

## Minnesota Open V

Packet by Seth Teitler, Selene Koo, Jeff Hoppes, and Jon Pennington

Edited by Auroni Gupta, Andrew Hart, Gaurav Kandlikar, and Cody Voight

### Tossups

1. **One song mentions that “laughter it’s free” before mentioning one of these things and saying “when you get down with Sublime / you get funky fresh lyrics.” The singer imagines “all the pretty things that we could be” and says that one of these things “could be a start,” in a recent song by the German girl band Boy. Besides Sublime’s “Don’t Push,” another song that mentions one of these things entreats the title subject not to change one of these things because “I need to (\*) make you mine.” A soul standard subtitled “Soulville, U.S.A.” is named for one of these things. The chorus of the rap track “Know What I’m Sayin’” mentions one of these things in its chorus as a way to “hit Mike Jones up on the low.” For 10 points, the hit “Jenny” by Tommy Tutone is partially titled for what type of sequence of digits?**  
ANSWER: telephone numbers [accept equivalents; prompt on partial answer]
2. **Drinfeld defined a class of quantum groups named for this scientist whose finite-dimensional representations give rational solutions to a quantum equation named for this man and Baxter. A collaborator and this scientist, who is second alphabetically, proved that the zeros of the partition function of ferromagnetic Ising models always lie on the unit circle. This scientist and the same collaborator also suggested that weak interactions might allow a particle to decay into two or three pions, thus resolving the tau-theta puzzle in a manner verified by Lederman and Madame Wu. With a different collaborator, this scientist names (\*) nonabelian gauge theories; a Clay Institute Millennium Prize Problem asks for an existence proof for one such theory and its associated mass gap. For 10 points, name this scientist who hypothesized parity violation with Lee and worked on a class of field theories with Mills.**  
ANSWER: Chen Ning Yang
3. **This work opens with one character moving a flower stand with difficulty after his son muses while adjusting the cushions of a sofa. Another character in this work complains about having to wear a corset and giant hat in the aria “Si, io penso all’tortura.” The Café Hottot is the site of a meeting between the maid Bersi and the sinister spy Incredibile in this work’s second act. Its title character’s lover poignantly remembers how her mother died in their home in the aria “La mamma morta,” after pleading with Gerard to save the title character. This opera’s title character describes the beauty of nature in contrast to the poor treatment of the lower classes in an aria also known as “L’Improvviso,” “Un (\*) di all’azzurro spazio.” For 10 points, name this opera that ends with the deaths by guillotine of Maddalena and her title lover, a French revolutionary poet, written by Umberto Giordano.**  
ANSWER: Andrea Chenier
4. **One social scientist with this last name controversially advocated trial marriages in her early work *The Family*, and collected the tale of “Playing Dead Twice in the Road,” among several others, in two sets of African-American folktales. That social scientist with this last name conducted fieldwork among the Zapotecs that resulted in *Mitla: Town of the Souls*. Another social scientist with this last name analyzed concepts that he termed “status-role bundles,” and included self-collectivity and ascription-achievement in his set of pattern (\*) variables. That sociologist with this surname taught Niklas Luhmann and championed systems theory in his work *The Social System*. For 10 points, give this last name shared by Ruth Benedict’s teacher Elsie Clews, and by a man who discussed his AGIL paradigm in *The Structure of Social Action*.**  
ANSWER: Parsons [Talcott or Elsie Worthington Clews; accept Clews until “status-role bundles”]
5. **Friedrich Leo hypothesized that this work’s various sections were organized in a non-chronological manner reflecting a method of composition introduced by Varro. This work’s composition was aided by its author’s time as a *bibliothecis*, a *studiis*, and *ab epistulis*. It was dedicated to Septicius Clarus, who was supposedly dismissed, along with this work’s author, for behaving inappropriately around the Empress Vibia Sabina. This work recounts an anecdote in which a kidnapped man (\*) awaiting ransom promises that he will hunt down and crucify his captors. In another episode from this work, a man sings about the destruction of Troy during a great conflagration in his own city. This work was the model for, and the source of some phrases in, a later work by Einhard. For 10 points, name this set of biographies of eleven emperors and Augustus’s great-uncle, written by Suetonius.**  
ANSWER: *The Lives of the Caesars* [or *De Vita Caesarum*]

