

Toss-ups

1. While visiting the tomb of her father Gustave, the protagonist of this work asks him to “Help me say Goodbye.” “The world wants” one character in this work, who croaks as she sings in *Il Muto*. The title character of this work despises “the garish light of day”, and asks Firmin and André “Why so silent, good messieurs?” when he appears as the Red Death at a masquerade ball. Piangi, the lover of Carlotta, is murdered by that character during a performance of *Don Juan Triumphant*, after which a mob storms his lair and Raoul rescues Christine. For 10 points, name this Andrew Lloyd Webber musical about a deformed “Angel of Music”.

ANSWER: *The Phantom of the Opera*

2. This character is barked at by the dogs Tray, Blanch, and Sweetheart, who are chased off by a man who pretends to be Tom O’Bedlam. This “man more sinned against than sinning” cries out “Never, never, never, never, never!” while holding the corpse of a character who replied “Nothing, my Lord” to his earlier question. This character cries “Blow, winds, and crack your cheeks!” in a storm he weathers with Kent and the Fool, as he denounces the faithlessness of Goneril and Regan. For 10 points, name this father of Cordelia who divides his kingdom between his daughters, the namesake of a Shakespeare tragedy.

ANSWER: King Lear

3. The divergence of this quantity at low temperatures is described by the Kondo effect, and it is quantized by the von Klitzing constant, which was determined via the quantum Hall effect. In AC circuits this quantity is generalized to a complex form, which is measured in siemens and called impedance. It is directly proportional to length and inversely proportional to cross-sectional area. This quantity is equal to voltage divided by current according to Ohm’s Law. For 10 points, name this quantity which measures opposition to the flow of electricity.

ANSWER: electrical resistance

4. This singer gained publicity for a relationship with a man eight years her senior, photographer James Lowe. In one of her songs, she declares “in all chaos, there is calculation” and describes “dropping glasses just to hear them break.” She says, “I’m kind of over getting told to throw my hands up in the air,” in one song, and her debut album *The Love Club EP* was originally released for download on Soundcloud. That album includes a song whose music video features two young men shaving their heads in a bathroom. For 10 points, name this New Zealander singer who insists that she’s “not caught up in your love affair” in “Royals.”

ANSWER: Lorde [accept “Ella Marija Lani Yelich-O’Connor”]

5. The Zemene Mesafint or “Era of the Princes” in this country resulted from the murder of Iyasu the Great, who ruled from Gondar. One ruler of this country used an electric chair as a throne and was succeeded by his daughter Zewditu. A Communist government came to power in this country after a famine in its Wello province. That government, the Derg, ordered the execution of Abuna Theophilos, Patriarch of this country’s Oriental Orthodox Church. Under Emperor Menelik II this country defeated an Italian invasion in 1935. For 10 points, name this country located on the Horn of Africa with its capital at Addis Ababa.

ANSWER: Federal Democratic Republic of Ethiopia [accept “Ītyōṗṗyā”]

6. Cyril Scott, who leads the Rosebud Sioux Tribe, has announced that he considers this project an “act of war.” Dave Heineman, the current Governor of Nebraska, approved a modification to this enterprise, which has been delayed indefinitely pending review from the Department of State and the Obama administration. Senator Mary Landrieu’s support for this proposal failed to gain it the required sixty votes needed for approval in the U.S. Senate. For 10 points, name this proposed addition to a pipeline that transports oil from Canada to the Gulf of Mexico.

ANSWER: **Keystone XL** pipeline [prompt on partial answers]

7. The only known chaperone protein for this structure is the trigger factor, and elongation factors promote binding to these organelles. In eukaryotes, the 3 prime terminus of its 18S portion attaches to the Kozak sequence, and the fMet initiator arrives at this organelle before it performs its most important function. This organelle has A, P, and E sites, and deacylated tRNA hangs out at the E-site before leaving this organelle. It is synthesized in the nucleolus and decodes mRNA in translation. For 10 points, name this organelle that is responsible for protein synthesis.

