

VCU Closed

February 2, 2013

Packet by Chicago B (Ben Chametzky, Charles Tian, Daichi Ueda, Nolan Winkler) and Yale B (Basil Smitham, Grace Liu, Jacob Wasserman, Michael Garn)

1. The title character of one novel by this author becomes confused between football and soccer and wonders about the height of his ex-wife's son, Victor. That character, an émigré who is baffled by "unpredictable America," is a professor at Waindell College. Another of his works sees an ugly daughter of Sybil drown herself after an unsuccessful date with Pete Dean. He wrote about (*) butterflies and synesthesia in an "Autobiogrpahy revisited" titled *Speak, Memory*. This author of *Pnin* wrote a novel that consists of commentaries by Charles Kinbote and a 999-line poem by John Shade. For 10 points, name this author of *Pale Fire*.

ANSWER: Vladimir Nabokov

2. A medium with this property can have Cerenkov radiation with zero minimum particle velocity, an effect first observed in diffraction gratings by Smith and Purcell. The wavefunction of a particle in a potential of this type can be decomposed in a plane wave and a function of this type according to (*) Bloch's theorem. Quasicrystals have order but lack this property, though crystals possess it because they have repeated translational symmetry. Functions with this property have some similarly-named value a for which $f(x+a)$ equals $f(x)$, which is why such functions describe oscillating waves. For 10 points, give this term, which refers to objects with repeating structures.

ANSWER: periodic [prompt on "symmetric" or "translationally symmetric"]

3. Under this ruler, the Alcántara Bridge was constructed, and he instituted the alimenta system of welfare grain distribution. He deified his sister Ulpia Marciana and annexed Nabatea. This besieger of Sarmizegethusa, the capital of Decebalus, took Susa from the Parthians. The appointment of his successor may have been forged by his wife (*) Plotina. He built the last forum in Rome, including his namesake market, and employed Pliny the Younger. This conqueror of Dacia and adopted son of Nerva, under whom the Roman Empire was at its greatest geographic extent, constructed a column honoring his victories. For 10 points, name this second of the Five Good Emperors, the predecessor to Hadrian.

ANSWER: Trajan [or Marcus Ulpius Nerva Traianus Augustus; or Caesar Divi Nervae Filius Nerva Traianus Optimus Augustus; or Caesar Nerva Traianus Germanicus]

4. One organization which purports to build solutions for the problem identified in this work is the Saguaro Seminar. One explanation proposed in this book is labeled the "re-potting" hypothesis and is tied to the rise in home ownership. The author distinguishes between the "bridging" and "bonding" varieties of the concept analyzed in this work and blames its decline, in part, on increased (*) television-viewing. This book claims that the increasing reliance on robocalls and professional staff during political campaigns is symptomatic of its central concern. In this book, the author insists that "social capital" has decreased as fewer people join organizations like the NAACP or the Elks. For 10 points, name this Robert Putnam work, which details the decline of community engagement in post-Sixties America as exemplified by its title sporting phenomenon.

ANSWER: Bowling Alone: The Collapse and Revival of American Community

5. One version of this scene was painted in a fresco cycle in Orvieto Cathedral. That version features a portrait of Fra Angelico standing next to a portrait of the work's artist, Luca Signorelli. Another version of this scene shows one central figure's head flanked by lilies and a red sword. In that depiction, Rogier van der Weyden features the Archangel Michael prominently holding out a set of (*) golden scales. Its most famous version features a possible portrait of the artist in the figure of Saint Bartholomew and boat full of naked people being dragged underground at its lower right. For 10 points, identify this Biblical scene painted by Michelangelo on the altar wall of the Sistine Chapel, that shows Christ and various saints dispensing verdicts on the souls of mankind.

