

ICCS 2014

Packet 8

TOSSUPS

1. After the death of this ballet's composer, Marius Petipa and Lev Ivanov revived it in an influential 1895 production. A recurring B-minor theme in this ballet is played by the oboe over harp and tremolo strings. This ballet includes a Dance with Goblets, as well as a *pas de quatre* for four "young" title characters. This ballet's protagonist, Siegfried, is tricked by Von Rothbart into marrying Odile instead of his beloved. For 10 points, name this ballet by Tchaikovsky in which the princess Odette is cursed to transform every day into the title type of bird.

ANSWER: Swan Lake

2. Though not Byzantine iconoclasts, mobs of this religious sect carried out the *Beeldenstorm* riots to smash religious images. The founder of this sect burned Michael Servetus at the stake for anti-Trinitarian views. William the Silent of Orange-Nassau converted to this sect before liberating the Netherlands. This religion was added as a legal option for princes to choose in the Peace of Westphalia. Its namesake founder ran a theocratic government in Geneva. For 10 points, name this Christian sect that included France's Huguenots and believed in predestination.

ANSWER: Calvinism [or Reformed Christianity; do not accept or prompt on "Protestant"]

3. This novel ends with the news that a pompous pharmacist "has just received the cross of the Legion of Honor." The protagonist's husband dies not long after she commits suicide and leaves him indebted to Lheureux. A lawyer in this book moves to avoid seeing the protagonist, but she begins visiting him after being left by a landowner. The protagonist begins affairs with Leon and Rodolphe after growing dissatisfied with her dull life with the doctor Charles. For 10 points, name this novel about Emma that was written by Gustave Flaubert.

ANSWER: Madame Bovary

4. A form of decay in which this tissue is blocked is called tylosis. Mutations in the IRX15 gene result in the collapse of this tissue. This tissue stains blue-green with Toluidine blue. In protosteles, this tissue is internal to its counterpart. The inward growth of vascular cambium forms this tissue. This tissue consists of tracheids and vessel elements and functions via the transpiration-pull mechanism. The secondary form of this tissue is wood. For 10 points, name this plant tissue that is responsible for transporting water.

ANSWER: xylem

5. This country's constitution is based on the concept of "guardianship of the jurist." Decrees in this country have banned a practice of cutting oneself with a sword, a practice that often occurs alongside *tazieh* passion plays on the holiday of Ashura. An ancient religion from this modern-day country had concepts of evil and good called *Druj* and *asha* and believed that Ahriman was in conflict with Ahura Mazda. For 10 points, name this Shi'a-majority country and historic home of Zoroastrianism that is now led by Ayatollah Ali Khamene'i.

ANSWER: (Islamic Republic of) Iran [or Jumhuri-ye Eslami-ye Iran]

6. In 1850, this politician promoted the anti-slavery cause with a speech on the Senate floor appealing to “a higher law than the Constitution.” Lewis Powell stabbed this man on the same night that John Wilkes Booth killed the president. As the book *Team of Rivals* documented, this New York Senator joined Abraham Lincoln's Cabinet despite initially being the front-runner at the 1860 Republican Convention. For 10 points, name this Secretary of State for both Lincoln and Andrew Johnson, a man whose namesake “folly” was his purchase of Alaska.

ANSWER: William Henry **Seward**

7. A caretaker in this work tells a joke about two drunks who mistake a statue of Christ on a grave for a poor likeness of the buried man. Another character in this work writes an editorial about foot-and-mouth disease. This book's hero uses the alias Henry Flower to correspond with Martha. A female character's monologue at the end of this book ends with the words “yes I said yes I will yes.” The cuckolded ad-seller Leopold walks all over Dublin in this novel and comes home to Molly. For 10 points, name this mock-epic by James Joyce that is set on Bloomsday.

ANSWER: **Ulysses**

8. This man painted a landscape of a town where he worked with Adrian Dornbush to found the Stone City Art Colony. This man painted a red curtain being lifted to show an adult-headed child with a hatchet in *Parson Weems' Fable*. A Blue Willow ware teacup is held aloft by one of three old women in front of Leutze's *Washington Crossing the Delaware* in his *Daughters of Revolution*. This painter posed his sister Nan and his dentist in front of a white cottage. For 10 points, name this regionalist painter from Iowa who included a pitchfork in his *American Gothic*.

