



1. The production of a bound state of this particle and its antiparticle is expected to be suppressed by quark-gluon plasma formation. A mechanism that suppressed FCNCs required the existence of this particle; that mechanism was elucidated by Iliopoulos, Maiani and Glashow. That bound state of this particle and its antiparticle was first found, independently, by groups led by Burton Richter and Samuel Ting. That discovery of that bound state constituted the November Revolution. That bound state constitutes the only meson with a two-letter name, the J/psi meson. For 10 points, identify this second generation quark paired with the strange quark.

ANSWER: charm quark [prompt on quark; prompt on c quark]

066-13-83-08101

2. This man denied a governor's request for a collegium of firefighters in Nicomedia, fearing it would become seditious. In another letter to that governor of Bithynia-Pontus, this man advised Pliny the Younger not to actively hunt out Christians but to continue executing those who confessed to the crime. He instituted the alimenta, which used funds from public lands to aid orphans and poor children in Italian cities. The Roman Empire reached its maximum territorial extent under this man's rule. Apollodorus of Damascus built a bridge for this man over the Danube to help move troops in his war against Dacia. For 10 points, name this Roman emperor, the second of the "Five Good Emperors" and predecessor of Hadrian, who commissioned a namesake column.

ANSWER: Caesar Nerva Trajanus Germanicus [or Caesar Divi Nervae Filius Nerva Traianus Optimus Augustus; or Marcus Ulpius Traianus]

121-13-83-08102

3. In the bottom-right of this painting, a cat is doing a barrel roll to scratch at a scary-looking mask on a stone jar. Doric columns in the buildings framing this painting's lower level contrast with the Corinthian columns on the upper level. The presence of a servant butchering a lamb in this painting refers to the sacrifice of the "lamb of god." In the foreground of this painting, two dogs are tied together in front of a string quartet consisting of the artist and three other Venetian painters. Suleiman the Magnificent and Francis I of France are among the diners in this painting, which features a dwarf with a parrot. For 10 points, name this Paolo Veronese painting of the feast where Jesus turned water into wine.

ANSWER: Wedding at Cana [or Marriage at Cana; or Wedding Feast at Cana]

080-13-83-08103

4. The protagonist of this work remembers hearing the syllogism, "Caius is a man; all men are mortal; therefore Caius is mortal," and then wonders if Caius experienced what he did. An apprehensive character in this work half-crosses himself, half-bows, as he enters the protagonist's room before leaving for his regular game of whist. The protagonist concentrates his thoughts on his vermiform appendix while trying to avert a pain that continually subsides then returns worse than ever. That title character becomes dependent on his servant Gerasim after injuring himself while hanging curtains in his new house. For 10 points, name this novella about the deterioration of a judge written by Tolstoy.

ANSWER: *The* Death of Ivan Ilyich [or Smert' Ivana Ilyicha]

020-13-83-08104

5. The carbon residue of the input to this process is measured using RCR. This process was first developed by Vladimir Shukhov, whose ideas were improved upon by William Burton. One form of this process uses a slurry settler, which acts as a centrifuge. Alteration is an alternative to this process, which can be reversed in a process that uses a platinum-rhenium catalyst. One type of this process uses aluminosilicates known as zeolites as catalysts. Another type occurs at high temperatures and results in residue known as coke. Fractions are created from this process, which often takes place in an oil refinery. For 10 points, name this industrial process used to break large carbon molecules into smaller ones.

ANSWER: **cracking** [prompt on answers like "oil **refining**"; prompt on **fractional distillation**"]

140-13-83-08105

6. This country was targeted in the CIA's Project Fiend, which had a British component, Valuable, that was likely sabotaged by Kim Philby. This country advanced women's rights by reforming the patriarchal Code of Leke. The Sigurimi, this country's security police, had their power lessened by Ramiz Alia. In 1967, this country banned all religious practices to become the first officially atheist state. A year later, it became the first of the original Warsaw Pact countries to leave that alliance. It was the only Eastern European nation to side with China in the original Sino-Soviet split. Its king Zog was forced to flee when the Italians invaded in 1939. For 10 points, name this country that was once a Communist nation led by Enver Hoxha.