6. **This artist painted Saul sitting under a tree as a group of Jews lift rocks over their heads around the central figure in a depiction of *The Stoning of St. Stephen* for an altarpiece in Genoa. This artist is generally credited with turning a design by a teacher into a fresco depicting Leo IV's miraculous intercession during the *Fire in the Borgo*. A request relayed by Baldassare Castiglione led this artist to leave a home city for a new appointment to redesign parts of a patron's ducal palace, creating scenes of *Hecuba's Dream* and *The Death of Ajax*, among others, for the Troy Apartment. For that same patron, this student of Raphael also designed and decorated a palace that contains scenes from Apuleius's *The Golden Ass* in the (\*) Psyche Room and depicted grotesque humanoids attempting to pile up mountains while Jupiter hurls lightning in the Chamber of the Giants. For 10 points, name this court artist of Federigo Gonzaga in Mantua who created the Palazzo del Te.**  
ANSWER: Giulio **Romano** [or Giulio **Pippi**]
7. **This molecule has been synthesized by the Shawinigan or Fluohmic process, in which the heat of formation is provided by electrical heating. Acetone and this molecule are consumed to produce methyl methacrylate. Ammonia must be removed to prevent polymerization of this molecule in two synthetic methods for this molecule, the Degussa-developed BMA process and Andrussow oxidation, which both require a platinum catalyst and consume methane and ammonia. This molecule is added across the double bond of an aldose in the (\*) Kiliani-Fischer synthesis to extend a monosaccharide by one carbon. Reacting this compound with butadiene yields a precursor to nylon. When inhaled, this molecule inhibits cytochrome c oxidase in the electron transport chain. For 10 points, name this acid whose anion is isoelectronic with carbon monoxide and contains a carbon-nitrogen triple bond.**  
ANSWER: **hydrogen cyanide** [or **hydrocyanic acid**; or **HCN**; prompt on **cyanide**; accept **prussic acid**]
8. **The rise of this government was based on support from certain "fractions" of industrial promoters according to a controversial study by David Abraham. According to Adam Tooze's *The Wages of Destruction*, this government was doomed by mismanagement of an economy based on plunder. This regime's collapse was the subject of the article "Two kinds of downfall," part of the "Historian's Quarrel" of the 1980s. Daniel Jonah Goldhagen wrote that citizens under this government were "willing (\*) executioners." A memoir of one member of this government recalls the author's surprise appointment as Minister of Armaments and describes its leader as a layman and bohemian who worked in spurts and saw himself as an artist rather than a technocrat. For 10 points, Albert Speer wrote a memoir titled for the "Inside" of what German government led by Adolf Hitler?**  
ANSWER: the **Third Reich** [accept **Nazi** Germany; prompt on **Germany**]
9. **In a one-act play by this author, the brothers Afa and Augustin return from a fishing trip to find the latter's East Indian godfather dead. In another of this author's plays, an angry mob murders Moustique after his impersonation of the main character is unraveled by the coffin-maker Basil. Another play by this author of *The Sea at Dauphin* features an aborted fetus named Bolom, who presents the devil's challenge: successfully vex the devil or be eaten, a fate faced by Gros (\*) Jean and Mi-Jean. A charcoal burner escapes with Souris and Tigre from imprisonment by Colonel Lestrade in this another play by this author, which is about the title hallucination of Makak. This author of *Ti-Jean and His Brothers* wrote a work that tells the story of Maud and Major Plunkett and includes the allegorical characters Philoctete, Helen, Hector, and Achille. For 10 points, name this author of *Dream on Monkey Mountain*, who adapted the *Odyssey* to his native St. Lucia in the poem *Omeros*.**  
ANSWER: Derek **Walcott**
10. **One saint from this city battled Arianism by convincing a woman named Ingunthis to convert her Visigothic husband Hermenegild. A religious festival in this city is organized by religious "brotherhoods" and involves sets of images called *pasos* that proceed down the "carrera oficial," or Official Path. A saint from this city, the brother of the aforementioned Saint Leander, created a policy requiring the establishment of seminaries in cathedral cities while presiding over the Fourth Council of (\*) Toledo and is the patron saint of the internet. This city's cathedral, the largest Gothic one in the world, has a bell tower called the Giralda that was converted from a minaret. For 10 points, name this home of Church Doctor Saint Isidore, the site of Spain's largest Holy Week Easter celebration and chief city of Andalusia.**  
ANSWER: **Seville** [or **Sevilla**]
11. **Two answers required. The ratio of these two quantities must decrease in the direction of gravity in order for the interchange instability to operate in a magnetically supported, static sheet. The ratio of these two quantities determines whether a molecular cloud is subcritical or supercritical, and during cloud collapse their ratio remains constant unless there are non-ideal effects such as ambipolar diffusion. For a given surface pressure, an isothermal sphere that remains static has a maximum value for one of these quantities that is given by the Bonnor-Ebert formula; the ideal MHD induction equation shows that the other one of these quantities is (\*) "frozen" into the local plasma. For 10 points, name these two quantities, one of which can change to give rise to an emf, and the other one of which can change due to accretion or transfer in a semidetached binary system.**  
ANSWER: **mass** and magnetic **flux** [or **mass-to-magnetic-flux** ratio; accept **surface [or column] density** and **magnetic field** strength before "frozen"]

