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### TOSSUPS

1. The festival of Holi begins with one of these things called the Holika Dahan. At Hindu weddings, the groom and bride circle one of these things four times with their scarves tied together. One creature formed from these things refused to bow to Adam and was outcast with the name Shaitan. In the past, recently widowed Hindu women performed (\*) *sati* (SAH-tee) by entering one of these things to commit suicide. Chinese people throw spirit money into one of these things to give spending money to the dead. The Hindu deity Agni is the god of, for 10 points, what phenomenon which was maintained in the hearth of the Vestal Virgins?

ANSWER: fires [or flames; accept bonfire; accept pyres; accept anything that involves burning things; prompt on "altars" or other sacrificial devices that don't explicitly involve fire]

2. This author wrote that the title phenomenon "vibrates in the memory" "when soft voices die." In another poem, this author calls the title entity "Destroyer and Preserver" "from whose unseen presence the leaves dead are driven." This author wrote a variation on a Greek tragedy in which Jupiter falls from grace. The speaker of a poem by this author recounts a "shattered visage" with "a (\*) sneer of cold command." This author asks "If winter comes, can spring be far behind?" in one poem, and in another poem he recounts the inscription "Look on my works, ye Mighty, and despair!" For 10 points, name this Romantic poet of *Prometheus Unbound*, "Ode to the West Wind," and "Ozymandias."

ANSWER: Percy Bysshe Shelley

3. The Japanese app LINE sells user-made versions of these objects on the Creators Market, including iconic examples featuring the bear and rabbit duo Brown and Cony. A "Downer Dino" one of these objects features a Tyrannosaurus saying "Everything is Terrible" while watching a falling meteor. A set of these objects features a puppy on roller skates saying "On My Way!" (\*) Mark Zuckerberg's sheepdog Beast inspired a series of these objects. Facebook launched a branded pack of these objects as publicity for *Despicable Me 2*. For 10 points, name these objects used in messaging services, one pack of which features Pusheen the Cat.

ANSWER: stickers [accept Facebook stickers; accept Line stickers; accept WeChat stickers; prompt on "emojis" or "emoticons" or "cartoons"]

4. During this war, General Joseph Stilwell sent supplies across a mountain range via a dangerous air route nicknamed "The Hump." Claire Lee Chennault commanded a group of volunteer pilots in this war known as the Flying Tigers. During this war, the U.S. introduced the P-51 (\*) Mustang fighter and the B-29 Superfortress bomber, and the nickname "Red Tails" was given to a group of African-American pilots known as the Tuskegee Airmen. For 10 points, name this war in which a bomber known as the Enola Gay dropped the "Little Boy" atomic bomb on Hiroshima.

ANSWER: World War II [or Second World War]

5. This character's last words include "we owe a rooster to Asclepius" (uh-SKLEE-pee-uss). Echebrates (eh-CHAY-kruh-tees) asks about the specifics of this man's death in one work, while in another work, this man's friend fails to convince him to escape from a jail cell. This subject of *Phaedo* and friend of (\*) Crito stands trial against charges brought by Anytus, Meletus, and Lycon in another work, where he is referred to as "the gadfly of the state". After being found guilty of corrupting the minds of Athenian youth, this thinker is sentenced to death by drinking hemlock. For 10 points, name this ancient Greek philosopher, the subject of many dialogues written by his student Plato.

ANSWER: Socrates

6. The inhabitants of this location are classified as either "drowned" or "saved" in a memoir by an Italian chemist. In another book, the narrator declares that God "is hanging here on this gallows" when he witnesses the execution of a young boy at this location, where the residents of the Hungarian town of Sighet are sent after they ignore the warnings of Moshe the Beadle. (\*) Primo Levi (**PREE-mo LEH-vee**) wrote about "Survival in" this location. In 1992 Art Spiegelman won a Pulitzer for his graphic novel depicting the guards and prisoners in this location as cat and mice. For 10 points, name this setting of Elie Wiesel's novel *Night*, a World War II concentration camp.

