LADUE INVITATIONAL SPRING TOURNAMENT 2013

Round 7

TOSS-UPS

1. A shadowy servant clasps her hands in prayer in this artist's painting of *Judith and Holofernes*, while his portrait of the royal family depicts them with idiotic eyes. An angry mob attacks horsed men in his painting of the *Charge of the Mamelukes*, intended to go along with a painting whose Christ-like central figure raises his arms in front of a Napoleonic (*) firing squad. This artist painted a scene from Greek mythology on the wall of his house, in which a wild-eyed man holds a bloody headless body near his face. For ten points, identify this artist of *The Third of May, 1808*, whose *Black Paintings* include *Saturn Devouring His Son*.
ANSWER: Francisco **Goya**
<MS>

2. In this pathway, the enzyme triose phosphate isomerase converts di-hydroxy-acetone phosphate into glycer-aldehyde-3-phosphate. At its start, hexokinase adds a phosphate group to this pathway's reactant, and substrate-level phosphorylation leads to a net gain of 2 ATP molecules after its investment and (*) payoff phases. The products of this pathway can be converted by Coenzyme A into acetyl-CoA prior to their entry into the Krebs cycle. For ten points, name this process in which a molecule of glucose is broken down into two molecules of pyruvate.
ANSWER: **glycolysis** (prompt on "respiration" or "(an)aerobic respiration")
<BZ>

3. This man's "Lost Speech" was supposedly so good that reporters put their pencils down to listen. In another speech, this man notes that, unlike his addressees, he has sworn an oath to protect the Constitution, and that a "momentous issue" lies in their hands. In one of this man's speeches, he advocates binding up wounds "with malice towards none, with charity for all," and in another, he claims that the (*) "brave men who struggled here have consecrated" the ground on which he stood far better than he did with a speech which "the world will little note, nor long remember." For ten points, identify this President who said, "Four score and seven years ago" in his Gettysburg Address.
ANSWER: Abraham **Lincoln**
<MS>

4. The title character of one of this author's novels is engaged to Lucy Tartan and murders Glen Stanley. In one of this author's novellas, a falling tarp reveals the corpse of slavemaster Alexandro Aranda on the *San Dominick* as Babo chases (*) Benito Cereno. Nippers, Turkey, and Ginger Nut work with the title character of one of his short stories who responds to requests with "I would prefer not to." This author of "Bartleby the Scrivener" wrote a novel featuring the First Mate Starbuck and beginning "Call me Ishmael." For ten points, identify this American author who described Captain Ahab's hunt for the title whale in *Moby-Dick*.
ANSWER: Herman **Melville**
<MS>

5. Euler created a function of this type that generates primes for its first 40 inputs, and, when the inner product is the standard one, the Cauchy-Schwarz inequality in Rn states that the product of two functions of this degree is greater than or equal to a third one squared. All conic sections can be expressed as two-variable functions of this type, while a single-variable function of this type has a third derivative of (*) zero. These functions' largest root is negative *b* plus the square root of *b*-squared minus 4*ac* all over 2*a*, which can be found by completing the square. For ten points, identify these parabolic degree-two polynomials like *x*-squared minus *x* plus two.
ANSWER: **quadratic** functions/polynomials/equations (accept **degree two** or **second degree** functions before mention, prompt on **parabola**s or **polynomials**)
<MS>

6. This civilization produced pottery such as Kamares ware and others that were painted in the "marine style". This civilization's Akrotiri settlement on the island of Santorini was buried after the eruption of Thera, and one religious ritual of this civilization involved leaping over bulls. Its cities included Phaistos and Galatas, and settlements of this civilization were first discovered by British archaeologist Arthur Evans. The primary script of this civilization was (*) Linear A, which was found at the ruins of the palace of Knossos. For ten points, name this Ancient Greek civilization which preceded the Mycenaean civilization and was based in Crete.
ANSWER: **Minoan** Civilization
<SC>

7. Demeter punished Erysichthon for destroying one of these sacred to her. In the Volsung Saga, Sigmund pulled a sword out of one named Barnstokkr. Hermes and Zeus rewarded Baucis and Philemon by having them turn into two of these objects instead of dying, and in Egyptian mythology, Isis finds Osiris' coffin stuck in one of them. **(*)** Ratatoskr relays insults between an eagle sitting on one of these and a dragon named Nidhogg gnawing on it. Spirits of these in Greek mythology were known as dryads, while Daphne was turned into one to escape Apollo's pursuit. Yggdrasil is among the "World" type of, for ten points, what objects exemplified by the ash and the oak?
ANSWER: **tree**s [accept **ash**, **oak**, **laurel**, or more specific types of trees; accept **Yggdrasil**; do not accept "forest"]
<BZ>