12. **The fears of one character in this story about her nephew’s journey to Havana are momentarily calmed when someone points out Havana on a map. The main character of this story throws clumps of earth at an angry bull in order to save two children and earlier attends a fair at Colleville, where she meets a man who nearly rapes her. Much of this story is set in Pont-l’Eveque, where Paul brings his rude bride to meet his mother. Another major event in this story is the communion of Virginie, which is set at the same church where the protagonist first becomes enthralled with a vision of the (\*) Holy Ghost. After the protagonist’s lover Theodore leaves her for a wealthier woman, the main character of this story is hired as a housekeeper by Madame Aubain and briefly cares for Loulou, a pet parrot whom she sees floating above her on her deathbed. For 10 points, name this story about the selfless and impoverished girl Felicite, one of the “Three Tales” by Gustave Flaubert.**  
ANSWER: “A Simple Heart” [or “A Simple Soul”; or “Un Coeur Simple”]
13. **This political party developed a primer including such generative words as “revolution,” “liberation,” and “genocide.” This party developed that primer, *The Dawn of the People*, for use in a Year of Literacy campaign. After losing presidential elections to the Liberal Alliance, the Constitutionalist Liberal Party, and the National Opposition Union, this party regained the presidency in the election of 2006, during which Herty Lewites was expelled from this party. A government led by this party filed charges including the development of the manual *Psychological Operations in Guerilla Warfare* by the (\*) CIA, and the placement by Navy Seals of mines in the harbor of Corinta, in a case in the International Court of Justice. For 10 points, name this political party whose current members include Daniel Ortega, which ended the Somoza dynasty and fought a war with the Contras in Nicaragua.**  
ANSWER: Sandinista National Liberation Front [or Frente Sandinista de Liberación Nacional; or FSLN; or Sandinistas]
14. **This deity broke Vasishta’s curse on the eight Vasus by incarnating a beautiful woman, marrying King Shantanu, and murdering seven of their sons, sparing the life of the eighth, Bhishma. In another story, Bhagiratha was able to perform the sraddha ceremony after this deity emerged from Vishnu’s big toe. This goddess once deposited the semen from the lovemaking of Shiva and Parvati, her sister, resulting in the birth of Kartikeya. In art, this goddess is depicted wearing a white crown, holding a white lily and a water pot, and riding a crocodile. She attempted to (\*) descend from heaven, threatening to engulf the earth and carry it with her into Patala, but Shiva agreed to use his hair to break her fall, splitting her into seven streams. For 10 points, name this Hindu goddess, the personification of a namesake holy river.**  
ANSWER: Ganga [or Ganges]
15. **One work by this composer contains an Adagio in F minor with a Vivace postscript that is combined with a Bach fugue in a *Fantasia Concertante* by Michael Tippett. Dissonance created by a delayed leading tone and an anticipated tonic note sounding together is termed this composer’s namesake “cadence” or “clash.” The first solo violin and the first tutti violins break out into rapid sixteenth-note oscillations in the Adagio movement of a work by this composer that ends with a serene 12/8 movement known as the (\*) pastorale ad libitum. This composer wrote a set of pieces that were adapted for solo piano as two series of parallel variations in a Rachmaninoff composition dedicated to Fritz Kreisler. This composer based his D-minor violin sonata, part of a collection of twelve *sonata da chiesa* and *sonata da camera*, on “La Folia.” For 10 points, name Italian Baroque violinist whose concerto grossi include his *Christmas Concerto*.**  
ANSWER: Arcangelo Corelli
16. **Proliferations of these cells in the skin give rise to Darier’s sign when rubbed and are known as urticaria pigmentosa. In addition to germ-cell tumors and AML, the D816V (“D-eight-sixteen-V”) mutation in the protein c-kit is often found with overproliferation of these cells, which store and secrete chymase and tryptase. They release a substance that is broken down by diamine oxidase and that is also secreted by enterochromaffin (\*)-like cells. They are derived from CD34-positive stem cells, like basophils, but mature in the tissue, where they may increase capillary permeability. They are stabilized by cromolyn sodium, which is used to manage asthma. For 10 points, name these cells that respond to immunoglobulin E by releasing histamine in an allergic reaction.**  
ANSWER: mast cells
17. **The last line of this poem is taken verbatim from Thomas Wilkinson’s travel book *Tours to the British Mountains*. The speaker of this poem imagines a “Cuckoo-bird / Breaking the silence of the seas / Among the farthest Hebrides” and a nightingale chanting “welcome notes to weary bands / Of travellers in some shady haunt, Among Arabian sands.” Either “old, unhappy, far-off things, And battles long ago” or “Some natural (\*) sorrow, loss, or pain / That has been, and may be again” are conveyed by the title figure of this poem, who causes “the Vale profound” to overflow “with the sound.” Its speaker states that after he left, “The music in my heart I bore, Long after it was heard no more.” For 10 points, name this Wordsworth poem praising a Highland maiden who sings alone while working in the fields.**  
ANSWER: “The Solitary Reaper”

