

Ladue Invitational Spring Tournament II



2012

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LADUE INVITATIONAL SPRING TOURNAMENT 2012

Round 1

TOSS-UPS

1. This author began his career with a novel detailing Dr. Ferguson's trip to Africa, whose focus is to find the source of the Nile and meet with the other explorers. This author also wrote a work in which the protagonist reads a note by Saknussem and travels to a land of giant mushrooms and mastodons. He penned a novel which sees Aouda rescued with the help of Passepartout and (*) Phileas Fogg, while in another work, Ned Land, Conseil, and Professor Aronnax travel with Captain Nemo aboard the *Nautilus*. For ten points, name this French author of *A Journey to the Center of the Earth*, *Around the World in Eighty Days*, and *Twenty Thousand Leagues Under the Sea*.

ANSWER: Jules Gabriel Verne

<EnzeC>

2. This element was first observed by Jules Janssen during the solar eclipse of 1868. It can be used to detect small leaks in high pressure containers, but its most common application involves cooling superconducting magnets in MRI scanners. As temperature approaches absolute zero, this substance forms a Rollin film, enabling it to creep along surfaces as a (*) superfluid. It's also mixed with nitrogen and oxygen as a breathing gas for deep-sea divers, and because sound propagates faster in gases with low molecular weights, inhaling this gas can increase the pitch of one's voice. For ten points, name this noble gas, the second most abundant element in the universe, which has an atomic number of 2 and chemical symbol He.

ANSWER: helium (accept He before mention)

<KT>

3. In its early stages, this empire conquered Serbia at the Battle of Kosovo, and this empire's existence was officially ended by the Treaty of Lausanne. Later, it would undergo the Tulip Period and the Tanzimat reforms. It won at the Battle of Mohacs but was later defeated by the Holy League at (*) Lepanto, and by Jan Sobieski at Vienna. Skanderbeg and Alexander Ypsilantis both led rebellions against this empire, which modernized its army in the "Auspicious Incident." Leaders of this empire include ones nicknamed "the Thunderbolt," "the Grim," and "the Magnificent." For ten points, name this "sick man of Europe," once ruled by Suleiman, that conquered Constantinople in 1453 and was succeeded by modern-day Turkey.

ANSWER: Ottoman Empire

<JD>

4. Dropping perpendiculars in this geometric figure leads to Viviani's Theorem, and Morley's Theorem constructs one of these figures. A theorem discovered by Napoleon Bonaparte states that the centers of some of these shapes form another one, and the incenter and centroid are the same only in this figure. The area of one of these (*) polygons is equal to side-length squared times the square root of three divided by four. A median of this figure divides it into two 30-60-90 triangles, because it is a regular polygon which has all 60-degree angles. For ten points, what is this kind of triangle that has three equal sides and angles?

ANSWER: equilateral or equiangular triangles (prompt on isosceles triangles)

<MS>

5. This man created a three-movement piano sonata while studying under Rubin Goldmark, and later wrote the film scores to *Of Mice and Men* and *Our Town*. This composer of a *Short Symphony* wrote a piece which incorporates folk songs like "Camptown Races" as well as the title figure's (*) speeches and letters, while another of his works for percussion and brass was intended to foster patriotism during World War II and is now often played at presidential inaugurations. This man also composed a ballet score commissioned by Martha Graham that depicts a celebration of Pennsylvanian pioneers. For ten points, name this American composer of *A Lincoln Portrait*, *Appalachian Spring*, and *Fanfare for the Common Man*.

ANSWER: Aaron Copland

<HX>

6. In one of this author's works, he describes his experiences in the POUM during the Spanish Civil War, and in another, wrote about the Brooker family, coal miners, and the problems with English socialism. This author of *Homage to Catalonia* and *The Road to Wigan Pier*, wrote an essay recounting how, as a (*) Burmese police officer, he was forced to shoot an elephant. This author wrote a novel in which a character will "work harder" but is taken to a glue factory instead of a veterinarian. That work sees Napoleon act more human after Snowball is chased away, and in another of his works, O'Brien betrays Julia and Winston Smith to Big Brother's totalitarian regime. For ten points, name this author of *Animal Farm* and *1984*.