ANSWER: Auschwitz [or Oswiecim; accept Auschwitz-Birkenau; prompt on "Birkenau"; prompt on "Monowitz" or "Buna" or "Monowitz-Buna" or "Buna-Monowitz"; prompt on general answers such as "concentration camps" or "death camps"]

7. This artist painted the British general George Eliott extending his right arm to signal his officers to rescue defeated Spanish soldiers in *The Defeat of the Floating Batteries at Gibraltar*. Henry Pelham stares off into the distance while a rodent bites a golden chain in this artist's *Boy with a Squirrel*. In one of this man's many portraits, engraving tools rest on a table and the title (\*) silversmith holds a teapot. Another painting by him shows a man about to harpoon the title animal in Havana Harbor. For 10 points, name this American painter of a *Portrait of Paul Revere* and *Watson and the Shark*.

ANSWER: John Singleton Copley

8. A king with this name defeated a rebellion that tried to depose him and crown his elder brother Robert Curthose; that king later died while hunting in the New Forest. George IV ("the 4th") of England was succeeded by his younger brother of this name, who oversaw the passage of the Great Reform Act. The Battle of the Boyne was won by a king with this name, who came to power in the (\*) Glorious Revolution. In 2011, a prince with this name married Kate Middleton. For 10 points, what name is shared by four kings of England, the first of whom is called the Conqueror?

ANSWER: William [accept William II or William Rufus or William IV or William III or William of Orange or Prince William, Duke of Cambridge or William I or William the Conqueror]

9. The existence of an object with this property at a given point is guaranteed by Playfair's axiom. The existence of the "ultra" variant of this property was discovered independently by Bolyai and Lobachevsky. Two vectors with this property have a dot product equal to the product of their magnitudes. The creation of hyperbolic geometry involved the assumption that this property didn't exist, which was equivalent to ignoring Euclid's (\*) fifth postulate. Quadrilaterals named for this property have supplementary opposite angles and include squares. For 10 points, name this property of two lines which never intersect.

ANSWER: parallel [accept ultraparallel or parallelograms]

10. In "I Sing the Body Electric," Walt Whitman comments that these people's bodies contain "The same old blood! / The same red-running blood!". A literary one of these people chooses having his right foot cut off over being castrated. Another literary one of these people reluctantly kills Margaret Whitehead at the instigation of the madman Will, after which the lawyer Thomas Gray leads that protagonist to his hanging. People of this type are the protagonists of Alex Haley's (\*) *Roots* and William Styron's *The Confessions of Nat Turner*. For 10 points, name these people who sometimes wrote narratives describing their time in captivity.

ANSWER: slaves [prompt on "black people" or "African-Americans"]

**HALFTIME**

11. In this state, *The New York Times* photographed a police dog jumping at the stomach of a high school student in 1963. A pro-segregation governor of this state personally blocked two black students from entering a university in his "Stand in the Schoolhouse Door". In 1965 policemen assaulted hundreds of protesters on this state's Edmund Pettus (\*) Bridge during Bloody Sunday. During the 1960s, this state was governed by the segregationist George Wallace, who faced Civil Rights protesters marching from Selma. For 10 points, name this state that witnessed Martin Luther King's Birmingham Campaign and the Montgomery Bus Boycott.

ANSWER: Alabama

12. Since the 19th century, multiple species from this sea have invaded a more nutrient-rich sea to the north via a process known as Lessepsian Migration. At the northern end of this sea, which does *not* border Iran, the strategically located Strait of Tiran (tee-rah-n) is guarded by the port of Sharm-el-Sheikh. Its southeastern entrance is controlled via the Bab-el-Mandeb strait, which connects it to the Gulf of (\*) Aden. This sea's port of Jeddah is the main international gateway for pilgrims traveling to Mecca. The Suez Canal connects the Mediterranean to, for 10 points, what sea that separates the Arabian Peninsula from Africa?