ANSWER: the Last Judgment

6. One central premise of this idea is often analogized using a mousetrap, an idea which was refuted when Kenneth Miller used a broken mousetrap to crack a pencil. The proponents of this idea wrote that it was part of a plot to overthrow "materialism" in the so-called Wedge Document. This idea, which was the central contention of the (*) *Kitzmiller v. Dover* case, is propounded by William Dembski and Michael Behe, the latter of whom stated that the flagellum is irreducibly complex in his book *Darwin's Black Box*. For 10 points, name this pseudo-creationist idea propounded by the Discovery Institute, which states that life is too complex to have evolved without a deity or guiding force.

ANSWER: Intelligent Design or ID [prompt on creationism]

7. The political lead-up to this conflict saw the formulation of a plan for federation by Lord Carnarvon and Sir Henry Bartle Frere. One battle in this conflict saw Gonville Bromhead and John Chard lead their men in forming a defensive line behind mealie bags; that engagement led to the awarding of eleven Victoria Crosses for the successful defense of (*) Rorke's Drift. The commander of the victorious army in this conflict's final battle repelled repeated enemy charges by forming his men into a large square, after which he captured the enemy capital of Ulundi. Prior to that battle, that commander, Lord Chelmsford, had suffered a crushing defeat after his men were overrun by the enemy's buffalo horns formation. For 10 points, name this 1879 war between the United Kingdom and a South African kingdom ruled by such men as Cetshwayo and Shaka.

ANSWER: Anglo-Zulu War

8. This play features a woman who asks about Florence's whereabouts, although she soon loses interest and instead chides a man for twisting his mouth. That woman compares herself to "a live coal burning in others' hearts," and she is spat on after an attempted seduction. Another character in this play demands a (*) toothbrush while speaking to an eyelid-less valet. A woman who had an affair with the tango-dancing Roger is sent to a room with a large bronze statue and Second Empire furniture. For 10 points, name this play in which army deserter Garcin, baby-drowning Estelle, and postal clerk Inez learn that "Hell is other people," a work by Jean-Paul Sartre.

ANSWER: No Exit [or Huis Clos; or In Camera; or No Way Out; or Behind Closed Doors; or Doors Closed; or Dead End]

9. One enemy in this video game disguises himself as a maiden, but when exposed to daylight he is revealed to be a monstrous thief named Blind. The protagonist of this game is told to acquire the three Pendants of Virtue by a man who can later be contacted through telepathic panels, Sahasrahla. The protagonist of this game receives the (*) sword and shield from his dying uncle, and uses the Magic Mirror to teleport himself out of the Dark World. The Dark World contains a massive pyramid at its center, in which the game's hero fights the final boss, Ganon. For 10 points, identify this game, whose hero must rescue the seven maidens and defeat the wizard Agahnim, the third game in the Zelda series. ANSWER: *The Legend of Zelda: A Link to the Past* [or *Zeruda no Densetsu: Kamigami no Toraifosu*; do not accept or prompt on "Zelda" or "The Legend of Zelda" by itself]

10. A particularly difficult example of performing this action was illustrated by James Wilkinson, and the number of outputs for this action within a given interval is given by Budan's theorem. Several methods of performing this action are outgrowths of Vincent's theorem, including the VAS method used by Mathematica. Several different methods of doing this relies on a combination of finding the Sturm sequence and counting the number of (*) sign changes within it. One common method of performing this action involves repeatedly iterating $x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$; that method repeatedly finds the x-intercept of a tangent line. For 10 points, name this task done via Newton's method, which consists of finding the points at which the graph of a polynomial intersects the x-axis. ANSWER: finding the roots of a polynomial [or solving a polynomial, or finding the zeros of a polynomial; accept equivalents]

