

JAMES ROUND 10
TOSSUPS

1. **A namesake Research Center for this phenomenon was founded by William Dement at Stanford. K-complexes and namesake spindles occur during one stage of this phenomenon, while delta waves and the beginning of theta rhythms occur during other stages of it. A successive lack of this event leads to its namesake (*) "debt," which can cause a weakened immune system and memory deterioration. An obstruction of breathing during this event is its namesake apnea, and during one stage of it, the eyes begin to move rapidly. REM is a stage of, for 10 points, what state of semi-consciousness in which humans dream?**

ANSWER: sleep

2. **In one of this writer's stories, Pablo gives what he believes is the false hiding location of Ramon, who is shot at the title execution spot. He wrote a play in which the Communist Hugo shoots Hoederer. One novel by this author of "The Wall" and *Dirty Hands* sees a critical realization occur at a chestnut tree. In that novel, Antoine (*) Roquentin researches the Marquis de Rollebon and develops the title "sweetish sickness", which he calls a *Nausea*. His most famous play is set in a room with Third Empire furniture and sees Garcin announce "Hell is other people." For 10 points, name this existentialist who wrote *No Exit*.**

ANSWER: Jean-Paul Sartre

3. **An attempt on this man's life led to the death of police officer Leslie Coffelt, who managed to kill Griselio Torresola. That assassination attempt was also perpetrated by Oscar Collazo, who was a Puerto Rican nationalist. As president, this man vetoed the Taft-Hartley Act and desegregated the (*) armed forces. This proponent of a "Fair Deal" recalled Douglas MacArthur during the Korean War. This man is depicted holding a copy of the Chicago Daily Tribune that claims that he had lost to Thomas Dewey in the 1948 presidential election. For 10 points, name this president who ordered the dropping of an atomic bomb on Hiroshima.**

ANSWER: Harry S. Truman

4. **This nation's city of Arad in the southeastern part of this nation is home to Mount Kina as well this nation's National Trail. The highest point in this nation's internationally recognized boundaries is Mount Meron, while this nation claims that Mount Hermon is its highest point. This nation's city of (*) Beersheba is known as the "capital of the Negev". Adjacent to Jordan's sole port, Aqaba, lies the city of Eilat, the only domestic destination of Ben Gurion Airport located in this nation's capital city. For 10 points, name this Jewish nation on the east coast of the Mediterranean Sea.**

ANSWER: State of Israel

5. **The energy levels of this model are proportional to n plus one-half in its quantum analogue. Using a Taylor series quadratic expansion, any stable equilibrium can be modeled using the general equation for one of these systems. RLC circuits are an electrical example of these systems, one case of which sets omega equal to the square root of the length over gravity; that case uses the (*) "small angle" assumption. For one of these systems, the square root of k over the mass gives the angular frequency. Hooke's law can be used to create these systems. A restoring force creates, for 10 points, what systems which springs exemplify the "simple" type of?**

ANSWER: harmonic oscillator (accept simple harmonic oscillator; accept damped oscillator; prompt on "oscillator"; prompt on "spring" or "pendulum")

6. **This painting is analyzed in the opening of the book *The Order of Things* by Michel Foucault. Scenes painted by Rubens hang on the back wall in this painting as a bodyguard and a nun converse to the right. A man can be seen through a doorway at the back of this painting, while a man wearing a red cross and working at an (*) easel is this work's artist himself. A mastiff in this work's foreground is being nudged by the foot of a dwarf as a small girl in a large white dress stands at its center. For 10 points, name this painting showing the Infanta Margarita and the family of Phillip IV of Spain, a work by Diego Velazquez.**

ANSWER: *Las* Meninas

7. **Coenocytic members of this kingdom lack septa, and another group in this kingdom, the ascomycetes, reproduces asexually using conidia. A unicellular member of this kingdom mates using "alpha" and "a" mating factors. Other members of this kingdom can form (*) mycorrhizae with plants, and lichens are a symbiotic relationship between photosynthetic microbes and members of this kingdom. Notable members of this**

kingdom include *Neurospora crassa* and *Saccharomyces cerevisiae*, and most members of this kingdom have chitin in their cell walls. For 10 points, name this kingdom that includes yeast, bread mold, and mushrooms.