ANSWER: Republic of **Albania** [or Republika e **Shqipëria**]

052-13-83-08106

7. In this novel, Shaun the Postman criticizes the story of Ondt and the Gracehoper before falling into a barrel and traveling down the river. Towards its end, St. Kevin lies in a bathtub in the house of the Porter family. The Norwegian Captain and the Russian General are forms taken by one character in this novel. The four books of this novel parallel the outline of history presented by Vico in *The New Science*. This book's Four Old Men spread rumors about an incident in Phoenix Park performed by the husband of Anna Livia Plurabelle, Humphrey Chimpden Earwicker. For 10 points, name this stream-of-consciousness novel that incorporates a barrage of portmanteaus into the construction of a dream world, written by James Joyce.

ANSWER: ***Finnegans Wake***

192-13-83-08107

8. This was the highest position held by a man mocked along with Bruce Barton and Hamilton Fish by Franklin Roosevelt; that man in this position was Joseph Martin. This was the highest office held by a man depicted as a screaming baby by cartoonists after complaining about being "forced to use the rear door" on Air Force One. After Larry Flynt offered one million dollars for each sexual story about Republicans, Bob Livingston proved unable to take on this position. Long time holders of this national position were Sam Rayburn and Tip O'Neill. For 10 points, name this political position held for much of the 1990s by Newt Gingrich.

ANSWER: **Speaker** of the United States House of Representatives [or **Speaker** of the House]

052-13-83-08108

9. One movement with this title contains an extensive tam-tam solo and features soft trombones sounding out the final unresolved chord over several repetitions of the word "forever." This word is spelled out above the notes G-F-E flat in the first movement of a piece followed by "The Absence" and "The Return." The thirty-minute last movement of *The Song of the Earth* has this name, which titles a work written on the occasion of Archduke Rudolph's escape from Vienna in the wake of Napoleon's attack. In a symphony with this name, the musicians snuff out a candle on their stand during the final adagio and leave until just two muted violins remain. For 10 points, give this nickname of Haydn's *Symphony No. 45*.

ANSWER: **farewell** [or **Abschied**; or **Lebewohl**; or **Adieux**]

020-13-83-08109

10. Han Xiang's production of an endless supply of this stuff convinced his uncle to let him study Daoism. In Celtic myth, this substance caused Midhir's lover Etain to be reborn a millenium into the future. The ancient Roman god of this substance was named Liber. After nearly raping his own mother, Lycurgus went on a campaign against this substance, which Circe used to turn Odysseus' men into pigs. This substance attracted many bloodthirsty centaurs to Pholus's cave. Homer wrote that the Aegean Sea was as dark as this substance, which Silenus may have liked a little too much. For 10 points, name this beverage whose Greek god was Dionysus.

ANSWER: wine

020-13-83-08110

11. In the lead-up to this event, the apostles question Jesus's resolve to return to Judaea because he has been threatened with stoning there. The shortest verse in the Bible occurs right before this event, in which Jesus says to God, "I thank thee that thou hast heard me." This event sparks Caiaphas to make plans to execute Jesus. When Jesus performs this miracle, he states "whatsoever thou wilt ask of God, God will give it thee," before proceeding to declare "Come forth" next to a cave. The subject of this miracle was a native of Bethany and the brother of Mary and Martha. For 10 points, name this miracle performed by Jesus in the Book of John, in which a certain man was raised from the dead.

ANSWER: raising of Lazarus [or resurrection of Lazarus]

192-13-83-08111

12. A character in this play recounts how he was awoken in the middle of a dream in which he was about catch an enormous trout, prompting his listeners to compare the trout to his mistress. Another character in this play spends all day fitting old keys and locks while sitting on a bench. That character gladly eats dumplings given to him by his wife Anna, who is dying of consumption. Early in this play, Satine wakes up and recalls cheating at cards the night before. Towards its end, Vassilisa pours boiling water on Natasha's feet, prompting the thief Vaska to start a brawl which ends in the death of the landlord Kostilyoff. For 10 points, name this landmark of socialist realism depicting a group of impoverished boarders written by Maxim Gorky.