ANSWER: Red Sea [or al-Bahr al-Ahmar]

13. The discrete nature of this property helped prove the existence of Weiss domains, whose boundaries physically distort to produce Barkhausen noise. This property can be modeled by a simple lattice of discrete spins, the Ising ("icing") model, and its dependence on both current and past conditions is a canonical example of hysteresis. A discontinuity in the Curie-Weiss equation causes this property to disappear at the (\*) Curie temperature. Unlike a similar phenomenon, this property can exist without an external field, and it allows minerals like magnetite to spontaneously align themselves. For 10 points, name this property found in elements like cobalt and iron.

ANSWER: ferromagnetism [accept ferromagnets; prompt on "magnetism"; do not accept "antiferromagnetism"]

14. In 2013 a member of this organization named Chuck Blazer became an FBI informant after he secretly pleaded guilty to taking bribes. In May 2015 a former vice president of this organization named Jack Warner turned himself over to police in Trinidad after seven officials of this organization were arrested in (\*) Zurich on corruption charges. In June 2015 Sepp Blatter agreed to resign as president of this organization. Thousands of migrant workers have died while constructing stadiums in Qatar for its 2022 competition. For 10 points, name this sports organization that runs the World Cup of soccer.

ANSWER: FIFA (FEE-fuh) [accept Federation Internationale de Football Association or International Federation of Association Football]

15. A play named after and based on this play was an allegory for the Nazi occupation of France, and was written by Jean Anouilh (ah-NOO-ee). In this play, a character justifies an action by saying "It is the dead not the living, who make the longest demands"; that action is observed by a sentry through a receding dust cloud. This play ends with the suicide of (\*) Eurydice (yoo-RID-uh-see) shortly after she discovers that her son Haemon has met the same fate. The sister of Ismene (iss-MAY-nay) buries her brother Polyneices (polly-NYE-sees), defying an order by King Creon in, for 10 points, what Sophocles tragedy about the title daughter of Oedipus?

ANSWER: Antigone (ann-TIG-uh-nee)

16. After he retired, this leader imported a rubber substitute to New York known as chicle (CHICK-el), which was later used to invent modern chewing gum. This leader buried his amputated left leg with full military honors while fighting the French in the Pastry War. He served as president of his country eleven times after emperor Agustin de Iturbide (ee-tur-BEE-day) was overthrown in 1823. He ordered the execution of hundreds of prisoners in the (\*) Goliad Massacre, shortly before he was defeated in 20 minutes at the Battle of San Jacinto by Sam Houston. For 10 points, name this president of Mexico who won at the Alamo.

ANSWER: Antonio López de Santa Anna [or Antonio de Padua María Severino López de Santa Anna y Pérez de Lebrón; prompt on partial surname]

17. A mythical place of this type contains the Bat House, and is ruled by a group of lords who play the Mayan ballgame with the Hero Twins. Quetzalcoatl creates humanity using bones stolen from this type of place. The dog-headed Xolotl ("show"-LOH-tuhl) guides people to these places in his role as (\*) psychopomp. A bard about to leave one of these places turns around to face his wife Eurydice (yoo-RID-uh-see), but loses her forever. In Greek mythology, the pit of Tartarus is part of this realm guarded by the three-headed dog Cerberus. Xibalba (shee-BAHL-bah), Mictlan, and Hades are, for 10 points, what type of realm home to the dead?

ANSWER: underworld [or hell; or afterlife; or land of the dead before "home to the dead"; or Xibalba before "Xibalba"; or Mictlan before "Mictlan"; or Hades before "Hades"; or obvious equivalents]

18. This quantity can be raised in liquid chromatography to decrease elution time in its high performance variant. A type of calorimeter that holds this quantity constant is contrasted with a bomb and can be made from two Styrofoam cups. One form of this quantity is proportional to mole fraction according to Raoult's law. The total value of this quantity in a mixture can be calculated by (\*) Dalton's law. When this quantity is held constant, work is proportional to the change in volume, and is an example of an isobaric process. For 10 points, name this quantity measured in the SI unit pascals, symbolized P.

