Brookwood Invitational Scholars Bowl XXVI: Brought to you by the letter *J'accuse*
Round 3
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Tossups

1. In one section of this literary work, the main character is advised that "the immature think that knowledge and action are different, but the wise see them as the same." In this work, an endless dress prevents a princess from being disrobed following a dice game; that princess was won in a contest in which her husband shot a mechanical fish in the eye by seeing only its reflection. This work opens with the birth of Bhishma and tells of the death of Karna at the hands of Arjuna, who chooses to employ Krishna as his charioteer. Much of this work focuses on the rivalry between the Kauravas and the Pandavas. For 10 points, name this Indian epic which contains the *Bhagavad-Gita*.
ANSWER: __*Mahabharata*__ [accept __*Bhagavad-Gita*__ outright before "endless" and prompt on it after]

2. Lake Drummond is located within one of these larger geographical features, which forms the subtitle of Harriet Beecher Stowe's novel *Dred*. The largest of these features in the United States is named for Atchafalaya and is home to the endangered Louisiana black bear. Muskegs and fens are types of them. One on the border between Georgia and Florida has a name translating as "land of the trembling earth." The Great Dismal one in Virginia and the Louisiana bayous are examples of these features. Alligators and crocodiles live together in one of these places, which is nicknamed "River of Grass". For 10 points, name these natural features exemplified by the Everglades.
ANSWER: __swamp__s [or __marsh__es; or __wetland__s; or __bog__s; or __bayou__s; __muskeg__s or __fen__s before mention]

3. In one painting by this man, the subject wears a red hat with a violet flower and stuffs a jagged, blue handkerchief into her mouth. That painting depicts his sorrowful looking lover Dora Maar. This artist of *Weeping Woman* depicted a harlequin playing a clarinet next to a figure holding a guitar. In the middle of one of his paintings, a flower emerges from a broken sword. This artist of *Three Musicians* painted five prostitutes looking at the viewer in another work, and he also depicted a horse crying out in anguish after the bombing of a Basque town. For 10 points, name this Spanish Cubist painter of *Les Demoiselles d'Avignon* and *Guernica*.
ANSWER: Pablo Ruiz y __Picasso__

4. In an application of this phenomenon, cesium atoms can be slowed down in atomic clocks because the atoms absorb photons, recoil, and lose momentum. Steven Chu won a Nobel Prize for investigating the "cooling" mechanism of this effect. A relativistic factor for this effect equals the square root of one plus beta over one minus beta. It was used to prove general relativity in the Pound-Rebka experiment. This effect includes a term for the source velocity and the observer's velocity. For 10 points, name this effect which causes a shift in observed frequencies for moving objects, which is why ambulance sirens change pitch.
ANSWER: __Doppler__ Effect

5. *(Note to moderator: stress the italicized word "originally" in the third sentence.)*
In one film from this country, Robert explains that Andre's death at the hands of Schumacher was an accident. In another film from this country, the main character is accused of plagiarism by the teacher Sourpuss, causing him to run away. The magazine *Notebooks on Cinema* was important to a cinema movement in this country. Rick Blaine *originally* met Ilsa in this country in *Casablanca*. In a film set here, the film-loving Michel is betrayed to the police by Patricia, and that film, *Breathless*, is an example of this country's "New Wave." For 10 points, name this country home to Jean Renoir and Francois Truffaut, the latter of whom set most of *The 400 Blows* in Paris.
ANSWER: __France__

6. This man was called a "wild boar from the forest" in a text that asks one figure to " judge your own cause." This figure was given refuge by Frederick III of Saxony. This man called the participants of one uprising he inspired "filthy swine," and also burned a copy of the counter-document, *Exsurge Domine*, in public. Angered by the actions of Johann Tetzel, he was excommunicated by Leo X at the Diet of Worms after writing a document prompted by the sale of "sin-erasing" indulgences. For 10 points, name this monk who in 1571 nailed his *Ninety-Five Theses* to the door of Wittenberg Cathedral, starting the Protestant Reformation.
ANSWER: Martin __Luther__

