

**LADUE INVITATIONAL
SPRING TOURNAMENT 2011**

Round 12

TOSS-UPS

1. One of this man's poems advises "Do not weep maiden, for war is kind", and he wrote a short story in which none of the characters knew the color of the sky and which sees the death of Billie Higgins, the oiler. In addition to *The Open Boat*, one of his novels set in The Bowery opens with Jimmie getting into a fight, and ends with the (*) drunken Mary forgiving her dead daughter. Another of this man's novels sees the death of Jim Conklin and Henry Fleming's disgraceful flight from the battlefield. For ten points, name this American author of *Maggie: A Girl of the Streets* and *The Red Badge of Courage*.

ANSWER: Stephen Crane

<MS>

2. Followers of this religion view the year in three epochs, each with rulers that reside in the North Star, and a central principle of this religion maintains that the harmony of the universe is disrupted when someone exerts their will against the world. The basic virtues or (*) "Three Jewels" of this religion are compassion, moderation, and humility, and this religion defines pu as a state where there is no right or wrong, which is the goal of following wu wei. Yu-Huang, better known as the Jade Emperor, is the supreme god of, for ten points, what Asian religion that emphasizes the "path" or the "way", whose foundational scripture was written by Laozi?

ANSWER: Daoism or Taoism

<HX>

3. This quantity is equal to the principal quantum number times Planck's constant over 2 times pi and the coupling of this quantity is used to correct for orbital resonance. The Kerr metric describes black holes for which this quantity is nonzero, and for a particle in circular orbit, the magnitude of this quantity is equal to (*) mvr. This property explains how a gyroscope can remain upright while spinning, and the time derivative of this quantity is torque. For ten points, name this vector quantity, denoted L, the product of moment of inertia and angular velocity, the rotational analogue of a quantity equal to mass times velocity.

ANSWER: Angular momentum

<HX>

4. One side in this battle had previously landed their soldiers at Pevensey, and the losing side of this battle utilized a "shield defense" of Housecarls, but their fyrdmen were cut down in the open after a counter-attack. That side had recently lost some of their forces at (*) Stamford Bridge to an army led by Tostig Godwinson and Harald Hardrada. Ending soon after King Harold took an arrow through the eye, this is, for ten points, what 1066 battle depicted in the Bayeux tapestry, a big win for William the Conqueror, resulting in him being crowned king of England?

ANSWER: Battle of Hastings or Senlac Hill

<KT>

5. Robert Axelrod wrote about this thought experiment in his *The Evolution of Cooperation*, and noted that the best strategies in this situation were those that were “nice”, “forgiving”, “retaliating”, “non-envious.” It was originally posed by Merrill Flood and Melvin Dresher, and the best response to the (*) iterated version of this problem is the “tit-for-tat” solution. Contrasting the value of altruistic versus selfish actions, this is, for ten points, what thought experiment, in which two suspects are each offered a chance to confess to lighten their jail sentence?

ANSWER: **Prisoner**’s Dilemma (accept equivalents)

<MS>

6. One type of this process uses nocturnally activated stomata, common in cacti, and is called crassulacean acid metabolism. Compounds involved in this process include xanthophylls and carotenes, and both niacin and (*) NADPH can be synthesized during this process, which generally takes place in the mesophyll. For ten points, name this biologic process in which carbon dioxide and water are combined to form oxygen and glucose, made possible by chloroplasts in the cells of plants.

ANSWER: **Photosynthesis** (prompt on light reactions or Calvin cycle)

<HX>

7. This function applied to 2 is equal to 1 minus one-half plus one-third minus one-fourth and so on. This function satisfies the equality $f(xy)=f(x)+f(y)$ (“f of x times y equals f of x plus f of y”) and its integral is equal to x times itself minus x. Its derivative is the (*) reciprocal function, 1 over x, and this function’s inverse is the exponential function. Equal to the power to which 2.718 must be raised to equal a number, for ten points, what is this logarithm with base e?