ANSWER: Grant **Wood**

9. N-body simulations overestimate the central distribution of this substance, resulting in the cuspy halo problem. The supersymmetric neutralino is one candidate for this substance, which is believed to be a weakly interacting massive particle, or WIMP. Fritz Zwicky postulated this substance after observing the Coma cluster, and its existence can explain why galaxy rotation curves don't drop off as they should. For 10 points, name this substance that makes up about a quarter of the content of the universe but is not detectable by electromagnetic radiation.

ANSWER: **dark matter**

10. This philosopher discussed billiard balls to unravel the assumption that “constant conjunction” of events implies “necessary connexion” between them. This man wrote that “custom or habit” is the only reason to believe in causation, an example of his skepticism about induction. This empiricist wrote that all ideas come from impressions, except when considering colors one has seen and imagining a “missing shade of blue” between them. For 10 points, name this Scottish author of *Treatise of Human Nature* and *An Enquiry Concerning Human Understanding*.

ANSWER: David **Hume**

11. This play's central characters talk to each other from ladders meant to represent the second story of their respective houses. The drunken church organist Simon Stimson commits suicide in the third act of this play. In the last act of this play, a character asks the Stage Manager, “Do any human beings ever realize life while they live it?” while revisiting her twelfth birthday. George Gibbs and Emily Webb get

married before Emily dies during childbirth in this play. For 10 points, name this play about life and death in Grover's Corners that was written by Thornton Wilder.

ANSWER: **Our Town**

12. This country lost a conflict in which a southern neighbor recognized the independence of a polity led by the Thirty Three Immortals. Escaped slaves in this country established settlements called quilombos. This nation lost the Cisplatine War and later allied with its southern neighbors in the War of the Triple Alliance. It gained independence when its first emperor promulgated the "Cry of Ipiranga." This country's last monarch outlawed slavery with the Golden Law. For 10 points, identify this country that was once ruled by Pedro II from Rio de Janeiro.

ANSWER: Federative Republic of **Brazil** [or Republica Federativa do **Brasil**]

13. The 1979 Ann Arbor Decision found that a school district failed to identify speakers of this language for appropriate English instruction. A Wolof word meaning "understand" may be the source of the word "dig" in this language. Stative predicates and inherent properties often occur with the null copula in this language. This language's tense-aspect system uses "invariant be" for habituals, and expresses a remote past with "stressed BIN." For 10 points, name this ethnolect of English, in which one could grammatically say "It ain't nobody gonna miss nobody."

ANSWER: **African-American Vernacular English** [or **AAVE**; or **African American English**; or **AAE**; or **Black Vernacular English**; or **Black English Vernacular**; or **BVE**; or **BEV**; prompt on "Ebonics"; prompt on "English"]

14. A Stalfos with this profession gives Link the Tokay Eyeball and was once the lover of Queen Ambi; in another *Legend of Zelda* game, Aveil leads these people's namesake fortress. In a different series, people with this profession fight each other in "insult duels." In *Majora's Mask*, these people hide some stolen Zora Eggs in Great Bay Cove. Guybrush Threepwood aspires to become one of these people in *The Secret of Monkey Island*. For 10 points, name this profession whose members make up Tetra's entourage in *The Wind Waker*.

ANSWER: **pirates** [accept word forms; accept **sailors** until "Aveil"]

15. At the assembly level, invoking these entities pushes the old frame pointer onto the stack. Side effects occur when these entities modify the value of a global variable. Scheme and Lisp are examples of programming languages named for these entities. Many languages support ad hoc polymorphism by allowing you to create many of these entities with the same name in a process called overloading. When these entities refer to themselves, recursion ensues. For 10 points, name these entities that accept parameters and have return values.