7. The daughter of a rich preacher in this play starts peeling labels off liquor bottles once it's revealed that she only married after having a false pregnancy. This play begins with a character quoting the Bette Davis film line, "What a dump!" A character in this play constantly complains about genetic engineering to a genetics professor. A character in this play tells a story about a boy who dies in a car crash, swerving to avoid a porcupine, before revealing that the boy is his imaginary son. In Act II of this play, "Walpurgisnacht", Nick and Honey get to play "Get the Guests." For 10 points, name this play about terrible party hosts George and Martha, written by Edward Albee.
ANSWER: _Who's Afraid of Virginia Woolf_

8. One commander of this group was tricked by a landing at Verplanck's point. According to one account, nine Tarleton's Raiders were defeated by a single member of this force named Peter Francisco during his namesake "fight." Some unpaid members of this group, which at one point was commanded by Israel Putnam, planned a _coup d'etat_ during the Newburgh Conspiracy. Members of this army lost battles at Brandywine and Germantown, but were trained to use bayonets and become a "model company" by Prussian officer Baron von Steuben at Valley Forge. For 10 points, name this army of the Colonies led by George Washington during the American Revolution.
ANSWER: **Continental Army** [or the **American soldiers during the Revolution** or **Army of the American Colonies** or clear-knowledge equivalents; prompt on general answers like "American army"]

9. In humans, superoxide dismutase 2 is found in these structures. Uncoupling proteins are localized to these organelles, particularly in brown adipose fat tissue, where these structures house thermogenin. SMACs and cytochrome c are released from this organelle during apoptosis. $FADH_2$ is produced in this organelle's matrix, which is indented with several folds called cristae. In this organelle's membrane, protons move down their concentration gradient through ATP synthase, resulting in oxidative phosphorylation. For 10 points, name this site of cellular respiration, the "powerhouse" of the cell.
ANSWER: **mitochondria** [or **mitochondrion**]

10. This work includes a section where one man is asked about the care of horses and about flute-playing. A section of this work addresses three men who represent the "poets," "craftsmen," and the "rhetoricians" respectively. Its subject is justified in Xenophon's prose work of the exact same title. In one story from this work, Chaerephon asked the Oracle at Delphi if the central figure was wiser than all men. In this work, the speaker refers to himself as the "gadfly of the state", and his death sentence is based mainly on "corrupting the youth." For 10 points, name this speech of Socrates defending himself at his trial, written by Plato.
ANSWER: The _**Apology** of Socrates_

11. The speaker of one of this author's poems rambles about an "intellectual breeze" to his "pensive Sara." The speaker of another of his poems tells of the "symphony and song" of an "Abyssinian maid", who is "singing of Mount Abora" as the "damsel with a dulcimer". In one poem, this writer of "The Aeolian Harp" described a dice game between Life-in-Death and Death. He opened another work by describing the title figure decreeing a "stately-pleasure dome" in Xanadu. This man described a sailor who is cursed after his crew shoots down a large albatross. For 10 points, name this Romantic poet of "Kubla Khan" and _The Rime of the Ancient Mariner_.
ANSWER: Samuel Taylor **Coleridge**

12. One person in this political position led with a doctrine of bribes called "Bread, or stick." A holder of this position accepted $50 million from the Clinton administration after committing the "December Mistake." Another person who held this office waged war on Catholics during the Cristero War. Holders of this office are allowed only a single six-year term. In 2000, Vicente Fox became the first member of PAN to hold this position, which was held for 71 years by the PRI ("pree") political party. Recent holders of this post have had to fight the Sinaloa and Los Zetas cartels to combat drug trafficking. For 10 points, identify this office held by Porfirio Díaz, Benito Juarez, and Felipe Calderón.
ANSWER: **President** of **Mexico** [or **Mexican president** or El **Presidente de Mexico**; do not accept "emperor of Mexico" or other wrong things]