ANSWER: *The* Lower Depths [or Na Dne]

192-13-83-08112

13. This protein cooperates with the MEG3 non-coding RNA to activated GDF15, and this protein induces a lincRNA that binds to hnRNP-K and mediates downstream transcriptional repression. The drug RITA up-regulates the activity of this protein. LMO3 binds to this protein through its DNA binding domain, and this protein also contains a C-terminal tetramerization domain and a proline-rich domain. The HPV E6 protein targets this protein for degradation, as does the ubiquitin ligase mdm2. It is activated downstream of double-stranded breaks induced by UV damage. This protein triggers the transcription of p21, which arrests the cell at the G1/S checkpoint. For 10 points, name this innocuously named tumor suppressor, known as the “guardian angel” of the genome.

ANSWER: tp53

048-13-83-08113

14. Emma Rothschild has argued this phrase was used by one man as an “ironic but useful joke,” pointing to the first time that man uses it in his *History of Astronomy*. Alfred Chandler referenced this object in a 1977 work about the beginning of middle management in the U.S. This phrase's most famous popularizer first used it with its usual meaning in a story about a “proud and unfeeling landlord” who appears in his *The Theory of Moral Sentiments*, and it also appears in that man's *The Wealth of Nations*. For 10 points, name this metaphor for the unseen power of the market to allocate resources efficiently.

ANSWER: invisible hand

121-13-83-08114

15. The reciprocal of this function is represented by Hankel's contour integral. A function must be this function if it meets certain criteria, including being logarithmically convex, according to the Bohr-Mollerup theorem. The logarithmic derivatives of this function are represented with the letter psi. This function applied to z and multiplied by this function applied to one minus x gives the result π over \sin of πx . The square root of π appears when this function is applied to half-integers. This function has a value of one at one, and, at x plus one it equals x times itself at x . This function is defined as the Euler integral of the second kind, which is the integral from zero to infinity of t to the z minus one times e to the negative t dt. For 10 points, name this extension of the factorial function to complex numbers.

ANSWER: **gamma** function [do not accept or prompt on "factorial"]

190-13-83-08115

16. A park in this country is home to a peace flame that has burned continuously since 1964 and an arch-like Memorial Cenotaph. An art movement from this country contended that buildings should be designed the same way organic life grows. This country is the home of the Metabolism movement and a building with an illuminated cross as its centerpiece, known as the Church of Light. This country's tallest structure is a broadcasting tower called the Skytree. A man-made island in this country is home to a Renzo Piano-designed airport terminal. A Mayan Revival style building in this country survived a devastating 1923 earthquake. For 10 points, name this country where Frank Lloyd Wright built the Imperial Hotel, the birthplace of architect Tadao Ando.

ANSWER: **Japan** [or **Nippon**-koku; or **Nihon**-koku]

066-13-83-08116

17. This region was subject to a campaign to erase its cultural identity through an Educational Ordinance and "citizen schools," a process which was furthered by over eighty percent of the population taking new names. This region's Manse Demonstrations in 1919 were part of its Samil Movement, or March 1st Movement, protesting this region's foreign occupation. Resistance in this region also caused the flourishing of Christianity by many people who were opposed to the worship of a foreign emperor. For 10 points, name this region that was occupied by Japan from 1910 until 1945, when it was liberated and split along the 38th parallel into two countries.