18. **This person served as special counsel to an investigative committee whose findings led to a prohibition on deferred-dividend policies that the Appleton Rule effectively codified nationwide. This person’s role with the Armstrong Committee, and the support of boss Charles Murphy, helped this person win an office in which he pushed for administrative reform through the Moreland Act. This author of the majority opinion in the *Shreveport Rate Case* upheld the constitutionality of the (\*) Wagner Act and struck down parts of the NIRA in other opinions. As Secretary of State, he participated in the signing of the Nine Powers Treaty and the Four Powers Treaty while presiding over the Washington Naval Conference. He lost an election to a man campaigning on the slogan “He Kept Us Out of War.” For 10 points, name this man who became Chief Justice years after losing the election of 1916 to Woodrow Wilson.**  
ANSWER: Charles Evans **Hughes** [Sr.]
19. **Steve Lekson claimed that this culture practiced a “big line dance” by aligning its major sites on a meridian stretching north from Paquime. Christy Turner’s controversial study asserted that this culture practiced ritual cannibalism, citing evidence of “pot polishing” from Cowboy Wash. Pithouses of the Basketmaker culture were an early stage of this culture, which constructed places of worship called (\*) Great Houses. Their art includes a flute-playing figure called Kokopelli. A thirteenth-century drought may have forced migrations to Acoma and Zuni by these people, whose name means “The Ancient Ones” in Navajo. For 10 points, kivas at Chaco Canyon and Mesa Verde were built by what pueblo-dwelling people of the pre-Columbian southwest?**  
ANSWER: **Anasazi** [or **Ancient Pueblo**; or **Ancestral Pueblo**; prompt on **Pueblo** or **Chacoan** culture]
20. **This novel’s preface states that a writer can “mellow the lights and deepen and enrich the shadows of the picture” when writing a romance, which is distinguished from writing a novel. In this novel, an ancient race of birds once laid massive eggs, but have shriveled into lanky chickens by years of breeding. One of its characters is repulsed by two lower-class laborers discussing the prospects of her store, whose first customer, Ned Higgins, orders all the gingerbread animals. In this novel, a set of flowers nicknamed “Alice’s posies” bloom just before a judge (\*) hemorrhages blood, reflecting the curse “God will give him blood to drink!” In this novel, Clifford is wrongly imprisoned for the murder of his uncle. Matthew Maule’s curse on the central family of this novel seemingly ends with the marriage of Holgrave and Phoebe. For 10 points, name this novel about the Pyncheon family, the inhabitants of the title decaying New England mansion, by Nathaniel Hawthorne.**  
ANSWER: *The **House of the Seven Gables***
21. **These concepts, along with defeasibility, are central to the Lehrer and Paxson approach. To augment these concepts, Alvin Goldman added causality. The third of these concepts was changed to two contrapositive statements in the “tracking” theory of Robert Nozick, who responded to a work in which these concepts apply in the case of a man who owns a Ford and another man who is in Brest-Litovsk, (\*) Boston, or Barcelona. A paper titled for these concepts presents the example of a job applicant who doesn’t realize that he has ten coins in his own pockets and thinks that another applicant with ten coins in his pockets will get the job. These concepts were first introduced by Plato in his dialogue *Theaetetus*. For 10 points, name these three concepts that provide a possible definition of knowledge and title an Edmund Gettier paper.**  
ANSWER: **justified true belief** [or **JTB**; accept any permutation of these three words, such as **justification, truth, and belief**]

#### Tiebreakers

22. **In one novel by this author, the protagonist forgoes the vial of prussic acid that he carries in his vest pocket by leaping off a jetty. The main character befriends the cripple Miniman and chases the lieutenant’s bride Dagny in that novel by this author, who also created the entrepreneur Geissler, who staves off a drought by building an irrigation system. Besides writing a book about Johan Nagel, this author penned a novel in which the main character begs the narrator of the epilogue to kill him, falls in love with the trader’s daughter Edvarda, and lives alone with his dog (\*) Aesop. In another of this author’s novels, a harelipped woman strangles her harelipped infant daughter. This author of *Mysteries* wrote about Lieutenant Glahn. This author of *Pan* described the simple farm life of Inger and Isak in another novel. For 10 points, name this Hitler-loving Norwegian who won the Nobel for writing *The Growth of the Soil*.**  
ANSWER: Knut **Hamsun** [or Knud **Pedersen**]
23. **This person’s private secretary, Neville Pickering, who died at age twenty-five from leg injuries sustained in a horse-riding accident, may have been his homosexual lover. He is buried at a site called “World’s View” in the Matopo Hills, along with the thirty-four members of the Shangani Patrol. The Polish princess Catherine Radziwill, who falsely claimed to be engaged to this man, wrote a posthumous biography of him subtitled “man and empire-maker.” The Colesberg (\*) kopje, or “New Rush,” was the base for this man’s success in the city of Kimberley, where he found himself trapped by a siege during the Boer War, an event he helped cause by sponsoring the Jameson Raid and the dream of a “Cape to Cairo” railroad. For 10 points, name this founder of De Beers, a diamond magnate who funded a series of Oxford scholarships.**  
ANSWER: Cecil [John] **Rhodes**

24. **Antibodies against these proteins are found in over 95% of patients with drug-induced lupus. The “spooling” model of Felsenfeld and “disruptive” model of van Holde have been proposed to explain the positioning of these proteins. Their characteristic fold consists of three alpha helices linked by two loops, and they all contain extended tails.** In yeast, the Swi/Snf (“switch/sniff”) complex remodels their association with another molecule. One of them has a variant designated by a degree symbol and is also known as the “linker” one. These proteins function as hetero-octamers, and the addition of three methyl groups to lysine-27 on one of these proteins results in gene silencing, and their acetylation tends to enhance transcription. For 10 points, name these basic proteins that DNA winds around to form chromatin.