11. This ruler's chief minister, Georg Heinrich von Görtz, became hated for debasing his nation's currency through the issuing of copper tokens. This ruler manipulated the Ottoman Sultan Ahmed III into an unpopular war with Russia, therefore making himself the target of an uprising called the "kalabalik." He was killed while besieging the fortress of Fredriksten, after which his army was decimated by a brutal winter while making this ruler's namesake "Death March." After two early victories, he forced (*) Frederick IV and Augustus the Strong to sign the Treaties of Travendal and Altranstädt, respectively, but he is perhaps best known for a crushing defeat he suffered after allying himself with the Cossack Hetman Ivan Mazepa. For 10 points, name this loser of the Battle of Poltava, who ruled as King of Sweden for much of the Great Northern War. ANSWER: Charles XII [accept Carl XII or Karl XII; prompt on partial answers]

12. This man described his ambitions as a poet by claiming, "I seek / As climate seeks its style, to write / Verse crisp as sand, clear as sunlight." Upon moving to America, he remarked "Everybody in New York is in a sitcom. / I'm in a Latin American novel," and wrote "Yet the south felt like home." Poems more famous than "A Lesson for This Sunday" and "Origins" see him "blow out the light / by the dreamless face of Maria Concepcion / to ship as a seaman," "curse the drunken officer of (*) British rule," and claim "The classics can console. But not enough." He wrote a rumination on "the disjecta membra of the great house" and another poem that asks "How can I face such slaughter and be cool?" and notes "the gorilla wrestles with the superman." For 10 points, name this author of "A Far Cry From Africa" and the epic *Omeros*. ANSWER: Derek Walcott

13. Invitrogen's BLOCK-iT algorithm is used to design high-throughput screens using this process. One protein used in this process was named for *Arabidopsis* mutants whose leaves looked like octopi. SID-1 encodes a channel necessary for this process in *C. elegans*, which uses this process to regulate lin-14 via lin-4 during development. The aforementioned protein, Argonaute, makes up the catalytic subunit of (*) the RISC complex, which uses the small interfering molecules generated by DICER. This process results in either inhibition of translation or degradation of the target messenger, leading to gene knockdown. For 10 points, name this process whereby single-stranded RNA is silenced thanks to the recognition of double-stranded RNA with the same sequence.

ANSWER: RNA Interference [or RNAi]

14. An admonition in this work cites the line "Where there is fear, there is also reverence," from the poet Stasinus. The difference between carrying and being carried highlights a distinction about this work's central topic. Fallacies in this work are likened to Daedalus' creations, and the example of horsemanship undermines a definition of a certain quality as (*) "justice which attends to the gods." In this work, a son prosecuting his father ponders a dilemma about whether an act is pious because the gods love it or whether the gods love it because it is pious. For 10 points, name this dialogue of Plato in which Socrates, about to stand trial, fails to learn the nature of piety from the title character.

ANSWER: Euthyphro

15. Part of this musical work uses a B-flat, E-flat, D, B-flat motif to depict a castle, and another section of it depicts the legendary harpist Lumir. One section of this work features a piercing high E on the violin, which represents the composer's hearing problems. That section of this piece is titled after the mountain where St. (*) Wenceslas supposedly sleeps. This piece, which contains the "Blanik" section, is most noted for a part that adapts Gieseppe Cenci's "La Mantovana" and was repurposed into the melody of the Israeli national anthem. That section of this work depicts the movement of waters in the Vltava in "Die Moldau." For 10 points, name this nationalistic suite of symphonic poems by Bedrich Smetana.

ANSWER: Mà Vlast [or My Country; or My Fatherland; or My Motherland]

16. One candidate in this 2012 election called the other "a hired gun" for representing Travelers Insurance in an asbestos case. A candidate in this election defeated Alan Khazei and Setti Warren in a primary and earlier chaired a congressional panel overseeing TARP funds. Aides of a candidate in this election were criticized for (*) "tomahawking," a gesture referring to one candidate's false claim of Native American ancestry. The incumbent defeated Martha Coakley in a 2010 special election, and was opposed by the architect of the Consumer Financial Protection Bureau. For 10 points, name this election in which Scott Brown was defeated for reelection by Elizabeth Warren.

