

ICCS 2014

Packet 2

TOSSUPS

1. In a meeting at Thionville, this man sided with the Pope's representatives rather than his father-in-law's, and proceeded to conquer a Lombard Kingdom ruled by Desiderius. This man ordered the beheading of over 4000 Saxons in the Massacre of Verden. This man's grandsons divided his kingdom at the Treaty of Verdun, and he employed Alcuin at his capital in Aachen. Leo III crowned this man as the first Holy Roman Emperor in 800. For 10 points, name this Carolingian Frankish king.

ANSWER: Charlemagne [or Charles the Great, prompt on "Charles", prompt on "Charles I"]

2. Cardenio is continually interrupted by this character while explaining his love for Lucinda. This character's exploits are chronicled by the made-up author Cide Hamete Benengeli. He steals a washbasin from a barber after mistaking it for the Helmet of Mambrino, and is defeated by the Knight of the White Moon. This character, who rides the horse Rocinante, goes on a quest to find the princess Dulcinea with his squire Sancho Panza. For 10 points, name this character who tilts at windmills in a novel by Miguel de Cervantes.

ANSWER: Don Quixote [or El Quijote]

3. The port cities Mahon and Heraklion are located on islands in this body of water. Resort destinations on this body of water include the Costa Brava and the Costa Blanca, the latter of which includes the city Alicante. This body of water's Gulf of Lion, which is plagued by a cold wind called the *mistral*, receives the Rhône River. It meets the Atlantic Ocean off Cape Trafalgar, and the Sea of Marmara is linked by the Dardanelles to one of its constituent seas. For 10 points, the Aegean Sea is part of what body of water separating Europe and North Africa?

ANSWER: Mediterranean Sea

4. The Hoboken catalog arranges this composer's works by genre instead of chronologically. A string quartet by this composer ends with a phrase that is interrupted by several grand pauses, and is accordingly called "The Joke." A symphony by this composer ends with a movement in which performers gradually leave the stage, leaving only two violins. Another of his symphonies is named for a fortissimo chord in its Andante second movement. For 10 points, name this "Father of the Symphony," whose works in that genre include the "Farewell" and the "Surprise."

ANSWER: Franz Joseph Haydn

5. The motion of a rigid body when this quantity is zero can be visualized by the use of Poincaré's ellipsoid. For a magnetic dipole, this quantity is given by the cross product of the dipole with the magnetic field. This quantity is defined as the time derivative of the angular momentum or as the cross product of the displacement and force vectors, and it can also be obtained from the product of the moment of inertia and the angular acceleration. For 10 points, identify this quantity, the rotational analogue of force.

ANSWER: torque

6. In Eastern Orthodox Christianity, this substance makes up the *prosphoron* prior to its ritual use. The name of Bethlehem literally means “house of” this substance. During the first of Jesus’s three temptations, Satan asks him to turn stones into this substance. In Judaism, the “Hamotzi” blessing is recited over this substance, and egg is used to help make a braided type of this food called *challah*. For 10 points, name this type of food which, in Catholicism, constitutes the host that transubstantiates into the body of Christ.

ANSWER: **bread** [prompt on “food”]

7. This city’s ruling class was overthrown in a coup led by Ahmed Pasha, who established its Karamanli dynasty. The *USS Intrepid* was downed during a blockade of this city’s harbor, and this city’s ruling family was defeated at the Battle of Derna; those events are cited in the second line of the US Marines’ Hymn which refers to this city’s shores. Its rulers fought the US in the First Barbary War, and King Idriss ruled out of this city before he was deposed in the September revolution led by Muammar Ghaddafi. For 10 points, identify this city, the capital of Libya.

ANSWER: **Tripoli** [or **Tarabulus**; accept **Tripolitana**]

8. This is the job that writer Daniel Quinn takes in Paul Auster’s novel *City of Glass*. A man in this profession knocks out Joel Cairo after Cairo pulls out a gun in his office. Later in that book, that man in this profession turns Brigid O’Shaughnessey into the police. The Sternwood sisters attempt to seduce a man in this profession in another novel. For 10 points, name this profession of Philip Marlowe and Sam Spade, the protagonists of Raymond Chandler’s *The Big Sleep* and Dashiell Hammett’s *The Maltese Falcon*.