ANSWER: Fungi

8. **One character in this book works toward entering Oberlin College by studying under Miss Bodwin. Another character in this novel calls his heart a tobacco tin and fears a beautiful woman who walks fully dressed out of a stream. Characters in this novel include a man referenced as (*) "schoolteacher" who worked at Sweet Home and a granddaughter of Baby Suggs named Denver. Paul D abandons Sethe in this novel after learning about the mercy killing she performed on her daughter when faced with being returned to slavery. 124 Bluestone Road is visited by the title spirit in, for 10 points, what novel by Toni Morrison?**

ANSWER: Beloved

9. **Key members of this event had organized in Hamburg, Germany. After this event, Tom Ridge became the head of a newly consolidated office that consolidated part of the INS and the Federal Protective Service. One location in this event had been the site of an earlier truck (*) bombing in a parking lot. Photographs taken during this event include "The Falling Man" and one of a president in the midst of reading to schoolchildren. The Department of Homeland Security was created and the PATRIOT Act was passed in response to this event. For 10 points, hijacked planes were used to carry out what terrorist attack?**

ANSWER: 9/11

10. **This book describes a rope of palm-fibre wrapping around a woman's neck in an invective against her husband nicknamed "the Flame." Mary is mentioned 34 times within this book, including a section titled after her. A verse describing how God's throne extends over all the universe appears in this book's longest section (*) "The Cow." One figure in this book is magically taken to Jerusalem during the Night Journey, and it contains 114 approximate chapters called suras. Hadiths are not found in this text, but were spoken by the same prophet who "recited" this text. For 10 points, the Archangel Gabriel revealed to Muhammed what holy book of Islam?**

ANSWER: the Qur'an (or Koran)

11. **Temperature trends in this layer of the atmosphere are periodically increased by volcanic eruptions, but in the past 25 years have shown a decrease in 0.5 degrees Celsius. Dobson units were created to measure one substance in this layer. This is the lowest layer in which temperature (*) inversion begins, and it has no regular convection. Felix Baumgartner made his skydive from this layer, in which free radicals created from CFCs have depleted molecules responsible for protecting the earth from UV light. For 10 points, the ozone layer is found in what layer of the atmosphere just above the troposphere?**

ANSWER: stratosphere (prompt on "ozone layer")

12. **According to legend, this man's funeral escort killed all who crossed their path to keep this man's grave secret. This ruler killed his half-brother Bekhter because Bekhter would not share his hunting spoils, and this man's father Yesugai was poisoned by Tatars. After his ambassador was humiliated by Otrar's governor, this leader crushed the (*) Khwarezmian Empire. This man defeated his once friend Jamukha. This leader conquered the Jin and Western Xia empires, and he may have poisoned his son Jochi to make way for his more able son Ogedai. For 10 points, name this warchief also known as Temujin who united the Mongol tribes.**

ANSWER: Genghis Khan [accept Zingis Khan; accept Chengiz Khan; accept Chinggis Khan; accept Yuan Taizu; accept Cheng Ji Si Han; Dschingis Khan; accept Jenghiz Khan; accept Jinghis Khan; accept Temujin before mentioned]

13. **A writer in this language used the legend of the Seven Sleepers in his play *The People of the Cave*. Another author in this language described a friend of the cafe owner Tarzan who seeks revenge on his wife and friend in *The Thief and the Dogs*. That author used this language to write the books *Sugar Street* and (*) *Palace Walk*, which are in a trilogy titled after a capital. A roc's nest is visited by Sinbad the Sailor in a work in this language narrated by Scheherazade. Naguib Mahfouz wrote the Cairo Trilogy using, for 10 points, what language of the short story collection *One Thousand and One Nights*?**

ANSWER: Arabic (accept word forms; prompt on "Egyptian" Arabic)

14. This artist included depictions of the three Virtues in his design for the tomb of Antipope John XIII. He supposedly yelled "Speak!" at a bald statue he made of Habakkuk, which was nicknamed Zuccone and is located outside the Orsanmichelle. An unusually haggard wooden depiction of the title woman comprises this artist's Magdalene Penitent. This man sculpted an (*) equestrian statue of Erasmo da Narni, who was nicknamed the Honeyed Cat, or Gattamelata, while his best known work shows the title figure holding the sword of Goliath. For 10 points, name this Renaissance sculptor, whose version of the David is bronze.

