

## Minnesota Open V

Packet by the editors (1): Auroi Gupta, Andrew Hart, Gaurav Kandlikar, and Cody Voight

### Tossups

1. **An explanation of this phenomenon was developed by Donald Griffin along with the recently deceased Robert Galambos. The brains of some organisms that make use of this phenomenon have developed a shape-shifting “melon” region that increases the efficiency of this technique. Nobuo Suga is a pioneer in studying this phenomenon, which is utilized by some organisms that have DSCF areas in their brains. Members of the genus *Rousettus* are the only megachiropterans to use this technique, the (\*) “frequency modulating” version of which is common to some organisms. Organisms that employ this technique include swiftlets and shrews. For 10 points, name this phenomenon employed by toothed whales like dolphins and by bats, which use it to create “maps” of their surroundings.**  
ANSWER: echolocation [prompt on sonar]
2. **One character imagines that this scene will bring the arrival of “oldtimers with strange license plates—from Maine, Massachusetts, Vermont, New Hampshire!” One attendee in this scene angrily states that “I’m not licked that easily. I’m staying right in this city, and I’m gonna beat this racket!” In this scene, which ends with the sound of a barely audible flute that also opens the play it is a part of, a woman stifles her coming tears and reveals that she “made the last payment on the (\*) house today...And there’ll be nobody home.” A speech that imagines the central character of this scene “riding on a smile and a Shoeshine” repeats “nobody dast blame this man.” The transition to this scene involves a single cello string pulsing, muting the crash of a speeding car. It occurs in a section titled “Requiem” as the last scene in its play. For 10 points, name this scene that centers on an event attended by Linda, Happy, and Biff, who remember and mourn a suicidal salesman.**  
ANSWER: Willy’s funeral [or Loman’s funeral or the funeral in *Death of a Salesman*; accept “Requiem” before mentioned; prompt on funeral or equivalents throughout]
3. **In this election, leaked polls referred to the winner as “Flanby” and the loser as “The Midget.” The victor campaigned as “Mister Normal” in this election, in whose lead-up the Socialist Party and the Radical Party of the Left had their first joint open primary. Early on in this election, the two frontrunners suspended their campaigns after a shooting at the Ozar Hatorah day school. The loser in this April (\*) 22nd election, who consistently ran ahead in the opinion polling data, could not overcome fallout from the Eurozone crisis and a rocky relationship with Carla Bruni. For 10 points, name this election in which voters chose Francois Hollande over the incumbent Nicolas Sarkozy.**  
ANSWER: the 2012 French presidential election [prompt on partial answer; accept all combinations of 2012, president, and France; accept equivalents of most recent French presidential election or Hollande-Sarkozy election]
4. **A black mechanic with this surname, Percy, brought a suit against McDonnell Douglas that the Supreme Court used to lay the framework for Title VII cases. Charles, a person with this surname, brought a case before the Supreme Court that resulted in the striking down of the “freedom of choice” plan for desegregating New Kent County, Virginia. Brother Bill attempted to expose the violence in a place co-named for this surname, where the back door of a unit was welded shut in anticipation of the stay of mayor (\*) Jane Byrne, who lived there during a short publicity stunt. This surname is the second one that graced that building, which was a notorious housing project in the same city as the Rockwell Gardens and Robert Taylor Homes, and was also named for an Italian-American nun. For 10 points, give this surname that, along with the name Cabrini, identifies a notorious Chicago housing project.**  
ANSWER: Green [accept Cabrini-Green]
5. **At the bottom of this painting, three couples are shown embracing and kissing. Seven tiny demons that are all headed back toward the underworld represent Satan in this work. Figures dressed in white, red and green kneel on the roof of the central structure in this painting, in which an ox and a horse are shown gazing toward the central action. Several of this painting’s features, such as a ring of angels holding ribbons and olive branches, and an inscription in Greek referencing the (\*) *Book of Revelation*, suggest that it was made when its artist was under the influence of Savanarola’s teachings. The Virgin Mary is shown praying toward the baby Jesus in this painting. For 10 points, name this painting that shows angels and men celebrating the birth of Jesus, the only signed work of Sandro Botticelli.**  
ANSWER: *The Mystical Nativity* [or *The Mystic Nativity*]

6. **This book contains a moving scene in which the narrator's father continuously repeats "that's strange," having lost the power of speech at the very instant when he finally understood the meaning of Beethoven's sonatas. In the last part of this book, a virgin becomes bored with sex just by studying the erogenous zones on a picture of a woman, and an orgy hostess enforces multiple contacts between participants. One woman in this book recites her husband's pet names for her while being gang-raped by several children who leave her to drown then go circle-dancing in the streets. This book describes how a cap remained the only vestige of (\*) Vladimir Clementis after he was airbrushed out of a photograph with Klement Gottwald in its first section, "Lost Letters." Tamina appears in the second of two sections titled "The Angels" in this work. For 10 points, name this book about two ways of coping with life in authoritarian Czechoslovakia, written by Milan Kundera.**  