ANSWER: **Natural logarithm** (prompt on Logarithm, accept ln(x))

<MS>

8. This term originated from John Bunyan's book *Pilgrim's Progress* and was used in a 1906 speech delivered by Theodore Roosevelt. Julius Chambers was one of the first ones of these, as his investigation of Bloomingdale Asylum led to the reformation of the institution. Famous examples found during the (*) Progressive Era include Ida Tarbell, who revealed the corruption of monopolies in Standard Oil and Upton Sinclair, whose book *The Jungle* led to the establishment of the Pure Food and Drug Act. For ten points, give this collective term used to describe investigative journalists who report about issues such as crime, fraud, public health, and safety found within America.

Answer: **Muckrakers**

<EnzeC>

9. This author wrote about his marathon experiences in his *What I Talk About When I Talk About Running*. The narrator assists The Librarian in reading dreams from the skulls of unicorns in the even-numbered chapters, and a Calcutec narrates the odd-numbered chapters in this man's *Hard-Boiled Wonderland and The End of the World*. The author of books about (*) Toru Okuda's cat and the friendship between the son of sculptor Koichi Tamura and cat-finder Nakata, this is, for ten points, what Japanese author of *The Wind-Up Bird Chronicle* and *Kafka on the Shore*?

ANSWER: Haruki Murakami (accept either and in either order)

<MS>

10. One work by this man argues that wax is wax even if it changes in color or shape because it is perceived "by the intellect alone", while another suggests a form of duality in which the mind controls the body, but the body also influences the mind. Another work by this author of (*) *Meditations on First Philosophy* attempts to create a fundamental set of principles using a method called metaphysical doubt, which led to his conclusion that thought exists. For ten points, name this philosopher who stated "cogito ergo sum" in his *Discourse on Method*.

ANSWER: René Descartes

<HX>

HALFTIME

11. The Borealis basin covers 40% of this locale, and the geologic history of this astronomical body is split into three primary epochs, the Noachian, Hesperian, and Amazonian. It is home to the Valles Marineris, a large canyon, and is the home of the (*) tallest known mountain in the Solar System. This body's soil was sampled in 2008 by the *Phoenix* lander, and in 2007, compounds containing water molecules were found on this planet by the rover *Spirit*. For ten points, name this celestial body and site of Olympus Mons, the fourth planet from the sun.

ANSWER: Mars

<HX>

12. This work sees a girl confess to her nurse, Giovanna, of her love for another character, whom she saw in a church. That character is overheard singing *Questa o quella* and also wishes to seduce the Countess of Ceprano. That character also tells the title character's daughter that his name is Gualtier Maldè, and tries to seduce (*) Maddalena, the sister of an assassin. Based on Hugo's *Le roi s'amuse*, Sparafucile mistakenly kills Gilda instead of the Duke of Mantua in, for ten points, what Verdi opera about a hunchbacked court jester?

ANSWER: Rigoletto

<HX>

13. This organization was reformed by a 2009 treaty, which merged its three pillars into a consolidated legal personality and established its first president, and its newest member, Estonia, entered this organization in January of this year. It was established mainly by the Treaty of Maastricht, which was amended by the aforementioned Treaty of (*) Lisbon, and Turkey has not yet been allowed to join this international body. One part of this organization is headed by Herman Van Rompuy, and a recent two-day summit was held by this organization in Brussels to deal with financial issues in Portugal. For ten points, name this organization, binding together 27 states located on the namesake continent.

ANSWER: European Union

<HX>

14. The second one of these events was crushed by Lusius Quietus and called the Kitos War, and the third of these resulted in the banning of a certain religious group from their holy city, except on Tisha B'Av, when they were allowed to return to mourn the destruction of both of their temples. The first of these events ended when all of the defenders committed suicide instead of being captured at (*) Masada. For ten points, what are these events, where members of a certain religious group rose up against the Romans, examples of which include one led by Bar Kokhba and one that ended with the destruction of Jerusalem?

ANSWER: Jewish Revolts (accept equivalents)

<MS>

15. At the beginning of this novel, William Dane falsely accuses the title character of theft, causing him to flee Lantern Yard. The title character's daughter eventually marries Aaron Winthrop, but not before (*) Godfrey Cass and Nancy Lammeter attempt to adopt her. This book sees Dunstan steal gold from the protagonist's house in Raveloe and Molly Farren give birth to Eppie. For ten points, name this novel about the title weaver, a work of George Eliot.