ANSWER: George Orwell (accept Eric Blair)

<JD>

7. Treks up this mountain begin at Moschi and proceed up the Barranco Wall and past the Garden of Senecios. The Rebmann and Furtwangler Glaciers are located at the top of this mountain. This mountain was named "Kaiser Wilhelm peak" in 1889 by the first person to ascend it, Hans Meyer. The Reusch Crater is found within Kibo, which, along with Mawenzi and Shira, is one of the three cones that make up this mountain. Not far to west lies Mount Meru, while Mount (*) Kenya lies 200 miles to the north. Called Uhuru in Swahili, this is, for ten points, what stratovolcano located in Tanzania, the tallest mountain in Africa?

ANSWER: Mount Kilimanjaro

<JD>

8. Henry Thoreau claimed that this man knew "no more of grammar than one of your calves," and asks "When were the good and brave ever in a majority?" This man fought Henry Pate in the Battle of Black Jack at Palmyra, and he also lost to John Reid at Osawatomic. A Free State company under this man's command received news of the sack of (*) Lawrence two days before they killed five settlers in the Pottawatomie Massacre. This man is best known for his defeat by Robert E. Lee's marines during a 1859 raid on a West Virginian armory. For 10 points, name this radical abolitionist who led an unsuccessful raid on Harpers Ferry.

ANSWER: John Brown

<HX>

9. In order to retrieve the Syamantaka Gem, this figure wrestled the bear Jambavan. This figure also slew the evil Narakasura with his discus, the Sudarshana Chakra. He lifted Mount Govardhana on his pinky finger for 7 days and 7 nights to shelter the people of Vrindavan from Indra's wrath. This god danced on the head of (*) Kaliya to make it leave a lake which had been poisoned by its venom. His brother, Balarama, is the son of Rohini and an incarnation of the divine snake, Shesha. After giving Duryodhana his army, this figure fought on the side of the Pandavas in the Kurukshetra War, where he served as Arjuna's charioteer. For ten points, identify this blue-skinned eighth avatar of Vishnu who is found in the Mahabharata and the Bhagavad-Gita.

ANSWER: Krishna

<MukS>

10. One constant associated with the "skin" form of this phenomenon is calculated using the local wall shear stress, fluid density, and free-stream velocity, while the "stick-slip" model of this phenomenon is velocity-dependent. This phenomenon is governed by Amontons' laws, and the (*) triboelectric effect describes how electric charge is transferred as a result of this force. Coulomb developed laws regarding its "dry" form, and this force does no work on a rolling object. In fluids, this force is called drag, and it generally converts energy into heat. This force exists in static and kinetic varieties, and can be calculated by multiplying mu ("mew") times the normal force. For ten points, name this force that opposes motion.

ANSWER: friction

<HX>

HALFTIME

11. This ruler established the Palatine School and the system of *missi dominici* to oversee his lands. He hired Alcuin of York to educate his people, and he defeated Desiderius and the Lombards at Pavia, a feat which was chronicled by his biographer Einhard. His rearguard was defeated by the Basques at the Battle of (*) Roncevaux Pass, and he split his territory amongst his three grandsons in the Treaty of Verdun. Ruling from Aachen, this man was the grandson of Charles Martel, and Pope Leo III crowned him in the Christmas Day Mass. For ten points, name this Frankish king, son of Pepin the Short, who became the Holy Roman Emperor in 800 CE.