ANSWER: **Korean** Peninsula [or **Hanguk** bando; or **Choson** bando]

020-13-83-08117

18. The biggest environmental issue in this region began when the American beaver was introduced here in 1940. The early 20th century saw a sharp decline in the native Selkham and Yagan tribes located here, which were part of the Ona language group. That decline was likely the result of a gold rush here led by Julius Popper. The largest city here, Ushuaia, claims to be the southernmost city in the world. By taking the Drake Passage, one can round this region's southernmost point, Cape Horn. The Strait of Magellan separates this area from the mainland. For 10 points, name this archipelago shared by Argentina and Chile.

ANSWER: **Tierra del Fuego**

140-13-83-08118

19. In one story, this author wrote about Jacobus Laningdale, who suggests bombing China with glass tubes containing disease-ridden mosquitoes. One of his autobiographical characters drowns himself on a trip to the South Seas. This writer lived in London's East End to do research for *The People of the Abyss*. This author of "The Unparalleled Invasion" and an essay about "Yellow Peril" wrote a novel set in the year 419 B.O.M. narrated by Avis Everhard, who is killed by the Oligarchy. A man from Sulphur Creek warns the protagonist of one of his stories not to go out alone, but he disobeys and freezes to death. For 10 points, name this author of *The Iron Heel* and "To Build a Fire," which has the same setting as his *The Call of the Wild*.

ANSWER: Jack **London**

190-13-83-08119

20. At a social event in this novel, Mrs. Leo Hunter reveals that one character lives at Bury St. Edmonds. During a game of whist in this novel, Rachael's hand is squeezed by a man who is shot in the arm the next day while hunting rooks. Towards its beginning, Alfred Jingle prevents a group of cab drivers from hurting a group of people heading towards Rochester. The lawyers Dodgson and Fogg argue against the title character, whose friend Nathaniel Winkle is mistaken for Tracy Tupman by Dr. Slammer. Augustus Snodgrass marries Emily Wardle with the help of the title character, who is served by Sam Weller. For 10 points, name this novel detailing the adventures of the title character and his namesake club, the first by Charles Dickens.

ANSWER: The *Pickwick Papers* [or The *Posthumous Papers of the Pickwick Club*]

192-13-83-08120

21. This king removed six of the twelve judges deciding the case of *Godden v. Hales* in order to win the right to name members of any religion to his Privy Council. William Sancroft was one of seven bishops imprisoned by this leader for opposing his Declaration of Indulgence. During this man's reign, George Jeffreys presided over the Bloody Assizes following the Monmouth Rebellion. This man's crown was given to his rival by the Convention Parliament. Despite support from Louis XIV, this man was forced to flee to France after losing to his successor at the Battle of the Boyne. For 10 points, name this Catholic king of England who succeeded Charles II, but was removed from power following the Glorious Revolution.

ANSWER: James II of England [or James VII of Scotland; prompt on James]

140-13-83-08121

22. In May 2013, Jay Carney denied *New York Times* reports that the use of this two-word term was ad-libbed, labeling it "deliberate and based on U.S. policy." The speech which introduced this two-word term in context said it applied not only to items being "utilized" but also those "moved around." This term was said to apply only to "mass fatalities" and not "small-scale episodes" in a briefing that also it labeled it something that would "change the calculus" but not lead to a specific response. For 10 points, identify this two-word term which Barack Obama applied to the use of chemical weapons in Syria, implying that the U.S. would intervene if this barrier were crossed.

ANSWER: "red line"

019-13-83-08122

23. The definition of the magnetic vector potential proceeds from this law. When a time-varying electric field is present, this law must be modified to include a term for displacement current. That modification was first done by James Maxwell, and its differential form involves the curl of the magnetic field. This law is a special case of the Biot-Savart law that is easier to apply to a problem given certain symmetries. This law states that the line integral of the magnetic field around a closed curve is equal to the current enclosed. For 10 points, identify this law whose namesake also names the SI unit for electric current.

ANSWER: Ampère's law

066-13-83-08123



1. This ruler called the First Council of Orleans right before his death. For 10 points each:

[10] Name this member of the Merovingian dynasty, a son of Childeric I who expanded his kingdom by conquering Gaul.