13. One principle associated with this amendment was upheld nationally in *Weeks v. United States*. This amendment was held not to apply formally to students in *New Jersey v. TLO,* and a guideline on "reasonable suspicion" was added in *Terry v. Ohio*. This amendment is described in the "fruit of the poisonous tree" metaphor, an extension of this amendment's exclusionary rule. This amendment was the subject of *Mapp v. Ohio*, and states that evidence acquired illegally is inadmissible. The constitutional right this amendment provides is limited if there is "probable cause." For 10 points, name this Bill of Rights Amendment which protects against illegal searches and seizures.
ANSWER: **Fourth** Amendment to the United States Constitution

14. In order to do this action, one mythical figure tied a black ram to a ewe, then poured milk and honey, followed by wine and water, into a pit. That person spoke to Elpenor and Anticlea while doing this. A different hero was required to talk to the Cumaean Sibyl and deliver the Golden Bough to her in order to do this action, in order to talk to his father Anchises. This action, performed by Odysseus and Aeneas, was also performed by Heracles as part of his Twelfth Labor. One person who did this looked back at his wife Eurydice, causing him to lose her forever. For 10 points, name this action which Orpheus took to try and bring back his wife to the living.
ANSWER: going into the **Underworld** [or going into **Hades**; accept same-knowledge equivalents such as "leaving the Underworld" or "entering the Underworld"]

15. According to the Hume-Rothery rules, solid solutions only form when this quantity differs by less than 15% for solute and solvent. The lattice constant for BCC crystals is four over root three times this quantity. This quantity is smaller for cations than their corresponding neutral atoms. Because f electrons are very poor at shielding, this quantity does not change significantly across the lanthanide series. In general, this quantity decreases from left to right across a period and increases down a group. It equals 0.7 angstroms for carbon, half the length of a carbon-carbon bond. For 10 points, name this quantity measuring the "size" of an atom.
ANSWER: atomic **radius** [or ionic **radius**; or **van der Waals radius**; prompt on atomic "volume"; prompt on atomic "size"]

16. This policy was the subject of a 2005 study conducted by Espenshade and Chung. A recent court case about it coined the phrase "narrowly tailored" and was remanded for failing to meet strict scrutiny. The "compelling interest" test is required for this policy, the subject of 2009's *Ricci v. DeStefano*. Critics of it say it leads to "mismatch." Two cases named for Lee Bollinger, president of the University of Michigan, covered this policy, which the Supreme Court avoided ruling on in 2013 with Abigail Fisher's lawsuit against the University of Texas. For 10 points, name this policy in which an underrepresented group has better odds of gaining employment or admission.
ANSWER: **affirmative action** [prompt on "reverse discrimination" or "discrimination"]

17. Lichas invaded one of these events and was promptly whipped for his actions. The *kotinos* was given out at these events. Milo of Croton gained fame at the *pankration* during these events, and Alexander I participated in one after a ruling made by the *Hellanodikai*. Analogs to these events also occurred at Nemea and Pythia. An inviolable truce was declared for their duration. Phidias constructed a statue of Zeus near the location of these events. Women were forbidden to attend these events, as men competed nude. For 10 points, name these sporting events occurring every four years in ancient Greece.
ANSWER: ancient **Olympic** Games [or the **Olympics**; prompt on **Panhellenic** Games; prompt on "games"]

18. Philip Glass commemorated a bicentennial in a piece *named* for this work. This piece begins with four cellos and two violas playing the hymn "Oh Lord, Save Thy People," meant as a call to God for help. A descending pattern in the strings in this piece is meant to signify an enemy retreat, and is preceded by a quote from *La Marseillaise*. At the end of this piece, a certain weapon is scored to fire 11 times over a brass fanfare of *God Save The Tsar*. For 10 points, name this piece for orchestra and cannon commemorating the Russian victory over Napoleon in the title year, composed by Pyotr Tchaikovsky.
ANSWER: *1812 Overture* [or *Festival Overture in Eb Major*, Op. 49]

19. It's not by Akutagawa, but a character in this novel tells a story about a woman who unsuccessfully grabs an onion to climb out of hell. In a "poem in prose" from this novel, Satan tells Jesus that humans never should have been given free will; in response, Christ kisses him. This novel's protagonist befriends Kolya and is upset when the corpse of his mentor, Father Zossima, starts decomposing. The parable of "The Grand Inquisitor" is told in this novel. The epileptic son of Stinking Lizaveta murders Fyodor, but Smerdyakov escapes punishment when Mitya is arrested. For 10 points, name this novel about siblings Dmitri, Ivan, and Alexey, written by Fyodor Dostoyevsky.
ANSWER: The **Brothers Karamazov** [or **Bratya Karamazovy**]