8. One character in this novel asks his recently-divorced wife to send him his velocipede, and another floats up into the sky while folding a sheet. That former character, the Belgian Gaston, was married to Amaranta Ursula, whose affair with her nephew produced a child with a pig's tail who is devoured by ants. The central character of this work bears 17 identically-named children and founds a town named **(*)** Macondo. It begins with a character facing the firing squad and remembering when his father took him to see ice for the first time. Following generations of the Buendia family is, for ten points, what magical realism novel about Colonel Aureliano by Gabriel Garcia Marquez?
ANSWER: *One Hundred Years of Solitude* (or *Cien anos de soledad*)
<MS>

9. Point Pelee and the Golden Horseshoe are located in this province, which contains Lake Simcoe, Rainy Lake, and Lake Nipigon. The western half of James Bay is located in this province, and it contains Manitoulin Island and Georgian Bay. Its cities include **(*)** Thunder Bay, Hamilton, and Mississauga, while Kingston lies upstream from the Thousand Islands. Windsor lies near Lake St. Clair in this province, which borders four of the Great Lakes. For ten points, name this Canadian province located between Manitoba and Quebec which contains the cities of Ottawa and Toronto.
ANSWER: **Ontario**
<JD>

10. One coefficient of this phenomenon can be found with Schlick's approximation, and its diffuse form is applied in Lambert's cosine law. This phenomenon notably does not occur for a certain polarization at Brewster's angle. At values above the critical angle, the **(*)** total internal type of this phenomenon occurs, and the law of it states that the angle at which this process occurs is equal to the angle of incidence. For ten points, identify this phenomenon in which a wave returns to its original medium after contacting a surface, easily observed with mirrors.
ANSWER: **reflect**ion (accept word forms)
<EnC>

HALFTIME

11. Fifteen Russian sailors are currently detained in this country after trying to smuggle arms into it. A June 2012 crash in the Ishaga neighborhood of this country led to a temporary shutdown of its Dana Air. This country's current president is a member of the People's Democratic Party, and took over from **(*)** Umaru Musa Yar'Adua. Abubakar Shekau currently leads a terrorist group in this country founded by Mohammed Yusuf, the Islamist Boko Haram, and there is much oil in its Niger River delta. For ten points, identify this West African country whose President Goodluck Jonathan renamed the University of Lagos and lives in Abuja.
ANSWER: Federal Republic of **Nigeria**
<SF+MS>

12. One of this author's novels features the discussion of a flowered carpet, which ends with Gradgrind chanting "fact, fact, fact!". In another of his works, Nell Trent dies after Daniel Quilp takes possession of the title locale from her gambling grandfather. In addition to writing **(*)** *Hard Times* and *The Old Curiosity Shop*, this author wrote a novel whose protagonist befriends convict Abel Magwich and loves Estella, the ward of Miss Havisham. For ten points, name this English author who detailed the life of the orphan "Pip" in *Great Expectations*.
ANSWER: Charles **Dickens**
<MiP>

13. Sumitomo used a ruthenium (IV) oxide catalyst to produce this element in the Deacon process, and this element forms at the anode in the electrolytic Castner-Kellner process. This element is bonded to metals in sylvite and carnallite, and along with sulfur, it is bonded to a hydrocarbon in mustard gas, which, like this element, was used as a (*) chemical weapon in World War I. Molecules containing hydrogen, fluorine, carbon, and this element have contributed to ozone depletion, and this diatomic element is also present in bleach and in disinfectants for swimming pools. For ten points, identify this element, a poisonous green gas that bonds with sodium to form table salt.
ANSWER: **chlorine**
<EnC>

14. One side's forces in this conflict were impeded by heavy fog in the Battle of Corunna Road, which resulted in the defeat of the Fourteenth International Brigade. Despite winning the Battle of Teruel, the losing side in this war surrendered soon after the flight of Juan Negrin and their massive defeat at the Battle of the (*) Ebro. The German Condor Legion carried out this war's bombing of Guernica, and this war ultimately ended in a victory for the Falange and the rest of the Nationalists. For ten points, name this Iberian civil war won by Francisco Franco shortly after the capture of Madrid.
ANSWER: **Spanish Civil War** (accept just **Spanish** after "civil war" is mentioned)
<KT>