ANSWER: Charlemagne (Accept Charles I, Charles the Great, Karl de Grosse, Carolus Magnus, or Charles le Grand; prompt on Charles)

<KT>

12. This figure convinced Ar-Pharazon to attack Aman, but the attack failed and his body was destroyed. He changed his name from Mairon upon leaving Valinor. He was called Gorthaur the Cruel when he served as Morgoth's lieutenant during the War of Wrath, and he later established a stronghold at Dol Goldur. He was opposed by Elendil and Isildur in the Siege of Barad-dur, and his defeat by the Last Alliance marked the end of the Second Age. His army bears the symbol of his (*) eye, and his servants include the Nazgul. This figure's army was defeated at the Pelennor Fields by the forces of Gondor and Rohan, and he resides in Mordor. For ten points, identify this master of the One Ring, the chief antagonist of the Lord of the Rings series.

ANSWER: Sauron (accept Mairon before mentioned)

<JD>

13. Irregularly shaped compartments of this organelle which change in response to cellular metabolic activity are called paraspeckles, and promyelocytic leukemia bodies are often found in this organelle. The biogenesis of snRNPs ["snurps"] is thought to be regulated by this organelle's (*) Cajal bodies, and it can be visualized through Hoechst and DAPI staining. Movement in and out of these organelles is regulated by RAN proteins at its namesake pores, and this organelle is not found in erythrocytes. This organelle is surrounded by a namesake "envelope" which is continuous with rough ER, and it is the site of transcription. For ten points, name this organelle only found in eukaryotes which contains the nucleolus as well as the genetic material of the cell.

ANSWER: nucleus

<HX>

14. This philosopher noted that no one who jumps out of a burning building is accused of committing suicide in a version of his most famous work, and included descriptions of the sights of Paris in his semi-autobiographical *Reveries of a Solitary Walker*. This man contrasted amour de soi with amour propre in a work which also compares people who are born stronger with people who fence in plots of land. This author of *Discourse on Inequality* described how he would raise and educate the imaginary title savage in his treatise on (*) education titled *Emile*, and also popularized the concept of the general will. For ten points, which Swiss-French philosopher observed that "man was born free, and he is everywhere in chains" in *On the Social Contract*?

ANSWER: Jean-Jacques Rousseau

<HX>

15. In one part of this work, a fisherman is allowed to select the manner of his death after opening a jar with the seal of Solomon on it, and in another part, Morgiana stitches back together the body of Cassim. In another story from this work, a mariner finds an island of rocs on one of his (*) seven voyages. The frame narrative for this collection revolves around Shahryar's marriage to his vizier's wife Scheherazade, which will end with her execution when she stops telling stories. For ten points, what is this collection of Arabic folk tales, including "Ali Baba and the Forty Thieves" and "Sinbad the Sailor?"

ANSWER: One Thousand and One Nights (or Arabian Nights or One Thousand and One Arabian Nights)

<MS>

16. This man easily won an election against Gregory Jolivet after defeating incumbent Buz Lukens in a 1990 primary, and this politician is the only currently-serving member of the Congressional “Gang of Seven.” In 2006, this man defeated John Shadegg and Roy Blunt to fill Tom DeLay’s vacated position of (*) Majority leader, a position now held by Eric Cantor, and this Representative from Ohio is notorious for his tendency to cry sometimes while giving a speech. For ten points, identify this Republican, who, in 2011, took over for Nancy Pelosi as the Speaker of the House.

ANSWER: John Andrew Boehner

<MS>

17. A straw hat sits atop a young woman’s head in this man’s sculpture of his future wife *Rose Beuret*, while another realistic work depicts a *Man With a Broken Nose*. This artist depicted three identical men in his unfinished *The Three Shades*, while he was accused of casting from a live model for his realistic statue of nude man with one hand on his head. In addition to sculpting *The (*) Age of Bronze* and six men with nooses around their necks in *The Burghers of Calais*, this man included a depiction of Francesca and Paolo kissing in *The Gates of Hell*. For ten points, name this artist who sculpted a man with his head on his fist in *The Thinker*.