ANSWER: Donatello (or Donato di Niccolo di Betto Bardi)

15. This compound protonates nitric acid in the precursor step to the nitration of benzene. Sodium nitrate is reacted with this compound in one method of producing it which uses Glover towers known as the lead chamber process, while another method uses a vanadium oxide catalyst and is called the (*) contact process. The "fuming" form of this strong diprotic acid is known as oleum. This compound is reformed during the recharging of lead acid batteries, and the reaction of sulfur trioxide with water forms this compound, leading to its presence in the atmosphere of Venus and acid rain. For 10 points, name this acid with formula H₂SO₄.

ANSWER: sulfuric acid (accept H₂SO₄ before read; accept oil of vitriol)

16. Apocryphally, this man declared "the carnival is over!" after being elected to his current position, upon which he also refused to wear a mozzetta. In private remarks made in June, this man seemed to acknowledge a "stream of corruption" and a "gay lobby," and later while on a plane flight back from Brazil, this man offhandedly said "who am I to (*) judge?" This man has been noted for his humility. He succeeded a man who became the first to resign a position in 600 years and is the first Jesuit to hold that position. For 10 points, name this Argentinian cardinal who succeeded Benedict XVI as Pope.

ANSWER: Pope Francis I (or Jorge Mario Bergoglio; prompt on "the Pope" before end)

17. This man was assassinated after going into town without his bodyguards called the "Dorados," upon which he apocryphally said "Don't let it end like this. Tell them I said something." Alvaro Obregon was victorious at the Battle of Celaya over this man's Division of the North. This man served as Governor of (*) Chihuahua for two years, and along with Emiliano Zapata, this man opposed Venustiano Carranza. While accompanying this man's army, Ambrose Bierce disappeared. After this man led the raid of Columbus, an expedition was led by General "Black Jack" Pershing to capture him. For 10 points, name this Mexican revolutionary and bandit.

ANSWER: Pancho Villa (or Francisco Villa; or Jose Doroteo Arango Arambula)

18. Along with Shu, this figure was sent to bring Tefnut back from Nubia after she fled there in the form of a lioness, leaving Egypt without water. A gambling match between this figure and Khonsu resulted in the births of Nut's children and the creation of the (*) lunar calendar. The inventor of magic, this deity assisted Isis in resurrecting her husband. When dead souls pass into the underworld this god weighs their hearts against a feather to judge whether they are worthy enough to pass into the afterlife. Commonly represented with the head of an ibis or a baboon, this is, for 10 points, what Egyptian god of writing and wisdom?

ANSWER: Thoth

19. One character in this book drives his accomplice Arthur into madness and convinces his fiancée to buy a brewery; that character is Compeyson. This novel sees one character write the letter T on a slate after she is attacked with a hammer by Orlick, who works under the blacksmith (*) Joe Gargery. This novel contains a woman who urges her adopted daughter to break the heart of the protagonist, as well as the lawyer Jaggers. This novel opens with the protagonist aiding an escaped convict, who turns out to be his benefactor Abel Magwitch. For 10 points, name this novel about Pip written by Charles Dickens.

ANSWER: Great Expectations

20. At the end of Act 1 of this opera, one character sings Vogliatemi bene or "Love me, please" as part of a long love duet. A child is named Sorrow in this opera in which the Bonze renounces his niece for changing religions. One character in this opera wonders when the robin makes his nest and sings (*) Un bel di or "One Beautiful Day." Goro prepares the marriage of the title character and tries to convince the male lead to be faithful. That male lead of this opera is the American Naval officer Pinkerton. Cio-Cio ["chocho"] San commits suicide at the end of, for 10 points, what opera by Giacomo Puccini about the title Japanese woman?