Answer: Silas Marner

<AZ>

16. This dynasty set its capital at Mukden, and followed a dynasty that ended when the Emperor Chongzhen committed suicide. The Maitreya Buddha was stolen during the reign of this dynasty, which was overthrown in the Xinhai Revolution, and this dynasty also saw a rebellion lead by a self-proclaimed younger brother of (*) Jesus, Hong Xiuquan, who established the Heavenly Kingdom of Great Peace in Nanjing. The White Lotus and Taiping Rebellions took place in, for ten points, what Chinese dynasty that followed the Ming, also called the Manchu Dynasty?

ANSWER: Qing Dynasty (accept Manchu Dynasty before mention)

<HX>

17. This film was paired with the short film *Presto* and won the 2008 Golden Globe Award for Best Animated Feature Film. The protagonist gets his plant taken from him and is sent off to space, clinging to the starliner *Axiom* after falling in love with an (*) Extraterrestrial Vegetation Evaluator. Aboard the spacecraft, it is revealed that after 700 years of living in space, humans have to rely on automated machines and have become extremely obese. For ten points, name this Disney-Pixar film set in the future, featuring the cute little title robot cleaning up the garbage left on Earth by humans.

Answer: **WALL•E**

<EnzeC>

18. The Clausius-Clapeyron equation states that the change in this quantity over the change in volume is equal to the derivative of vapor pressure with respect to temperature, and for an isothermal process, the change in this quantity is equal to nR times the natural log of the ratio of the volumes. The Helmholtz energy is equal to the (*) internal energy minus temperature times this quantity, while for a perfect crystal, this quantity is equal to 0. It always increases or stays constant by the second law of thermodynamics, and reactions are spontaneous when they have positive changes in, for ten points, what quantity, symbolized S , the measure of disorder in a system?

ANSWER: **Entropy**

<HX>

19. A red barn can be seen in the upper right of this work, which also depicts the Dibble house in the background. One figure in this work is seen looking to the right of the other; that figure is based off of the artist's sister, Nan, and is dressed in a colonial print apron, while the stitching in the other figure's (*) overalls reflects the pattern of the attic window of a house behind him, as well as the prongs of the hay fork he is holding. Byron McKeeby, the artist's dentist, modeled as the farmer in, for ten points, what classic of American Regionalism, painted by Grant Wood?

ANSWER: **American Gothic**

<HX>

20. One character in this work seduces Felton, her Puritan jailer, inciting him to assassinate the prime minister, and that same character steals some diamond studs. The protagonist of this work hires the servant Planchet and falls in love with a servant of Anne of Austria, (*) Constance Bonacieux. A man in a red cloak reveals the nature of one character's crimes and why she bears the fleur-de-lis, Milady de Winter. For ten points, name this novel by Alexandre Dumas, about D'Artagnan and his friends Athos, Porthos, and Aramis, who live by the motto "All for one and one for all."

ANSWER: **The Three Musketeers**

<CC>

BONUSES

1. Bonus: It ends with the title characters' bones turning to dust. For ten points each:

[10] Name this work, in which Quasimodo, the title bell-ringer, dies of starvation while embracing the recently hanged Esmerelda.

ANSWER: **The Hunchback of Notre-Dame** or **Notre-Dame de Paris**

[10] *The Hunchback of Notre-Dame* is a work by this French author, who wrote of Jean Valjean's struggles with Inspector Javert in *Les Misérables*.

ANSWER: Victor-Marie **Hugo**

[10] This Archdeacon in *The Hunchback of Notre-Dame* is pushed to his death by his adopted son Quasimodo after betraying Esmerelda.

ANSWER: **Claude Frollo** (accept either)

<MS>

2. Bonus: For ten points each, name these organelles in a cell:

[10] This organelle is a mandatory component of a eukaryotic cell that controls all cellular activities and regulates gene expression.