20. Magnetic field equals the curl of a quantity denoted by this letter, the vector potential. The universal quantifier is symbolized by an upside-down one. Though not F, a value denoted by this letter equals internal energy minus temperature times entropy. The HTML tag for a hyperlink uses this letter of the alphabet. This letter, which stands for Helmholtz free energy, multiplies e raised to the negative activation energy over RT in the Arrhenius equation. It equals ten in hexadecimal. A purine symbolized by this letter base-pairs with thymine. Retinol is this vitamin, important for eye health. For 10 points, name this letter which symbolizes the time derivative of velocity, acceleration.
ANSWER: **a** [or **A**]

The Round Is Over. Only Read the Tiebreaker if Needed.

21. In a tribute, "Lady Bird" Johnson said one person with this surname will be able to "teach us all how to turn the arts of compassion into the victories of democracy." Another figure with this surname promised no "bottlenecks" in a speech comparing his nation to the "arsenal of democracy". An activist with this surname gave the speech, "The Struggle for Human Rights", to the UN Commission on Human Rights. A politician with this last name gave a speech declaring "we have nothing to fear but fear itself," and delivered weekly series of thirty "fireside chats". For 10 points, give this shared surname of Eleanor and Franklin Delano.
ANSWER: **Roosevelt** [accept Eleanor **Roosevelt**; accept Franklin Delano **Roosevelt**]

Round 3 Bonuses

1. One composer with this surname wrote music for the court of Frederick the Great. For 10 points each:
[10] Name this family including Anna Magdalena, the namesake of a "Notebook" which includes a "Minuet in G."
ANSWER: **Bach**
[10] The most famous Bach, Johann Sebastian, wrote a famous *Toccata and Fugue in D minor* for this instrument. This instrument played by Bach himself is now mostly used in churches.
ANSWER: pipe **organ**
[10] This JS Bach work for harpsichord was supposedly written to cure the title patron's insomnia. This work includes 30 variations on an "Aria."
ANSWER: *Goldberg Variations, BWV 988*

2. Colligative properties only depend on this value for a solution. For 10 points each:
[10] Name this measurement of how much solute is dissolved in a solution, with variations such as molarity, molality, and parts per million.
ANSWER: **concentration**
[10] This measurement of a solution's concentration can be calculated as the moles of solute divided by total moles, and is symbolized X. It is analogous to the partial pressure of a gas.
ANSWER: **mole fraction** [or **mole percent**]
[10] This law can be used to calculate the partial pressure of very dilute components in a solution. It sets partial pressure equal to a namesake constant times mole fraction.
ANSWER: **Henry**'s Law

3. People of this occupation are the topic of Frank Owsley's book *Plain Folk of the Old South*. For 10 points each:
[10] Name this job common in the southern United States, which has varieties like the tenant and yeoman types. They often dealt with "King Cotton."
ANSWER: **farmer** [accept **agricultural worker** or similar]
[10] This organization was formed in 1867 by Oliver Kelley to ensure the rights of farmers. It won a major victory on private warehouses in the court case *Munn v. Illinois*.
ANSWER: The **Grange** [or The **National Grange of the Order of Patrons of Husbandry** or **Grangers**]
[10] Farmers in pre-Civil War America and the 1920s were plagued by this insect, which destroyed the cotton yield. A positive effect of this insect, however, was the expansion to other crops, such as the peanut.
ANSWER: **boll weevil**

4. He answered "Man" to defeat the sphinx guarding the gate to Thebes. For 10 points each:
[10] Name this Greek hero who, despite his wit, didn't figure out how to avoid killing his dad and marrying his mom.
ANSWER: **Oedipus**
[10] After learning that she did the icky with her own son, this mother of Oedipus killed herself.
ANSWER: **Jocasta** [or **Iocaste**; or **Epicaste**]
[10] Oedipus and Jocasta had these two sons, who warred with each other during the Seven Against Thebes. All or nothing, name both.
ANSWER: **Eteocles** and **Polynices** [or opposite order]