ANSWER: **ribosome**

8. This man arrived in India to learn that his brother, Lord Mornington, had been appointed its Governor General. During the Fourth Anglo-Mysore War, he captured Seringapatam. This general defeated Marshals Jourdan and Marmont at Vitoria and Salamanca, and he replaced Lord Castlereagh as British representative to the Congress of Vienna. At this leader’s greatest victory, his forces struggled for control of a farmhouse at La Haye Sainte before being reinforced by Gebhard von Blücher. For 10 points, name this general who defeated Napoleon at Waterloo.

ANSWER: Arthur **Wellesley**, 1st Duke of **Wellington** [accept either]

9. This author describes the title location of one poem as “morgue between Paris and Rome”. A “substanceless blue” is the subject of a poem titling a poetry collection by this author that includes a poem describing a person as “big as a Frisco seal.” This author of “The Munich Mannequins” calls her skin “bright as a Nazi lampshade” in another poem. Esther Greenwood’s experience with psychiatric treatment is the subject of her only novel. For 10 points, identify this author of the collection *Ariel*, which includes her poems “Lady Lazarus” and “Daddy”, and the novel *The Bell Jar*.

ANSWER: Sylvia **Plath**

10. In this figure’s seven visions, he spoke with archangels, called the Amesha Spentas, who commanded him to protect a different element, including animals, fire, and metal. This man composed seventeen hymns, the Gathas, that make up the oldest part of his holy text, the Zend Avesta. This prophet worshipped a god whose last creation was fire, so it is kindled in his religion’s fire temples. For ten points, name this Persian prophet who founded a namesake dualistic religion that worships Ahura Mazda.

ANSWER: **Zoroaster** [accept “**Zarathustra**” or “**Zartosht**”]

11. In a painting by this artist, a black-winged angel stands above musical instruments and pieces of armor. An angel with its back turned to the viewer plays violin for a sleeping Mary in another painting by this artist, who painted blood gushing from a man's neck in his depiction of *Judith Beheading Holofernes*. A bowl of fruit hangs over the edge of a table in another painting in which a man stretches out his hands in surprise at seeing the central figure. This artist also created a work in which the title tax collector is illuminated by a ray of light. For 10 points, name this user of tenebrism, who painted *The Supper at Emmaus* and *The Calling of St. Matthew*.

ANSWER: Caravaggio [accept "Michelangelo Merisi"]

12. A real number is produced when two of these entities are the inputs to the metric tensor, which is a bilinear form. Taking the hodge dual of the wedge product between two of them is equivalent to a more common operation involving these entities, which is only valid in 3 and 7 dimensional space. Projections of these objects are used in the Gram-Schmidt process, and a basis is a linearly independent set of them. They are added using the parallelogram rule, and cross products and dot products both involve them. For 10 points, name these objects, contrasted with scalars, that have both magnitude and direction.

ANSWER: vectors

13. When this figure was born, his father found his cell door miraculously open and the Yamuna River parted so he could cross. This deity killed the tornado demon Trinavarta, the wet nurse Putana, and his uncle Kansa, and he lifted the Govardhan Mountain with his little finger. He also served as Arjun's charioteer during the Kurukshetra War, and spoke the *Bhagavad Gita* to him before the first battle of that war. For 10 points, name this eighth avatar of Vishnu, known for his flute-playing and seduction of cowmaids, a peacock feather in his crown, and his dark skin.

ANSWER: Krishna [prompt on "Vishnu" before read]

14. In a short story by this author, the lawyer Tomas Rodaja believes he is made of glass after being given a love potion. In this author's first novel, Elicio and Erastro vie for the love of the title woman, with whom they travel to a wedding. This author of the *Exemplary Novels* and *La Galatea* wrote a novel in which Sancho Panza is promised governorship of an island by a protagonist defeated by the Knight of the White Moon. For 10 points, name this Spanish author of a novel in which a man who loves Dulcinea fights windmills, *Don Quixote*.

ANSWER: Miguel de Cervantes Saavedra

15. One ship from this country took prizes off the coast of South Africa before being sunk off the French coast in the Battle of Cherbourg. William Gladstone paid \$15.5 million to compensate for Britain's building ships for this country's fleet, whose submarine *Hunley* sank in a storm. John Ericsson designed one ship to combat a similar innovative ship from this country, which was built at Secretary Stephen Mallory's suggestion in Norfolk Yard from the hulk of the *Merrimack*. For 10 points, name this country whose navy included the *Alabama* and ironclads like the *Virginia* during the Civil War.