ANSWER: Auguste Rodin

<KT>

18. This man killed Eurytus’s son Iphitus and was punished by being enslaved to Omphale. On his journey into the Underworld, this figure saved Theseus from the Chair of Forgetfulness, and he defeated Thanatos to bring Alcestis back from death. According to one myth, Iolaus was given this man’s wife after he killed his sons, while in others, he murdered (*) Megara in that same fit of madness. This man was himself killed after wearing a shirt stained with the blood of Nessus. He required the help of his nephew to accomplish a task that was assigned by this man’s rival Eurystheus and involved killing a seven-headed creature from Lerna. For ten points, name this Greek hero who killed the Nemean Lion and the Hydra as part of his Twelve Labors.

ANSWER: Herakles (accept Hercules)

<BZ>

19. This man noted that the Platonic solids could be uniquely inscribed in a sphere, and nested them in his model of the Solar System. This man’s *Mysterium Cosmographicum* was the first published defense of the heliocentric system. One (*) law formulated by this man relates the square of an object’s orbital period to the cube of its semimajor axis, and he also hypothesized that the sun was one focus of an ellipse. The second of his namesake laws states that planets orbiting the sun sweep out the same area in the same amount of time due to the conservation of angular momentum. For ten points, name this German astronomer and assistant to Tycho Brahe who formulated three laws of planetary motion.

ANSWER: Johannes Kepler

<HX>

20. One figure with this title was appointed to enforce the Yassa law code, while another was instrumental in the massacres at Merv and Nisapur. Besides Chagatai and Tolui, one man with this title established his capital of Sarai on the Volga River, and another defeated the Mamluks at Ayn Jalut and drove the Abbasids from Baghdad. One of these figures destroyed the (*) Khwarezmian cities of Urgench and Samarkand and established his capital at Karakorum. The most famous person with this title defeated the Song dynasty and was visited in his court at Dadu by Marco Polo. For ten points, name this title given to Mongolian rulers such as Hulegu, Genghis, and Kublai.

ANSWER: khan (accept specific names that include the word “khan,” such as Chagatai Khan)

<JD>

End of regulation, only proceed if tied

21. After this novel’s protagonist returns from a horse race with the Meyerses, he comforts his love interest who claims that “rain is very hard on loving.” In one scene, the protagonist of this work jumps into a river to escape interrogation by the battle police while another sees the protagonist’s convalescence leave revoked after Miss Van Campen confiscates his alcohol. After arriving at a (*) hospital in Milan, the protagonist has his knee operated on by Dr. Valentini and is able to pursue a relationship with nurse Catherine Barkley, who later dies after giving birth to a stillborn child. For ten points, name this novel detailing Lieutenant Frederic Henry’s life during WWI as an ambulance driver, a work by Ernest Hemingway.

ANSWER: A Farewell to Arms (accept Lieutenant Frederic Henry before “novel”)

<EnzeC>

22. The curl of the field of this quantity for a fluid is the vorticity. One type of this quantity is equal in magnitude to the square root of quantity 2 times big G times M divided by r , and is the value needed to escape an object's gravitational pull. The (*) terminal variety of it is reached when the drag force is equal to the gravitational force, so an object experiences no acceleration. Its second derivative with respect to time is jerk, and it is the time-derivative of position. For ten points, identify this vector quantity from physics, consisting of an object's speed and direction.

ANSWER: linear velocity (do not accept or prompt on "angular velocity")

<MS>

BONUSES

1. Bonus: Its inner wall is covered with wrinkles called plicae circulares. For ten points each:

[10] Name this organ where most of the absorption occurs during digestion. Its three main sections are the duodenum, jejunum, and ileum.

ANSWER: **small intestine** (prompt on just “intestine,” but do not accept or prompt on “large intestine”)

[10] Food from this digestive organ is passed into the small intestine. Its parietal cells produce hydrochloric acid, which is essential to the activation of pepsin.

ANSWER: **stomach**

[10] The pyloric one of these muscles regulates the passage of chyme into the duodenum. The lower esophageal one prevents stomach acid from flowing into the esophagus, while the ileocecal one joins the small and large intestines.