ANSWER: pressure [prompt on "P" before read; accept molar partial vapor pressure; do not accept "peer pressure" or "Under Pressure"]

19. This composer used the form of both a sonata and a symphony as an example of double-function form in his Piano Sonata in B minor. "Feux follets" (FYOO foh-"lay") and "Mazeppa" are two etudes in a set of twelve difficult ones by this composer. Another of his etudes, based on Niccolò Paganini's Violin Concerto No. 2 of the same name, is "La (\*) campanella." His recitals often drove his fans into a namesake "mania." This composer wrote the *Transcendental Etudes*, three *Liebesträume* (LEE-biss-TROWM), and a set of nineteen virtuosic piano pieces based on the *lassan* and *friska* dances of his home country. For 10 points, name this composer of the *Hungarian Rhapsodies*.

ANSWER: Franz Liszt [or Franz Ritter von Liszt; or Liszt Ferenc]

20. The biogeography of these locations was modeled in a theory developed by E. O. Wilson. These locations, the subject of Foster's rule, can be formed along in a namesake arc behind an accretionary wedge, and they can subside to form guyots (GHEE-ohs) if eroded flat. The namesake gigantism of these locations resulted in the large size of animals such as the Haast's eagle and the moa. These locations are classified as either (\*) continental or oceanic, based on whether they are on the continental shelf. When seamounts rise out of the ocean due to volcanic activity, they become these landforms. For 10 points, name these areas of land found in oceans.

ANSWER: islands [prompt on "seamounts" before mentioned]

**END OF REGULATION, PROCEED ONLY IF TIED**

21. The narrator of this novel says that "the only people for me are the mad ones" while explaining his fondness for his friend. A character in this novel is described as an "Angel of Terror," a "Shrouded Traveler," and a "HOLY GOOF." That character and the narrator drive a Hudson automobile down to New Orleans, where they stay with the morphine addict Old Bull Lee. While trying to learn how to write, a character in this novel develops a close relationship with the poet (\*) Carlo Marx. For 10 points, name this novel in which Sal Paradise and Dean Moriarty romp around North America, the magnum opus of Jack Kerouac.

ANSWER: *On the Road*

22. This country disputed British claims in North America during the Nootka Sound Crisis. According to some historians, the negative traits of this country's colonial empire were historically exaggerated as part of the "Black Legend." This European country maintained a colonial trade network that regularly exported silver from the mines of Potosi (poh-toh-SEE) across the (\*) Pacific Ocean to China via treasure galleons. In the 16th century, it exploited the labor of Native Americans through the *encomienda* system, which was popular in its colony of Peru. For 10 points, name this European country that conquered the Aztec and Inca.

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

## BONUSES

1. This man responds to an accusation that he "doth in vain assay" with the words "My verse shall... in the heavens write your glorious name." For 10 points each:

[10] Name this poet whose Sonnet 75 from his *Amoretti* cycle says "One day I wrote her name upon the strand/but came the waves and washèd it away."

ANSWER: Edmund Spenser

[10] Spenser published *Amoretti* along with "Epithalamion," which celebrates this event he undertook with Elizabeth Boyle after a long courtship. In "Epithalamion," Spenser contemplates the future after the two of them consummate this event.

ANSWER: their marriage [accept word forms such as "their wedding"]

[10] Spenser also wrote *The Faerie Queene*, whose title character Gloriana is one of its many allegories for this ruler. This queen declared "I have the heart and stomach of a king" while giving a speech at Tilbury.

ANSWER: Queen Elizabeth I [prompt on "Elizabeth"; prompt on "Gloriana"]

2. This composer adapted his own name into a "D, E-flat, C, B" motif used in his String Quartet No. 8. For 10 points each:

[10] Name this composer whose D minor Symphony No. 5 was written as a response to government denunciation of his opera *Lady Macbeth of the Mtsensk District*.

ANSWER: Dmitri Shostakovich [or Dmitri Dmitriyevich Shostakovich]

[10] This other Soviet composer wrote the ballet *Cinderella* and included a sleigh bell-heavy "Troika" in a suite based on his score to the film *Lieutenant Kijé*.

ANSWER: Sergei Prokofiev [or Sergei Sergeyevich Prokofiev]

[10] Prokofiev also composed this educational piece in which instruments such as a clarinet, a bassoon, and a flute represent characters in the title children's story.