15. One of this man's operas sees Concepción become attracted to Ramiro after the latter carries a clock into her bedroom. This composer of *L'heure espagnol* was inspired by Schubert to compose his *Noble and Sentimental Waltzes*. This composer included a "Scarbo" movement in a piano suite intended to be more difficult than (*) Balakirev's *Islamey*, and one of his operas is about two orphans raised by shepherds on the island of Lesbos. The best known work of this composer of *Gaspard de la nuit* begins with a flute solo over a snare drum ostinato. For ten points, name this French composer of *Daphnis et Chloé* and *Bolero*.
ANSWER: Maurice **Ravel**
<HX>

16. This artist's debut album *Music of the Sun* features a song that says "you should make me your girl because I've got what you need", and another asking "come Mr. DJ, won't you turn the music up?" This singer of "If It's Loving that You Want" and "Pon de Replay" sang "oh na na" each time before asking the title question of another song. That song came from her album (*) *Loud*. In one song this artist states that "life's a game but it's not fair/I break the rules so I don't care," while another one of her songs repeatedly states that the title entity was found "in a hopeless place." For ten points, name this Barbados-born singer of "Take a Bow," "What's My Name?" and "We Found Love."
ANSWER: **Rihanna** (or Robyn Rihanna **Fenty**)
<JD>

17. During one of these events, the *Full House*, *Jabit III*, and *Straight Flush* were used for weather reconnaissance. These events prevented the execution of Operations Olympic and Coronet, which were part of the larger Operation Downfall. The first of these events was meant to occur at Aioi Bridge, and utilized planes such as *The Great Artiste*. Survivors of these events are known as (*) *hibakusha*, and they began in August, 1945 when the *Enola Gay* dropped the Little Boy. For ten points, identify this pair of destructive events in which weapons produced by the Manhattan Project were dropped on two Japanese cities.
ANSWER: the **bombing of Hiroshima and Nagasaki** (or **nuking Japan**; accept **destruction of Hiroshima and Nagasaki**; a correct answer must either have both city names or mention atomic weapons, prompt otherwise)
<MS>

18. This deity smeared ash on his head three times after his form of Tripurantaka fought three cities. This god is alternatively called Pashupati and resides as a yogi in Mount Kailash. The Ganges River flows through the matted hair of this rider of the bull Nandi, who burned the god of love to ashes. He is commonly depicted standing by a form of his wife named (*) Kali, or with a snake around his neck and a trident in his right arm. Often worshipped through a lingam, this god fathered Kartikeya and Ganesha with his wife Parvati. For ten points, name this Hindu destroyer god.
ANSWER: **Shiv**a (accept **Siv**a, **Rudra**, **Nataraj**a, **Neelkanth**a**,** or **Shankar**a)
<KT>

19. Along with a more distant neighbor, this object may contain chunks of diamond floating in a sea of liquid diamond, which may explain why this planet's magnetic poles are shifted almost 60 degrees from its rotational axis. This body's tropopause measures roughly 50 kelvin, which makes it the coldest planet in the solar system. Like Venus, this planet has a (*) retrograde orbit, and it is orbited by 27 moons which include Titania, Umbriel, and Ariel. William Herschel discovered this planet, whose axis of rotation has a roughly 90 degree tilt. For 10 points, identify this gas giant which orbits the Sun between Saturn and Neptune.
ANSWER: **Uranus**
<BZ>

20. In one of his works, this philosopher used the example of a slave solving a complicated geometry problem to show that certain knowledge is innate, and also explained how the universe was created from a combination of "Sameness", "Difference", and "Existence". Another work by this man describes the Sun as the child of the Form of the Good and uses a (*) parable of a ship to argue for justice as harmony. That work by this author of *Meno* and *Timaeus* also posited an ideal city-state governed by philosopher-kings and described chained prisoners observing shadows in its *Allegory of the Cave*. For ten points, name this Greek philosopher and author of *The Republic*, a student of Socrates and teacher of Aristotle.
ANSWER: **Plato**
<HX>