ANSWER: Confederate States of America [accept "the Confederacy"]

16. One of this man's quartets begins with a fortissimo D followed shortly by pianissimo triplets. That work contains a tarantella in its fourth movement and a death march in its second. This composer was unable to play his own extremely difficult Fantasy in C Major based on *Der Wanderer*, one of this man's *lieder* like *Im Frühling* and *Der Erlkönig*. One of his pieces depicts the travails of a fisherman, and sketches for a scherzo are the last completed parts of this composer's Symphony no. 8 in b minor, which remained unfinished at his death. For 10 points, name this Austrian Romantic composer of "Death and the Maiden" and the Trout Quintet.

ANSWER: Franz Peter **Schubert**

17. In a novel from this country, Eduviges's ghost haunts the town of Comala, where the protagonist comes to look for his title father. An author from this country wrote of gravediggers who exhume a corpse at the behest of the Washington Star in a novel inspired by Ambrose Bierce. A poet from this country included the lines "doubles back, and comes full circle, forever arriving" and "willow of crystal, a poplar of water" in a poem whose 584 lines parallel the Aztec calendar. For 10 points, name this country whose works include Juan Rulfo's *Pedro Paramo*, Carlos Fuentes's *The Old Gringo*, and "The Sunstone" by Octavio Paz.

ANSWER: **Mexico** [accept "**United Mexican States**" or "**Estados Unidos Mexicanos**"]

18. In a debate with William McDougall, this man called the brain a "mystery box." In an experiment he conducted with Harvey Carr, the subjects were trained to run through a maze to find food, but when the maze was shortened the subjects still ran the same paths and thus right into walls. He conducted the "Kerplunk" experiment, and one with Rosalie Rayner in which a metal bar was struck every time the infant test subject touched a rat, instilling a classically conditioned fear in the child. For 10 points, name this American psychologist who conducted the "Little Albert" experiment.

ANSWER: John Broadus **Watson**

19. During this leader's rule, T.V. Eachara Warriar filed a lawsuit after his son died in custody. This leader stopped requesting grain shipments after Lyndon Johnson used them to force support for the Vietnam War. This leader divided a state but left Chandigarh as a capital for both Haryana and Himachal Pradesh, and this leader's son Sanjay undertook a program of forced sterilization during The Emergency. This leader ordered Operation Blue Star and an invasion of the Golden Temple, for which she was assassinated by her Sikh bodyguards. For 10 points, name this female Prime Minister of India.

ANSWER: **Indira Priyadarshini Gandhi** [prompt on "**Gandhi**"]

20. One value involved in a form of this technique is the Kovats retention index, and this technique is used twice in MudPit protein analysis. A hyperbolic equation is used to find the optimal velocity required for achieving the maximum efficiency of this technique; that equation is the van Deemter equation. An important value to this technique is the retention factor, and it is separated into mobile and stationary phases. Types of this technique include thin-layer, column, and gas. For 10 points, name this technique used to separate mixtures, like the ink of a pen.

ANSWER: **chromatography**

TB. This facility contacts amateur radio operators on the 2 meter band at a frequency of 145.8 megahertz. The Cupola is a seven-windowed, hexagonal observatory at this facility, and the Alpha Magnetic Spectrometer located here searches for evidence of dark matter. Wallops Island was rocked in October 2014 because of the explosion of an Antares rocket carrying supplies to this facility. This facility is the most expensive object ever made. For 10 points, name this artificial satellite on which astronauts from different countries can perform scientific research.

ANSWER: International Space Station

Bonuses

1. The firing of Anna Walentynowicz triggered a strike that led to the creation of this group. For 10 points each:

[10] Name this trade union that grew from the 21 MKS Demands developed at the Gdansk shipyards.

ANSWER: **Solidarity** [accept “**Solidarność**”, “**Independent Self-governing Trade Union**”, and “**Niezależny Samorządny Związek Zawodowy**”]

[10] Solidarity was a group in this country. Pope John Paul II was originally from here, and his visit to this country sparked the development of Solidarity.

ANSWER: Republic of **Poland** [accept “Rzeczpospolita **Polska**”]

[10] This former electrician used Catholicism as a unifying factor while he led Solidarity. He was eventually elected president of Poland.