ANSWER: Peter and the Wolf [or Petya i volk]

3. According to the *Theogony*, "verily at the first Chaos came to be," but then came Gaia, Tartarus, and Eros. For 10 points each:

[10] Chaos then birthed Erebus and Nyx, the deities of darkness and night. Their offspring include this god of death, who tried to chain Sisyphus to Tartarus but ended up chained himself.

ANSWER: Thanatos

[10] Gaia then gave birth to this personification of the sky, with whom she mated to produce the Titans, the Cyclopes, and the Hekatoncheires (**HEH-kah-ton-KAIR-rees**). He was later castrated by his son Kronos.

ANSWER: Uranus [or Ouranos]

[10] The *Theogony* was written by this author of the agricultural almanac *Works and Days*. He is often considered a contemporary of Homer.

ANSWER: Hesiod [or Hesiodos]

4. This term can refer to an infinite source of electrons that is connected to an electric circuit to remove any excess charges. For 10 points each:

[10] Name this term that denotes the lowest possible energy state of an atom's electrons, with all of them occupying the lowest possible orbitals.

ANSWER: ground state

[10] This equation relates the energy released or absorbed by electrons transitioning between energy states to their principal quantum numbers, using a namesake unit equal to 13.6 electron volts.

ANSWER: Rydberg formula

[10] This series of ultraviolet spectral lines is produced by electrons transitioning to the  $n=1$  quantum level from higher levels. Its alpha line is often used as an astronomical benchmark.

ANSWER: Lyman series [accept Lyman alpha line]

5. For 10 points each, name these American warships that are now museums:

[10] Launched during George Washington's administration as one of the U.S. Navy's six original frigates, this warship was nicknamed "Old Ironsides" after it defeated the HMS *Guerriere* (**gair-ee-AIR**) in the War of 1812.

ANSWER: USS *Constitution*

[10] This last American battleship ever built was where the Japanese government signed its official instrument of surrender at the end of World War II.

ANSWER: USS *Missouri*

[10] This world's first nuclear submarine completed the world's first successful submerged voyage under the North Pole in 1958.

ANSWER: USS *Nautilus*

6. For 10 points each, answer the following about ballet techniques.

[10] This technique involves putting the full weight of your body onto the tips of your feet and can be entered via the relevé (**REH-leh-vay**) method. Special shoes are worn to facilitate this technique.

ANSWER: en pointe ("**on point**")

[10] This stance involves standing en pointe on one leg while turning out and extending your leg behind you. Holding your back leg at a greater than 90 degree angle is called the *penché* (**pawn-chay**) form of this technique.

ANSWER: arabesque [accept arabesque penché]

[10] In this basic foot position, one foot points towards the front of your body and the other points in the opposite direction, while both feet are spaced about twelve inches apart. The closed form of this position involves lining up the heels and toes of your feet.

ANSWER: fourth position [accept open fourth or closed fourth position]

7. Workers in this industry often suffered from "black lung disease." For 10 points each:

[10] Identify this industry that mined the fuel source used by many trains and steamships in the 19th century.

ANSWER: coal mining industry

[10] During the late 19th century, the coal fields of eastern Pennsylvania were the home base of this secret society of Irish miners, who often carried out kidnappings and murders in support of workers' rights.

ANSWER: Molly Maguires [accept Ancient Order of Hibernians or AOH]

[10] The Molly Maguires reached the height of their influence during an economic panic that began in this year, damaging the reputation of president Ulysses S. Grant.

ANSWER: 1873 [accept Panic of 1873]

8. For 10 points each, answer the following about literature set in the Congo:

[10] Marlow sails up the Congo River in search of Mr. Kurtz, who dies after exclaiming "The horror! The horror!" in this novel by Joseph Conrad.

ANSWER: *Heart of Darkness*

[10] The journalist Adam Hochschild criticized brutal colonial policies in the Congo in a 1998 non-fiction book about the "Ghost" of this Belgian king.

ANSWER: Leopold II [accept King Leopold's Ghost]

[10] A character known as the Big Man, who probably represents the Congolese dictator Joseph Mobutu, ruins the livelihood of the Indian businessman Salim in *A Bend in the River*, a novel by this Trinidadian author who also wrote *A House for Mr. Bismar*.