5. In a short story critical of fascism by this author, Mario pretends to be under Cipolla's spell before shooting the magician. For 10 points each:
[10] Name this author of *Tonio Kruger*. A character created by this author wrote an epic about Frederick the Great, muses about the Dionysian and Apollonian, and constantly sees red-haired men.
ANSWER: Thomas **Mann**
[10] In this Mann novella, Gustav von Aschenbach succumbs to cholera after seeing Tadzio fight with Jasiu.
ANSWER: *Death in Venice* [or *Der tod in Venegig*]
[10] Mann wrote about Adrian Leverkuhn in a novel framing this Germanic legend. Goethe wrote an epic poem about this scholar who sells his soul to the Devil for earthly riches and acclaim.
ANSWER: **Faust** [or **Doktor Faust**us]

6. On June 19, 2013, Ben Bernanke announced that this program would be tapered off by 2014 to allow interest rates to rise. For 10 points each:
[10] Name this program by which the Federal Reserve buys assets with newly created government money. It occurred in three rounds between 2009 and 2013.
ANSWER: **quantitative easing** [or **QE**]
[10] In addition to the Fed's expansionary monetary policy, Obama tried fiscal expansion to combat the recession by signing this 2009 legislation. It spent 800 billion dollars to invest in infrastructure, among other things.
ANSWER: **American Recovery and Reinvestment** Act of 2009 [or the economic **stimulus** package/program]
[10] In 2013, this other nation tried expansionary monetary policy for the first time in decades as one of its "three arrows" policies. This nation's new president, Shinzo Abe, held office in 2007, but resigned due to stomach trouble.
ANSWER: **Japan** [or **Nippon**]

7. The real part of all of *these* for the zeta function is ½, according to the Riemann hypothesis. For 10 points each:
[10] Give this term for the x-intercepts of a function. All odd functions have at least one of them.
ANSWER: **zero**es [or **root**s]
[10] According to this theorem, proved by Gauss, the number of roots of a polynomial, including complex roots and multiplicities, equals the degree of the polynomial.
ANSWER: **fundamental theorem** of **algebra**
[10] A rule named for this mathematician, published in *La Geometrie*, relates the parity of the number of positive real roots of a polynomial to the number of sign changes in the polynomial.
ANSWER: Rene **Descartes**

8. Name some saints, for 10 points each:
[10] This author of the *Canticle of the Sun* allegedly convinced a wolf to stop attacking villagers, which is why he's the patron saint of animals.
ANSWER: St. **Francis** of Assisi
[10] Francis is patron saint of Italy along with this woman from Siena. In 1375, she received the stigmata, which are often associated with her.
ANSWER: St. **Catherine** of Siena
[10] This saint was beheaded in Lycia under the reign of Emperor Decius; he had gone there after ferrying the Christ child across a river.
ANSWER: St. **Christopher**

9. Masuji Ibuse's novel *Black Rain* is about this event. For 10 points each:
[10] Name this event. Reverend Kiyoshi Tanimoto provided several stories for a book about this event written by John Hersey in 1946.
ANSWER: atomic bombing of **Hiroshima** and Nagasaki [or **atomic bomb**ing of Japan; or any same-knowledge equivalents]
[10] This author wrote the *Hiroshima notes*. World War II Japan is also the setting of this author's novel *Nip the Buds, Shoot the Kids*, and this Nobelist also wrote a book about Mitsusaburo and Takashi.
ANSWER: Kenzaburo **Oe**
[10] The firebombing of Dresden during World War II makes up a major plot point of this American author's novel *Slaughterhouse-Five*.
ANSWER: Kurt **Vonnegut**, Jr.