End of regulation, only proceed if tied

21. In one of this author's stories, Marya Gavrilovna accidentally marries Burmin when her lover is prevented from reaching church by the title storm. In another of his stories, Tomsky's grandmother dies after being threatened by Hermann, who bets on the three, seven, and the ace. In addition to "The Blizzard" and "The (*) Queen of Spades", this man also wrote a poem in which Evgenii's disgust at the flood of the Neva causes the title statue of Peter the Great come to life. In his most famous work, the title character kills Lensky in a duel and rejects Tatyana. For ten points, name this Russian author of "The Bronze Horseman" and *Eugene Onegin*.
Answer: Alexander Sergeyevich **Pushkin**
<MM>

22. The Mobius configuration consists of two of these figures mutually inscribed, the projection of one of which onto the plane gives a complete 4-graph. They have volume equal to one-sixth of a vector triple product, and, when one of these shapes is inscribed in the non-adjacent vertices of a unit (*) cube, it has volume one-third. Regular ones have volume equal to side-length-cubed over 6 times the square root of 2, and surface area root-three times side-length-squared. For ten points, identify this 3-dimensional figure whose regular variety is the simplest Platonic solid, consisting of 4 triangular faces.
ANSWER: regular **tetrahedron** (prompt on "triangular pyramid")
<MS>

BONUSES

1. Bonus: Answer the following about physics we're still trying to figure out, for ten points each:
[10] Though we're still unsure how exactly gravity works, we've at least discovered this "God" particle, hypothesized by a British physicist. This boson is what gives objects mass.
ANSWER: **Higgs** boson
[10] Though yet unobserved, Dirac proved that, since charge was quantized, the "monopole" variety of these could exist. These entities have a north and a south end, and the field they produce works in tandem with the electric field.
ANSWER: **magnet**s
[10] Analysis of the Hulse-Taylor binary system imply that these entities exist, but they have yet to be detected by LIGO. These ripples in spacetime are disturbances caused by the fundamental force central to general relativity.
ANSWER: **gravity waves** (or **gravitational waves**)
<MS>

2. Bonus: This ship's captain doesn't like to be told the odds. For ten points each:
[10] Identify this spaceship, once owned by Lando Calrissian. It was able to make the Kessel run in less than twelve parsecs.
ANSWER: The *Millenium **Falcon***
[10] This captain of the *Falcon* is inseparable from his Wookie friend Chewbacca, the ship's first mate. In the original *Star Wars* movie, this smuggler played by Harrison Ford shot Greedo first.
ANSWER: **Han Solo** (accept either)
[10] Han Solo won the *Falcon* in the final round of a tournament of this card game, when Lando was unable to complete his Idiot's Array. Lando had earlier won the rights to Cloud City by playing it.
ANSWER: **Sabacc** (prompt on **Jhabacc**)
<MiP>

3. Bonus: Many men could not partake in this event due to the curse of Macha. For ten points each:
[10] Name this event in which the armies of Queen Medb attacked Ulster in an attempt to steal a valuable bull.
ANSWER: **Cattle Raid of Cooley** (or **Tain Bo Cuailnge**; accept any answer indicating a theft of cattle from Cooley)
[10] The Cattle Raid of Cooley is recorded in the Ulster Cycle of this country's mythology. Famous figures in this country's mythology include Deirdre of the Sorrows and Finn MacCool.
ANSWER: **Ireland** (or **Eire**)
[10] This youth ended up halting Queen Medb's offensive and protecting Ulster. This wielder of the Gae Bulg was a son of Lugh and gained his most famous name after killing a guard dog.
ANSWER: **Cu Chulainn** (accept **Setanta**)
<BZ>

4. Bonus: One character in this work eavesdrops on an argument in the Twelve Oaks library. For ten points each:
[10] Identify this novel by Margaret Mitchell, in which Scarlett O'Hara's love marries Melanie Hamilton. In it, Scarlett manages to save Tara plantation from the hands of the Union soldiers.
ANSWER: *Gone with the Wind*
[10] This black sheep of a Charleston family was expelled from West Point and made his fortune gambling and running the Union blockade. He is Scarlett's third husband, and eventually leaves her, saying, "My dear, I don't give a damn."
ANSWER: **Rhett Butler** (accept either)
[10] Scarlett is in love with this heir to the Twelve Oaks plantation, who ends up incompetently running one of her mills after returning home from Rock Island prison.
ANSWER: **Ashley Wilkes** (accept either)
<MiP>