ANSWER: **functions** [or **methods** or **subroutines** or **procedures** or **routines** or **callable units**]

16. This deity was raised on Rhodes by Capheira and the Telchines. After raping a Lapith woman named Caenis, this god transformed her into the male warrior Caeneus. This god found Demeter hiding in a herd of mares and fathered the talking horse Arion with her. Iphimedia's affair with this god resulted in the birth of Otus and Ephialtes. Odysseus earned this god's enmity by killing Polyphemus, this god's son. This god is also the father of the merman Triton. For 10 points, name this brother of Hades and Zeus, the Greek god of the sea.

ANSWER: Poseidon [accept Neptune until “Greek” is read]

17. Before Wessex united them against the Vikings, this number of Anglo-Saxon kingdoms ruled over ninth-century England. An English king with this regnal number faced the impostors Lambert Simnel and Perkin Warbeck. After the 1356 Golden Bull, this was the total number of electors who chose the Holy Roman Emperor. This number of United Provinces broke from Spain to form the Netherlands. The victor of the Wars of the Roses was a Henry with this regnal number. For 10 points, give this number that was also the number of hills Rome was built on.

ANSWER: seven [or the seventh; accept Heptarchy during the first sentence]

18. In one of this author’s plays, the protagonist causes horns to grow from a knight’s head for doubting his powers. The ghost of Machiavelli introduces another of this author’s plays, whose title character falls in the boiling cauldron he intended to use to kill a prince. He’s not Goethe, but the protagonist of a play by this man asks, “Was this the face that launch'd a thousand ships?” after summoning a vision of Helen of Troy; that character offers his soul to Mephistophilis in exchange for knowledge. For 10 points, name this playwright who wrote *The Jew of Malta* and *Doctor Faustus*.

ANSWER: Christopher Marlowe

19. This is the solo instrument in Max Bruch’s *Kol Nidrei*, and it represents the title character in Richard Strauss’s *Don Quixote*. Dvorak wrote a popular concerto in B minor for this instrument. The melody in “The Swan” from *Carnival of the Animals* is played by this instrument. Famous performers of this instrument include Mstislav Rostropovich and Pablo Casals. J.S. Bach wrote six suites for this string instrument unaccompanied. For 10 points, name this instrument that is larger than a viola and smaller than a double bass.

ANSWER: violoncello

20. The Keldysh parameter quantifies partly how likely this process is to occur as a consequence of tunneling. The degree to which this condition predominates in a gas is given by the Saha equation, and this condition is dominant in and constitutive of plasmas. A common version of this process occurs when a photon interacts with an atomic electron at a frequency corresponding to the binding energy. For 10 points, identify this process that, in atoms, typically leaves behind a nucleus with excess positive charge.

ANSWER: ionization

21. Maya Lin’s Confluence Project is a series of art installations located along this river. Navigation on this river was once impeded by Celilo Falls before it was flooded by The Dalles Dam, located near the entrance to this river’s namesake gorge. The city of Pasco is located at the junction of this river and its longest tributary, the Snake. Also located on this river is Franklin D. Roosevelt Lake, a reservoir formed by the Grand Coulee Dam. For 10 points, the border between Oregon and Washington is partly formed by what largest river of the Pacific Northwest?

ANSWER: Columbia River

22. One catalyst for this conflict occurred when the Assault Guard murdered politician José Sotelo. The Santoña Agreement ended the involvement of the Euzko Gudarostea during this conflict. NKVD officer Aleksandr Orlov was responsible for moving all of one nation’s gold reserves to Russia during this

conflict. The volunteer International Brigades fought for one side in this war while the volunteer German Condor Legion fought for the other side and bombed the city of Guernica. For 10 points, name this war in which the Second Republic of a nation was overthrown by the Nationalist forces led by Francisco Franco.

ANSWER: Spanish Civil War

23. In one work by this author, Nancy tells her husband to “roll over” because she’s “read how animals do it,” after hearing the sound of a jet plane. A character in another of his works feeds poisoned meat to his landlord’s dog. In another work by this man, a character swerves to avoid a porcupine and hits a tree. This author of *Seascape* wrote a play that ends with Peter accidentally stabbing Jerry in Central Park and another where “Get the Guests” is played by George and Martha. For 10 points, name this author of *Zoo Story* and *Who’s Afraid of Virginia Woolf?*

ANSWER: Edward Albee

24. The derivative of the log of the equilibrium constant equals the change in this quantity divided by the gas constant times temperature squared, according to the van't Hoff equation. This quantity remains constant during a Joule-Thomson process. At constant pressure, its change is equal to the change in internal energy. Change in this quantity is equal to change in Gibbs free energy plus temperature times change in entropy, and its path-independence is established by Hess's Law. For 10 points, name this thermodynamic quantity symbolized H.