ANSWER: **Nucleus**

[10] This organelle is found in only autotrophic cells; it contains components such as the stroma and granules.

ANSWER: **Chloroplast**

[10] This organelle buds off from the Endoplasmic Reticulum and breaks down excess fatty acids and purines. A defection in it may cause Zellweger syndrome.

ANSWER: **Peroxisome**

<KT>

3. Bonus: He was famous for attempting to use armed insurrection in order to abolish slavery. For ten points each:

[10] Name this abolitionist who gained attention for leading groups of volunteers during the Bleeding Kansas crisis. He was later executed after his raid on the Harper's Ferry Arsenal.

ANSWER: John **Brown**

[10] As a response to the Sack of Lawrence, John Brown led this event, in which he and other abolitionists killed five pro-slavery settlers in Franklin County, Kansas.

ANSWER: **Pottawatomie** Creek Massacre

[10] In late 1856, leaders in Kansas wrote this pro-slavery constitution but refused to let people vote on it fairly, sparking outrage across the country.

ANSWER: **Lecompton** Constitution

<JD>

4. Bonus: Answer these questions about wives in Greek mythology, for ten points each:

[10] This wife of Odysseus awaited her husband for many years, all the while pretending to weave a burial shroud for her father-in-law in order to keep her suitors at bay.

ANSWER: **Penelope**

[10] This faithful wife of Admetus volunteered to die in place of her husband, and Hercules went to go beat up Death to get her back.

ANSWER: **Alcestis**

[10] This unfaithful wife of Agamemnon had an affair with his cousin and murdered him and Cassandra.

ANSWER: **Clytemnestra**

<CC>

5. Bonus: These mathematical entities provide solutions to equations like $x^2+1=0$. For ten points each,

[10] Name these types of numbers consisting of a real part and an imaginary part.

Answer: **complex** numbers

[10] This term is used to describe a pair of complex numbers with the same real part but opposite signs on their imaginary parts.

Answer: complex **conjugate**

[10] These “integers” have integral real and complex parts. There is no finite ordering of them, and they are named after the man who described them while proving quartic reciprocity.

Answer: **Gaussian** Integers

<EnzeC>

6. Bonus: They often stop working properly at the breakdown voltage. For ten points each:

[10] Name this device used to store electrical charge, the unit for whose namesake measure is the farad.

ANSWER: **Capacitor**

[10] This first capacitor stores energy in the walls of a water-filled glass, and credit for its discovery goes to Pieter van Musschenbrook.

ANSWER: **Leyden** Jar

[10] The breakdown voltage changes depending on this, the material inserted between the two plates of a capacitor.

ANSWER: **Dielectric**

<MS>

7. Bonus: For ten points each, name some German states:

[10] This is Germany's largest state and its second-most populous. Its capital is Munich and its namesake Alps lie in its south.

ANSWER: **Bavaria**

[10] This state has its capital at Potsdam and surrounds, but doesn't include, Berlin. A famous gate in Berlin is named after it.

ANSWER: **Brandenburg**

[10] This northernmost state borders Denmark to the north and has its capital at Kiel.

ANSWER: **Schleswig-Holstein**

<JD>

8. Bonus: It is subtitled *The Execution of the Defenders of Madrid*. For ten points each:

[10] Name this painting in which a group of people are shot by a firing squad early in the morning on the title day. A lamp lies in front of the soldiers and one of the captives raises his hands in the air.

ANSWER: *The **Third of May**, 1808: The Execution of the Defenders of Madrid*

[10] This painter of *The Third of May* also included *Witch's Sabbath* and *Judith and Holofernes* in his *Black Paintings*.

ANSWER: Francisco José de **Goya** y Lucientes

[10] This other famous Goya painting depicts a scene from Greek mythology, in which Cronus tries to stop his kids from overthrowing him, starting by biting off their heads.

ANSWER: **Saturn Devouring His Son**

<BZ>

9. Bonus: In this work, the White Rabbit is worried that he "shall be too late." For ten points each:

[10] Name this novel, in which the title character falls down a rabbit hole, where she meets such characters as the Cheshire Cat, the Queen of Hearts, and the Mad Hatter.