5. Bonus: He oversaw the construction of the Aswan dam, which created a lake named after him. For ten points each:
[10] Name this man who led the Free Officers Movement with Muhammad Naguib. This predecessor to Anwar Sadat lost the Six-Day War against Israel and nationalized the Suez Canal.
ANSWER: Gamal Abdel **Nasser** Hussein
[10] Nasser was a leader of this African country, which fought the Six-Day War as part of the United Arab League. This country's president Anwar Sadat signed the Camp David Accords with Israel's Menachem Begin.
ANSWER: Arab Republic of **Egypt**
[10] In the Egyptian Revolution of 1952, Nasser deposed this king of Egypt. This successor to Faud I was opposed by the Free Officers Movement and was criticized for continuing the British occupation of Egypt in World War II.
ANSWER: King **Farouk** I
<KT>

6. Bonus: Name these artists who used apples in their work, for ten points each:
[10] This friend of Paul Gauguin painted *Still Life with a Basket of Apples* not long before cutting off part of his left ear. He also painted *The Potato Eaters*, *The Starry Night*, and lots of depictions of sunflowers.
ANSWER: Vincent **van Gogh**
[10] This surrealist's *Son of Man* shows a man wearing a bowler hat with an apple in front of his face, and is similar in nature to his *The Great War on Facades*. He also painted *Time Transfixed* and *The Menaced Assassin.*
ANSWER: Rene **Magritte**
[10] Glykon's "Farnese Hercules" is a copy of this Greek sculptor's "weary" Heracles, in which the hero leans on a club and holds the Apples of the Hesperides behind his back. This man was Alexander the Great's personal sculptor.
ANSWER: **Lysippos**
<MS>

7. Bonus: Answer some questions about tributaries of the Danube, for ten points each:
[10] Before joining the Danube, the Isar flows through this Oktoberfest-celebrating capital city of Bavaria.
ANSWER: **Munich** (or **München**)
[10] Before joining the Danube at Belgrade, the Sava flows through the capital of this country that contains the Istrian Peninsula and the cities of Rijeka and Dubrovnik.
ANSWER: Republic of **Croatia**
[10] The Prut River flows into the Danube after forming the border between Moldova and this country to its southwest, which has its capital at Bucharest.
ANSWER: **Romania**
<JD>

8. Bonus: Name some naval victories for England, for ten points each:
[10] This early battle in the Hundred Years' War was a huge defeat for France, who had chained their ships together prior to it. The destruction of the French fleet in this battle ensured that France could not invade England.
ANSWER: Battle of **Sluys** (or Battle of **L'ecluse**)
[10] Horatio Nelson met his end while leading Britain to yet another victory over the French at this battle of the Napoleonic Wars, which took place in 1805 off the coast of southwestern Spain.
ANSWER: Battle of **Trafalgar**
[10] Perhaps the most important victory for the Royal Navy was their defeat of this "invincible" force sent by King Philip II of Spain. It was mostly decimated at Gravelines, due to the help of the "Protestant Wind."
ANSWER: Spanish **Armada** (accept Invincible **Armada** or **Great and Most Fortunate Navy**)
<MS>

9. Bonus: This novel's protagonist works for Muhbab Ali. For ten points each:
[10] Identify this novel, whose title character, while serving under Mookherjee, ends up in conflict with the Russians. He and a friendly lama also try to discover the "River of the Arrow."
ANSWER: *Kim*
[10] This collection of stories by the author of *Kim* partially follows the wolf-raised Mowgli. It contains tales like "Toomai of the Elephants" and "Rikki-Tikki-Tavi."
ANSWER: The *Jungle Book*
[10] This author wrote *Kim* and *The Jungle Book*. A father tells his son to "keep [his] head when all about" are "losing theirs" in his poem "If--" and his other poems include "Gunga Din" and "The White Man's Burden."
ANSWER: Rudyard **Kipling**
<MS>

10. Bonus: He studied under Leucippus, whose ideas he expanded upon. For ten points each:
[10] Identify this Greek philosopher who postulated that if an object was divided enough times, there would eventually be small particles that could not be divided any further.
ANSWER: **Democritus**
[10] The small indivisible particles that Democritus envisioned were given this name, which later scientists found could be actually separated further into their constituent protons, neutrons, and electrons.
ANSWER: **atom**s (accept **atomic** theory)
[10] Atomic theory progressed little in the next two thousand years until this British chemist put forth an atomic theory of his own, though he may be better known for his law of partial pressures and his law of multiple proportions.
ANSWER: John **Dalton**
<BZ>