ANSWER: Lech **Walesa**

2. This effect occurs when a salt containing ions of an insoluble solid are added to the solid, causing it to precipitate. For 10 points each:

[10] Name this effect that causes lower solubility of a solute if some of its ions are already present in the solution.

ANSWER: **common-ion** effect

[10] The common-ion effect is a specific case of this more general principle, summarized as any change to a balanced system will cause an opposite change to re-balance it.

ANSWER: **Le Châtelier’s** principle

[10] Le Châtelier’s principle deals with the position of this state, in which the rate of forward and backward reactions are equal.

ANSWER: chemical **equilibrium**

3. The eighth piece in this set is titled *Träumerei*. For 10 points each:

[10] Name this suite for piano that depicts the Knight of the Hobbyhorse and one of its namesake figures “Falling Asleep”.

ANSWER: **Kinderszenen** [accept “**Scenes from Childhood**”]

[10] *Kinderszenen* was composed by this German Romantic composer of the *Rhenish Symphony*, who quoted his suite *Papillons* in *Carnaval*.

ANSWER: Robert **Schumann**

[10] This composer and wife of Robert Schumann was the daughter of his music teacher. She advocated for Johannes Brahms and was the first pianist to perform his work publicly.

ANSWER: **Clara** Schumann [accept “Clara Josephine **Wieck**”]

4. In the beginning of this work, Billy Bones is given the “black spot.” For 10 points each:

[10] Name this work in which Jim Hawkins overhears a planned mutiny while hiding in an apple barrel aboard the *Hispaniola*.

ANSWER: **Treasure Island**

[10] *Treasure Island* was written by this author who also wrote about a scientist who turns evil at night in *The Strange Case of Dr. Jekyll and Mr. Hyde*.

ANSWER: Robert Louis **Stevenson**

[10] In this other Stevenson work, which was followed by the sequel *Catriona*, Ebenezer Balfour attempts to sell away his nephew, David, who befriends the Jacobite soldier Breck.

ANSWER: **Kidnapped**

5. An attempt to relocate this team to Seattle was foiled after an ownership group led by Vivek Ranadive reached an agreement with the Maloofs. For 10 points each:

[10] Name this team that plays at Sleep Train Arena in California’s capital, whose former players include Nate Archibald, Mitch Richmond, and Chris Webber.

ANSWER: **Sacramento Kings** [accept either]

[10] The Sacramento Kings are led by this center drafted 5th in the 2010 NBA. This player is notorious for his technical fouls and actions like punching Patrick Beverley in the stomach.

ANSWER: DeMarcus “Boogie” **Cousins**

[10] After he was caught in a betting scandal, this former NBA referee claims that the NBA had fixed Game 6 of the Lakers-Kings series in the 2002 NBA playoffs for better ratings.

ANSWER: Tim **Donaghy**

6. The thirty-six views of this location include one from a teahouse at Koishikawa. For 10 points each,

[10] Name this mountain depicted reddened by the sun in one of those views.

ANSWER: Mount **Fuji** [accept “**Fuji**-san”]

[10] This most famous depiction of Mount Fuji by Hokusai shows the title entity ravaging boats off the coast.

ANSWER: *The* **Great Wave off Kanagawa** [accept “**Kanagawa Oki Nami Ura**”]

[10] This Japanese term for woodblock prints means “pictures from the floating world”. Hokusai and Hiroshige worked in this medium.

ANSWER: **ukiyo-e**

7. This man built a mosque every Friday along his route. For 10 points each:

[10] Name this ruler who inadvertently caused massive inflation by giving away gold in Egypt.

ANSWER: Mansa **Musa** [accept “**Musa** I”]

[10] Mansa Musa ruled this African empire, where the University of Sankoré was established in Timbuktu.

ANSWER: **Malian** Empire

[10] When Mansa Musa ruined the economy of Egypt, this sultanate was in power there. Composed of Circassian former slaves, it overthrew the ruling Ayyubid dynasty in 1250.

ANSWER: Bahri **Mamluk** Sultanate [accept “Bahriyya **Mamluks**” or “**Bahri** dynasty”]

8. This scientist debated with Niels Bohr about quantum theory. For 10 points each:

[10] Name this German scientist most famous for his equation $E=mc^2$.