ANSWER: Clovis I

[10] Clovis helped to unite these people. Gregory of Tours wrote a history about these people.

ANSWER: Franks

[10] Clovis's conversion to Christianity was encouraged by this wife of his, a Burgundian heiress who ordered a war against King Sigismund later in her life.

ANSWER: Saint Clotilda [or Clothilde; or Chrodechilde; or Chrotechildis]

192-13-83-08201

2. Identify these people who contributed to the discovery of the ionosphere, for 10 points each:

[10] The ionosphere was postulated to explain the results of this man's experiment transmitting radio waves across the Atlantic Ocean. He is usually claimed to be the inventor of the radio.

ANSWER: Guglielmo Marconi

[10] These two scientists independently proposed the existence of the ionosphere in 1902. The E region of the atmosphere is still sometimes named for these two scientists.

ANSWER: Arthur Edwin Kennelly and Oliver Heaviside [accept in any order]

[10] Using frequency modulation, this man proved the height of the ionosphere, and names its F region. Independently of Douglas Hartree, he developed an equation for the propagation of electromagnetic waves in plasma.

ANSWER: Edward Victor Appleton

003-13-83-08202

3. This photographer's early work included pictures of gowns designed by the couturier Paul Poiret. For 10 points each:

[10] Identify this American photographer who curated the *Family of Man* exhibition at the MoMA in 1955 and assisted Alfred Stieglitz in setting up the 291 Gallery, which introduced works by Matisse, Picasso, and others to the United States.

ANSWER: Edward Jean Steichen

[10] Steichen's work was often printed in this quarterly photographic journal published by Alfred Stieglitz.

ANSWER: Camera Work

[10] Steichen is regarded as a pioneer in this photography genre because of his work for the Conde Nast Publications *Vogue* and *Vanity Fair*. Another photographer in this genre, Richard Avedon, created several advertisements for Christian Dior.

ANSWER: fashion photography

066-13-83-08203

4. This language is also known as “castellano.” For 10 points each:

[10] Name this Romance language that originated in Castile and is spoken in twenty countries in the Americas.

ANSWER: **Spanish** [or **español**]

[10] In Spanish, the past tense can be conjugated in this aspect, which mainly expresses ongoing past actions.

ANSWER: **imperfect** [or **imperfecto**; do not accept "preterite" or "preterito"]

[10] In Paraguay, Spanish is a co-official language along with this language, an indigenous South American language spoken by a majority of the population.

ANSWER: **Guarani**

052-13-83-08204

5. Name some biological applications of herring sperm, for 10 points each:

[10] This pyrimidine was first isolated from herring sperm in 1900. It base pairs with adenine in RNA, and isn't present in DNA.

ANSWER: **uracil**

[10] Herring or salmon sperm is used as a blocking agent in this procedure, which is used to identify RNA fragments in a sample. Unlike a similar procedure, it involves RNA electrophoresis.

ANSWER: **Northern** blot

[10] Another compound identified in herring sperm was agmatine, which inhibits the breakdown of this amino acid into nitric oxide in the body. This amino acid has a guanidium group at the end of a three-carbon side chain.

ANSWER: **arginine** [or **Arg** or **R**]

190-13-83-08205

6. This event resulted in the capture of the youngest signer of the Declaration of Independence, Edward Rutledge. For 10 points each:

[10] Name this May 12, 1780, incident in the Revolutionary War, the largest surrender of an American force in the war. It featured Benjamin Lincoln giving up a Southern city to Henry Clinton.

ANSWER: surrender of **Charleston**

[10] Afterwards, Clinton put this man in command of the South. A rival of Clinton, he later surrendered to George Washington at Yorktown.

ANSWER: Charles **Cornwallis**

[10] This notorious British soldier known as the "Butcher" reportedly reveled in abuse of prisoners at Charleston. His men were accused of massacring Americans at the Battle of Waxhaws.