ANSWER: *The Book of Laughter and Forgetting* [or *Kniha smíchu a zapomnění*; or *Le livre du rire et de l'oubli*]
7. **Aryl versions of these compounds are produced after the alkaline hydrolysis of aryl xanthates in a reaction named for Leuckart. Ribonucleotide reductases carry out the biosynthesis of ribonucleotides by catalytically using radicals of these compounds. The coenzyme responsible for methane biosynthesis contains one of these compounds at the reactive site. Another biological example of these compounds is (\*) Coenzyme A, in which pantothenate is bonded to cysteamine. One of these compounds is typically added to natural gas to make its presence detectable, and these compounds got one of their names because they can bond strongly with mercury. For 10 points, name this functional group characterized by a sulfur atom bonded to a hydrogen atom, which are the sulfuric analogs of alcohols.**  
ANSWER: thiols [or mercaptans]
8. **This person, who signed early works as Helios, suffered from erratic behavior that may have been brought on by brain injuries from head trauma suffered from a horrific runaway stagecoach accident. The disputed paternity of this person's son, Florado Helios, led this person to murder Major Harry Larkyns, but he was not punished because his case marked the last time that an admitted murderer was freed on (\*) "justifiable homicide" in California. He used trip wires to depict Sallie Gardner in an experiment commissioned by Leland Stanford. For 10 points, name this man who invented the zoopraxiscope to put to rest the vexing problem of how many legs a horse had on the ground while galloping.**  
ANSWER: Eadward [James] Muybridge [or Edward James Muggeridge; or Eduardo Santiago Muybridge]
9. **This person gave members of the nobility nicknames like "the dog," "the churl," "Joseph the Jew," and "Whore-son" upon return from serving as Lieutenant of Ireland. This target of part of the Bologne Agreement was threatened excommunication by Robert Winchelsey. This person ruled as regent in the absence of a monarch who married the so-called "She-Wolf of France." This person was a member of the household of the Prince of Carnarvon, who later became king and exiled this person three times. This person, who was made the first Earl of (\*) Cornwall, violated the Ordinances of 1311 by returning from exile and was beheaded by a group of magnates led by Thomas, the Second Earl of Lancaster and Guy de Beauchamp, Earl of Warwick. For 10 points, name this noble of Gascon extraction who was a favorite of Edward I and, like the younger Hugh Despenser, was the alleged homosexual lover of Edward II.**  
ANSWER: Piers Gaveston [accept either; prompt on 1st Earl of Cornwall]
10. **One talisman against these objects was the dried body of a kingfisher. Orphic mythology holds that these objects were used to avenge Zagreus after his abduction and mutilation. One of these objects was used after the Titan Iasius slept with Demeter at the wedding of Cadmus and Harmonia. These objects were once placed out of the reach of their owner, who was knotted one hundred times by rawhide thongs, until (\*) Briareus set him free and he recovered them. Aphrodite used her girdle to divert one of these objects, saving the life of Anchises but dooming him to lameness. After he had accepted payment for raising Hippolytus from the dead, Asclepius was killed with one of these objects, which were also used to put a stop to Phaethon's ill-fated chariot ride. Apollo killed the forger of these objects, the Cyclopes, who created them alongside a helmet of invisibility and a trident. For 10 points, name these weapons thrown liberally by Zeus.**  
ANSWER: Zeus's thunderbolts [or storm bolts; or lightning bolts; or bolts]
11. **The critic Norman Lebrecht alleged that after a mediocre recording of Beethoven's *Triple Concerto*, this person dismissed the idea of a second take, saying "we have to pose for the cover photographs." Walter Legge initiated the second phase of this conductor's career by naming this person the principal conductor of his newly created Philharmonia. This person's career began at Ulm by conducting *The Marriage of Figaro*. This person was fond of conducting scorelessly with eyes closed, and was awarded a post for life after the death of bitter rival (\*) Wilhelm Furtwangler. This person conducted recordings of four cycles of the Beethoven symphonies and a version of *Also Sprach Zarathustra* that was used in *2001: A Space Odyssey*. Although this person was the best-selling conductor of his lifetime, he was tainted by his membership in the Nazi Party. For 10 points, name this Austrian conductor, the longtime director of the Berlin Philharmonic.**  
ANSWER: Herbert von Karajan

12. According to one poem, this war was between the “vast military empires of the shark and the tiger” that transformed the “sabbath of witches” and “adoration of madmen” of yesterday into “to-day the struggle.” In a story set in a frigid hospital cellar during this war, a Belgian priest tends to three prisoners fated to be shot against the title structure. It was detailed in a journalistic work by a volunteer in the POUM militia who escaped its ravages after being shot in the (\*) throat by a sniper. This war, the setting of Sartre’s “The Wall,” provides the backdrop of a novel in which the earth shakes every time the protagonist has sex with his lover, a former rape victim named Maria. During this war, Anselmo, Pilar, and Pablo lead a guerrilla band plotting to blow up a bridge and are joined by Robert Jordan. For 10 points, name this war, the setting of *Homage to Catalonia* and *For Whom the Bell Tolls*, during which the author Federico Garcia Lorca was killed by Franco’s supporters.  