ANSWER: Madame Butterfly [accept Madama Butterfly]

TIEBREAKER/REPLACEMENT TOSSUPS

21. **The formation of one of these entities in an organic reaction mechanism is indicated by a double-barbed "curly" arrow pointing from a bond to an atom. Twice the number of these is subtracted from the number of valence electrons in the calculation of formal charge. Coordinate covalent bonds are formed from the (*) sharing of these entities. Their number is given by the E value in AXE theory. VSEPR [ves-per] theory gives the geometry of both bonds and these around a central atom. The two of these possessed by the oxygen atom in water give the molecule a bent geometry. Two dots represent, for 10 points, what pairs of unbonded electrons?**

ANSWER: lone electron pairs (accept unbonded electron pairs before end of question; before end of question, prompt on "electrons" or "electron pairs")

22. **During one conflict in this nation, Angelina Eberly fired upon Thomas Smith with a howitzer as he attempted to remove papers from one building. That conflict is known as this nation's Archive War, and began in response to one of Mirebeau Lamar's policies. Troops under James Fannin were massacred while fighting in this nation's independence war, which also saw fighting by William (*) Travis' troops. The Goliad massacre occurred during this nation's war of independence, which was ended at the Battle of San Jancinto. This nation was established by Sam Houston after he beat Santa Anna. For 10 points, name this precursor to the state that is led by Rick Perry.**

ANSWER: Republic of Texas

BONUSES

1. Though the god of war, it became a running joke in Greek mythology that Ares was actually a wimp. For 10 points each:

[10] After learning that Ares was having an affair with his wife Aphrodite, this god of the smithy constructed a golden net and caught them in the act to the humor of the rest of the gods.

ANSWER: **Hephaestus** (do not accept or prompt on "Vulcan")

[10] With Athena as his charioteer, this Greek soldier inflicted a wound upon Ares who was fighting alongside the Trojans. This man had ventured with Odysseus into Troy to retrieve the Palladium.

ANSWER: **Diomedes**

[10] When these two sons of Aloeus waged war on the gods, they captured Ares and trapped him in a bronze jar. Ares was freed by Hermes and these two giants eventually lost the war.

ANSWER: **Otus** and **Ephialtes** (prompt on "Aloadae")

2. Trigonin imagines basing a short story off off Konstantin's gift of the title bird to Nina in this play. For 10 points each:

[10] Name this Russian play which ends with Konstantin shooting himself after Nina leaves him.

ANSWER: *The **Seagull*** (or ***Chayka***)

[10] *The Seagull* is a play by this writer who ended another play with the title estate being cut down in *The Cherry Orchard*.

ANSWER: Anton **Chekhov**

[10] This other Russian play by Maxim Gorky pioneered social realism by depicting several families living in a cramped boarding house.

ANSWER: *The **Lower Depths*** (or ***Na dne***)

3. Its namesake acts required the former Confederate States to ratify the 14th Amendment before being readmitted to the Union. For 10 points each:

[10] Name this period in which the South was drawn into five districts for military occupation by the North.

ANSWER: **Reconstruction**

[10] These people came from the North to the South during Reconstruction seeking profit or political office. Their pejorative name derives from the sacks they supposedly carried their luggage in.

ANSWER: **carpetbaggers**

[10] Reconstruction was "ended" in this year. This year also saw a large railroad strike start in Martinsburg, West Virginia.

ANSWER: **1877**

4. It is sometimes known as cladogenesis, and the punctuated equilibrium model can be used to describe it. For 10 points each:

[10] Name this evolutionary process by which new branches of a genus develop.

ANSWER: **speciation**

[10] This kind of speciation occurs when populations evolve while they are separated by some kind of geographic barrier.

ANSWER: **allopatric** speciation

[10] In this process, rapid speciation happens in order to fill vacant ecological niches in a new environment. It frequently occurs after mass extinctions, and the Hawaiian islands are often viewed as an environment in which this process occurred.