ANSWER: **detectives** [or **private investigators**]

9. Ramakrishnan, Yonath, and Steitz used X-ray crystallography to study this organelle. Bacteria often contain the poly- form of these organelles, which can be separated by sucrose gradient centrifugation. Tetracycline and aminoglycoside antibiotics work by inhibiting this organelle. The large subunit of this organelle, which in Eukaryotes weighs 60 svedberg units, contains A, P and E sites, which tRNA shuttles through during the process of translation. For 10 points, name these organelles that are mostly comprised of their namesake RNA, and which are responsible for synthesizing proteins.

ANSWER: **ribosome**

10. The central character of one of this director’s films dies on a swing in the playground he fought to have built; that film is called *To Live*. This director worked with the actor Toshiro Mifune on fifteen films, including *Drunken Angel* and *Yojimbo*. One film this man directed focused on multiple people giving different accounts of the same murder. In another film by this director, bandits attack a small farming village, which is defended by a septet of warriors. For 10 points, name this Japanese director of *Rashomon* and *Seven Samurai*.

ANSWER: Akira **Kurosawa** [or **Kurosawa** Akira]

11. Routine activity theory posits that this phenomenon stems not from social causes, but from situational opportunities. One theory of this concept states that it is the result of societal and individual pressures. Kelling and Wilson’s broken windows theory claims that this phenomenon stems from urban disorder, while Robert K. Merton’s strain theory describes how it results from anomie. Cesare Beccaria pioneered

the field of penology in a work that advocated punishment as a deterrent for this behavior. For 10 points, give this term that refers to a violation of the law.

ANSWER: crime [accept more specific answers such as “murder,” “robbery,” etc]

12. This man tells Atticus that “every lover is a soldier” and arranges several trysts with Corinna in a work that could have been an epic if Cupid hadn’t “stolen a foot.” This author of the *Amores* also wrote a poem in which the gods reward Baucis and Philemon for their hospitality and turn them into trees. In another of his poems, white mulberries turn purple when two lovers commit suicide after one thinks the other has been eaten by a lion. For 10 points, name this Roman poet who included the story of Pyramus and Thisbe in his *Metamorphoses*.

ANSWER: Publius Ovidius Naso

13. It’s not palladium, but a catalyst of this transition metal is used in Sonogashira coupling. The most common method of extracting this element from ore involves separating it from iron and sulfur in chalcopyrite. Muntz metal, an alloy of zinc, iron, and this metal, is used in shipbuilding to prevent biofouling. This element’s anomalous electron configuration features a full 3d orbital and a half-filled 4s orbital. For 10 points, name this transition metal whose most common industrial use is in electrical wire.

ANSWER: copper

14. An "American Committee of Defense" for this man was headed by the philosopher John Dewey. While in prison, he formulated the concept of "permanent revolution" which stated that socialist revolutions in other countries would follow the one in his own nation. This one-time chairman of the Petrograd Soviet founded the Fourth International and wrote *The Revolution Betrayed* in 1937. This man was offered sanctuary by Lazaro Cardenas, but was assassinated by Ramon Mercador. For 10 points, name this exiled Communist who was killed with an ice-pick in Mexico.

ANSWER: Leon Trotsky [or Lev Trotsky or Lev Davidovich Bronstein]

15. It’s not the Mavericks, but this team was originally called the Dallas Chaparrals. One player for this team is the only player in NBA history to have been selected for the All-NBA and All-Defensive teams for each of the 13 years he has been in the league. Another player for this team holds the current record for most three-point shots made in a Finals series. In the 2013 playoffs, this team defeated the Lakers and the Grizzlies 4-0 before losing the final. For 10 points, Tony Parker plays for which Texas NBA team, which defeated the Miami Heat in the 2014 finals?

Answer: San Antonio Spurs [accept either underlined part]

16. A mathematical ring consists of a set and this many operations. This is the smallest positive exponent in the Taylor series expansion of cosine. Mersenne primes are one less than a power of this number. This number is the sum of the infinite series one plus one-half plus one-fourth plus one-eighth and so on. The multivariable function f equals x times y plus one has this degree, as do all quadratic polynomials. For 10 points, identify this prime number, the base of the binary system, which divides all even numbers.