ANSWER: histones [or histone proteins]

## Minnesota Open V

Packet by Seth Teitler, Selene Koo, Jeff Hoppes, and Jon Pennington

Edited by Auroni Gupta, Andrew Hart, Gaurav Kandlikar, and Cody Voight

### Bonuses

1. A cook who works at this place secretly writes a novel titled *The Pi Root of Oedipus* and designs Hazel's Prince Charming costume for a costume ball. For 10 points each:

[10] Name this location that, in *Sweet Thursday*, is managed by Fauna, who changed her name from Flora after a customer's snide remark. Dora serves as the madam for this location in another novel.  
ANSWER: **Bear Flag Restaurant** [prompt on partial answers]

[10] To great comedic effect, the friends of this marine biologist, such as Mack, repeatedly try to hook him up with the girls from the Bear Flag Restaurant while he is out doing things like capturing baby octopi.  
ANSWER: **Doc**

[10] Doc, Lee Chong, and Mack are characters in *Cannery Row*, a novel by this author whose many books set in California include *Tortilla Flat* and *Of Mice and Men*.  
ANSWER: John [Ernst] **Steinbeck** [Jr.]
2. This instrument consists of three diffusers, a keyboard, and a ribbon attached to a metal ring pulled by the player's right index finger. For 10 points each:

[10] Name this instrument that appears in Varese's *Ecuatorial* as a replacement for two theremins, the closest instrument to it in sound. It was invented in 1928 by a cellist.  
ANSWER: **ondes Martenot** [or **ondes musicales**; or **ondea**; or **ondium Martenot**; prompt on **Martenot**]

[10] The ondes Martenot is a solo instrument in this composer's ten-movement *Turangalila-Symphonie*, which, like his *Quartet for the End of Time*, prominently features imitations of birdsong.  
ANSWER: Olivier **Messiaen**

[10] An upward glissando by the ondes Martenot represents the release of the title saint's soul from her body in this composer's *Joan of Arc at the Stake*. He depicted a violent match in the Colombes stadium in his piece *Rugby*.  
ANSWER: Arthur **Honegger**
3. For 10 points each, answer the following on the work of recently deceased archaeologist William Rathje.

[10] Rathje introduced this archaeological study of modern urban refuse with his Tuscon Project. A.J. Weberman practices a less-scientific form of this endeavor focusing on Bob Dylan's trash.  
ANSWER: **garbology** [accept word forms]

[10] Rathje hypothesized that early civilizations might centralize through production of so-called Monstrous Visual Symbols in a variant of this gift-giving festival that was studied among the Kwakiutl by Franz Boas.  
ANSWER: **potlatch**

[10] Rathje co-directed an Archaeological Project focusing on this island off the coast of the Yucatan; the survey demonstrated its importance as an Olmec and Mayan trading post. It also housed a shrine to Ix Chel.  
ANSWER: **Cozumel**
4. This type of damage is typically divided into areas like abrasive, sliding and adhesive, polishing, fretting, and rolling contact. For 10 points each:

[10] Name this type of surface damage in which the surface layer loses material due to relative motion between said surface and a contacting substance.  
ANSWER: **wear** loss

[10] Adhesive wear is inversely proportional to this measure of a material according to Archard's equation. This property of a material can be measured using indentation tests such as Vickers's. The Mohs scale measures it for rocks.  
ANSWER: **hardness** [accept word forms]

[10] One simple simulation of wear involves a loaded pin in contact with a rotating one of these objects. The in-plane moment of inertia for this object is  $M R^2$  over four.  
ANSWER: **disk**