ANSWER: Albert **Einstein**

[10] One of Einstein's major issues with quantum theory was that it implied this "spooky action at a distance" in which a number of particles are represented by a single quantum state.

ANSWER: quantum **entanglement**

[10] Einstein introduced the concept of entanglement in this thought experiment, which was an attempt to discredit quantum theory.

ANSWER: **EPR** Paradox [Accept "**Einstein-Podolsky-Rosen** Paradox"]

9. This landform is bounded to the north by the Satpura and Vindhya mountain ranges. For 10 points each:

[10] Name this central plateau that lies between the Eastern and Western Ghats. The rivers Godavari and Kaveri flow through this area.

ANSWER: **Deccan** Plateau

[10] The Deccan Plateau is a geographic area in this country, the second most populous nation on Earth.

ANSWER: Republic of **India**

[10] This desert is surrounded by the Araveli Ranges on the east and by the Great Rann of Kutch to the south. It forms part of India's border with Pakistan.

ANSWER: **Thar** Desert [accept "**Great Indian** Desert"]

10. In the Odyssey, this man leaves a storeroom open, allowing Antinous and the other potential suitors of his mother to re-arm themselves. For 10 points each:

[10] Name this son of Odysseus and Penelope.

ANSWER: **Telemachus** [accept "**Telemakhos**"]

[10] This deity passes for Telemachus at Sparta, in order to acquire ships to search for Odysseus.

ANSWER: **Athena**

[10] This legendary Greek poet wrote the *Odyssey* and the *Iliad*.

ANSWER: **Homer**

11. Humans were created from this god's sweat and tears. For 10 points each:

[10] Name this sun god, who tried to prevent Net and Geb from giving birth by placing Shu, the air, in between them. He punished humankind by sending Sekhmet, his eye, down to Earth.

ANSWER: **Ra** [accept "**Re**"]

[10] This Egyptian deification of chaos lurks in the tenth region of the Night in wait for Ra. Priests molded disfigured wax models of this serpent in order to limit its evil powers.

ANSWER: **Apep** [accept "**Apophis**"]

[10] Ptolemy I created this syncretic Egyptian god in order to unify the Greeks and Egyptians. An enormous temple to this god in Alexandria hosted part of the Great Library.

ANSWER: **Serapis**

12. This series includes *Purple Jumping Man* and *Silver Car Crash*. For 10 points each:

[10] Identify this series of paintings that depicts multiple images of suicides, accidents, and car crashes cropped out of newspapers.

ANSWER: **Death and Disaster Series**

[10] The *Death and Disaster* series is a work by this Pop Artist most famous for his depictions of cultural icons like Marilyn Monroe and Campbell's Soup cans.

ANSWER: Andy **Warhol** [accept "Andrew **Warhola**"]

[10] The subject of Warhol's *Suicide: Fallen Body* jumped from this Art Deco skyscraper located in Manhattan. Warhol later filmed this building's distinct floodlights for eight hours.

ANSWER: **Empire State Building**

13. This character's name contains "softened consonants and long-drawn u-sound." For 10 points each:

[10] Name this character, a handsome Polish boy who travels with his mother and governess in the novel *Death in Venice*.

ANSWER: **Tadzio**

[10] Tadzio is the object of Gustav von Aschenbach's affection in *Death in Venice*, a novel by this German author.

ANSWER: Thomas **Mann**

[10] In this Mann novel, Hans Castorp's cousin Joachim Ziemssen dies at 7 o'clock after his return to active duty causes his lungs to deteriorate, despite his stay in an Alpine sanatorium.

ANSWER: *The* **Magic Mountain** [accept "*Der* **Zauberberg**"]

14. This man allegedly told Frederic Remington "You furnish the pictures and I'll furnish the war." For 10 points each:

[10] Name this owner of the *New York Journal* who popularized yellow journalism after an explosion in Havana Harbor.

ANSWER: William Randolph **Hearst**

[10] The explosion of the *USS Maine* in this Spanish colony's Havana Harbor impelled the United States to fight Spain and establish a protectorate over this country.

ANSWER: **Cuba**

[10] During Franklin Pierce's term, Pierre Soulé wrote this document that advocated the United States' annexation of Cuba. The fallout from its publication fractured the Democratic Party.