ANSWER: Banastre **Tarleton**

052-13-83-08206

7. A play from this country describes how Rosaura's arrival from Russia leads to Segismundo becoming King of Poland. For 10 points each:

[10] Name this European country whose Golden Age writers included the author of *The Sheep Well*, Lope de Vega.

ANSWER: Kingdom of **Spain** [or Reino de **España**]

[10] The aforementioned play, *Life Is a Dream*, was written by this playwright active during the Spanish Golden Age along with Lope de Vega.

ANSWER: Pedro **Calderon** de la Barca

[10] This Spanish poet of "Death Constant Beyond Love" promoted the style of *conceptismo* in opposition to the *culteranismo* of his rival, Luis de Gongora.

ANSWER: Francisco de **Quevedo**

023-13-83-08207

8. For water waves, it can be written as $\omega = \sqrt{gk}$. For 10 points each:

[10] Name these expressions, such as the ones named for Kramers and Kronig, which can be used to determine a medium's refractive index from a wave's group and phase velocity.

ANSWER: **dispersion relations**

[10] The most common example of dispersion involves white light passing through one of these objects and transforming into the visible spectrum.

ANSWER: **prism**

[10] This scientist modified $E = mc^2$ for his dispersion relations. A hypothesis of this physicist was confirmed by the Davisson-Germer experiment.

ANSWER: Louis-Victor-Pierre-Raymond, 7th duc **de Broglie**

020-13-83-08208

9. Kenneth Rexroth organized this event, which concluded with Gary Snyder's recitation of "A Berry Feast." For 10 points each:

[10] Name this historic poetry slam in San Francisco in 1955. Jack Kerouac started drunkenly chanting "Go! Go! Go!" during its high point, the first performance of "Howl" by Allen Ginsberg.

ANSWER: **Six Gallery Reading**

[10] The Six Gallery Reading was a pivotal moment in the genesis of this American literary movement, whose exponents included Ginsberg and Kerouac.

ANSWER: **Beat** Movement [or **Beat** Generation]

[10] This Jack Kerouac novel includes a thinly-veiled depiction of the Six Gallery Reading, in which one "Alvah Goldbook" recites the poem "Wail." It follows Ray Smith, who attains spiritual renewal after learning about Buddhism from Japhy Ryder.

ANSWER: *The* **Dharma Bums**

080-13-83-08209

10. The Gigantomachy was one of the more formidable attacks to Olympian supremacy. For 10 points each:

[10] To defeat the giants, the god needed the help of this hero, who was armed with arrows dipped in the poison of a monster he had slain earlier, the hydra.

ANSWER: **Heracles** [or **Hercules**]

[10] This leader of the giants was immortal as long as he stayed in the land of Pallene, so Heracles killed him by knocking him out, then moving his body outside Pallene.

ANSWER: **Alcyoneus** [or **Alkyoneus**]

[10] Another giant who fought in the war, Enceladus, was defeated by Athena and trapped under this mountain, where he is said to be responsible for its volcanic and seismic activity.

ANSWER: Mount **Etna**

140-13-83-08210

11. This poet described a creature that "stirred his velvet head like one in danger" in "A Bird came down the Walk" and compared a sunset to a housewife in "She sweeps with many-colored Brooms." For 10 points each:

[10] Name this American poet better-known for writing lyrics like "I'm Nobody! Who are you?" and "I heard a Fly buzz when I died."

ANSWER: Emily **Dickinson**

[10] In another Dickinson poem, the speaker claims she has "heard" this in the "chillest land and on the strangest sea." That poem calls this "the thing with feathers that perches in the soul."

ANSWER: **Hope**

[10] One version of this oft-revised Emily Dickinson poem ends with the lines, "Diadems drop and doges surrender, soundless as dots on a disk of snow." It refers to the "meek members of the Resurrection."

ANSWER: "**Safe in their Alabaster Chambers**"

080-13-83-08211

12. The "national" and "philosophical" types of this state of mind are described in a popular book by Charles Mackay. For 10 points each:

[10] Name this type of belief that the title of Mackay's book references as the "extraordinary popular" kind. One section of the book describes economic bubbles.