ANSWER: **Alice's Adventures in Wonderland**

[10] *Alice in Wonderland* is a work by this British novelist and mathematician, who wrote about the quest for the title beast in *The Hunting of the Snark*.

ANSWER: Lewis **Carroll** or Charles **Dodgson**

[10] Carroll also wrote this poem, in which the title beast's head is cut off with the vorpal blade. It is known for its nonsense words, and begins "'Twas brillig and the slithy toves / Did gyre and gimble in the wabe."

ANSWER: **"Jabberwocky"**

<MS>

10. Bonus: This regime was founded when its namesake seized power after the Battle of Sekigahara. For ten points each:

[10] Name this period, also known as the Edo period, which followed the Warring States Period, when Nobunaga and Hideyoshi consolidated power in Japan.

ANSWER: Tokugawa shogunate or Tokugawa bakufu

[10] The Tokugawa shogunate was abolished during this period, beginning in 1868, which saw a “restoration” of imperial rule to Japan, named after a certain teenage emperor.

ANSWER: Meiji Restoration

[10] The Meiji Restoration was prompted by a visit from this American Commodore who compelled Japan to open up its ports at the Convention of Kanagawa in 1854. His large, black ships and advanced technology showed the Japanese that they were behind the rest of the world.

ANSWER: Matthew Perry (prompt on Perry)

<HX>

11. Bonus: It was given its current name by Masaoka Shiki. For ten points each:

[10] Name this form of poetry originating in Japan, which, in English, is written in three lines and 17 syllables.

ANSWER: haiku [accept hokku, prompt on “haikai no renga”]

[10] This Japanese author is often considered the master of haiku and created works like *The Narrow Road to the Deep North*.

ANSWER: Matsuo Basho [accept either name or in either order, also accept Matsuo Kinsaku or Matsuo Chūemon Munafusa]

[10] This more modern Japanese author also wrote a lot of haikus, but is better known for his short stories, which include “In a Grove” and “Rashomon”.

ANSWER: Rynosuke Akutagawa (accept either name in either order)

<BZ>

12. Bonus: Identify the following about some recent plane problems, for ten points each:

[10] In June of 2009, Air France Flight 447 crashed into the Atlantic Ocean soon after departing from this Brazilian city.

ANSWER: Rio de Janeiro

[10] An August 2010 plane crash near Aleknagik, Alaska killed this former senator, who had lost his seat two years earlier amid a corruption scandal.

ANSWER: Ted Stevens

[10] Though fortunately no crashes occurred, a lot of plane flights had to be cancelled in Spring 2010 due to the eruption of Eyjafjallajökull (EYE-ya-fee-al-lah-YOH-kuhl), a volcano in this European island country.

ANSWER: Iceland

<MS>

13. Bonus: Name some leaders associated with the 3rd Crusade, for ten points each:

[10] This king led the English contingent of the Third Crusade, and negotiated the terms of the treaty that left Jerusalem in the hands of the Saracens.

ANSWER: **Richard I** or **Richard the Lionheart**

[10] This leader of the Saracens was the first Ayyubid Sultan of Egypt and Syria, and recaptured Palestine from the Crusader Kingdom of Jerusalem.

ANSWER: **Saladin** or **Salah ad-Din Yusuf ibn Ayyubi**

[10] This German Holy Roman Emperor attempted to lead an army of 150,000 into the Holy Land, however, he drowned when his horse slipped while crossing the Saleph River.

ANSWER: **Frederick I** or **Frederick Barbarossa**

<CC>

14. Bonus: This era saw the birth of the sinfonia and the concerto. For ten points each:

[10] Name this musical style of composers such as Vivaldi and Handel, which began after the Renaissance. Its name comes from the Portuguese word that means “misshapen pearl,” and it is characterized by terraced dynamics, as well as juxtaposed fast and slow sections.

ANSWER: **Baroque**

[10] This famous composer died in 1750, and was one of the last composers of the Baroque style. His works include *Tocatta and Fugue in D minor* as well as six *Sonatas and Partitas for solo violin*.