5. This term was coined in 1919 to describe a series of pieces occupying “the interchange station between painting and architecture.” For 10 points each:  
 [10] Name this acronym of a Russian phrase meaning “project for the affirmation of the new.”  
 ANSWER: **Proun** [or **Prounen**; or **Prouns**]  
 [10] This artist created the *Proun* series, as well as the propaganda poster *Beat the Whites with the Red Wedge*.  
 ANSWER: El **Lissitzky** [or Lazar Markovich **Lissitzky**]  
 [10] El Lissitzky worked for a time at the People’s Art School in Vitebsk, which was set up by this fellow Jewish artist of a set of stained glass windows in Jerusalem representing the twelve tribes of Israel, and the painting *I and the Village*.  
 ANSWER: Marc [Zaharovich] **Chagall**
6. The title character of one poem by this author murders an *oprichnik* in a fistfight in order to avenge the honor of his wife. For 10 points each:  
 [10] Name this author of *The Song of the Merchant Kalashnikov* who wrote about a boy who escapes from a monastery in *The Novice* and about an eternal wanderer who dooms Tamara by kissing her in *Demon*.  
 ANSWER: Mikhail [Yuryevich] **Lermontov**  
 [10] In this Lermontov novel consisting of five separate stories, the superfluous man Pechorin flirts with Princess Mary and kills his friend Grushnitsky in a thrilling duel set at the edge of a cliff.  
 ANSWER: *A **Hero of Our Time*** [or **Geroy nashevo vremeni**]  
 [10] Prince Zvezdicha is cheated by an even more superfluous man named Evgeny Arbenin, who poisons his wife’s ice cream upon wrongfully suspecting her of adultery, in this drama by Lermontov.  
 ANSWER: **Masquerade** [or **Maskarad**]
7. Name these concepts of cosmic order from different religions, for 10 points each.  
 [10] In Zoroastrianism, Ahura Mazda upholds this principle of order or truth in opposition to *druj*.  
 ANSWER: **asha**  
 [10] This Egyptian concept of order, truth, and law was embodied by a goddess of the same name whose feather was used in the Weighing of the Heart ceremony.  
 ANSWER: **ma’at**  
 [10] The ancient Anglo-Saxons believed that cosmic order was tied to this concept of personal fate or destiny.  
 ANSWER: **wyrd**
8. One member of this group allegedly wrapped himself in a flag before jumping to his death. For 10 points each:  
 [10] Name this group of six teenage military cadets, who died rather than surrender during an 1847 battle.  
 ANSWER: **Niños Heroes** [or **Child Heroes**; or **Boy Heroes**; or **Heroic Youth**; or other close approximations]  
 [10] The Niños Heroes were among the defenders of this fortified castle, whose name means “hill of the grasshopper.” It was stormed by Winfield Scott’s army.  
 ANSWER: **Chapultepec** Castle  
 [10] A later foreign occupier of Chapultepec Castle was this Hapsburg, the first and last monarch of Mexico’s Second Empire.  
 ANSWER: **Maximilian** I of Mexico [or Ferdinand **Maximilian** Joseph]
9. The speaker of this poem remembers when “the calves / Sang to my horn, the foxes on the hills barked clear and cold, And the sabbath rang slowly/In the pebbles of the holy streams.” For 10 points each:  
 [10] Name this 1945 poem that concludes with the speaker noting, “Time held me green and dying / Though I sang in my chains like the sea.”  
 ANSWER: **“Fern Hill”**  
 [10] “Fern Hill” is a work by this Welsh poet who also wrote “A Refusal to Mourn the Death, by Fire, of a Child in London” and “Do Not Go Gentle Into That Good Night.”  
 ANSWER: Dylan [Marlais] **Thomas**  
 [10] The couplet “And I am dumb to tell the lover’s tomb / How at my sheet goes the same crooked worm” closes this Thomas poem, whose speaker admits that the same natural process that “drives the water through the rocks” also “drives my red blood.”  
 ANSWER: “The **Force That Through The Green Fuse Drives The Flower**”

10. One king of these people, Nechtan, asked the abbot Ceolfrid to send him masons to build a stone church. For 10 points each:  
 [10] Name this Dark Age ethnic group, who supposedly practiced matrilineal succession because they obtained Irish wives after leaving Scythia.  
 ANSWER: **Picts**  
 [10] The story of Pictish matriliney comes from the first book of this esteemed eighth-century author's *Ecclesiastical History of the English People*.  
 ANSWER: Venerable **Bede** [or **Beda**]  
 [10] According to Bede, the northern Picts were converted to Christianity by this "famous Irish priest and abbot," who received the island of Iona as a gift from the Pictish king Brude.  
 ANSWER: Saint **Columba** [or **Colum Cille**; or **Colban**; or **Kolbjorn**; do not accept "Columban" or "Columbanus"]
11. For 10 points each, name these things associated with twisted curves.  
 [10] This unit vector is defined as the derivative with respect to distance along the curve of the position vector.  
 ANSWER: unit **tangent** vector  
 [10] The unit tangent vector and the principal normal unit vector define this plane; for a plane curve, this plane contains the curve.  
 ANSWER: **osculating** plane  
 [10] One of the Serret-Frenet formulae states that the derivative of the unit binormal vector equals minus one times the principal normal unit vector times this quantity. It shares its name with a type of balance employed in Coulomb's experiments on electrostatic force.  
 ANSWER: **torsion**
12. This architect's design for the Richards Medical Research Center at the University of Pennsylvania consists of three towers housing laboratories, surrounding a service tower with few windows. For 10 points each:  
 [10] Name this architect who also designed research space in the Salk Institute of La Jolla, California.  
 ANSWER: Louis [Isadore] **Kahn** [or Itze-Leib **Schmuilowsky**]  
 [10] Louis Kahn's design for this Fort Worth art museum includes six parallel cycloid-shaped vaults with light entering through skylights at the apex of each vault.  
 ANSWER: **Kimbell** Art Museum  
 [10] A two-story expansion to the Kimbell Art Museum that is scheduled to open in 2013 is the work of this architect, who designed the Modern Wing of the Art Institute of Chicago and worked with Richard Rogers on the Pompidou Center.  
 ANSWER: Renzo **Piano**
13. With G.E. Briggs, this guy co-developed a model of enzyme kinetics based on the steady-state approximation. For 10 points each:  
 [10] Name this man whose model with Briggs gives a similar result to that of Michaelis and Menten.  
 ANSWER: J.B.S. **Haldane** [or John Burdon Sanderson **Haldane**]  
 [10] Haldane used mathematical analysis to prove that Lamarckian transformation could not prevail against this evolutionary process, in which there is differential reproduction of organisms leading to changes in population gene frequencies.  
 ANSWER: **natural selection**  
 [10] Another founder of modern population genetics, Sewall Wright, developed this set of statistics to describe population heterozygosity. One of these statistics that describes reduction due to drift in heterozygosity of a subpopulation is supposedly equal to  $1$  over quantity  $4$  times  $N_e$  times migration plus  $1$ .  
 ANSWER: Wright's **F** statistics [or **F<sub>st</sub>**; do not accept "Fit" or "Fis" because they do not equal  $1/(4N_e * m + 1)$ !]
14. This figure convinces the men of Ulster to accept an invitation by threatening to cause the breasts of each woman of Ulster to beat against each other until they become foul and putrid. For 10 points each:  
 [10] Name this troublemaker in Irish myth who sets Loegure Buadach, Conall Cernach, and Cu Chulainn at odds with one another during a magnificent feast, in which the latter beats Cu Roi at the beheading game.  
 ANSWER: **Bricriu** Nemthenga [or **Bricne**]  
 [10] Bricriu also baits Fedelm Noichride, Lendabair, and this woman by telling each one that they are the foremost among the women of Ulster. This daughter of Forgall the Wily was the wife of Cu Chulainn.  
 ANSWER: **Emer** [or **Eimhear**]  
 [10] Another beheading game is played between the Green Knight and this nephew of King Arthur.  
 ANSWER: Sir **Gawain** [or **Gwalchmei**; or **Walewein**; or **Wawain**; or **Gavin**; or anything that's close to sounding like "guhthhh-wan" (rhymes with Obi-Wan)]