ANSWER: Spanish Civil War [or Guerra Civil de España]
13. This group was opposed in one revolt by Patrick Gordon, who fought them after they returned from the Azov Campaigns and made contact with an ally from a previous rebellion who was imprisoned in the Novodevichy Convent. This group rebelled in the wake of the death of Feodor III after the Naryshkin brothers proclaimed a certain person tsar. This group, which was initially armed with arquebuses, fought in the Siege of Kazan. They supported Sophia Alekseyvna during a namesake 1698 uprising and a 1682 Moscow revolt that opposed the coming to power of a (\*) ten-year-old monarch who would later embark on the Grand Embassy. For 10 points, name this group of “shooters,” poleaxe- and firearm-toting Russian guardsmen created by Ivan the Terrible and disbanded by Peter the Great.  
ANSWER: the Streltsy [or Shooters before mentioned; prompt on Marksmen]
14. This quantity causes the change in sign of the electronic wave function discovered by Herzberg and Longuet-Higgins. The restoration of the single-valuedness of the electron wavefunction for triatomic molecules by Mead and Truhlar was achieved using this as-yet undiscovered factor. This quantity was shown to be an element from the holonomy group for a fibre bundle with a certain connection by Barry (\*) Simon. It equals one-half the solid angle subtended at the origin by the closed loop traced by a time-varying magnetic field for a spin one-half particle. This quantity is acquired by the instantaneous eigenstate of a quantum system described by a cyclic time-dependent Hamiltonian, depends on the topology of the parameter space, and is in addition to the dynamical phase. For 10 points, name this factor commonly seen in the Aharonov-Bohm effect.  
ANSWER: Pancharatnam-Berry phase [or geometric phase; prompt on Pancharatnam phase]
15. One oft-excerpted piece from this opera begins with a harp solo and climaxes in measure 30 with the tempo marking *poco piu appassionato*. That piece from this opera is an expressive string solo similar to the *Melodie-Elegie* from its composer’s opera *The Furies*. This opera’s title character listens to a baritone plea in 9/8 time while she hears the offstage voice of Nicias in a scene in which she laments the oncoming signs of old age while looking in a mirror. The D-major (\*) *entr’act* between two Act II scenes in this opera is a frequent encore piece for violinists. This opera’s “Meditation for solo violin” represents the title character’s reflection on the advice of the monk Athanael. For 10 points, name this opera about a courtesan by Jules Massenet.  
ANSWER: Thais
16. A 1921 work titled for this system best defines the title state of Giorgio Agamben’s text “The State of Exception.” One text traces the history of this system, whose early leaders exemplified “Roman” and “commissarial” archetypes, and whose later leaders emerged after the French revolution, and did not attempt to defend an existing constitution but instead tried to form a new one. Carl Schmitt advocated the “sovereign” type of this system in a 1921 work titled for it. Alongside Pareto efficiency and independence of irrelevant alternatives, the lack of this system is one of the (\*) four criteria in Arrow’s impossibility theorem. In a term from Marxist political theory coined by Joseph Wedermeyer, the entire proletariat can act as this type of system. For 10 points, name this government structure in which a Mussolini figure controls an entire government by fiat.  