ANSWER: **adaptive radiation**

5. This man attacked Christianity in his lecture "Why I Am Not A Christian." For 10 points each:

[10] Name this English philosopher and mathematician who wrote the essay "On Denoting" and collaborated on another work with Albert Whitehead.

ANSWER: Bertrand **Russell**

[10] Russell and Whitehead produced this volume of mathematics that shares a name with a work written by Isaac Newton. It contains a proof of $1+1=2$, with the commentary "the above proposition is occasionally useful."

ANSWER: **Principia Mathematica**

[10] An atheist, Russell attacked unfalsifiable claims of religion by stating that if he were to assert this kitchen

object circled the Sun, no one could definitely disprove its existence either.

ANSWER: a **teapot**

6. Early English monarchs are often forgotten. For 10 points each:

[10] This only king of England to hold the title of "the Great" was a king of Wessex.

ANSWER: **Alfred** the Great

[10] Alfred propagated the Doom Book, a law code that should not be confused with the Domesday Book, a census taken by this first Norman king of England.

ANSWER: **William the Conqueror** (accept **William I of England**; accept **William II of Normandy**; prompt on "William")

[10] This little-known queen co-ruled with William the Conqueror; she was descended from Charlemagne.

ANSWER: Queen **Matilda** of Flanders

7. For 10 points each, answer some questions about misbehaving operatic characters and their respective punishments:

[10] After harassing his servant Leporello and attempting affairs with Anna, Elvira, and Zerlina, this title Mozart character is dragged to hell by Il Commendatore.

ANSWER: **Don Giovanni** (do not accept or prompt on Don Juan)

[10] In one of this composer's operas, *Billy Budd* is executed after killing the corrupt Claggart in a rage. This man also composed the *Young Person's Guide to the Orchestra* and the *War Requiem*.

ANSWER: Benjamin **Britten**

[10] In this Dmitri Shostakovich opera, the title character murders her husband Zinovy and her father-in-law Boris, and is exiled to Siberia.

ANSWER: **Lady Macbeth** of the Mtsensk District

8. The McCabe-Thiele diagram can be used to find the number of plates needed in one type of this process. For 10 points each:

[10] Name this process of separating a solution into its components. It has a fractional form.

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

[10] Distillation employs this phase change in which a liquid is converted into a gas.

ANSWER: **boiling** or **evaporation** (accept word forms)

[10] This term refers to a solution of fluids that cannot be separated by simple distillation. A simple one is formed with 4% water and 96% ethanol.

ANSWER: **azeotrope**

9. He wrote "where ignorance is bliss / 'tis folly to be wise" in his poem "Ode on a Distant Prospect of Eton College." For 10 points each:

[10] What poet also wrote a mock elegy for the cat Selma in his "Ode on the Death of a Favourite Cat, Drowned in a Tub of Gold Fishes"?

ANSWER: Thomas **Gray**

[10] Gray is best known for this poetic masterpiece that deliberates on the death of the common man. It opens with "The curfew tolls the knell of parting day" and contains the line "The paths of glory lead but to the grave."

ANSWER: **"Elegy Written in a Country Churchyard"**

[10] "Elegy Written in a Country Churchyard" also describes this poet as "mute, inglorious." This poet is best known for an epic in which Lucifer wages a war with God, *Paradise Lost*.

ANSWER: John **Milton**

10. This character listens to her father's last heartbeat after negotiating a peace with the Aurochs. For 10 points each:

[10] Name this protagonist of a 2012 indie film played by Quvenzhané Wallis who lives in "The Bathtub" with her father Wink.

ANSWER: **Hushpuppy**

[10] Hushpuppy is the main character of this Benh Zeitlin film set on a Louisiana island devastated by a hurricane. Zeitlin and Wallis received Academy Award nominations for their work in this film.

ANSWER: **Beasts of the Southern Wild**

[10] Wallis is the youngest ever nominee for Best Actress. Jessica Tandy, the oldest to receive the award, won for

this film, in which she is driven around by the Morgan Freeman-played Hoke Colburn.