ANSWER: two

17. One work by this author begins with the epigraph “To JS/07 M 378 this marble monument is erected by the state.” The title character of that poem worked for “Fudge Motors” and “never got fired,” and the

question "Was he free? Was he happy?" is dismissed as "absurd" by the speaker. In another of this man's poems, an "expensive delicate ship" and an oblivious ploughman appear in a description of Breughel's *Landscape with the Fall of Icarus*. For 10 points, name this poet of *The Unknown Citizen* and *Musée des Beaux Arts*.

ANSWER: Wystan Hugh Auden

18. These acts worked on a "sliding scale" system for the last eighteen years in which they were effective. Thomas Malthus wrote pamphlets in support of these measures before their enactment. Early opposition to these acts was organized by James Wilson's founding of the magazine *The Economist*. In Manchester, Richard Cobden led a "League" which protested against these laws until Robert Peel negotiated their repeal in 1846. For 10 points, name these unpopular laws which put high duties on foreign grain imported to early 19th-century Britain.

ANSWER: Corn Laws

19. This man showed vines growing on an outdoor metal railing behind two girls in *On the Terrace*. The Phillips collection in DC holds a painting by this man in which Gustave Caillebotte sits in the lower-right in the Maison Fournaise restaurant. This man showed white lamps hanging over couples at an outdoor Montmartre garden in *Dance at Le Moulin de la Galette*. Another of his paintings shows several wine bottles and yellow-hatted people below a yellow and white striped awning. For 10 points, name this French Impressionist painter of *Luncheon of the Boating Party*.

ANSWER: Pierre-Auguste Renoir

20. Pausanias claims that this group originally consisted of three figures, including Aoides and Melete. Thamyris is blinded after losing a contest to these figures, who also judge the contest that results in Apollo's flaying of Marsyas. Depending on the source, they live on either Mount Helicon or Mount Parnassus. Among these children of Zeus and Mnemosyne are Terpsichore and Urania, who represent dance and astronomy. For 10 points, Clio and Calliope are members of which group of nine Greek goddesses of science, art, and literature?

ANSWER: the Muses [or Mousai]

21. One character in this novel lives inside a large elephant statue, with two children who he does not know are his own brothers. Later in this novel, a church warden is killed while hoisting a flag during an insurrection on June 5th, 1832. Characters including Grantaire and Enjolras die on the barricade, in addition to the aforementioned Gavroche, whereas Marius survives and marries Cosette at the end of this novel. For 10 points, name this Victor Hugo novel where Inspector Javert pursues Jean Valjean, who spent 19 years as a prisoner after stealing a loaf of bread.

ANSWER: *Les* Misérables

22. In a building this man owned, he hung a sign reading "This Way to the Egress," which actually meant "this way to the exit." This man brought the "Swedish Nightingale" Jenny Lind to America and also advertised a monkey's head sewn onto the back half of a fish. After purchasing Scudder's American Museum in New York, this man displayed such curiosities as the Feejee Mermaid and a midget named General Tom Thumb. For 10 points, name this showman and circus founder who is credited with the quote "there's a sucker born every minute."

ANSWER: Phineas Taylor **Barnum**

23. One version of these entities consists of pairs denoted *dextro*- and *levo*-; molecules that demonstrate that type of this phenomenon are called chiral. Besides the optical ones, or enantiomers, another one of these pairs has *cis*- and *trans*- varieties; that is the geometric type of these. The structural type of this phenomenon occurs when two compounds have the same atoms, but those atoms are connected differently to one another. For 10 points, name these compounds that have the same chemical formula but different properties.

ANSWER: **isomers** [accept **isomerism**; accept **stereoisomers** before “structural”; prompt on “enantiomers” before mentioned]

24. This philosopher argued that society’s negative influence transformed a self-preserving “love of self” into a “love of pride.” This philosopher presented the first man to fence off land as the origin of a three-part sequence by which society transitions from nature to the inequality between master and slave. This author of *Discourse on Inequality* argued in his most famous book that a sovereign must express the “general will” of the whole populace. For 10 points, name this philosopher whose *Social Contract* was considered a model for the French Revolution.