ANSWER: dictatorships
17. The first history of this person was commissioned by the son of this person’s greatest enemy and written by Abbas Khan Sarwani. This person’s government commissioned building projects like the Rohtas Fort and the Qila-i-Kuhna Mosque and introduced a system of copper, silver, and gold coins. This victor at the Battle of Chausa supervised significant improvements to the Grand Trunk Road. This person gained a nickname after killing a tiger with his bare hands. This person’s son Islam came to power after this ruler died during an accidental gunpowder explosion. This person’s organization of the government inspired the administration of (\*) Akbar the Great, the son of this ruler’s longtime adversary, who died after falling down the stairs of a library. For 10 points, name this Pashtun founder of the Muslim Delhi-based Sur Empire, a longtime antagonist of Humayun.  
ANSWER: Sher Shah Suri [prompt on partial answer; prompt on Suri or Farid Khan or Sher Khan]

18. **Mutants of this enzyme that have glutamine at the 35 position instead of glutamic acid have absolutely no catalytic activity, and this enzyme shares many structural characteristics with lactalbumin. The molecule that occupies the D site of this enzyme was shown to adopt an unusual conformation that stabilizes its oxonium ion intermediate. This enzyme was the first to have its crystal structure reported, which was done by David (\*) Phillips, who also proposed a mechanism of this enzyme that controversially had it proceed via an SN1 mechanism. That proposed mechanism has been superseded by the Withers mechanism, which agrees with the classification of this enzyme as a retaining glycosidase. For 10 points, name this enzyme that catalyzes the hydrolysis of linkages between NAG and NAM residues in Gram-positive bacteria, and which is often obtained from hen egg-whites, which gets its antibacterial properties from this enzyme.**  
ANSWER: lysozyme [accept hen eggwhite lysozyme, because that's the enzyme all the studies mentioned were done on]
19. **One member of this Jewish community, whose students included Chaim Volozhin or Ickowitz, stuck his feet in water to stay up and study over sixteen hours a day. David Roskies posited that a defining characteristic of this community was the consumption of salt-and-pepper kugel, which he links with the geographic "gefilte fish" line. Their dialect of a Germanic language can be distinguished by the utterance of the word "vos" instead of "vas." They tended to place importance in heads of Yeshiva, as opposed to "tsaddikim." Their major community centers included (\*) Brest and Brisk. This group, which usually aligned with the "mitnagdim" against the "Chassidim," had a prominent member named Vilna Gaon. For 10 points, name this Jewish community that was granted a charter by Vytautas the Great and occupied a historical area centered on Vilnius.**  
ANSWER: Litvaks [or Lithuanian Jews; accept Vilnius Jews before "Brest"]
20. **This thinker likened a central concept, which can be multivocalic and polysemic, to "forces" that are "determinable influences inclining groups and persons to action." This author's study of rituals focused on the "smallest unit of ritual which still retains the specific properties of ritual behavior." This thinker piggybacked on the work on rites of passage of Arnold Von Gennep to theorize that, during the middle stage of "liminality," individuals were "betwixt and between." This person, who conducted a lifelong study of the Zambian (\*) Ndembu tribe alongside his anthropologist wife Edith, was the foremost exponent of symbolic anthropology. For 10 points, name this British cultural anthropologist who wrote *The Drums of Affliction* and *The Forest of Symbols*.**  
ANSWER: Victor [Witter] Turner
21. **One character in this play chimes in with supportive asides like "Ay touch him, there's the vein" and "You are too cold" during an audience in which his companion quips that "it is excellent / To have a giant's strength; but it is tyrannous / To use it like a giant." In another scene, one of its characters proposes that a woman who lost her dowry in a shipwreck be used as a sexual decoy. Early in this play, a drunkard named Froth is apprehended by a policeman who calls him a "benefactor" rather than a "malefactor." One character substitutes a (\*) pirate's head for that of the lover of Juliet and dons the guise of a friar for the majority of the play. Elbow and Mistress Overdone appear in a subplot of this play, in which Isabella is offered the safe release of her brother Claudio in exchange for her virginity after laws against fornication are enforced in Vienna. For 10 points, name this comedy by Shakespeare, in which Duke Brabantio hands over power to Angelo.**  
ANSWER: Measure for Measure

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Packet by the editors (1): Auroi Gupta, Andrew Hart, Gaurav Kandlikar, and Cody Voight

### Bonuses

1. One of these works was uncovered in 1883 in the Ploutonion of Eleusis and depicts Eubuleus. For 10 points each:  
[10] Name these incomplete sculptures, one of which is the female *Leconfield* and the other of which is the male *Aberdeen*.  