15. This man instructs viewers about “post play” on the TNT-hosted *NBA Fundamentals* series. For 10 points each:  
 [10] Name this Alaskan who was drafted by the Cleveland Cavaliers in 2002 and supposedly tripped over a gym bag in 2010, causing him to break his right hand and miss the start of his first season with his current NBA team.  
 ANSWER: Carlos [Austin] **Boozer** [Jr.]  
 [10] In 2007, Carlos Boozer’s son Carmani received a stem-cell transplant from the umbilical cord of his younger brother. The stem-cell transplant was intended to cure Carmani of this disease in which a point mutation causes red blood cells to adopt a characteristic shape under low-oxygen conditions.  
 ANSWER: **sickle cell** disease/anemia [or **hemoglobin SS**]  
 [10] Two stem-cell transplants from a donor with a mutation in this gene resulted in an HIV infection cure in the “Berlin patient.” The delta-32 mutation of this gene confers resistance to most strains of HIV and smallpox.  
 ANSWER: **CCR5**
16. Karl Marx wrote a set of “Theses on” this philosopher. For 10 points each:  
 [10] Name this Young Hegelian who wrote *The Essence of Christianity*.  
 ANSWER: Ludwig [Andreas von] **Feuerbach**  
 [10] Max Stirner attacked *The Essence of Christianity* in this work, which posits realist and idealist stages of human development, followed by a third stage in which the adult values personal satisfaction above all else.  
 ANSWER: *The **Ego and Its Own*** [or *The **Ego and His Own***; or *Der **Einzig und sein Eigentum***]  
 [10] Marx’s *Theses on Feuerbach* concludes with section eleven, in which Marx says that, contrary to prior philosophers who have only “interpreted...in various ways,” the point of philosophy is to do this.  
 ANSWER: **change the world** [prompt on **change it**; accept any reasonable approximation; accept any combination/conjugation of **verändern** and **Welt**]
17. This person called on God to “wrest America out of the Hands of its old Land-Lord, Satan” in *The Present State of New England*. For 10 points each:  
 [10] Name this Puritan minister and proponent of smallpox inoculation, the son of another minister named Increase.  
 ANSWER: Cotton **Mather**  
 [10] Mather’s *Declaration of Gentlemen and Merchants* justified the removal of this English governor of the Dominion of New England, whose tyranny was likened to the Popish Plot.  
 ANSWER: Edmund **Andros**  
 [10] Mather’s masterpiece was this 1702 work, a diverse collection containing “the lives of sixty famous divines,” an early history of Harvard, and accounts of the Indian wars.  
 ANSWER: **Magnalia Christi Americana** [or *The Glorious **Works of Christ in America***; or *The **Ecclesiastical History of New England***]
18. One treatise on this art form, the *Fushikaden*, traces its mythological lineage to Uzume’s sensual dance for Amaterasu and its actual lineage to somewhere in India. For 10 points each:  
 [10] Name this form of musical Japanese dance theater that became popular in the fourteenth century. Each of the actors in this dramatic form wears a mask.  
 ANSWER: **Noh** drama  
 [10] This foremost Noh playwright wrote the dramas *Takasago*, about an elderly spirit couple who inhabit a pair of pine trees, and *Hagoromo*, in which a feather mantle belonging to a celestial maiden returns to Heaven after dancing for a fisherman.  
 ANSWER: **Zeami** Motokiyo [or **Kanze** Motokiyo]  
 [10] This term denotes the short farcical interludes played between the acts of Noh plays as well as the actors who perform in them. These interludes later became their own genre, featuring servants as stock characters.  
 ANSWER: **kyogen**
19. Methods for synthesizing this functional group include those of Madelung and a modification of another reaction using an aryl bromide starting material. For 10 points each:  
 [10] Name this aromatic heterocycle that is generated from the reaction of an arylhydrazine with an aldehyde or ketone.  
 ANSWER: **indole**  
 [10] This chemist names the aforementioned indole synthesis. In his eponymous projection for depicting stereochemistry, horizontal bonds project toward the viewer, and vertical bonds project away from the viewer.  
 ANSWER: [Hermann] Emil **Fischer**  
 [10] The key step in the Fischer indole synthesis is a [3,3] sigmatropic rearrangement of this functional group. A ketone alkylation named for Stork is also named for this functional group, an intermediate in the reaction.  
 ANSWER: **enamine** [accept **ene-hydrazine**, as it is correct for the first sentence]