11. Bonus: This country wants to build a large border fence in the Golan Heights. For ten points each:
[10] Identify this Jewish state in the Middle East which elects representatives to the Knesset, which is currently controlled by its Likud party.
ANSWER: **Israel**
[10] A hot political issue is whether or not Israelis should keep establishing these communities of its citizens on conquered territories like the West Bank. Obama has given up trying to halt their construction.
ANSWER: Israeli **settlements**
[10] Under Tzipi Livni's leadership, this centrist party controlled the most seats in the Knesset, but it did poorly in the recent elections, only winning two. It was founded in 2005 after Ariel Sharon broke with Likud.
ANSWER: **Kadima** (or *Forward*)
<DA>

12. Bonus: One type of it contains ribosomes and is where proteins are folded. For ten points each:
[10] Name this organelle which comes in a "smooth" type that synthesizes lipids and detoxifies drugs and a "rough" type that produces proteins and folds them.
ANSWER: **endoplasmic reticulum** (or **ER**)
[10] The rough endoplasmic reticulum is continuous with this structure, whose shape is maintained by protein filaments called its lamina. This structure contains pores and is double layered, similar to the mitochondria's.
ANSWER: **nuclear envelope** (or **nuclear membrane**; accept equivalents like **membrane** that surrounds the **nucleus**)
[10] Some hormones are produced in this area of the endoplasmic reticulum, which is enclosed by the membranes of the cisternae. In general, this term can refer to the internal space of any membrane-bound organelle.
ANSWER: endoplasmic reticulum **lumen** (or **lumina**; or **ER lumen**; accept **cisternal lumen**)
<BZ>

13. Bonus: The practice of *dhikr* is the recitation of Islamic ones. For ten points each:

[10] Identify these types of words, other examples of which include the Tetragrammaton YHWH ("yah-weh") and Adonai.

ANSWER: **name**s of **God** (accept answers specifying a **Jewish God** or **Islamic God**; prompt on "names of Allah")

[10] This mystical sect of Islam highly encourages *dhikr* and other forms of devotion to Allah. This group's dervishes also engage in a notable "whirling" dance.

ANSWER: **Sufi**sm

[10] Part of Sufism's belief system is derived from this most popular branch of Islam, whose members disagree with Shi'ites about whether Abu Bakr or Ali should have been the first caliph.

ANSWER: **Sunni** Islam (or **Sunni**s)

<MS>

14. Bonus: W.B. Yeats wrote the preface to this author's most famous work. For ten points each:

[10] Identify this author of *The Hungry Stones* and *The Home and the World*. He is best-known for his poetry collection *Gitanjali*.

ANSWER: Rabindranath **Tagore**

[10] Tagore also wrote *Jana Gana Mana*, the national anthem of this country. Other authors from this country include Vikram Seth and Anita Desai.

ANSWER: **India**

[10] This much earlier Indian author wrote of a fisherman finding the title character's ring in *The Recognition of Shakuntala*. An exiled yaksa asks the title character to bring a message to his wife in this author's *Cloud Messenger*.

ANSWER: **Kalidasa**

<MS>

15. Bonus: Identify these Gilded Age "robber barons", for ten points each:

[10] This founder of Standard Oil was the first to have a net worth of over one billion dollars.

ANSWER: John Davison **Rockefeller**

[10] This man was engaged in the "Erie War" with Jay Gould and Daniel Drew, and this railroad king had earlier worked for Gibbons' steamboat enterprise.

ANSWER: Cornelius **Vanderbilt**

[10] This former chairman of Carnegie Steel financed the Pennsylvania Railroad and the Reading Company. This head of the Homestead plant ordered Pinkerton agents to fight striking workers and was shot by Alexander Berkman.

ANSWER: Henry Clay **Frick**

<MiP>

16. Bonus: Their crown variety contains several of these groups arranged in a ring. For ten points each:

[10] Identify these compounds which contain two R groups bonded to an oxygen atom. The diethyl type of these compounds was once used as an anesthetic.

ANSWER: **ether**s

[10] Ethers can be produced by the Williamson synthesis, which involves reacting a strong base with one of these compounds. These compounds contain a hydroxyl group and examples of them include ethanol and isopropyl.

ANSWER: **alcohol**s

[10] Anhydrous diethyl ethers are also an important solvent in the preparation of Grignard reagents, which are formed when an organic halide is added to a suspension of this element, whose liquid form is also used in the Kroll process.