ANSWER: they are disembodied **heads** [they're also all by the same dude, but he's the next part, so don't say his name]  
[10] The aforementioned heads are all attributed to this Greek master who sculpted the *Aphrodite of Cnidus* and the *Apollo Lizard-Killer*.  
ANSWER: **Praxiteles** of Athens  
[10] This contemporary of Praxiteles sculpted heads smaller than his contemporaries to make his statues look taller. The fame of this sculptor rests with the *Farnese Heracles* and *The Scraper*.  
ANSWER: **Lysippos** [or **Lysippus**]
2. Pilgrims who visited this sacred building would ascend it on a path around its outer walls while passing through the world of desire, the world of forms, and the world of formlessness. For 10 points each:  
[10] Name this Mahayana Buddhist monument in Indonesia.  
ANSWER: **Borobudur** Complex [or **Barabudur** Complex]  
[10] The Buddha statues of Borobudur are all seated in the lotus cross-legged pose but differ subtly in that they make different versions of these symbolic hand gestures as one ascends the complex.  
ANSWER: **mudras**  
[10] The Buddha statue at the top of the Borobudur Complex is in the *Dharmachakra mudra*, which means that he is turning this eight-spoked symbol that represents dharma.  
ANSWER: the dharma **wheel**
3. Answer the following about British World War II literature, for 10 points each.  
[10] Guy Crouchback enlists in the British Army after hearing of the Molotov-Ribbentrop pact in this author's *Sword of Honor* trilogy. Sebastian Flyte and Lord Marchmain are the main characters of his book *Brideshead Revisited*.  
ANSWER: Evelyn **Waugh** [or Arthur Evelyn St. John **Waugh**]  
[10] Jim Graham is restored to his parents in Shanghai after the Japanese invasion in *Empire of the Sun*, a novel by this British author, best known for a novel in which people sexually fetishize car crashes.  
ANSWER: J. G. **Ballard** [or James Graham **Ballard**]  
[10] The title phenomenon of this poem is "dark as the world of man, black as our loss—Blind as the nineteen hundred and forty nails / Upon the cross," and symbolizes the bomb raids during the Blitz. It was written by Edith Sitwell.  
ANSWER: "**Still Falls the Rain**"
4. Identify the following about experiments that have been running for a very long time, for 10 points each.  
[10] The Clarendon Dry Pile bell has been ringing since the 1840s at this institution. The Radcliffe Camera building houses the science library at this institution, and Richard Dawkins taught here until 2008.  
ANSWER: **Oxford** University  
[10] Thomas Parnell started this experiment at the University of Queensland in 1927 to demonstrate that some "solids" are just highly viscous liquids. The video system that was supposed to record its eighth drop in 2000 ironically failed.  
ANSWER: the **pitch** drop experiment  
[10] Richard Lenski has grown more than 50,000 generations of these prokaryotes that have a notorious O157:H7 strain. These bacteria once evolved the ability to metabolize citrate, which caused Conservapedia founder Andrew Schlafly to throw a hissy fit.  
ANSWER: **E. coli** [or **Escherichia coli**]
5. This man divided the spiritual sciences into three levels of structure: experience, expression, and comprehension. For 10 points each:  
[10] Name this thinker whose "The Understanding of Other Persons and their Manifestations in Life" summarizes a method he developed, which centers on the "Erlebnis," or lived experience, and the "Verstehen," or understanding.  
ANSWER: Wilhelm **Dilthey**  
[10] Dilthey's based his hermeneutics on the approach of this German Romantic who wrote the monumental *The Christian Faith*.  
ANSWER: Friedrich [Daniel Ernst] **Schleiermacher**  
[10] This philosopher transformed modern hermeneutics in his *Being and Time*.  
ANSWER: Martin **Heidegger**

6. Of this battle, D.H. Hill claimed “it wasn’t war; it was murder.” For 10 points each:  
 [10] Name this July 1, 1862 battle that, like Pickett’s Charge during the Battle of Gettysburg, saw Robert E. Lee order his troops to make a direct charge on a fortified raised Union position, leading to massive Confederate casualties.  
 ANSWER: Battle of **Malvern Hill** [or Battle of **Poindexter’s Farm**]  
 [10] Malvern Hill marked the conclusion of this series of battles during the Peninsular Campaign, which took place over a certain time period and also included Oak Grove, Gaines’s Mill, and Savage’s Station.  