ANSWER: **Johann Sebastian Bach** (prompt on **Bach**)

[10] Bach was a prolific writer of this genre of musical composition, including church, sacred, and secular ones. A typical one of these compositions begins with a polyphonic opening chorus and ends with a homophonic chorale.

ANSWER: **Cantata** (also accept: Bach **cantata**)

<HX>

15. Bonus: This law was formulated 14 years too late by Edme Mariotte. For ten points each:

[10] Name this law from chemistry which states that pressure is inversely proportional to volume.

ANSWER: **Boyle's** Law

[10] Boyle's Law can be combined with Charles' Law to form this more general equation, which states that $PV=nRT$.

ANSWER: **Ideal Gas** Law

[10] This modification to the Ideal Gas Law takes into account inter-molecular forces, and is named for its Dutch formulator.

ANSWER: **Van der Waals** equation

<MS>

16. Bonus: He postulated eight stages of development, the last of which was described in his book *The Life Cycle Completed*. For ten points each:

[10] Name this psychologist and psychoanalyst who coined the phrase “identity crisis”.

ANSWER: Erik **Erikson**

[10] This other psychoanalyst described psychosexual development in *Three Essays on the Theory of Sexuality*. He also posited that the human psyche could be divided into three parts: the Id, the ego, and the super-ego.

ANSWER: Sigmund **Freud**

[10] In this 1920 essay, Freud discusses the conflict between the death instinct and the title concept, also known as the life instinct.

ANSWER: **Beyond the Pleasure Principle**

<HX>

17. Bonus: One character in *Catch-22* signs letters with this man’s name. For ten points each:

[10] Name this author, who wrote a story about Ichabod Crane, Brom Bones, and a Headless Horseman, *The Legend of Sleepy Hollow*.

ANSWER: Washington **Irving**

[10] Washington Irving also wrote this short story, where the title character falls asleep and wakes up twenty years later to meet his now-grown children.

ANSWER: **Rip Van Winkle**

[10] Supposedly written by Diedrich Knickerbocker, this collection of Irving short stories includes *The Legend of Sleepy Hollow* and *Rip Van Winkle*.

ANSWER: **The Sketch Book** of Geoffrey Crayon

<MS>

18. Bonus: Century-long losing streaks are usually heart-breaking, BUT NOT WHEN THEY HAPPEN TO THIS TEAM! For ten points each,

[10] Identify this Major League Baseball team, a long-time rival of the St. Louis Cardinals, that has a championship drought longer than any other professional sports team in North America.

Answer: Chicago **Cubs**

[10] This was the last year in which the Cubs won the World Series. Ironically, they won the World Series in the year before that as well.

Answer: **1908**

[10] In the 1908 World Series, the Chicago Cubs beat this American League team that featured Hall of Fame outfielder Ty Cobb.

Answer: Detroit **Tigers**

<EnzeC>

19. Bonus: This school of thought included thinkers like Duns Scotus and Anselm of Canterbury. For ten points each:

[10] Name this method of learning that sought to resolve contradictions and unite religion with reason.

ANSWER: **Scholasticism**

[10] This scholastic thinker believed that “only faith gives us access to theological truths”, and his namesake razor states that one should always opt for the simplest explanation.

ANSWER: William of **Ockham**

[10] This other scholastic thinker and author of *Summa Contra Gentiles* discussed the *quinque viae*, or the five reasons that prove the existence of God in his *Summa Theologica*.

ANSWER: Thomas **Aquinas**

<HX>

20. Bonus: Name some terms from epidemiology, the study of disease. For ten points each:

[10] This is the name given to the time between the exposure to the onset of symptoms. It is about two days for influenza, but may be as long as 10 years for kuru.

ANSWER: **Incubation period** or **Latency period**

[10] These agents, the counterparts of fomites, are living organisms that transmit infections from one host to another. Examples of them include mosquitoes and ticks.

ANSWER: **vector**

[10] This is a set of four criteria formulated by Friedrich Loeffler and its namesake in 1884 to establish the connection between an agent and a disease.

ANSWER: Henle-**Koch's Postulates**

<HX>