10. Answer the following about when it really wasn't a G'day, mate. For 10 points each:
[10] Australians memorialize ANZAC Day in honor of the failed Gallipoli campaign during WWI. The campaign was planned by this Brit, who later served as prime minister during WW2.
ANSWER: Sir Winston **Churchill**
[10] The 1854 Eureka Stockade rebellion took place in the middle of one of these events in Victoria, Australia. An event of this type brought thousands of people to Witwatersrand, South Africa, in the late 1880s.
ANSWER: **gold rush**es [or same-knowledge equivalents like "finding gold"]
[10] This bushranger got himself into a deadly shootout at Glenrowan before finally being hanged in 1880. This man explained why killing people is the right thing to do in his Jerilderie Letter.
ANSWER: Edward "Ned" **Kelly**

11. Orchestral excerpts from this man's operas include "Elsa's Procession to the Cathedral" and "The Ride of the Valkyries." For 10 points:
[10] Name this German composer of the *Ring of the Nibelung* opera cycle.
ANSWER: Richard **Wagner** [pronounced with a 'v,' not a 'w' but be lenient]
[10] Wagner served in this capacity for his own operas. Nahum Tate did this for Purcell's *Dido and Aeneas*, and Bertolt Brecht did this for *The Threepenny Opera*.
ANSWER: **librettist** [or **wrote** the **libretto** for the opera; accept same-knowledge equivalents about writing the text of the opera]
[10] This composer was an early mentor of Wagner before their friendship ended because of Wagner's anti-Semitism. This composer's own works include *Robert the Devil* and *Les Huguenots*.
ANSWER: Giacomo **Meyerbeer**

12. Though not Rome, this city is said to lie upon seven hills. For 10 points each:
[10] Name this city which lies on the Bosphorus. Its harbor is called the Golden Horn, and it's also home to the Grand Bazaar.
ANSWER: **Istanbul**, Turkey [do not accept or prompt on "Constantinople"]
[10] The Bosphorus connects the Sea of Marmara to this large Eurasian sea, which also borders on Ukraine and Russia.
ANSWER: **Black** Sea
[10] The city of Iasi in this country is also said to lie on seven hills. The Danube's delta is located in this European nation.
ANSWER: **Romania**

13. This work explains a rough quadrilateral which is constantly in strife between three nations, and argues that endless war leads to a need for production, strengthening the economy to stifle revolts. For 10 points each:
[10] Name this work written by Emmanuel Goldstein. Its third chapter, excerpted in full, is titled "War is Peace."
ANSWER: The **Book** [or The ***Theory and Practice of Oligarchical Collectivism***; accept "The **Book** from *1984*"]
[10] The Book occupies a significant middle section of *Nineteen Eighty-Four*, a dystopian novel written by this British author.
ANSWER: George **Orwell** [or Eric Arthur **Blair**]
[10] While Winston is imprisoned in the Ministry of Love, O'Brien tries to explain doublethink to him by torturing Winston until he accepts this mathematical statement as true.
ANSWER: **2+2=5** [or same-knowledge equivalents like "two and two makes five"]

14. The pirate Stenka Razin, who led a 1670 uprising against Moscow, was of this ethnic group. For 10 points each:
[10] Name these militaristic people of Southern Russia. An unsuccessful 1773 to 1775 rebellion of these people was led by the deluded Yemelyan Pugachev.
ANSWER: **Cossack**s [or **Kazaki**]
[10] Pugachev claimed to be a relative of Peter III, who held this title before being assassinated by Grigory Orlov. Other notable holders of this title, the emperor of Russia, include Ivan the Terrible.
ANSWER: **tsar** [accept **tsarina**]
[10] Pugachev's Rebellion occurred during the reign of this ruler, a close friend of Grigory Potemkin and patron of French authors.
ANSWER: **Catherine** the Great [or **Catherine** II of Russia; or Yekaterina **Alexeevna**]

15. For 10 points each, answer these questions about model Joanna Hiffernan:
[10] Hiffernan was a lover of this American artist, best known for his nocturnes and a painting of his mother.
ANSWER: James Abbott McNeill **Whistler**
[10] Whistler had a bitter feud with this French Realist painter over Hiffernan. He is best known for his works *A Burial at Ornans* and *The Stone Breakers*.
ANSWER: Gustave **Courbet**
[10] Hiffernan served as the model for one of these Whistler paintings "in white." The central figure looks blankly at the viewer while standing on a wolf skin.
ANSWER: ***Symphony*** in White No. 1 [or The ***White Girl***]