ANSWER: Jean-Jacques **Rousseau**

BONUSES

1. One section of this work begins “The song that I came to sing remains unsung to this day.” For 10 points each:

[10] Name this poetry collection, published in 1910, which features the line “Thou hast made me endless, such is thy pleasure.”

ANSWER: **Gitanjali** *Song Offerings*

[10] *Gitanjali* was written by this author of *The Home and the World*. This man also wrote the national anthem of Bangladesh, *Amar Sonar Bangla*.

ANSWER: Rabindranath **Tagore**

[10] This home nation of Tagore based its national anthem, “Jana Gana Mana,” on one of his poems.

Authors from this nation include the author of *The Inheritance of Loss*, Kiran Desai.

ANSWER: Republic of **India** [or **Bharat**]

2. Diseases associated with changes in this organelle include ragged red fiber disease. For 10 points each:

[10] Name these organelles, the site of the electron transport chain and the Krebs cycle. It contains folds called cristae in its inner membrane.

ANSWER: **mitochondria**

[10] Both mitochondria and chloroplasts are thought to have evolved via this mechanism. According to this hypothesis, those organelles were formerly free bacteria that were taken up by other single-celled organisms.

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

[10] The endosymbiotic theory was advanced by this professor, who also believed that AIDS was actually called by syphilis.

ANSWER: Lynn **Margulis** [or Lynn **Alexander**]

3. One issue in the phonology of these languages is the historical development of “weak” vowels called yers. For 10 points each:

[10] Name this group of languages that includes Bulgarian, Polish, Czech, and Russian.

ANSWER: **Slavic** languages

[10] The Slavic languages are a subset of this language family. Other members of this family include Celtic languages like Welsh, and Germanic languages like English.

ANSWER: **Indo-European** languages

[10] Many Slavic languages, including Russian, are written in the Cyrillic alphabet, which is the successor to this alphabet invented by Cyril and Methodius.

ANSWER: **Glagolitic**

4. After the death of this philosopher, young German university students who discussed and wrote about his legacy were known as “Young” adherents of his philosophy. For 10 points each:

[10] Name this philosopher who described the three-stage life of the *geist* in *The Phenomenology of Spirit*.

ANSWER: Georg Wilhelm Friedrich **Hegel**

[10] In *The Phenomenology of Spirit*, this term refers to a three-stage process of thesis-antithesis-synthesis. The “master-slave” type of this is a “struggle to the death” between two beings.

ANSWER: dialectic [accept master-slave dialectic]

[10] These lectures by Hegel attribute the natural progress of world events to the absolute spirit, and controversially claim that Africa had “no movement or development to exhibit.”

ANSWER: *Lectures on the Philosophy of World History* [or *Vorlesungen über die Philosophie der Weltgeschichte*]

5. The famous charge of the Rough Riders during this battle actually took place at Kettle Hill. For 10 points each:

[10] Name this July 1898 battle, a decisive battle of the Spanish-American War in Cuba. The press played up the role of the Rough Riders, ignoring the work of African-American soldiers.

ANSWER: The Battle of San Juan Hill

[10] This future President was a member of the Rough Riders. This man, who said "speak softly and carry a big stick," succeeded the assassinated William McKinley as President.

ANSWER: Theodore "Teddy" Roosevelt Jr. [prompt on Roosevelt]

[10] This man served as Secretary of State for both McKinley and Roosevelt. He negotiated three treaties related to the Panama Canal, including one with Panama's Jean Bunau-Varilla.

ANSWER: John Milton Hay

6. In December 2013, this country's Supreme Court overturned a lower court ruling that had decriminalized homosexuality. For 10 points each:

[10] Name this country with capital New Delhi; it is the second largest in the world by population.

ANSWER: Republic of India [or Bharat]

[10] The 2014 Indian elections led to the election of this man as Prime Minister. This Hindu nationalist was the Chief Minister of Gujarat from 2001-2014.