ANSWER: **sphincters**

<HX>

2. Bonus: This novel’s protagonist travels to the title locale to visit his cousin Joachim Ziemssen. For ten points each:

[10] Identify this novel in which Hans Castorp spends seven years at a Swiss sanatorium owned by Hofrat Behrens.

ANSWER: *The **Magic Mountain*** (or *Der **Zauberberg***)

[10] *The Magic Mountain* is a work by this author of *Doktor Faustus* and *Felix Krull*, who wrote of the title mercantile family in *Buddenbrooks*.

ANSWER: Thomas **Mann**

[10] Mann also wrote this novella, in which Gustav von Aschenbach loves the Polish boy Tadzio but winds up a victim to a cholera epidemic in the title city.

ANSWER: ***Death in Venice*** (or *Der **Tod in Venedig***)

<MS>

3. Bonus: Many fans of him are said to be infected with a namesake type of fever. For ten points each:

[10] Name this Canadian pop singer with an expensive haircut who received tremendous success from his first full-studio work, *My World 2.0*.

ANSWER: Justin Drew **Bieber**

[10] In March 2011, Justin Bieber admitted to having a relationship with this female actress, with whom he went on a romantic vacation in Hawaii.

ANSWER: Selena Marie **Gomez**

[10] In 2011, this woman claimed that Bieber had fathered her child, even though the paternity test results came back negative.

ANSWER: Mariah **Yeater**

<KT>

4. Bonus: This man’s government faked the existence of the Cohen Plan, an alleged Communist coup. For ten points each:

[10] Name this populist South American dictator, called “The Father of the Poor.” He established the *Estado Novo* and his government’s capital was at Rio de Janeiro.

ANSWER: Getúlio Dornelles **Vargas**

[10] In 1930, Vargas led a revolution in this country once ruled by Dom Pedro II, serving as its leader for the next 15 years. Its current president is Dilma Rousseff, and its largest city is Sao Paulo.

ANSWER: Federative Republic of **Brazil**

[10] Dom Pedro II was out of the country when this practice was abolished by Brazil’s “Golden Law” in 1888. This practice had essentially begun in Brazil with the forced labor of Native Americans under the *Encomienda*.

ANSWER: **slavery** (or equivalents, do not accept “slave trade” since that ended about 30 years earlier)

<MS>

5. Bonus: Celebrations of Eid al-Adha occur following this event. For ten points each:

[10] Identify this religious pilgrimage to Mecca, one part of which requires that practitioners of a certain religion walk around the cube-shaped *Kaaba* seven times.

ANSWER: **hajj**

[10] The *hajj* is one of the five pillars of this religion, alongside *shahada*, *salat*, *zakat*, and *sawm*. Adherents of this faith believe the angel Gabriel communicated with its last prophet, Muhammad.

ANSWER: **Islam** (prompt on **Muslim**)

[10] The pillar of *zakat* requires doing this action. The Jewish version of this, *tzedakah*, typically accounts for ten percent of their income.

ANSWER: giving to **charity** (or alms-**giving**, or any equivalent answer like “giving money to the needy”)

<MS>

6. Bonus: Resistors and capacitors are used in their RC type, and they can be classified as series or parallel. For ten points each:

[10] Name these systems commonly consisting of batteries and lightbulbs connected by conductive wires.

ANSWER: **circuits**

[10] This value is greater for a circuit connected in parallel than a circuit with the same components connected in series. It can be calculated by dividing voltage by resistance according to Ohm’s Law, and is measured in amperes.

ANSWER: **current**

[10] This rule states that the sum of the currents flowing into a node is the same as the sum of the currents flowing out of that node.

ANSWER: Gustav **Kirchhoff’s Junction** Rule (or **Kirchhoff’s First** Rule, prompt on **Kirchhoff** or **Kirchhoff’s** Current Law, do not accept anything involving loop rules or voltage rules)

<HX>

7. Bonus: At the Brandenburg Gate, this man told Mikhail Gorbachev to tear down the Berlin Wall. For 10 points each:

[10] Name this president of the United States who pursued supply-side economics and was involved in the Iran-Contra Affair.