ANSWER: 2012 United States Senate election in Massachusetts [or obvious equivalents specifying the office and state; prompt on partial answer]

17. A Senator with this last name was called the “Natick shoemaker” in a presidential election in which he replaced Schuyler Colfax on the winning ticket. A CEO with this name went on to implement the “New Look” after testifying that what’s “good for our country is good for General Motors” during his confirmation as Eisenhower’s Defense Secretary. One man with this name was a Texas congressman who steered money to the (*) Afghan mujahedeen and another was an ambassador who abetted Huerta’s rise to power in Mexico before being fired by a President who shared this last name. For 10 points, give this last name shared by Ulysses Grant’s second Vice-President and the man who was President during World War I.

ANSWER: Wilson

18. This author described an unfulfilling liaison between Cloris and Lysander in one poem. A play by this author depicts a girl who fends off a rapist by showing him a diamond ring, thereby indicating that she is a “person of quality.” That girl’s sister, Hellena, is seduced by a man who notes, “There’s no sinner like a young saint.” In her best-known novel, this author created characters who are given the Christian names (*) Caesar and Clemene. At the end of that novel, the title character leads a slave revolt against deputy governor Byam in Surinam and mourns his decapitated lover Imoinda. For 10 points, identify this Restoration playwright and spy who wrote *The Rover* and *Oroonoko*.

ANSWER: Aphra Behn

19. Marius Petipa required the female dancer to perform this technique while lifting her other leg in the air in the final pose of his Grand Pas de Deux from Act III of *Swan Lake*. This technique is used by the male dancer who plays Bottom in Frederick Ashton’s *A Midsummer Night’s Dream* to create the impression of hooves. Marie Taglioni was the first to use this technique for aesthetic purposes, using it to appear (*) weightless in *La Sylphide*. The supporting leg in a pirouette typically performs this technique, and it requires a special shoe which uses a box at the front to support the toes. For 10 points, identify this ballet technique in which the ballerina dances on the tips of her toes.

ANSWER: dancing en pointe [or pointe work; accept equivalents that mention “pointe”]

20. In one story, this god's wife demands that he be allowed to build a palace, lest she make another god's gray hair run red with blood, and he dispatches emissaries to speak with Kothar and Khasis. This god was once invited to a banquet of mud, before which he had intercourse with a (*) calf to gain strength. This god's body was retrieved from the underworld by Shapash, and his reign was taken over by Athtar, before Anat avenges his apparent murder by mutilating Mot. This god's role in seasonal change is described in the Ras Shamra tablets, and this son of Dagon resided on Mount Saphon after he defeated Yam. For 10 points, name this Caananite "lord" and fertility god whose cult was often denounced by Jewish prophets.

ANSWER: Baal

TIEBREAKER/EXTRA

21. This poet wrote “I want my free will and want it accompanying the path which leads to action” before declaring “I am too much alone in this world.” Another poem by him begins with the lines “Spring has come again. The earth is like a child that knows poems by heart.” That sonnet was a part of a larger work of his written in Château de Muzot and dedicated to (*) Vera Knoop. This author wrote about a statue whose “legendary head with eyes like ripening fruit” is lost in a poem that ends with the line “you must change your life,” “The Archaic Torso of Apollo.” His best known work asks “who, if I cried out, would hear me among the Angelic Orders?” For 10 points, name the German poet of *Sonnets to Orpheus* and *The Duino Elegies*.

ANSWER: Rainer Maria Rilke

22. A ruler from this dynasty is depicted in Daniel 8:9 as a “little horn” of a he-goat. Bolis betrayed a member of this dynasty, Achaeus, who was executed by his cousin. His cousin was a ruler of this dynasty who won the Battle of Arius, but was defeated by Euthydemus I at a three-year siege. Hannibal was serving a ruler of this dynasty when he lost the Battle of (*) Eurymedon, which along with a defeat to Glabrio led to that ruler signing the Treaty of Apamea. That ruler of this dynasty, who was defeated at Bactra and Thermopylae, was Antiochus III. The founder of this dynasty was a leader of “the silvershields” and satrap of Babylon. For 10 points, name this Near Eastern diadochi dynasty founded by a general nicknamed *Nikator*.