ANSWER: Narendra Modi

[10] Modi is a member of this right-wing party, which previously led the country from 1998-2004 as part of the National Democratic Alliance.

ANSWER: Bharatiya Janata Party

7. For 10 points each, answer these questions about the moons of Jupiter.

[10] One possible home for extraterrestrial life is this icy moon in 2-to-1 orbital resonance with Io.

ANSWER: Europa

[10] Europa and Io are two of the four moons in this group, named for their discoverer.

ANSWER: Galilean moons [accept Galileo]

[10] E.E. Barnard discovered this moon in a closer orbit than the Galilean moons. This moon, like Thebe, has a namesake faint ring around Jupiter.

ANSWER: Amalthea

8. Examples of these entities which were founded by people of non-Han ethnicity are called the “conquest” type of them. For 10 points each:

[10] Identify these entities whose succession cycles were governed by whether or not they had the “Mandate of Heaven.”

ANSWER: Chinese Dynasties [or dynasty; accept word forms; accept “line of rulers” or equivalents; prompt on “monarchs” or “rulers”]

[10] The longest ruling Chinese dynasty was this one. The Bronze Age in China came to an end with this dynasty, which was succeeded by the Qin dynasty.

ANSWER: Zhou dynasty [accept: “Western Zhou dynasty”]

[10] Shi Huang, the first ruler of the Qin dynasty, had a mausoleum dedicated to him with sculptures of several soldiers in this earthen medium.

ANSWER: terracotta [or “the terracotta army” or equivalents]

9. At the end of this opera, Canio faces the audience and exclaims “La commedia e finita!” For 10 points each:

[10] Name this opera by Ruggero Leoncavallo, which is about some clowns. Its arias include “Vesti la giubba.”

ANSWER: Pagliacci

[10] Leoncavallo is from this country, the birthplace of opera. Claudio Monteverdi, also from here, wrote the early operas *The Coronation of Poppea* and *L’Orfeo*.

ANSWER: Italy

[10] Pagliacci is often performed with this other opera by Pietro Mascagni, in which Turridu’s affairs with Santuzza and Lola lead to trouble. Its Intermezzo is often performed separately.

ANSWER: Cavalleria Rusticana [or Rustic Chivalry]

10. These poems’ author said he composed them during a “hurricane of the spirit,” during which time he also wrote *Sonnets to Orpheus*. For 10 points each:

[10] Name this collection of ten poems. The first claims “beauty is nothing but the beginning of terror” and asks “Who, if I cried out, would hear me among the angels’ hierarchies?”

ANSWER: Duino Elegies [or Duineser Elegien]

[10] The *Duino Elegies* were written by Rainer Maria Rilke in this language. *The Lorelei* by Heinrich Heine is another poem in this language.

ANSWER: German [or Deutsch]

[10] Rilke was unable to return to Paris after the outbreak of this war. In a Jaroslav Hasek novel about this war, Josef Svejek is so eager to fight in it that people suspect him of being a spy.

ANSWER: World War I [or First World War]

11. These gases consist of randomly moving point particles that interact only during elastic collisions, and one mole of them has a volume of 22.41 liters at STP. For 10 points each:

[10] Identify these hypothetical gases described by the law $PV = nRT$.

ANSWER: ideal gases

[10] Dividing the ideal gas constant by Avogadro's number yields a constant named for this scientist. He proved that entropy equals that constant times the log of the number of microstates.

ANSWER: Ludwig Eduard Boltzmann

[10] The ideal gas law can be derived from this theorem, which states that in thermal equilibrium, molecules have the same average energy associated with each degree of freedom.

ANSWER: equipartition theorem

12. This event will be preceded by a succession of three winters known as the Fimbulvetr, and the only humans to survive it will be Lif and Lifthrasir. For 10 points each:

[10] Name this apocalyptic event in Norse mythology, marked by a battle at the field of Vigrid between the gods and the jotuns that goes poorly for the former.

ANSWER: **Ragnarök** [or **Ragnarøkkr**]

[10] At Ragnarök, Odin will be swallowed whole by this creature, who will have broken free of the chain Gleipnir. This wolf will then be torn in half by Odin's son Vidarr.