ANSWER: Ronald Wilson **Reagan**

[10] Officials in the Iran-Contra affair used money from Iranian arms sales to fund the Contras in this Central American country. This country’s Sandinista party is still a major force in its government.

ANSWER: **Nicaragua**

[10] This law banned the United States from giving aid to the Contras and was violated by numerous government officials during the Iran-Contra affair.

ANSWER: **Boland** Amendment [prompt on **Defense Appropriations Act**]

<KT>

8. Bonus: Name some things about ancient Greek sculpture, for ten points each:

[10] Perhaps the most famous Greek work of all, this Myron sculpture depicts a nude athlete tensing his muscles as he prepares to launch the title object.

ANSWER: The **Discus Thrower** or **Discobolus**

[10] This man was the first to sculpt a life-sized nude female in his *Aphrodite of Cnidus*. His other depictions of Greek gods include *Hermes and the Infant Dionysus* and *Apollo Sauroktonos*.

ANSWER: **Praxiteles**

[10] This sculptor’s *Apoxyomenos* shows an athlete scraping oil from his body. He also depicted a weary Hercules leaning against a rock in one work and a seated boxer in another.

ANSWER: **Lysippos**

<MS>

9. Bonus: This play begins after one character drops her flowers into the mud. For ten points each:

[10] Identify this comic play, in which Henry Higgins bets Colonel Pickering that he can teach Eliza Doolittle to speak like a proper lady.

ANSWER: **Pygmalion**: *A Romance in Five Acts*

[10] *Pygmalion* is a work by this Irish playwright, who wrote about Vivie discovering that her mother owns a brothel in *Mrs. Warren's Profession* and the title Salvation Army officer in *Major Barbara*.

ANSWER: George Bernard **Shaw**

[10] In this Shaw play, titled after the first line of the *Aeneid*, Raina Petkoff breaks off her engagement with Sergius so that she may marry Bluntschli, a soldier who carries chocolates in the place of ammunition.

ANSWER: **Arms and the Man**

<MS>

10. Bonus: Groups based in this region include the Justice and Equality Movement and the Liberation and Justice Movement. For ten points each:

[10] Identify this region of a certain east African country, which has been in near constant warfare since 2003 due to Janjaweed militants.

ANSWER: **Darfur**

[10] Darfur is a region in this large African country which is led by Omar al-Bashir from Khartoum.

ANSWER: Republic of **Sudan**

[10] A January 2011 referendum decided that the southern part of Sudan would split off and become a new country with its capital at this city on the White Nile.

ANSWER: **Juba**

<JD>

11. Bonus: Answer the following about the sums of the reciprocals of certain numbers, for ten points each:

[10] The sum of the reciprocals of all the positive squares is equal to this number squared over six. This number is also equal to the circumference of a circle divided by its diameter, and is approximately 3.14.

ANSWER: **pi**

[10] The “harmonic” series, the sum of the reciprocals of the positive integers has this property, where its sequence of partial sums does not tend to a finite limit. The series of reciprocals of prime numbers also has this property.

ANSWER: **divergence** (accept word forms)

[10] The unsolved Riemann Hypothesis deals with zeroes of this function, equal to the infinite sum of the reciprocals of all the integers taken to a complex power. It is named after a greek letter.

ANSWER: Riemann **zeta** function

<MS>

12. Bonus: The Leoncio Prado Military Academy is the setting of his *The Time of the Hero*. For ten points each:

[10] Identify this Peruvian author of *The War of the End of the World*, *Conversation in the Cathedral*, and *Aunt Julia and the Scriptwriter*. He also won the 2010 Nobel Prize in Literature.