ANSWER: Seleucid dynasty

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1. This man learned the use of writing from his father Agenor, who had studied in Egypt. For 10 points each:

[10] Name this mythical character, who sowed dragon's teeth to create warriors and founded Thebes.

ANSWER: **Cadmus**

[10] Along with a robe, this troublesome piece of jewelry was given by the gods to Cadmus's wife. Polynices used it to bribe Eriphyle in order to convince Amphiaraus to join the Seven Against Thebes.

ANSWER: the **necklace of Harmonia**

[10] This later king of Thebes eloped with Chrysippus and was then framed for his murder by Hippodamia, the wife of Pelops. He was the first husband of Jocasta.

ANSWER: **Laius**

2. New York City is the setting for many famous photographs. For 10 points each:

[10] This man took pictures of such locations as The Bandit's Roost and Gotham Court in his exploration of the living conditions in tenements in the late 1880s.

ANSWER: Jacob **Riis**

[10] While this artist's portrait of two identical twin girls next to each other was taken in New Jersey, her most famous photograph, which shows a boy with one of his suspenders undone, was taken in Central Park.

ANSWER: Diane **Arbus**

[10] A man on a New York construction beam winds up with one of these objects while a boy looks on in one photograph. Another photograph, showing Alan Shepherd holding one of these objects, was actually of a makeshift one composed of just the head attached to a contingency sampler, and was taken 239,000 miles from New York.

ANSWER: **golf club**

3. In this novel, Coupeau begins to drink heavily after falling from the roof of a hospital. For 10 points each:

[10] In what novel, the seventh of a twenty-novel series, does Gervaise marry the aforementioned roof-worker after being abandoned by her lover Lantier?

ANSWER: *L'Assommoir* [or *The Dram Shop*]

[10] This French novelist shocked his audience with a realistic depiction of the working class in *L'Assommoir* and other novels in the Rougon-Macquart cycle. He also wrote an open letter in response to the Dreyfus Affair.

ANSWER: Émile François **Zola**

[10] Zola also wrote this novel, in which Étienne Lantier leads a failed strike and becomes trapped with Catherine Maheu and Chaval.

ANSWER: **Germinal**

4. Answer the following about the Republican Revolution of 1994, for 10 points each.

[10] This Georgia representative replaced Bob Michel as leader of the Republicans in the House, ascending to the office of Speaker in 1994. About a year later, his standoff with Clinton led to a government shutdown.

ANSWER: Newton "Newt" Leroy **Gingrich** [or Newton "Newt" Leroy **McPherson**]

[10] Gingrich and the Republicans campaigned on this document, which lists eight promises and ten bills, including congressional term limits, an audit of Congress, a balanced budget amendment, and the line-item veto.

ANSWER: **Contract with America**

[10] This Speaker of the House before Gingrich lost reelection in his own district in Washington State in 1994, beaten by George Nethercutt. First elected in 1964, this Democrat presided over the House banking scandal.

ANSWER: Thomas "Tom" Stephen **Foley**

5. Answer the following about the geography of the Overseas Highway, for 10 points each.

[10] The Overseas Highway ends at this Florida city, the farthest of an island chain that divides the Gulf of Mexico from the Atlantic Ocean. This southernmost town in the continental U.S. once declared itself the Conch Republic.

ANSWER: City of **Key West**

[10] The Overseas Highway carries this federal road south from Miami and Key Largo to Key West. This highway, whose shield-shaped signs were once colored red in Florida, begins in Fort Kent, Maine.