16. Peter and Wendy kill their father with a lion generated by their playroom in this author's short story "The Veldt." For 10 points each:
[10] Name this American author. Eckels accidentally steps on a butterfly in the Jurassic Era and causes a presidential election's outcome to switch in the present, in his story "A Sound of Thunder."
ANSWER: Ray **Bradbury**
[10] Bradbury might be better known for this novel about fireman Guy Montag, who burns books.
ANSWER: *Fahrenheit 451*
[10] The Bitterings gradually transform into an entirely new species in Bradbury's story "Dark They Were, and Golden-Eyed", which takes place in this locale. Bradbury wrote a series of "Chronicles" about this place.
ANSWER: **Mars** [or The *Martian Chronicles*]

17. An ideal Newton's cradle involves these collisions. For 10 points each:
[10] Name these collisions which conserve kinetic energy. The collision of billiards balls is one of these.
ANSWER: **elastic** collisions
[10] All collisions conserve this quantity, equal to the product of mass and velocity. Symbolized p, it is always conserved in the absence of external forces.
ANSWER: linear **momentum** [do not accept "angular momentum"]
[10] In modern physics, this quantity is calculated as Planck's constant divided by momentum. For electrons, this quantity is in the range of picometers.
ANSWER: de Broglie **wavelength**

18. This order wore black cloaks, distinguishing them from the Carmelites. For 10 points each:
[10] Name this order of the Catholic Church which included Tomas de Torquemada and Bartolome de las Casas among its members.
ANSWER: **Dominican** Order
[10] Another Dominican friar was this 15th leader of Florence who ordered the burning of hundreds of non-religious books and artwork in the Bonfire of the Vanities.
ANSWER: Girolamo **Savonarola**
[10] Savonarola was burned at the stake after dismissing the commands of Rodrigo Borgia, who at that time held this high religious title. The first person to hold this post was Peter.
ANSWER: **pope** [or equivalents like **leader of the Catholic Church**]

19. Species designated by this letter often have small body size, high fecundity, and very low levels of parental nurturing. For 10 points each:
[10] Give the letter of the alphabet which corresponds to such animals, according to a theory of selection developed by EO Wilson.
ANSWER: **r** selectors
[10] R selectors called pioneer species are the first animals to settle new areas in this process, the formation of a new ecosystem and community. The secondary form of it occurs after a natural disaster.
ANSWER: primary ecological **succession**
[10] Often, the first organisms to move in during primary succession are these symbiotes consisting of a fungus and a plant. These "organisms" can even survive in space.
ANSWER: **lichen**s

20. Aaron Beck posited that this condition is caused by patients having distorted schemas about themselves. For 10 points each:
[10] Name this affective disorder characterized by low self-esteem and loss of interest in everyday activities. Patients with bipolar disorder alternate between happier "manic" phases and phases of this condition.
ANSWER: **depression** [or **major depressive disorder** or **clinical depression**]
[10] Through a biological view, studies have shown that depression may be linked to an imbalance of this neurotransmitter. Antidepressants like SSRIs inhibit this neurotransmitter's reuptake.
ANSWER: **serotonin**
[10] Depression can also be treated through this type of therapy, which assumes that depression is caused by one's own negative thoughts. It attempts to restructure those negative thoughts to influence mood.
ANSWER: **cognitive-behavioral** therapy [or **CBT**]

The Round is Now Over

21. Answer the following about lab safety, for 10 points each:
[10] When carrying out this process to an acid, make sure you add the acid to the water, not the water to the acid. This term refers to adding water to decrease a solution's concentration.
ANSWER: **dilution** [or **dilut**ing; or other word forms]
[10] Reactions that produce noxious fumes should be carried out in one of these contained, ventilated areas.
ANSWER: fume **hood**s
[10] General information about laboratory safety, as well as information about compounds like boiling points and densities, can be found one of these documents. They have 16 sections.
ANSWER: M**SDS** [or material **safety data sheet**s; or **product safety data sheet**s; or **PSDS**]