 ANSWER: **Seven Days** Battles [or Campaign]  
 [10] This commander of the Army of the Potomac failed to follow up on his gains at Malvern Hill, which he “commanded” from the gunboat *Galena*, earning him public ridicule. His high-water mark as commander came when he didn’t lose at Antietam.  
 ANSWER: George [Brinton] **McClellan**
7. A “war of the pamphlets” was part of the “quarrel” between Cardinal Richelieu and Pierre Corneille over the latter’s violation of this system in his play *Le Cid*. For 10 points each:  
 [10] Name this set of standards, specifying that plays should lack subplots, should be set in only one place, and should cover no more than twenty-four hours of action.  
 ANSWER: Aristotelian **unities** [or **classical unities**; or **three unities**; accept word forms of **unities** as well]  
 [10] Aristotle formulated his unities in a passage in this treatise on literary theory, which defined *mimesis* as art’s imitation and perfection of nature and required tragedies to have a moment of *catharsis*.  
 ANSWER: **Poetics**  
 [10] *Poetics* also specified that successful tragedies should have this element, defined as the reversal of situation. For example, it happens in *Oedipus Rex* when the messenger informs Oedipus of his true parentage.  
 ANSWER: **peripeteia**
8. One member of this group of artists painted a version of *The Last Supper* in which the apostles look in shock as Judas leaves and the work *Quid ed Veritas?*, which depicts Christ and Pilate. For 10 points each:  
 [10] Name this group of artists that organized the Society for Traveling Art Exhibitions before it was superseded by the “World of Art” movement in its home country.  
 ANSWER: the **Wanderers** [or **Itinerants**; or **Peredvizhniki**]  
 [10] This foremost of the Wanderers painted Ivan the Terrible holding the bloody head of his murdered son in one painting and showed a group of barge haulers in another.  
 ANSWER: Ilya [Yefimovich] **Repin**  
 [10] Repin’s barge haulers or “boatmen” are toiling alongside this Russian river.  
 ANSWER: the **Volga** [or **Volge**]
9. In this technique, analytes are introduced to variably delayed pulses during the “evolution period,” which happens between two ninety-degree orientation pulses. For 10 points each:  
 [10] Name this technique, a spectrum from which shows the chemical shifts of the same set of protons along two axes. The readout from this technique has a characteristic diagonal line.  
 ANSWER: H-H **COSY** [or H-H **Correlation Spectroscopy**; prompt on **two dimensional NMR**]  
 [10] COSY is a two-dimensional form of this technique, in which the chemical shift of nuclei in response to an applied magnetic field is measured. It is often generally performed on protons and carbon-13 atoms.  
 ANSWER: **NMR** spectroscopy [or **nuclear magnetic resonance** spectroscopy]  
 [10] Continuous-wave NMR has been replaced by a variety based on the use of this operation. In this form of NMR, all local electrons are simultaneously excited, which creates a free-induction-decay interference pattern.  
 ANSWER: **Fourier transform** NMR [or **FT** NMR; prompt on **Fourier**]
10. This man’s polemics were destroyed at the Wartburg Festival, during which students bitter after the Congress of Vienna used the occasion of the three-hundredth anniversary of the *Ninety-Five Theses* to burn things. For 10 points each:  
 [10] Name this author who was assassinated by theology student Karl Sand after criticizing German unification.  
 ANSWER: August [Friedrich Ferdinand] von **Kotzebue**  
 [10] Karl Sand was a member of one of these radical German student associations that advocated for German unification and nationalism.  
 ANSWER: **Burschenschaften** [accept word forms; prompt on **Studentenverbindungen**]  
 [10] Kotzebue’s assassination prompted this Austrian organizer of the Congress of Vienna to ban the Burschenschaften by issuing the Carlsbad Decrees.  
 ANSWER: Prince Klemens Wenzel von **Metternich** [or **Klemens** Wenzel Nepomuk Lothar]

11. Hitoshi Igarashi died as a result of this mandate, whose associated reward was jacked up by \$500,000 in September 2012. For 10 points each:  
 [10] Name this mandate issued by Ayatollah Khomeini against the author of the supposedly blasphemous *Satanic Verses*.  
 ANSWER: **fatwa** against Sir Ahmed Salman **Rushdie** [both underlined parts needed to get the points, prompt on **fatwa** alone]  
 [10] Give the full pseudonym used by Salman Rushdie during hiding, composed by him by combining the first names of two of his favorite authors. It titles his most recent book, subtitled “A Memoir.”  