ANSWER: United States Route **1** [or Federal Highway **1**; or United States Highway **1**]

[10] This longest of the Overseas Highway's bridges crosses the Moser Channel between Knight's Key and Little Duck Key. Its newer span bypasses Pigeon Key and is slightly shorter than its name would imply.

ANSWER: **Seven Mile** Bridge

6. One piece in this song cycle, "Ungeduld," deals with the desire of the singer to confess his love, and a green ribbon serves as an important motif in the later songs in the cycle. For 10 points:

[10] Name this song cycle, which, like the same composer's *Winterreise*, was based on Wilhelm Müller poems. It includes "Das Wandern" and "Tränenregen."

ANSWER: Die **schöne Müllerin** [or The **Miller's Beautiful Daughter**]

[10] This composer of *Winterreise* and *Die schöne Müllerin* also wrote the string quartet *Death and the Maiden* and lots of "lieder."

ANSWER: Franz **Schubert**

[10] Some songs in *Die schöne Müllerin*, including "Morgengruss" and "Ungeduld," are verse-repeating, which means that they follow this musical form. It signifies that each verse is sung to the same music.

ANSWER: **strophic** form

7. Answer the following about vestment colors in the Catholic Church, for 10 points each.

[10] One of the rarest colors of vestments is pink, worn only optionally on one Lenten Sunday and Gaudete Sunday, the third Sunday of this preparatory season for Christmas.

ANSWER: **Advent**

[10] The color red is used for the feasts of martyrs, as well as Palm Sunday, Good Friday, and this feast which celebrates the descent of the Holy Spirit.

ANSWER: **Pentecost**

[10] The color green is used to represent this liturgical season, which is divided into two parts, the first spanning from the end of the Christmas season until Ash Wednesday, and the second from the end of the Easter season until the feast of Christ the King.

ANSWER: **Ordinary Time**

8. Answer some things you'd see on an early organic chemistry test, for 10 points each:

[10] A common starting point in organic chemistry is comparing the strengths of these compounds, which in the Bronstead-Lowry definition are proton donors.

ANSWER: **acids**

[10] This effect, in which electron withdrawing groups pull electron density through sigma bonds, is responsible for making trifluoroacetic acid much stronger than acetic acid.

ANSWER: **inductive** effect

[10] Reaction mechanisms are derived using this pen-on-paper method to show how electrons move around during the reaction. This method's namesake symbol represents a pair of electrons.

ANSWER: **arrow pushing**

9. Mr. Rand allows a character in this play to drive garbage trucks. For 10 points each:

[10] Name this play, in which Alberta dies after giving birth and Rose adopts the baby, Raynell. Its main conflict concerns Cory's desire to play football and quit his job at the supermarket.

ANSWER: **Fences**

[10] This American playwright wrote about Troy Maxson in *Fences*, and depicted the conflict between Boy Willie and Berniece in *The Piano Lesson*.

ANSWER: August **Wilson**

[10] *Fences* ends with this character playing a musical instrument after escaping from the insane asylum. He received a head injury in World War II and has a metal plate in his head.

ANSWER: **Gabriel** Maxson [prompt on **Maxson**]

10. Answer the following about the unification of China, for 10 points each.

[10] In 221 BCE, this most powerful of the seven states of the Warring States Period completed its conquest of the other six states.

ANSWER: **Qin**

[10] Earlier, Qin scored a major success on the road to unification with its decisive victory over the Zhao state at this battle, which lasted from 262 to 260 BCE. In its aftermath, the victorious Qin commander, Bai Qi, ordered the live burial of over 400,000 Zhao prisoners of war.

ANSWER: Battle of **Changping**

[10] The unification of China enabled Qin to impose this ideology on its new empire by burning books and burying Confucian scholars. This ideology's proponents included Han Feizi and Shang Yang.