ANSWER: enthalpy [prompt on H before mentioned]

BONUSES

1. Name these Knights of the Round Table, for 10 points each.

[10] This “Knight of the Cart” was raised by the Lady of the Lake. He serves as King Arthur’s greatest champion before his affair with Guinevere.

ANSWER: Sir **Lancelot** du Lac [or **Launcelot**; or **Lancelin**]

[10] This illegitimate son of Lancelot is the only knight pure enough to sit in the Siege Perilous and thus is able, after much questing, to see the Holy Grail.

ANSWER: Sir **Galahad** [or **Galeas**; or **Galath**]

[10] While Chretien de Troyes was writing *Lancelot, Knight of the Cart*, he was also working on a romance about this “Knight of the Lion,” the son of King Urien and Morgan le Fay.

ANSWER: Sir **Ywain** [or **Owain**, or **Yvain**]

2. One writer from this country wrote “Sunstone,” a poetry collection with 584 sections to correspond to the Aztec calendar. For 10 points each:

[10] Name this country home to Juan Rolfo and Octavio Paz.

ANSWER: **Mexico** [or United **Mexican** States; or **Estados Unidos Mexicanos**]

[10] This work by another Mexican author chronicles the last moments of the title tycoon as he reflects on the events of his life.

ANSWER: *The **Death of Artemio Cruz*** [or *La **muerte de Artemio Cruz***]

[10] This author of *The Death of Artemio Cruz* also wrote *The Old Gringo*, which was inspired by the disappearance of Ambrose Bierce during the Mexican Revolution.

ANSWER: Carlos **Fuentes** Macias

3. Series of spectral lines of this element are named after Lyman, Balmer, Paschen, and Brackett. For 10 points each:

[10] Name this element whose spectrum was predicted using a model developed by Niels Bohr. The Bohr model did not work for any other elements with more electrons.

ANSWER: **hydrogen**

[10] In the Bohr model, a hydrogen atom is said to be in this state if the electron is in the second or any higher energy orbital. This state is contrasted with the ground state.

ANSWER: **excited** state

[10] This formula, named after its Swedish developer, can be used to calculate the wavelengths of spectral lines of the hydrogen atom.

ANSWER: **Rydberg** formula

4. This “closely held” corporation is owned and operated by David Green and his family. For 10 points each:

[10] Name this craft store chain that won a 2014 Supreme Court case against the federal government over their opposition to birth control requirements in the Affordable Care Act.

ANSWER: **Hobby Lobby**

[10] Hobby Lobby and several organizations affiliated with the Catholic Church argued that requiring them to purchase health insurance covering birth control violated this type of freedom.

ANSWER: **religious** freedom

[10] The Hobby Lobby case led many LGBT rights activists to call for religious freedom clauses to be omitted from this bill that would make it illegal to fire people for their sexual orientation.

ANSWER: Employment Non-Discrimination Act

5. The pregnancy of Ozbeg Khan's wife afforded this man an opportunity to visit Constantinople, after he had earlier encountered pearl divers near the Strait of Hormuz. For 10 points each:

[10] Identify this man who left Tangier in the 1320s to go on a grand tour of the Dar-e-Islam, passing through many places in the Islamic world.

ANSWER: ibn Battuta [or Abu Abdallah Muhammad bin Abdallah al-Lawati al-Tanji bin Battuta]

[10] Ibn Battuta also visited this empire, whose King Mansa Musa made a lavish pilgrimage to Mecca in 1324. This empire had major urban centers at Djenne and Timbuktu.

ANSWER: Mali

[10] On a pilgrimage to Mecca, Mansa Musa doled out large amounts of this metal, causing a precipitous drop in its price. It was mined in large quantities at Witwatersrand in South Africa.