ANSWER: **Driving Miss Daisy**

11. This day was part of the larger Operation Overlord. For 10 points each:

[10] Name this day in which Operation Neptune led to the storming of the beaches of Normandy.

ANSWER: **D-Day** [accept **June 6, 1944**]

[10] This German General, nicknamed the "Desert Fox", was partially in command of the German units during the D-Day invasion. The loser at the Battle of El Alamein, he committed suicide by cyanide pill after being involved in the July 20 Plot.

ANSWER: Erwin **Rommel**

[10] In 1942, British and Canadian forces, under the command of Admiral Mountbatten, raided this French port.. A "pinch" mission led by Ian Fleming to capture Enigma machines may have occurred during this raid.

ANSWER: **Dieppe**

12. One writer of this ethnicity wrote about a character who is tempted by the Spirit of Evil in a short story titled "Gimpel the Fool". For 10 points each:

[10] Name this ethnicity and religion of the author of *Portnoy's Complaint* as well as Isaac B. Singer, who often wrote in Yiddish.

ANSWER: **Jewish** (accept **Judaism** and related word forms)

[10] This author wrote about the title character relating his sexual fantasies to his therapist in the outrageous and controversial *Portnoy's Complaint*. His alter ego Nathan Zuckerman appears in several of his books.

ANSWER: Philip **Roth**

[10] This modern writer described the Jewish refuge of Sitka, Alaska in his alternate history book *The Yiddish Policeman's Union*. His book *The Amazing Adventures of Kavalier and Clay* is set during the Golden Age of comics.

ANSWER: Michael **Chabon**

13. There are puzzle, mirror, and table types of this musical form. For 10 points each:

[10] Name this musical form similar to a round in which an initial melody is followed by imitators. Pachelbel used this technique for a composition in D.

ANSWER: **canon**

[10] A canon should not be confused with this musical form which uses contrapuntal voices, and, like a sonata, typically has an exposition, a development, and a recapitulation. Bach composed a piece titled after its "Art."

ANSWER: **fugue**

[10] This composer used fugal finales in his Sun quartets. Another of his string quartets nicknamed "Emperor" uses the melody of Deutschland Über Alles.

ANSWER: Franz Joseph **Haydn**

14. This value for uranium-238 is used to help date the age of the earth. For 10 points each:

[10] Name this value defined for each radioactive isotope which describes how long it takes for 50% of a sample to decay.

ANSWER: **half-life**

[10] In reaction kinetics, this equation can also be used to compute a half-life, in this case the time it takes for half of a chemical reactant to be used up. This equation models the speed at which a reaction progresses and contains a namesake constant.

ANSWER: **rate law**

[10] This type of reaction has a constant half-life, while the integrated rate law of this form can be linearized using the natural log.

ANSWER: **first order** (prompt on "first" or "one")

15. This type of object was used in an experiment in which an adult yelled phrases like "Sock him" and "Kick him." For 10 points each:

[10] A Bobo type of what toy was repeatedly hit by an adult as a child watched in an experiment studying observational learning?

ANSWER: **doll**

[10] This psychologist conducted the Bobo doll experiment, and repeated it with variations in which the children

watch films and cartoons of violence.

ANSWER: Albert **Bandura**

[10] These specific cells in the brain have been found to fire both when the subject itself acts and when it observes another subject acting.

ANSWER: **mirror neuron** (prompt on "neuron")

16. In one novel from this series, the title Cousin Bette plots to destroy the Hulot family. For 10 points each:

[10] Name this collection of works depicting French society and characters like Cousin Pons and Eugénie Grandet.

ANSWER: *The **Human Comedy*** (or *La **Comédie humaine***)

[10] This famously hard working French author wrote *The Human Comedy* which also includes the novels *Lost Illusions* and *Old Goriot*.

ANSWER: Honoré de **Balzac**

[10] This frequent character in *The Human Comedy* first appears in *Old Goriot*. A social climber, he refuses the help of the criminal mastermind Vautrin and gradually finds success.