ANSWER: **delusions** [do not accept any other answers]

[10] Mackay describes the prophecies of this Frenchman, who wrote many quatrains supposedly predicting future events. Despite dying in 1566, this man is still studied by prophecy buffs.

ANSWER: **Nostradamus** [or Michel de **Nostredame**; or Michel de **Notredame**]

[10] Mackay also provides an overview of this 1600s period in Dutch history, when people went crazy for a particular import from the Ottoman Empire.

ANSWER: **Tulip Mania** [or **Tulip Craze**; or **Tulpenwindhandel**]

052-13-83-08212

13. This artist included "Pharaoh's Dance" and "Spanish Key" on the album *Bitches' Brew*, and he recorded "Venus de Milo" and "Boplicity" on *Birth of the Cool*. For 10 points each:

[10] Name this jazz trumpeter whose sextet, including Cannonball Adderley and John Coltrane, recorded the album *Kind of Blue*.

ANSWER: Miles Dewey **Davis** III

[10] Miles Davis' album *Walkin'* was composed in this style, an outgrowth of bebop with additional influences from soul and gospel music. Its rhythms were pioneered by the Jazz Messengers.

ANSWER: **hard bop** [prompt on **funky jazz**; prompt on **soul jazz**; do not accept or prompt on "cool jazz"]

[10] This jazz pianist of Spanish descent replaced Herbie Hancock in Miles Davis' band and played piano on *Bitches' Brew*. He used the adagio from *Concierto de Aranjuez* for the opening of his song "Spain," recorded with the band Return to Forever.

ANSWER: Armando Anthony "Chick" **Corea**

080-13-83-08213

14. The title crop is seen in a different light by natives and foreigners in this author's *Men of Maize*. For 10 points each:

[10] Name this Guatemalan Nobel laureate who also wrote about the abuses of the United Fruit Company in a trilogy including *Strong Wind* and *The Eyes of the Interred*.

ANSWER: Miguel Angel **Asturias**

[10] The second novel in that trilogy by Asturias is titled for a Pope of this color. A knight of this color challenges Gawain to a beheading contest in a Middle English poem.

ANSWER: **green**

[10] Asturias is sometimes considered a representative of magical realism, as is this Argentinian writer best-known for *The Invention of Morel*.

ANSWER: Adolfo **Bioy Casares**

192-13-83-08214

15. In monotremes, this structure is not coiled. For 10 points each:

[10] Name this spiral-shaped portion of the inner ear that takes its name from the Latin for "snail shell."

ANSWER: **cochlea**

[10] This portion of the cochlea transduces vibrations in cochlear fluid into action potentials in each of its approximately 20,000 hair cells.

ANSWER: **organ of Corti**

[10] Two compartments of the cochlea, the scala tympani and scala vestibuli, contain this fluid rich in sodium ions. It lies extracellular to the hair cells, along with endolymph.

ANSWER: **perilymph**

020-13-83-08215

16. In an epic tale about this leader, his mother, the ugly Buffalo Woman Sogolon, is married to Maghan Kon Fatta, whose other wife Soussama and son Dankaran show this man and his mother no respect. For 10 points each:

[10] Name this leader who is born lame, but eventually grows to become the first mansa of the Mali Empire.

ANSWER: **Sundiata** Keita [or **Sundjata**; or **Mari Jata**]

[10] Sundiata was served by Balla Fasseke, who held this position. These people were also responsible for the oral tradition that passed the epic of Sundiata down through generations.

ANSWER: **griots**

[10] Balla Fasseke's being taken captive in the epic leads to the Battle of Kirina, in which this ruler of Sosso was defeated by Sundiata, possibly because of an arrow using the spur of a white rooster.