ANSWER: gold [accept aurum]

6. The protagonist of this play forges her father's signature to secure money to finance her husband's trip to Italy, a crime for which she is blackmailed by Krogstad. For 10 points each:

[10] Name this play that ends with Nora Helmer slamming the door behind her as she leaves her husband Torvald.

ANSWER: A Doll's House [or A Doll House or Et Dukkehem]

[10] A *Doll's House* was written by this Norwegian playwright, who also wrote *Hedda Gabler*.

ANSWER: Henrik Ibsen

[10] Another play by Ibsen is *Ghosts*, in which Oswald learns that he has inherited this disease from his father.

ANSWER: syphilis

7. These shapes have area equal to side-length squared times sine of the angle between them. For 10 points each:

[10] Identify these quadrilaterals that, like squares, have four equal sides and perpendicular diagonals. Unlike squares, however, their angles need not be right.

ANSWER: rhombuses [or rhombi]

[10] If a rhombus has diagonals of length x and y , then what is the area of the rhombus?

ANSWER: $xy/2$ [one-half x times y]

[10] Rhombuses are a subset of this larger class of quadrilaterals. These quadrilaterals have perpendicular diagonals and two sets of adjacent sides with equal length.

ANSWER: kite quadrilaterals [or kites]

8. The Secretary of Homeland Security is currently the last person on this list. For 10 points each:

[10] Name this list, the current order of which was established by law in 1947, of individuals who are eligible to hold a particular political office under certain circumstances.

ANSWER: United States presidential line of succession [accept any equivalents that indicate the order in which persons may succeed to the U.S. presidency]

[10] Until 1971, the holder of this office was in the line of succession. This person oversees the largest civilian vehicle fleet in the world, many of which have a right-hand driver's seat.

ANSWER: United States **Postmaster General**

[10] This former REI executive and banker is ineligible to succeed to the presidency despite serving as the country's Secretary of the Interior, as she was born in the United Kingdom.

ANSWER: Sally Roffey **Jewell**

9. Giovanni Gentile supported this political ideology. For 10 points each:

[10] Name this ideology supported in Italy by Benito Mussolini.

ANSWER: **fascism**

[10] In Italy, the violent period from the late 1960s to the early 1980s is known by this name. It included a bombing of a train station in Bologna.

ANSWER: **Years of Lead** [or **anni di piombo**]

[10] Conflict between Italy and this country resulted in the Walwal Incident. Italy invaded this African country in 1895 after a dispute over the Treaty of Wuchale.

ANSWER: Federal Democratic Republic of **Ethiopia** [or **Abyssinia**]

10. Answer the following about sculptors who created more abstract works, for 10 points each.

[10] This sculptor created a work showing two block-like people embracing in *The Kiss*, and he also created a series of works emphasizing the motion of the title avian in *Bird in Space*.

ANSWER: Constantin **Brancusi**

[10] This sculptor's somewhat abstract representations of human figures include *Two Large Forms* and *Draped Seated Woman*.

ANSWER: Henry **Moore**

[10] Umberto Boccioni was a member of this art movement, which was exemplified by his works like *Spiral Expansion of Muscles in Action*. Filippo Marinetti wrote this movement's manifesto.

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

11. The Hawar Islands are one group of disputed islands in this body of water. For 10 points each:

[10] Name this body of water that is connected by the Strait of Hormuz to the Gulf of Oman and is located to the southwest of Iran.

ANSWER: **Persian Gulf**

[10] This small island nation in the Persian Gulf with capital Manama claims the Hawar Islands, although the islands are closer to Qatar. This nation is ruled by the House of Khalifa.

ANSWER: **Bahrain**

[10] This resort island in the Persian Gulf is where American Robert Levinson disappeared in 2007 while doing investigative work. The Greek Ship was wrecked and deserted here in 1966.

ANSWER: **Kish** Island

12. Identify these model organisms, for 10 points each:

[10] Thomas Hunt Morgan used these insects to study mutagenesis. They have four chromosomes and can be crossbred with balancer lines to maintain mutations.

ANSWER: **Drosophila melanogaster** [or **D. melanogaster**]

[10] This species of worm was used to study apoptosis by Sydney Brenner. Martin Chalfie transfected them with GFP.