ANSWER: **Legalism** [or **fa jia**]

11. Recent data presented at the Hadron Collider Physics conference in Kyoto has some particle physicists fearing they will lose their jobs. For 10 points each:

[10] That data from the LHC has shown that it is unlikely that certain particles predicted by this theory exist. It predicts that every fermion has a partner boson and vice versa.

ANSWER: supersymmetry [or SUSY]

[10] One of the big draws of supersymmetry was that it provided an answer to this conundrum which is focused on the weak forces' huge strength in comparison to gravity..

ANSWER: hierarchy problem

[10] Another theory debunked partly due to observation of the Higgs Boson is that there might exist a fourth generation of these particles, three of which make up protons and neutrons.

ANSWER: quark

12. In addition to determining which NFC teams would be in the playoffs, Week 17 of the NFL season saw players attempting, but ultimately failing, to break some records. For 10 points each.

[10] This Minnesota Vikings running back fell just short of the single-season record for rushing yards. This Oklahoma graduate was the NFL Rookie of the Year in 2007 and recently recovered from a torn ACL.

ANSWER: Adrian Peterson

[10] Peterson attempted to break the record of Eric Dickerson, who played most of his career for two teams in this city, which now has zero NFL teams.

ANSWER: Los Angeles [or LA]

[10] Michael Strahan's sack record was also in danger during week 17. Both the Texans' J.J. Watt and this 49ers linebacker came close.

ANSWER: Aldon Smith

13. She was banished from Algiers for her witchcraft, and she worshiped the god Setebos. For 10 points each:

[10] Identify this mother of Caliban, who trapped the air spirit Ariel in a tree.

ANSWER: Sycorax

[10] In Shakespeare's *The Tempest*, this man is the rightful Duke of Milan, although he is deposed by his scheming brother Antonio. Along with his daughter Miranda, he arrives on the island and frees Ariel from the tree.

ANSWER: Prospero

[10] After Ferdinand arrives on the island after a shipwreck, Ariel claims in a song that his father, the King of Naples, lies this far beneath the waves.

ANSWER: full fathom five [or five fathoms]

14. This event led to the dismissal of Louis XV's foreign minister. For 10 points each:

[10] Name this 1770 diplomatic crisis that saw Britain successfully face down a Spanish attempt to seize an archipelago.

ANSWER: Falklands Crisis

[10] The Falklands Crisis was a triumph for the government of this British Prime Minister. Unfortunately for him, his ministry also saw less pleasant events, such as the outbreak of the Gordon Riots and military defeat in the American Revolutionary War.

ANSWER: Lord North

[10] One year after being forced from office by a vote of no confidence after the British defeat at Yorktown, Lord North briefly returned to power by forming a coalition government with this Whig leader, the notable arch-rival of William Pitt the Younger.

ANSWER: Charles James Fox

15. The transition between these two stages of mitosis is one of the most crucial checkpoints for cells. For 10 points each:

[10] Identify these two stages of mitosis, one in which the chromosomes are lined up along a namesake plate and the stage following it, in which sister chromatids are separated.

ANSWER: metaphase and anaphase [need both]

[10] This complex, when bound to Cdc20, is crucial in facilitating the metaphase-to-anaphase transition by cleaving securin, which leads to the release of separase and the separation of sister chromatids.

ANSWER: Anaphase Promoting Complex [accept cyclosome or APC/C]

[10] APC attaches this 76-aa peptide to lysine residues. This very common peptide is attached by its namesake ligases, and in addition to its best known function it's key in vesicular trafficking.

ANSWER: ubiquitin

16. One painting in this series depicts a cavalry charge led by Niccolò da Tolentino. For 10 points each:

[10] Name this series of three paintings that depicts a 1432 clash between the armies of Florence and Siena.

ANSWER: *The Battle of San Romano*

[10] *The Battle of San Romano* by this painter, who is also known for *The Hunt in the Forest* and a Gothic-inspired *Saint George and the Dragon*.