ANSWER: **Soumaoro** [or **Sumanguru**]

023-13-83-08216

17. This artist painted four scenes from the life of Saint Sebastian for St. Florian Abbey, and he showed a bunch of angels playing around in a Roman fountain in his *Rest on the Flight into Egypt*. For 10 points each:

[10] Name this German artist, said to have painted the first autonomous landscapes in European art history in forest scenes like *Landscape with Footbridge*.

ANSWER: Albrecht **Altdorfer**

[10] In Altdorfer's best-known painting, the moon and the sun appear in the sky simultaneously as a giant inscription floats over a military victory for this general.

ANSWER: **Alexander the Great** [or **Alexander III** of Macedon; accept *The **Battle of Alexander at Issus***; accept ***Alexander's Victory***; accept *The **Battle of Issus***; prompt on just **Alexander**]

[10] In a painting by Altdorfer, this saint is dwarfed by a gigantic forest scene; however, he still plays his traditional role of slaying a dragon.

ANSWER: Saint **George**

080-13-83-08217

18. The second of these theorems shows a sufficiently strong, finitely axiomatizable theory of numbers can prove its own consistency only if it is inconsistent. For 10 points each:

[10] Name these theorems of an Austrian mathematician, which prove the impossibility of axiomatizing number theory.

ANSWER: Kurt Gödel's **incompleteness** theorems

[10] Gödel also proved the completeness theorem for first-order logic, which together with soundness shows first-order logic possesses this property. In the real numbers, a subset has this property if and only if the subset is closed and bounded.

ANSWER: **compact**

[10] Both incompleteness theorems rely on a lemma proving there are deducible sentences of this type. In analysis, a function f is said to have one of these at x if f of x equals x .

ANSWER: **fixed point**

121-13-83-08218

19. In his book *Kali's Child*, Jeffrey Kripal attempted to emphasize the homoeroticism of this man's teachings. For 10 points each:

[10] Name this Indian mystic whose disciple Swami Vivekananda founded a namesake "mission" in his honor.

ANSWER: **Ramakrishna** [or **Ramkrishna**; or Gadadhar **Chattopadhyay**; or Ramakrishna **Paramahansa**]

[10] The mysticism of Ramakrishna was given as one example of the "oceanic feeling" in a letter Romain Rolland addressed to this man, who argued that Moses was an Egyptian noble in another book. He wrote *The Interpretation of Dreams*.

ANSWER: Sigmund **Freud** [or Sigismund Schlomo **Freud**]

[10] Ramakrishna was also famed for his almost-daily samadhi, in which this happened to him. He was possibly influenced the Sufi practice of sema, whose end goal was the form of this termed wajd.

ANSWER: religious **trance** [or **ecstasy**]

020-13-83-08219

20. The narrator of this book contemplates the life of a *plongeur* after B offers him a job looking after a "congenital imbecile." For 10 points each:

[10] Name this semi-fictionalized memoir, the first book published by its author, which recounts how its author lived among beggars and hoboes in the two title locations.

ANSWER: **Down and Out in Paris and London**

[10] *Down and Out in Paris and London* is a memoir by this Englishman, who recounted his service in Burma in *Burmese Days* and "Shooting an Elephant." His novels include *Animal Farm* and *Nineteen Eighty-Four*.

ANSWER: George **Orwell** [or Eric **Blair**]

[10] Orwell embraced socialism, but recounted his disillusionment with communism in this book about his time fighting for the Republicans in the Spanish Civil War.

ANSWER: **Homage to Catalonia**

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21. Anna Hingley was the first woman to traverse this region on horseback, from Broome to Cairns. For 10 points each:

[10] Name this arid region that covers seventy percent of Australia.

ANSWER: Australian **Outback**

[10] This town in the Outback is situated at the geographical center of Australia. It is named after the wife of telegrapher Sir Charles Todd.

ANSWER: **Alice** Springs [or **the Alice**]

[10] The Outback also includes these domed rocks a few miles away from Uluru, southwest of Alice Springs. They are made up of a conglomerate of sedimentary rocks.

ANSWER: **Olgas** [or **Mount Olga**; or Kata **Tjuta**]

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