ANSWER: C. elegans [or Caenorhabditis elegans]

[10] A lot of early embryology experiments were done in the eggs of the African clawed frog, which has this scientific name.

ANSWER: Xenopus laevis [or X. laevis]

13. This novel's title character is taken from the *Rights-of-Man* to serve on the HMS *Bellipotent*. For 10 points each:

[10] Name this novel whose title character exclaims "God bless Captain Vere!" before being hanged for killing the master-at-arms John Claggart.

ANSWER: Billy Budd, *Sailor* [or Billy Budd, *Foretopman*]

[10] This author of *Billy Budd* wrote the short story "Bartleby the Scrivener," whose title character "prefer[s] not to" do any task assigned to him.

ANSWER: Herman Melville

[10] Melville also wrote this epic novel about Captain Ahab's pursuit of the title animal. This novel opens with the line "Call me Ishmael."

ANSWER: Moby-Dick; or, *The Whale*

14. The branch of philosophy that studies this concept is called epistemology. For 10 points each:

[10] Name this concept that is equated with power in a Francis Bacon aphorism.

ANSWER: knowledge

[10] Epistemologists often argue over how people know if propositions have this property. For any proposition *p*, the Law of the Excluded Middle states that either *p* or *not p* has this property.

ANSWER: truth [accept word forms]

[10] Knowledge was thought to be equivalent to this three-word phrase for much of the twentieth century, until major counterexamples to this view were pointed out by Edmund Gettier.

ANSWER: justified true belief

15. Answer the following about the attempts of Scots people to assert their self-rule, for 10 points each.

[10] Robert the Bruce won this 1314 battle against the English, securing Scots independence for almost four more centuries.

ANSWER: Battle of Bannockburn

[10] Before Robert the Bruce, this Scots commander fought at Stirling Bridge against the forces of Edward Longshanks. He was hanged in 1305.

ANSWER: William Wallace

[10] These tribes controlled the land that is now Scotland before the ethnogenesis of the Scots people. They allegedly carved Sueno's Stone and painted their faces blue before combat.

ANSWER: Picts [or Picti]

16. Name some composers who wrote for piano, for 10 points each.

[10] This Polish composer's many hits include *Fantasia-Improptu*, the "Black Keys" Etude, the "Revolutionary" Etude, and the "Raindrop" Prelude.

ANSWER: Frederic Chopin

[10] This composer wrote preludes such as “The Girl with the Flaxen Hair” and “The Sunken Cathedral.” He also composed *Suite Bergamasque*.

ANSWER: Claude **Debussy**

[10] This man’s piano pieces include a toccata that begins with repeated D’s and three “War Sonatas.” One of his ballets contains a famous “Dance of the Knights.”

ANSWER: Sergei **Prokofiev**

17. Because of a phenomenon known as Western intensification, this phenomenon is stronger than its counterpart, the North Atlantic Drift. For 10 points each:

[10] Name this phenomenon that transports warm water from its namesake body of water toward the western coast of Europe, keeping the British Isles slightly warmer.

ANSWER: **Gulf Stream**

[10] The Gulf Stream is one of these phenomena whose flow is measured in units known as sverdrup, which are equivalent to 1 million cubic meters per second.

ANSWER: ocean **currents**

[10] Deep water currents are not wind-driven. Instead, the movement of deep ocean water is referred to by this term, which is named for the two parameters that largely determine its movement.

ANSWER: **thermohaline** circulation [prompt on **conveyor belt**]

18. This man made many speeches attacking the “Do Nothing Congress.” For 10 points each:

[10] Name this president who ordered the dropping of two atomic bombs on Japan. He succeeded to the presidency after the death of Franklin D. Roosevelt.

ANSWER: Harry S. **Truman**

[10] In 1948, Truman won an election to become president in his own right. He narrowly defeated this New York Republican, despite early media projections that this man would win.

ANSWER: Thomas Edmund **Dewey**

[10] After the 1948 election, a famous photo shows a triumphant Truman holding up a newspaper from this city with the erroneous headline “DEWEY DEFEATS TRUMAN.”