 ANSWER: **Joseph Anton** [prompt on partial]  
 [10] On a related note, Naguib Mahfouz was attacked by extremists in Egypt for publishing this novel, in which Arafa brings a bunch of weapons to defeat gangsters that Adhem, Rifaat, and Qassem, each an allegorical representation of a prophet from Christianity, Judaism, or Islam, could not.  
 ANSWER: **Children of Gebelawi** [or **Children of the Alley**; or **Children of Our Alley**; or **Awlad Haretna**]
12. This economist names a neoclassical growth model with Cass and Koopmans. For 10 points each:  
 [10] Name this British economist and mathematician who discovered that a monopoly should mark up its prices by the inverse of the price elasticity of demand.  
 ANSWER: Frank [Plumpton] **Ramsey**  
 [10] The aforementioned result can be applied with the government as the monopoly to determine the optimal rate of these measures for a commodity, a result known as “Ramsey’s rule.”  
 ANSWER: **taxes**  
 [10] Ramsey’s “Truth and Probability” disagrees with this man’s *A Treatise on Probability*, which proposed a “logical-relationist” theory. He also penned *The General Theory of Employment, Interest, and Money*.  
 ANSWER: John Maynard **Keynes**
13. This was the first year that Topps made baseball cards. For 10 points each:  
 [10] Name this year in which Sy Berger’s groundbreaking Topps set included a #1 card of Andy Pafko that was often ruined by rubber bands.  
 ANSWER: **1952** [prompt on ‘52]  
 [10] Although the 1951 Bowman set also contained a depiction of him, the 1952 Topps set contains the “rookie card” of this Yankees centerfielder, a switch-hitter who died of liver failure in 1995.  
 ANSWER: Mickey [Charles] **Mantle** [prompt on The **Mick**]  
 [10] Among modern rookie cards, the 1989 Ken Griffey Jr. card from this brand is ascendant. This company decided to feature Griffey on its #1 card in 1989, its debut year.  
 ANSWER: **Upper Deck** Company LLC
14. Little is known about this figure, but according to Plutarch, he was tall, and was very manly despite the “delicacy of his looks and effeminacy of his dress.” For 10 points each:  
 [10] Name this Spahbod who was sent by Orodes II to delay the Romans, but ended up defeating them instead, using horse-archers and camels to resupply the archers.  
 ANSWER: **Surena** [or Eran Spahbodh **Rustaham** Suren-Pahlav]  
 [10] Surena thus won the Battle of Carrhae, at which he defeated this legendarily rich Roman triumvir and apocryphally forced him to choke down some molten gold.  
 ANSWER: Marcus Licinius **Crassus**  
 [10] Surena took full advantage of the “Parthian shot” maneuver, in which the horse-archers would pretend to do this action before loosing an arrow.  
 ANSWER: **retreating** [accept equivalents such as **running away** or **turning around**]
15. Slater and Koster’s famous 1954 paper introduced this approach, as well as providing the two-center approximation for it and a table for constructing its Hamiltonian. For 10 points each:  
 [10] Identify this approach to calculating electronic band structures that is an extension of the LCAO method and is the counterpart to the nearly-free electron approximation.  
 ANSWER: **TB** model [or **tight-binding** model/method/approximation; \**moderator note*\* accept, but do not say, **Bloch** method]  
 [10] This physicist developed the LCAO method upon which the tight-binding model is based. A theorem due to him states that the wavefunction of an electron in a perfectly periodic potential may be written as the product of a plane wave restricted to the first Brillouin zone and an arbitrary function with the same periodicity as the potential.  
 ANSWER: Felix **Bloch**  
 [10] The first Brillouin zone is defined as the volume encompassed around a lattice point without crossing a plane named for this physicist. His law, derived for X-ray diffraction, states that  $n\lambda = 2d \sin \theta$ .  
 ANSWER: William [Lawrence] **Bragg** [do not accept “William Henry Bragg”]

16. One company that operates on this formation is Range Resources, which has the comforting corporate slogan, “Drilling is just the beginning.” For 10 points each:  
 [10] Name this part of the Romney formation and Hamilton group, a large shale formation in Appalachia.  
 ANSWER: the **Marcellus** formation/subgroup/member/shale/anything  
 [10] The untapped natural gas in the Marcellus shale may be accessible via the “plug and perf” or “sliding sleeve” versions of this procedure, which involves forcing highly pressurized fluid into the rock.  
 ANSWER: **fracking** [or induced hydraulic **fracturing**; or **hydrofracking**; or word forms of any of those]  
 [10] The controversial Act 13 in this state would strip local municipalities of the power to zone against fracking. Because a conservative justice of this state’s supreme court, Joan Orié Melvin, is currently suspended for improper electioneering, the law will probably be struck down.  