ANSWER: Paolo Uccello or [Paolo di Dono]

[10] Other wrks of Uccello are found in the cathedral of this city, the Duomo. This city's baptistery awarded Ghiberti a commission to sculpt its doors.

ANSWER: Florence

17. Greg Mankiw and Matthew Weinzierl proposed taxation based on this property, based on the fact that is a strong, albeit imperfect predictor of income. For 10 points each:

[10] Those economists wrote about "utilitarian income redistribution" in a paper proposing taxation on what quantitative characteristic, which is notably depressed among North Koreans?

ANSWER: height

[10] The notion of optimal taxation based on tagging was introduced by George Akerlof, who also wrote about information asymmetry in a paper about the market for what product?

ANSWER: lemons [or used cars or defective cars]

[10] The optimal linear tax formula includes a term for this quantity in the denominator, which affects the efficiency cost of taxation. This quantity measures how sensitive people's desire for work is to the level of income tax.

ANSWER: elasticity of labor supply

18. The first war named for these people was sparked by the rise of Isabella II under a pragmatic sanction. For 10 points each:

[10] Name these people who wished to uphold the Salic Law and employed the Basque general Tomás de Zumalacárregui. They became the standard-bearers of hardline Catholicism in Spain during their three nineteenth-century wars, and they were eventually folded into the Francoist movement.

ANSWER: Carlists

[10] Carlism gained major support from Basque and Catalan communities by promising to reverse these laws of Philip V, which revoked the autonomy of Spain's peripheral communities.

ANSWER: the Nueva Planta decrees

[10] Carlists celebrated when Isabella was deposed in 1868 in an event known by this name. Another country's version of this event was secured at the Battle of Aughrim.

ANSWER: the Glorious Revolution

19. To implement a stack data structure, one can use parallel shift registers. But this bonus isn't about data structures. For 10 points each:

[10] A shift register is a series of these circuits connected to the same clock. They come in SR, D, and T types.

ANSWER: flip-flop

[10] One type of Flip-Flop, an SR Latch, can be built from two of this type of logic gate, which with the NAND gate is considered a "universal gate."

ANSWER: NOR Gate

[10] Both the NOR and NAND gates implement a type of logic named for this man. This English thinker wrote *The Laws of Thought*.

ANSWER: George Boole [accept Boolean algebra or Boolean logic]

20. In *The Republic*, this man is the source of Polemarchus's definition of justice, and Socrates discusses his poetry in the *Protagoras*. For 10 points each,

[10] Name this lyric poet, who was credited with inventing letters of the Greek alphabet and wrote many elegies and encomiums.

ANSWER: Simonides of Ceos

[10] This other lyric poet, from Lesbos, wrote "a trembling / seizes all of me" in *phainetai moi*, and is also known for a *Hymn to Aphrodite* which asks the title goddess not to crush the author's spirit.

ANSWER: Sappho of Lesbos

[10] This lyric poet from Boetia authored numerous victory odes, including ones for the Panhellenic games at Olympia and Delphi. Alexander the Great ordered his house spared during the razing of Thebes.

ANSWER: Pindar

21. Epiphenomenalism and parallelism are variations of this philosophy. For 10 points each:

[10] Critically dubbed the “ghost in the machine,” this philosophy posits a distinction between mind and body. Forms of this philosophy include predicate, property, and substance, the last of which was advocated by Descartes.

ANSWER: mind-body **dualism** [or **dualist** philosophy; accept equivalents]

[10] Discussed by dualist David Chalmers and supported by the inverted spectrum argument, these phenomena concern the subjective properties of experiences. Thomas Nagel’s “What Is It Like to Be a Bat?” argues for them.

ANSWER: **qualia** [or **quale**]

[10] This Frank Jackson thought experiment about qualia is the basis of the knowledge argument. It concerns whether a super-scientist trapped in a black-and-white chamber learns anything after she sees a red tomato outside.

ANSWER: the **Mary’s Room** experiment [or the **Mary problem**]