ANSWER: **Chicago** [or **Chicago Daily Tribune**]

19. This poem’s speaker claims “Sophocles long ago” heard “the eternal note of sadness” in the waves, which are compared to “the Sea of Faith.” For 10 points each:

[10] Name this poem that begins “The sea is calm tonight” and ends comparing humanity’s situation to being on a “darkling plain” where “ignorant armies clash by night.”

ANSWER: **“Dover Beach”**

[10] “Dover Beach” was written by this author of “The Scholar-Gipsy.”

ANSWER: Matthew **Arnold**

[10] In a poem addressed to this woman, Arnold compares his loneliness to unhappy islands separated by “the unplumb’d, salt, estranging sea.” An earlier poem dedicated to her is “Isolation.”

ANSWER: **Marguerite**

20. This enthusiast of plein-air landscapes used that method to produce works featuring London’s Parliament building. For 10 points each:

[10] Name this artist who painted many works featuring water lilies at Giverny. He also created a series of paintings of haystacks.

ANSWER: Oscar-Claude **Monet**

[10] Monet provided the name to this art movement with his painting of a sunrise. Other artists of this school include Cezanne and Renoir.

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

[10] Monet also painted a large number of landscapes featuring this French cathedral. Versions Monet painted included ones in *Full Sunlight* and *Setting Sun*.

ANSWER: **Rouen** Cathedral

21. Answer the following about the *bar mitzvah* ceremony, for 10 points each.

[10] The 13-year-old undergoing a *bar mitzvah* reads a portion of this holy text from its namesake scroll. This text consists of the “Five Books of Moses,” the first five of the Bible.

ANSWER: **Torah** scroll [or **Pentateuch**]

[10] The Torah is read from this elevated stage-like area at the front of the synagogue. The *aliyah* is a call to stand on this platform.

ANSWER: **bimah**

[10] In many synagogues, this official, who helps the rabbi by leading the tunes during prayer, sings the *aliyah* to bring the *bar mitzvah* up to the *bimah*.

ANSWER: **cantor** [or **hazzan**; or **chazan**]

22. This equation is usually compactly written as a gamma matrix times the covariant derivative of the wave function equals the mass times the wave function. For 10 points each:

[10] Identify this relativistic modification of the Schrodinger equation that models the behavior of spin-one-half particles.

ANSWER: **Dirac** equation

[10] Solutions to the Dirac equation predicted the existence of these particles, which have the same mass as their antiparticles the electrons but an opposite charge.

ANSWER: **positrons**

[10] Unlike the Schrodinger equation, the Dirac equation can be shown to have this property, as it conserves probability current under transformations such as boosts and rotations in Minkowski space.

ANSWER: **Lorentz invariance** [accept **covariance**]

23. This Prime Minister’s tenure in office was marked by trade union strikes during the Winter of Discontent. For 10 points each:

[10] Name this British Prime Minister who was in office from 1976 to 1979, and at the time of his death in 2005, was the longest-living British PM.

ANSWER: Leonard James **Callaghan**

[10] This “Iron Lady” was the first woman British Prime Minister and succeeded James Callaghan. This member of the Conservative Party dispatched troops to retake the Falkland Islands from Argentina and survived a bombing at a hotel in Brighton.

ANSWER: Margaret Hilda **Thatcher**

[10] A large strike in the UK in the mid-1980 led to the Battle of Orgreave between police and members of this profession. Thatcher’s policy of quashing the strike led to the decline of trade unions in the UK.

ANSWER: mining

24. Answer the following about the *Canterbury Tales*, for 10 points each.

[10] In this character's tale, Alison cheats on her carpenter husband John with Nicholas. The Reeve's Tale is about a man of this character's profession being outwitted with a "bed trick."

ANSWER: the Miller

[10] This man, the author of the *Canterbury Tales*, based the awkward narrator on himself. This poet also wrote *The Parliament of Fowls* and *The Romance of the Rose*.

ANSWER: Geoffrey Chaucer

[10] In the Nun's Priest's Tale, this rooster foresees his death at the hand of a fox in a dream, which he discusses with his favorite wife Partlet. He manages to escape the fox in the end.

ANSWER: Chanticleer [or Chauntecleer]