ANSWER: Jorge Mario Pedro **Vargas Llosa**

[10] This other author of the “Latin American Boom” hails from Colombia and wrote works like *Love in the Time of Cholera* and *One Hundred Years of Solitude*.

ANSWER: Gabriel José de la Concordia **García Márquez** (do not accept or prompt on just one last name)

[10] Gabriel Garcia Marquez also wrote this novel, in which the Vicario twins murder Santiago Nasar, despite the fact that he probably didn't take Angela's virginity.

ANSWER: **Chronicle of a Death Foretold** (or **Crónica de una muerte anunciada**)

<MS>

13. Bonus: The first one of these entities was built by Djoser, but more famous ones can be found at Giza. For 10 points each:
[10] Name these structures often built as tombs for Pharaohs, such as ones for Khafre and Menkaure. The Great Sphinx is located in front of several of them.

ANSWER: Egyptian **pyramids**

[10] Pyramids are composed of several of these structures stacked on top of each other. These relatively low structures were the tombs for Old Kingdom nobility, and preceded the pyramids.

ANSWER: **mastabas**

[10] These other pyramidal structures were built in Mesopotamia and had between two to seven tiers. One of the best-preserved of these structures is Choqa Zanbil, and others include the White Temple of Uruk and Etemenankia.

ANSWER: **ziggurats**

<HX>

14. Bonus: One of their stories concerns the fall of the impostor Seven Macaw. For ten points each:

[10] Name these Mesoamerican peoples whose mythology is recorded in the *Popul Vuh* and who abandoned their cities in 900 AD.

ANSWER: **Mayans** [accept **Mayan** Civilization]

[10] This underworld of Mayan mythology was the home of several rivers of blood and the guide Ixtab. Hunahpu and Xbalanque defeated the rulers of this place, One Death and Seven Death, at a ball game.

ANSWER: **Xibalba** (shee-ball-bah)

[10] Hunahpu and Xbalanque have this kind of relationship. Other mythological figures with this relationship include Castor and Pollux and Romulus and Remus.

ANSWER: **twins** [prompt on “brothers”, accept any kind of twins like “fraternal” or “identical”]

<BZ>

15. Bonus: Cirrus ones are made of ice crystals, while cumulus ones look like cotton balls. For ten points each:

[10] Name these features that form in the sky after condensation. Cumulonimbus ones are associated with thunderstorms.

ANSWER: **clouds**

[10] Clouds form when water vapor is cooled past this temperature. A relative humidity of 100% indicates that the current temperature is equal to this temperature.

ANSWER: **dew point**

[10] Clouds generally form in this lowest layer of Earth’s atmosphere. It makes up roughly 80% of the atmosphere’s mass, and is also the site of most weather phenomena.

ANSWER: **troposphere**

<HX>

16. Bonus: Name some US national parks, for ten points each:

[10] This most visited national park lies in its namesake range of the Blue Ridge Mountains on the border between North Carolina and Tennessee.

ANSWER: Great **Smoky Mountains** National Park

[10] This national park in California is home to the world’s tallest tree, General Sherman, as well as Moro Rock and most of Mount Whitney.

ANSWER: **Sequoia** National Park

[10] This national park in Utah lies along the Paunsaugunt Plateau and features many of its distinctive *hoodoos*, tall spires of rock that are formed from erosion.

ANSWER: **Bryce Canyon** National Park

<JD>

17. Bonus: This problem was given its current name by Albert Tucker. For ten points each:

[10] Identify this non-zero sum problem, in which two criminals are given the option to either stay silent, confess, or betray the other person.

ANSWER: **prisoner's dilemma**

[10] The prisoner's dilemma contains one of these situations in which no players can benefit themselves any further by changing their course of action. In the prisoner's dilemma, this is reached when both criminals betray each other.

ANSWER: **Nash equilibrium** (or **Nash equilibria**)

[10] The prisoner's dilemma is the most well-known problem in this field, which analyzes the results of contests between rational players. Famous mathematicians involved in this field include John von Neumann and John Nash.