ANSWER: **Ostend Manifesto**

15. The occurrence of this event was first proposed by Georges Lemaître. For 10 points each:

[10] Name this event at the beginning of time, during which the Universe began to expand from an infinitely dense state.

ANSWER: **Big Bang**

[10] It is hypothesized that, right after the Big Bang, the Universe underwent this process of extremely rapid expansion. This theory was developed by Alan Guth and Andrei Linde.

ANSWER: **inflation**

[10] A mere 378,000 years after the Big Bang, the Universe was cool enough for this event to occur. This event was the joining of protons and electrons to form neutral hydrogen atoms.

ANSWER: cosmological **recombination**

16. The sequel to this work includes a girl named Sophie in an attempt to explain difficulties in marriage. For 10 points each:

[10] Name this philosophical work that discusses the educational system applied to the title boy.

ANSWER: Émile, or *On Education* [accept “Émile, ou *De l’Education*”]

[10] This author of *Émile* was a Swiss-born Romanticist who also wrote *The Social Contract*.

ANSWER: Jean-Jacques Rousseau

[10] In *The Social Contract*, Rousseau wrote about this entity, which is the collective desire of a group of people.

ANSWER: General Will [accept “Volonté Générale”]

17. According to the Roman Catholic Church this man was the first pope, ordained by Jesus in the “Rock of my Church” speech. For 10 points each:

[10] Name this apostle who thrice denied Christ.

ANSWER: Saint Simon Peter

[10] This man was the only one of the apostles not to die a martyr’s death. At the Last Supper, this man sat next to Jesus as the “disciple whom Jesus loved”.

ANSWER: Saint John

[10] This apostle traveled as far as India to preach the Gospel. When Jesus resurrected, this apostle was at first skeptical, asking first to see and feel the puncture wounds of the nails.

ANSWER: Saint Thomas

18. Unlike most pandemics, this one killed proportionally more adults than elderly and children, because of its use of a cytokine storm. For 10 points each:

[10] Name this influenza outbreak that killed three to five percent of the global population in the year World War I ended.

ANSWER: Spanish influenza [accept “**1918 influenza pandemic**” or obvious equivalents]

[10] This pandemic was probably not a result of the conjunction of Mars, Jupiter, and Saturn. John Clyn left parchment for another “son of Adam” to finish his *Annals* because he died in it.

ANSWER: Black Death [accept “bubonic plague” or “*Yersinia pestis*”]

[10] John Snow discovered the source of a cholera outbreak in this English capital city, where an outbreak of plague occurred in 1665.

ANSWER: London

19. The protagonist of this work meets Jack Duane in prison, who convinces him to rely on crime to support his family. For 10 points each:

[10] Name this novel, in which the Lithuanian immigrant Jurgis Rudkus ends up at a Socialist rally after working at multiple jobs with poor conditions.

ANSWER: *The* Jungle

[10] This author penned the Lanny Budd series, *The Brass Check*, and *The Jungle*. He was also a prominent muckraker.

ANSWER: Upton Beall Sinclair, Jr.

[10] This man, the boss of a loading crew in a meatpacking factory, uses his political power to blackmail Ona and put Jurgis in jail.

ANSWER: Phil Connor [accept either]

20. This process is how somatic cells divide into two. For 10 points each:

[10] Name this process of cell replication that includes prophase and is preceded by interphase.

ANSWER: **mitosis**

[10] This stage of interphase is between the G1 and G2 phases and is when DNA replication occurs.

ANSWER: **S** phase

[10] This family of proteins controls the transition between the G1 and S phase as well as between interphase and mitosis as a whole.

ANSWER: **cyclins**

TB. This man's victory is depicted in the Bayeux Tapestry. For 10 points each:

[10] Name this Duke of Normandy who became King of England after the Battle of Hastings.

ANSWER: **William the Conqueror** [accept "**William I**" or "**William the Bastard**"]

[10] This last king from the House of Wessex invited William to rule England upon his death, but Harold Godwinson seized the throne with the support of the English barons.

ANSWER: **Edward the Confessor**

[10] William led this genocidal campaign in 1070 to lay waste to counties like Yorkshire and Northumbria after Edgar the Ætheling attempted to seize the English throne.

ANSWER: **Harrowing of the North** [accept "**Harrying of the North**"]