ANSWER: **magnesium**

<EnC>

17. Bonus: Its first strain concludes with an ascending arpeggio followed by four A-flat octaves. For ten points each:
[10] Name this composition which was named after a club in Sedalia, Missouri. It became the archetype for syncopated works like its composer's later *The Cascades* and *Sugar Cane*.
ANSWER: ***Maple Leaf Rag***
[10] The *Maple Leaf Rag* is an early work by this African-American composer, known as the "King of Ragtime". He also composed an opera in which the title character is rescued from a wasps' nest by Remus, *Treemonisha*.
ANSWER: Scott **Joplin**
[10] This other Joplin rag rose to prominence after being featured in *The Sting*. The right hand plays syncopated sixths over eighth notes in the left hand following its introduction, which is completely in octaves.
ANSWER: *The **Entertainer***
<HX>

18. Bonus: This play opens with the central characters arguing over what jokes to use to open a play. For ten points each:
[10] Identify this play in which Dionysus and his slave Xanthias visit the underworld, where the title animals say "Bre-kekekex-koax-koax."
ANSWER: *The **Frogs*** (or ***Batrachoi***)
[10] *The Frogs* was written by this comic playwright of Athens, who also penned *The Knights* and *Lysistrata*.
ANSWER: **Aristophanes**
[10] In this Aristophanes play, Bdelycleon drapes nets over his house in an attempt to keep his father from visiting the law courts.
ANSWER: *The **Wasps*** (or ***Sphekes***)
<MS>

19. Bonus: This dynasty lost the Battle of Salsu against the Korean kingdom of Goguryeo. For ten points each:
[10] Identify this short-lived dynasty that oversaw the construction of the Grand Canal around the year 600.
ANSWER: **Sui** Dynasty
[10] The Sui Dynasty was overthrown by the Li family, who then formed this "golden age" dynasty whose monarchs included Taizong and Xuanzong. It faced the An Lushan rebellion, which weakened the second half of the dynasty.
ANSWER: **Tang** Dynasty
[10] The Sui and Tang dynasties were periods in the history of this Asian country, which was unified under the Qin dynasty of Shi Huangdi.
ANSWER: **China** (accept **Zhōng guó**)
<JD>

20. Bonus: Answer the following about non-Euclidean geometry, for ten points each:
[10] Most non-Euclidean geometries stem from ignoring this one of Euclid's axioms, the least intuitive.
ANSWER: **parallel** postulate (or **5**th axiom)
[10] An elliptical Euclidean geometry is applicable on the surface of these shapes, the three-dimensional analogues of circles. They are bisected by great circles, and have area four-thirds pi times the radius-cubed.
ANSWER: **sphere**s
[10] In both elliptical and hyperbolic geometries, two triangles can only be similar to each other if they also have this property. Figures with this property have the same shape and size.
ANSWER: **congruency** (accept word forms)
<MS>

21. Bonus: It can be described by the Big Five traits, which include factors such as conscientiousness and extraversion. For ten points each:

[10] Name this term which describes the pattern of thoughts, emotions, and behaviors in people. Temperament is considered the innate component of it.

ANSWER: **personality**

[10] Carl Jung's *Psychological Types* provided the basis for this personality test. It uses a combination of four dichotomies, such as sensing versus intuition and thinking versus feeling.

ANSWER: **Myers-Briggs** Type Indicator (prompt on just one name)

[10] This other personality test analyzes subjects' reactions to nearly bilaterally symmetric images, five in black and white and five in color. Its results can be interpreted by the Exner scoring system.

ANSWER: **Rorschach** Inkblot Test (or the **Rorschach** technique)

<KT>

22. Bonus: This element's citrate can be used to treat gout, arrhythmia, and kidney stones. For ten points each:

[10] Identify this alkali metal found in saltpeter, whose atomic symbol is K.

ANSWER: **potassium**

[10] One form of radiometric dating measures the amount of potassium-40 that has decayed into an isotope of this element. It is the third most common gas in the atmosphere and can be found in light bulbs.

ANSWER: **argon**-40 (accept **Ar**-40)

[10] This potassium compound dissolves in water to give a purple solution. It constitutes Baeyer's reagent, and its strong oxidizing properties are exploited in titrations and water treatment processes.

ANSWER: **potassium permanganate** (accept **KMnO4**)

<EnC>