 ANSWER: **Pennsylvania**
17. In this story, the memory of a picnic in which a black man is hung, roasted, and his genitals cut off is sufficient to restore the main character’s libido. For 10 points each:  
 [10] Name this story, which titles its collection, in which the brutally racist sheriff Jesse lies in bed with his wife Grace and remembers when he beat Big Jim C for leading several men in singing spirituals.  
 ANSWER: “**Going to Meet the Man**”  
 [10] “Going to Meet the Man” was written by this author, who included prayers by Florence, Elizabeth, and Gabriel Grimes in his novel *Go Tell It on the Mountain*.  
 ANSWER: James [Arthur] **Baldwin**  
 [10] In this novel by James Baldwin, an American expatriate named David proposes to his girlfriend Hella before commencing a homosexual relationship with a waiter at a gay bar.  
 ANSWER: **Giovanni’s Room**
18. In Scandinavian folklore, one group of these creatures killed all the cows belonging to a dairy maid. For 10 points each:  
 [10] Name these long-eared mischievous creatures, who in Norse mythology were divided into light and dark subtypes, who respectively lived in Alfheim and Svartalheim.  
 ANSWER: **elves** [or **elfs**; or **ells**; prompt on “fairies”]  
 [10] This other kind of sprite is a kind of house servant in Germanic folklore. They are usually invisible, but can assume a human-like form the size of a child.  
 ANSWER: **kobolds**  
 [10] This more sinister spirit from Celtic mythology is a shape-shifting horse that haunts Scottish and Irish rivers and streams, dragging children underwater, devouring them, and leaving only their hearts and livers. Ew.  
 ANSWER: **kelpies**
19. One piece with this title is a five movement work sometimes paired in CDs with another work in the same genre by the composer’s son-in-law, Josef Suk. For 10 points each:  
 [10] Give this title, shared by an E major orchestral work by Dvorak and another piece that imitates Mozart’s use of the classical sonatina form and contains an oft-performed second movement Valse.  
 ANSWER: **Serenade for Strings** [or **String Serenade**]  
 [10] The latter work was composed by this Russian, who failed to impress Nikolai Rubinstein with his first piano concerto, but had better success with his *1812 Overture*.  
 ANSWER: Pyotr Ilyich **Tchaikovsky** [or Peter Ilyich **Tchaikovsky**]  
 [10] Dvorak mocked the annoying song of the scarlet tanager in this chamber work, which he wrote during a vacation in Spillville, Iowa during his tenure as a conservatory director in New York.  
 ANSWER: **American String Quartet** [or **String Quartet no. 12, op. 96, in F major**; prompt on partial answers]
20. One assay used to characterize viruses uses the lower mobility of these structures through polyacrylamide gels, and some Morpholinos work by forming these structures with RNA. For 10 points each:  
 [10] Name these structures that form after a Holliday junction undergoes branch migration. These structures are characterized by the presence of slightly mismatched nucleic acid base pairing.  
 ANSWER: DNA or RNA **heteroduplexes**  
 [10] Heteroduplexes are formed between miRNAs and mRNAs during this process, in which the Dicer enzyme cleaves a double-stranded RNA, which eventually downregulates translation of the target mRNA.  
 ANSWER: **RNAi** [or **RNA interference**]  
 [10] The frequency of recombination between two genes on the same chromosome is determined by this parameter for the two genes. This parameter is reported in units of centiMorgans, or, in some cases, in base pairs.  
 ANSWER: the **distance** between the two genes [accept equivalents like “**how far apart the genes are**”]



21. Beginning in 1971, this port city was administered as a part of Cape Province. For 10 points each:
- [10] Name this port on Africa's west coast, which has been a part of South-West Africa and a South African exclave, and was transferred to its present country of control along with the Penguin Islands in 1994.  
ANSWER: **Walvis Bay** [or **Walfischbucht**; or **Walfischbai**]
- [10] Walvis Bay is today a part of this nation, the former South-West Africa, which is home to the SWAPO Party of first president Sam Nujoma and his successor Hifikepunye Pohamba, both of whom ruled from Windhoek.  
ANSWER: **Namibia**
- [10] The Whitaker Report documents the atrocities of an event in the early 1900s in which German general Lothar von Trotha won the Battle of Waterberg against the Namaqua and this ethnic group, against which the Germans perpetuated a subsequent genocide.  
ANSWER: the **Herero**