20. Robert Axelrod's book *The Evolution of Cooperation* was based in part on a pair of tournaments that he ran on an iterated version of this game. For 10 points each:
- [10] Name this simple scenario from game theory in which two convicts must decide whether to rat each other out.  
ANSWER: **prisoner's dilemma**
- [10] This strategy won both of Axelrod's tournaments. It cooperates on the first move; for all later moves it does whatever its partner did on the previous move.  
ANSWER: **tit-for-tat**
- [10] This polymath submitted the tit-for-tat strategy. He described the "Cult of Struggle" in *The Origins of Violence*, and examined the noospheric evolution of the institution of war and the concept of peace in *Peace: An Idea Whose Time Has Come*.  
ANSWER: Anatol [Borisovich] **Rapoport**
21. This man's government was supported by Patriarch Hermogen, who rallied the people against Bolotnikov's rebellion. For 10 points each:
- [10] Name this boyar who ordered rebels thrown off bridges and deposited under the ice of frozen ponds.  
ANSWER: Vasily [Ivanovich] **Shuisky** [or **Vasily IV** of Russia; prompt on **Vasily**]
- [10] Another rebel against Shuisky was the so-called "Felon of Tushino," one of these people. Shuisky took power after an earlier one of them was deposed and had his ashes fired out of a cannon in the direction of Poland.  
ANSWER: **False Dmitris** [prompt on partial answer]
- [10] Shuisky and the False Dmitris were among the various scoundrels who claimed to be tsars during this anarchic period of Russian history that ended with the rise to power of Michael Romanov.  
ANSWER: **Time of Troubles** [or **Smutnoye Vremya**]

### Extra bonuses

22. This character discovers a silver dove in her grandfather's grave and watches her brother Paul skin a pregnant rabbit in the story "The Grave." For 10 points each:
- [10] Name this character whose understanding of her family's history, including the beautiful Aunt Amy, develops in *Old Mortality*.  
ANSWER: **Miranda Gay** [accept either name]
- [10] This author of "The Grave" and *Old Mortality* wrote about Laura, who lives in Mexico and is courted by Braggioni, in the short story "Flowering Judas." She also wrote the novel *Ship of Fools*.  
ANSWER: Katherine Anne **Porter** [or Callie Russell **Porter**]
- [10] *Old Mortality* is found in a collection named after this other Porter novella, in which Miranda becomes sick during the 1918 flu epidemic and inadvertently causes her lover to die while he tends to her.  
ANSWER: **Pale Horse, Pale Rider**
23. For 10 points each, name these dynasties and polities that ruled parts of southern India during the fourteenth century.
- [10] This empire's capital was moved to Halebidu by Vishnuvardhana. Following the death of its ruler Veera Ballala III, it was absorbed into the emerging Vijayanagara Empire.  
ANSWER: **Hoysala** Empire
- [10] The Hoysala Empire fought a bunch with this dynasty, which participated in long-lasting conflicts with Pallava, Chera, and Chola, its fellow Tamil empires. It moved its capital from Korkai to Madurai in the sixth century CE, and it included several rulers named Maravarman and Jatavarman.  
ANSWER: **Pandya** dynasty
- [10] Halebidu was looted, and the Pandya stronghold of Madurai besieged, by the forces of Alauddin Khilji, a ruler of the Muslim sultanate based in this Indian city, whose rulers included the Tugluq and Lodi families.  
ANSWER: **Delhi** Sultanate
24. For 10 points each—answer the following on events of the Precambrian:
- [10] The Late Heavy Bombardment took place during this first geologic eon, which preceded the Archaean and Proterozoic.  
ANSWER: **Hadean** Eon
- [10] Remnants of the Archaean Eon include banded iron formations and some of these deposits formed by lithification of cyanobacterial mats.  
ANSWER: **stromatolites**
- [10] The Varangian and Huronian glaciations may be evidence for some of these episodes during the Proterozoic Eon. They occur when the Earth freezes over, resembling a namesake sphere of solid precipitation.  
ANSWER: **snowball** episode [or **Snowball** Earth]