each:

[10] Name this event in which over 900 people died in a “revolutionary suicide” using cyanide spiked Flavor Aid at a namesake cult compound in Guyana.

ANSWER: **Jonestown** Massacre [accept clear knowledge equivalents]

[10] The Jonestown Massacre was committed by members of this cult led by Jim Jones. Founded in Indiana, this cult migrated to San Francisco before ending up at its “Agricultural Project” in Guyana.

ANSWER: **People’s Temple**

[10] Just prior to the mass suicide at Jonestown, members of the cult killed this congressman shortly after he landed at Port Kaituma airstrip. This California representative became the only member of Congress to be killed in office.

ANSWER: Leo **Ryan**

14. Ferdinand the Holy Prince died while he was in this state, which he entered after the disastrous Siege of Tangier. For 10 points each:

[10] Name this state in which Francis I found himself following the Battle of Pavia, and Radu the Handsome of Wallachia grew up in this state in the Topkapi Palace.

ANSWER: hostage or captive [or word forms of those answers]

[10] For a time in his youth, this king of Macedon was held as a hostage in Thebes. This victor at the Battle of Charonea is perhaps best known for fathering one Alexander the Great

ANSWER: Philip II of Macedon [accept Philip of Macedon; prompt on Philip]

[10] In 167 BC, this Greek noble was taken as a hostage to Rome. His situation wasn't so bad, however, as he became a historian there and wrote *History of Rome* which is one of our best sources for the First Punic War

ANSWER: Polybius

15. For 10 points each, name these works or artists who depicted the female form.

[10] Discovered near the Austrian city of Krems, this curvaceous statuette is made of limestone and painted red ochre. It may have been a prehistoric fertility idol.

ANSWER: Venus of Willendorf

[10] This Romanian sculptor caused controversy for his *Princess X*, which bears a heavy resemblance to male genitalia. He may be better known for his *Bird of Space* series.

ANSWER: Constantin Brancusi

[10] This British artist is known for large-scale organic sculptures, like *Family Group* and his many reclining nudes, that often feature women and mothers.

ANSWER: Henry Moore

16. For 10 points each, name these things related to sources of Norse mythology and a certain god:

[10] The *Havamal* is a collection of sayings attributed to “the high one” who is this Norse god, the chief of the Aesir, and owner of Sleipnir, who is often called the Allfather.

ANSWER: Odin

[10] High, Just-as-High, and Third are pseudonyms used by Odin in the *Gylfaginning* section of this work which also includes the *Skaldskaparmal* and the *Hattatal*. It was written by Snorri Sturluson.

ANSWER: Prose Edda [or Younger Edda]

[10] Odin is also a major character in this first poem of the Poetic Edda, in which Odin asks a seeress to relate the future and the events of Ragnarok.

ANSWER: Voluspá [or Prophecy of the Volva]

17. These objects were produced by heating scapulae and plastrons. For 10 points each:

[10] Name these organic objects used for divination, the source of the earliest known Chinese writing.

ANSWER: oracle bones

[10] Oracle bones were produced by this dynasty known from the Bamboo Annals. They were succeeded by the Zhou.

ANSWER: Shang Dynasty

[10] This city's archaeological site produced animalistic bronze vessels typical of the Shang and Zhou dynasties. It was the last Shang capital.

ANSWER: Anyang [accept Yin or Yinxu]

18. The relationship between the constants arising from this interaction and dihedral torsion angles is shown by the Karplus equation. For 10 points each:

[10] Name this interaction between different spin states in NMR active nuclei, resulting in the splitting of a signal into doublets, triplets, quartets, etc. following Pascal's triangle.

ANSWER: J-coupling [or indirect dipole dipole coupling; prompt on coupling; prompt on spin-spin coupling]

[10] Coupling is usually seen in the form of NMR involving this substance. This substance is “donated” by Bronsted-Lowry acids.

ANSWER: protons [or hydrogen-1 particles; or 1-H particles; or H+ ions; prompt on just hydrogen]

[10] 1-H NMR assesses this metric for groups of hydrogen atoms. In tetramethylsilane, it is 0, whereas in aldehydes, where there is little to no shielding, it is 9.8.

ANSWER: chemical shift [prompt on delta; prompt on shift]

19. Act I, Scene 3 of this opera is a controversial expressionist depiction of extra-marital sex, and the Mussorgsky-

influenced final act portrays a spiteful revenge killing in a convict train to Siberia. For 10 points each:

[10] Name this opera about Katerina. Its sympathetic portrayal of murder may have been received as justification for the Kulak genocide, but after a moralistic Pravda critique it was suppressed for thirty years.

ANSWER: Lady Macbeth of the Mtsensk District

[10] This composer of *Lady Macbeth of Mtsensk* was the frequent victim of Zhdanov's censorship for ideological failings. His *7th Symphony* was partly composed and later performed in besieged Leningrad.

ANSWER: Dmitri Shostakovich

[10] This 1962 choral symphony features settings of a Yevtuskenko poem about an atrocity at the title location. The first movement of this work contains references to several notorious anti-Semitic episodes.

ANSWER: Symphony No. 13 "Babi Yar" [accept either underlined portion]

20. Identify the following about the pre-Raphaelite movement, for 10 points each.

[10] This pre-Raphaelite painting by John Everett Millais depicts the suicide of one of Shakespeare's heroines. Her drowned body is pictured floating in a stream, surrounded by flowers.

ANSWER: Ophelia

[10] The model used in *Ophelia* was Elizabeth Siddal, who married this member of the pre-Raphaelites. This man painted *The Girlhood of the Virgin Mary* and *Beata Beatrix*.

ANSWER: Dante Gabriel Rossetti

[10] In this painting by William Holman Hunt, Jesus, whose head appears in front of the full moon, holds a lantern and knocks on a door with no handle.

ANSWER: *The* Light of the World

21. Using this algorithm, a player picks its move to get the greatest utility given that its opponent will pick the move that gives it the least utility. For 10 points each:

[10] Name this algorithm for choosing a game strategy that also shares its name with a theorem of von Neumann defining the value of a game.

ANSWER: minimax [or maximin]

[10] Solving a zero-sum game can be posed as this type of problem, and the minimax theorem is an example of duality in them. They are usually solved with the simplex algorithm.

ANSWER: linear programming [prompt on optimization]

[10] Because of its recursive structure, the minimax algorithm naturally uses this form of tree search. Unlike breadth-first search, it searches as far as possible along each branch before backtracking and trying the next.

ANSWER: depth-first search

22. This branch of philosophy originates in Kant's marriage of rationalism and empiricism. For 10 points each:

[10] First, name this branch of philosophy associated with Edmund Husserl, concerned with examining what the mind perceives as the external world.

ANSWER: phenomenology

[10] This word refers to the setting aside of the question of the reality of a perceived object. Once this is done, the phenomenologist is left with a subjective perception to analyze. Husserl also calls it *epoché*.

ANSWER: bracketing

[10] This author's *Phenomenology of Perception* rejects the Cartesian *cogito* that is implicit in Husserl, instead arguing that perception is prior to consciousness.

ANSWER: Maurice Merleau-Ponty