ANSWER: **Fenrir** [or **Fenrisulfr**; or **Fenris** wolf]

[10] Fenrir was originally chained only when this god agreed to put his hand in the wolf's mouth. Naturally, upon being chained Fenrir angrily bit this god's hand off.

ANSWER: **Tyr** [or **Tiwaz**]

13. This piece of territory was gained as part of the policy of *lebensraum*. For 10 points each:

[10] Name this territory that was handed over in the Munich Pact, which Neville Chamberlain called "peace for our time."

ANSWER: **Sudetenland** [or **Sudety**]

[10] The Sudetenland was originally part of this country, whose president Edvard Benes wasn't allowed in the Munich Pact negotiations. This country later split apart in the Velvet Divorce.

ANSWER: **Czechoslovakia** [or **Československo**]

[10] Germany also annexed this country in the *Anschluss* despite the opposition of Kurt Schuschnigg.

ANSWER: **Austria** [or **Österreich**]

14. After this novel's title character is raped by Alec, she gives birth to a son named Sorrow. For 10 points each:

[10] Name this novel, in which the title character later meets Angel Clare while working at Talbothays Dairy.

ANSWER: **Tess of the d'Urbervilles**

[10] *Tess of the d'Urbervilles* was written by this author of *The Mayor of Casterbridge* and *Far from the Madding Crowd*.

ANSWER: Thomas **Hardy**

[10] The title character of this other Hardy novel is tricked into marrying Arabella Donn. In the second section of this novel, "At Christminster," he falls in love with his cousin Sue Bridehead.

ANSWER: **Jude the Obscure**

15. Answer the following about paintings of military scenes, for 10 points each.

[10] This artist painted the Battle of Jersey in *The Death of Major Peirson*; he also created *Watson and the Shark*.

ANSWER: John Singleton **Copley**

[10] This painter showed the troop led by Frans Bannick Cocq in his painting *The Night Watch*.

ANSWER: **Rembrandt** [or Rembrandt Harmenszoon **van Rijn**]

[10] Benjamin West's painting *The Death of General Wolfe* depicts an event that took place during the Battle of the Plains of Abraham, in this present-day Canadian province.

ANSWER: **Quebec**

16. The state-owned oil cartel PDVSA spends millions of dollars extracting duckweed from the waters of this country's Lake Maracaibo. For 10 points each:

[10] Name this OPEC member that disputes ownership of land west of the Essequibo River with neighboring Guyana. It is governed from Caracas.

ANSWER: Bolivarian Republic of **Venezuela** [or República Bolivariana de **Venezuela**]

[10] Venezuela is bisected by this river, which is viewed as a prospective site for oil exploration due to its extensive tar sands.

ANSWER: **Orinoco** River

[10] The Orinoco oil sands are located east of the Andes, in a grassland plain with this name.

ANSWER: *Los* **llanos**

17. This substance is a component of the Kastle-Meyer solution, which is used to test for the presence of blood. For 10 points each:

[10] Name this compound that is colorless in acidic solutions and pink in basic ones.

ANSWER: **phenolphthalein**

[10] Phenolphthalein is a member of this class of compounds that change color when the pH of a solution changes.

ANSWER: pH **indicators** [or acid-base **indicators**]

[10] These flowers can act as natural pH indicators in that they are blue when grown in acidic soil and pink when grown in alkaline soil.

ANSWER: **hydrangeas**

18. Marie Laveau popularized this faith among the Creole population of New Orleans. For 10 points each:

[10] Name this syncretic faith begun by slaves and their descendants in Haiti. Contrary to popular belief, this faith largely rejects sorcerers who aim to create zombies.

ANSWER: **voodoo** [or **vodoun**]

[10] In voodoo, these spirits are intermediaries between humans and the distant god Bondye. They include Erzulie and the top hat-wearing Baron Samedi.

ANSWER: **loas** [or **lwa**]

[10] This West African ethnicity held the beliefs which blended with Catholicism in New World religions such as Voodoo and Santeria. Their chief god is named Olurun or Oludumare.