ANSWER: **game theory**

<MS>

18. Bonus: The narrator claims that "The woods are lovely, dark and deep / But I have promises to keep." For ten points each:

[10] Identify this poem in which a "little horse must think it queer" to do the title action. It begins "Whose woods these are I think I know. / His house is in the village though."

ANSWER: **"Stopping By Woods on a Snowy Evening"**

[10] This poet of "Stopping by Woods on a Snowy Evening" wrote "I took the one less traveled by" in "The Road Not Taken" and that "good fences make good neighbors" in "Mending Wall."

ANSWER: Robert Lee **Frost**

[10] This Frost poem discusses the two title ways in which the world can end; "from what [he's] tasted of desire," he prefers the first option, but the second option would suffice if he "had to perish twice."

ANSWER: **"Fire and Ice"**

<MS>

19. Bonus: Its librettist, Emmanuel Schikanader, played the role of the bird catcher Papageno at its premiere in Vienna. For ten points each:

[10] Name this opera in which Tamino uses the title instrument to rescue Pamina, the daughter of the Queen of the Night.

ANSWER: *The **Magic Flute*** (accept *Die **Zauberflöte***; prompt on **K. 620**)

[10] Ludwig von Köchel [KERR - kul] catalogued the works of this Austrian composer of *The Magic Flute*, whose Symphony No. 41 is nicknamed "Jupiter." His other works include *Don Giovanni* and *Eine Kleine Nachtmusik*.

ANSWER: Wolfgang Amadeus **Mozart**

[10] This other Mozart opera sees Ferrando and Guglielmo disguise themselves as Albanians and seduce each others' wives on a bet with Don Alfonso.

ANSWER: **Così fan tutte**, ossia *La scuola degli amanti* (accept **Thus Do They All**, or *The School For Lovers*; prompt on **K. 588**)

<HX>

20. Bonus: Answer some questions about the early stages of World War II, for ten points each:

[10] Germany was able to overrun most of Europe using this war strategy that concentrated overwhelming force at high speed to break enemy defenses. It roughly translates to "lightning war."

ANSWER: **Blitzkrieg**

[10] Blitzkrieg was most famously used against this eastern neighbor of Germany, which it invaded on September 1st, 1939 to begin World War II.

ANSWER: Republic of **Poland** (or **Polska**)

[10] After the German *Wehrmacht* swept through France in May of 1940, Allied forces retreated to the beaches of this city on the English Channel, from which 330,000 Allied troops were evacuated to Britain.

ANSWER: Battle of **Dunkirk** (accept Miracle of **Dunkirk**)

<LC>

21. Bonus: These substances are proton donors by the Brønsted-Lowry definition. For ten points each:

[10] Name these corrosive substances with pH less than 7, often contrasted with bases.

ANSWER: acids

[10] This Swedish chemist formulated another definition of acids, which says they dissociate in aqueous solution to produce hydrogen ions.

ANSWER: Svante Arrhenius

[10] These types of acids have multiple dissociation constants, resulting in multiple equivalence points on a titration curve.

ANSWER: polyprotic acids

<EnzeC>

22. Bonus: The protagonist states, "If you meet the Buddha in the road, kill him." For ten points each:

[10] Name this work in which Mizoguchi meets Kashiwaga at Otani University, is shocked at Tsurukawa's death, and burns the title structure down.

ANSWER: *The Temple of the Golden Pavilion* (accept Kinkaku-ji)

[10] *The Temple of the Golden Pavilion* was written by this Japanese author, who famously committed seppuku after a failed coup. He also wrote *Confessions of a Mask* and *Acts of Worship*.

ANSWER: Yukio Mishima (or Kimitake Hiraoka; accept either name in any order for both)

[10] Mishima wrote *The Sailor who Fell from Grace Into* this body of water, and *The [this] of Fertility*, a series of four novels, including *Spring Snow* and *Runaway Horses*.

ANSWER: Sea

<KT>