ANSWER: **Eugénie** de **Rastignac** (accept either or both)

17. Although not the capital, this is the largest city in the state of the same name. For 10 points each:

[10] Name this largest city of the United States, consisting of five boroughs.

ANSWER: **New York** City

[10] This river is connected to the Hudson via the Spuyten Duyvil [Spooi-ten Dooi-vil] Creek. It forms the northern boundary of Manhattan, and is crossed by Interstate 278 over the Triborough Bridge.

ANSWER: **Harlem** River

[10] Interstate 278 also crosses this smallest borough, entering at the west over the Goethals Bridge and at the east over the Verrazano-Narrows Bridge.

ANSWER: **Staten Island**

18. During the last of these periods, Japan entered a policy of seclusion. For 10 points each:

[10] Name these periods of government in which power resided not with the emperor, but with the title military dictators. Tokugawa Ieyasu named one of these periods of rule.

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

[10] This American ended the policy of seclusion during the Tokugawa Shogunate after sailing into Tokyo harbor with his "Black Ships" and having the Convention of Kanagawa forcibly signed.

ANSWER: Commodore Matthew **Perry**

[10] The Tokugawa Shogunate was established after Tokugawa Ieyasu won this battle against the Western Army, which was loyal to the Toyotomi clan.

ANSWER: Battle of **Sekigahara**

19. These works were painted on the walls of the Deaf Man's Villa as their creator descended into mental illness. For 10 points each:

[10] Name these series of darkly themed paintings which include a depiction of a crazed Titan bloodily eating a body, *Saturn Devouring his Son*.

ANSWER: **Black Paintings**

[10] The *Black Paintings* are a work of this Spanish painter who showed a Jesus-like figure being executed by firing squad in *The Third of May, 1808*.

ANSWER: Francisco **Goya**

[10] Among the *Black Paintings* are a depiction of two men fighting with these instruments while they are knee deep in mud.

ANSWER: **cudgels** (do not accept synonyms; accept *Fight with **Cudgels***)

20. For 10 points each, answer some questions about the birds and the bees of cyclone formation:

[10] Cyclones can form when the warm and cold types of these entities collide. Those two types are represented on a weather map by blue triangles and red semicircles, respectively.

ANSWER: weather **front**

[10] During cyclogenesis, this type of front may occur when a cold front overtakes a warm front. It is represented by both triangles and semicircles.

ANSWER: **occluded** front

[10] If a warm, moist front and a cold, dry front collide rapidly enough, one of these entities may form, the strength of which can be measured by the Enhanced Fujita Scale.

ANSWER: **tornadoes**

TIEBREAKER/REPLACEMENT BONUSES

21. Lavoisier gave this element its name, from the Greek for "sharp," because he thought it was an essential component of all acids. For 10 points each:

[10] Identify this element, the second most common in air after nitrogen. Its diatomic form possesses a double bond.

ANSWER: **oxygen** (accept **O**)

[10] Liquid oxygen has this property, which results from the presence of unpaired electrons. This property allows for attraction only when an external magnetic field is applied.

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

[10] The paramagnetism of oxygen is accounted for by this theory, which describes bonds in terms of namesake bonding and antibonding orbitals. It gives rise to the concept of bond order and explains the structure of hypervalent compounds without involving d orbitals.

ANSWER: **molecular orbital** theory [accept **MO** theory]

22. There are many variations on the story of Robin Hood. For 10 points each:

[10] Name this arguably most authentic version of Robin Hood, featuring such characters as Locksley and his merry men, as well as a Jewish moneylender named Isaac and his daughter Rebecca.

ANSWER: **Ivanhoe**

[10] *Ivanhoe* was written by this Scottish author who also wrote *Rob Roy* and the long poem *The Lady of the Lake*.

ANSWER: Sir Walter **Scott**

[10] Robin Hood appears in this anachronistic rendition of the legend of King Arthur that includes such characters as the Questing Beast, as well as references to telegraphs and Hitler. It was written by T.H. White.

ANSWER: *The **Once and Future King***