ANSWER: **Yoruba** people

19. Charles Simic was the first Serbian-American to hold this post. For 10 points each:

[10] Name this position, also held by Robert Pinsky and Rita Dove, which serves as the official consultant on poetry to the United States Congress.

ANSWER: United States **Poet Laureate**

[10] This man, who served as the US Poet Laureate in 1986 and 1987, wrote about the political rise of Willie Stark in the novel *All The King's Men*.

ANSWER: Robert Penn **Warren**

[10] This other US Poet Laureate wrote that "They begin beating it with a hose to find out what it really means" in his "Introduction to Poetry", and wrote *The Art of Drowning*.

ANSWER: Billy **Collins**

20. Early modern examples of these events took place in North Berwick and in Fulda. For 10 points each:

[10] Name these events targeting people suspected of using sorcery. Gottfried Christian Voigt estimated that nine million women were killed in these events in Europe.

ANSWER: witch hunts [or witch trials]

[10] This treatise on witches by Heinrich Kramer contributed to the obsession with witch hunts.

ANSWER: Malleus Maleficarum [or *The Hammer of Witches*; or *Der Hexenhammer*]

[10] Another treatise supporting witch hunts was *Daemonologie*, which was written by this King of Scotland and England, the target of the Gunpowder Plot.

ANSWER: James VI of Scotland [or James I of England]

21. These particles are described by Bose-Einstein statistics and in diatomic crystals their dispersion relation breaks up into an acoustic and an optical mode. For 10 points each:

[10] Identify these particles, the collective excitations of a crystal lattice.

ANSWER: phonons

[10] This quantity for phonons is usually called a “pseudo” or “crystal” version of this quantity because it is only defined modulo a reciprocal lattice vector. Just like photons, phonons have an energy given by \hbar times this quantity.

ANSWER: momentum [accept wave vector, do not accept “angular momentum”]

[10] In the full quantum mechanical treatment, phonons are typically modeled as modes of the quantum version of this type of system; a mechanical example is a mass on a spring whose restoring force is described by Hooke’s Law.

ANSWER: simple harmonic oscillator

22. A 1913 concert in Vienna’s Musikverein was stopped by police after fighting broke out, preventing a scheduled performance of Mahler’s *Kindertotenlieder*. For 10 points each:

[10] This man was the conductor at the *Skandalkonzert*, and his *Chamber Symphony No. 1* was also performed. Later in his career, this composer developed the twelve-tone technique.

ANSWER: Arnold Schoenberg

[10] Also on the program were this man’s *Six Pieces for Orchestra*. His other works include *Langsamer Satz* for string quartet, and the twelve-tone *Concerto for Nine Instruments*.

ANSWER: Anton (von) Webern

[10] The riot started during a performance of this man’s *Orchestral Songs on Picture-Postcard Texts*. This composer’s violin concerto was dedicated to the memory of Manon Gropius.

ANSWER: Alban Berg

23. This character tells a story to Lockwood, who is living at Thrushcross Grange. For 10 points each:

[10] Name this housekeeper, who narrates the main story of the novel in which she appears. She finds Heathcliff’s corpse and is good friends with her mistress Catherine Earnshaw.

ANSWER: Nelly Dean [accept either underlined name]

[10] Nelly, Heathcliff, and Catherine all appear in this 19th-century British novel, titled after Heathcliff’s estate.

ANSWER: Wuthering Heights

[10] *Wuthering Heights* is the only novel by this author, whose sisters Anne and Charlotte were also novelists.

ANSWER: Emily Bronte [prompt on “Bronte”]

24. Answer the following about methods of travel which traders might use in the ancient world, for 10 points each:

[10] These vehicles included the small penteconter, the massive Roman quinquireme, and the trireme, whose three rows of oars and battering ram at the prow were useful in battle.

ANSWER: ships [or boats; or warships]

[10] Traders might use this early road running southeast of Rome to reach the coastal port of Brundisium. Spartacus's men were crucified along this road.

ANSWER: Appian Way [or Via Appia]

[10] Traders used these large, thin-necked vases with two handles at the top to carry goods such as olive oil or wine. They weren't quite as large as a *pithos*.

ANSWER: amphoras [or amphorae]