ANSWER: V. S. Naipaul [or Vidiadhar Surajprasad Naipaul]

9. When light slows down upon entering a medium, it bends in a process known as refraction. For 10 points each:

[10] This law calculates the resultant angle of a refracting ray of light, given its incident angle and the indices of refraction of the two media.

ANSWER: Snell-Descartes law [or Snellius' law]

[10] This phenomenon occurs when the index of refraction of an object depends on wavelength, bending different colors different amounts. It is commonly observed in prisms.

ANSWER: dispersion

[10] Snell's law can be derived from a principle minimizing this quantity named for Fermat. That principle was later explained using a lifeguard trying to reach a drowning swimmer by Richard Feynman.

ANSWER: Fermat's principle of least time

10. For 10 points each, answer the following about the Brazilian private equity firm 3G Capital.

[10] In 2010 3G Capital bought a majority share in this American fast food chain, which acquired the Canadian chain Tim Hortons in 2014 as part of a controversial tax inversion scheme.

ANSWER: Burger King [or BK]

[10] In July 2015 3G Capital completed its merger of the ketchup manufacturer Heinz with this other American foods conglomerate.

ANSWER: Kraft Foods

[10] To perform these acquisitions, 3G Capital partnered with this third richest man in the world, a so-called "Oracle of Omaha" who runs the investment company Berkshire Hathaway.

ANSWER: Warren Buffett [or Warren Edward Buffett]

11. In the 13th century this city-state conquered the port cities of Zadar and Ragusa along the Dalmatian Coast. For 10 points each:

[10] Name this Italian city-state, a port city on the Adriatic Sea that is known for its many canals.

ANSWER: Venice [or Venezia; or Most Serene Republic of Venice]

[10] Venice conquered Dalmatia with the help of Western soldiers during this poorly planned crusade, which failed to reach the Holy Land and ended up sacking Constantinople instead.

ANSWER: Fourth Crusade

[10] During the Fourth Crusade, the crusaders were manipulated into attacking Dalmatia and Constantinople by this blind doge of Venice.

ANSWER: Enrico Dandolo

12. This disease is unusually prevalent among French Canadians and Ashkenazi (ash-keh-NAH-zi) Jews. For 10 points each:

[10] Name this disease which can create a cherry-red spot in the center of the retina. Because it is caused by different mutations in different regions, it can come in infantile, juvenile, and late-onset forms.

ANSWER: Tay-Sachs disease

[10] A mutation in the gene coding for this enzyme is responsible for the symptoms of Tay-Sachs. This enzyme is responsible for breaking down GM2 gangliosides.

ANSWER: hexosaminidase A (hex-ose-ah-MIN-a-dace) [accept HEXA]

[10] Tay-Sachs affects the function of this organelle, which has a very low pH to break down compounds in the cell. Other diseases associated with defects in this organelle include Gaucher's and Fabry's.

ANSWER: lysosome



13. Answer the following about the miracles and teachings of Jesus, for 10 points each.

[10] In a parable of Jesus, this character squanders his inheritance in a faraway land and returns to become a slave to his father, only to be accepted into open arms.

ANSWER: the Prodigal Son [or the Lost Son]

[10] In another parable of Jesus, this character helps a wounded man on the road despite being a complete stranger and an enemy of the Jewish people.

ANSWER: the Good Samaritan

[10] A group of pigs run into a nearby lake after Jesus performs this type of miracle. Jesus also performs one of these miracles for the daughter of a Gentile woman, after that woman compares herself to a dog eating the scraps that fall from a table.

ANSWER: exorcism [or driving out a demon; or curing demon possession; or obvious equivalents]

14. One of this author's narrators moves "far from the face of bookworms" to Crete, where he plans to activate an old lignite mine. For 10 points each:

[10] Name this author of *The Last Temptation of Christ* whose characters include a cimbalom-playing foreman and the hotel owner Madame Hortense.

ANSWER: Nikos Kazantzakis (kah-zant-ZAH-kees)

[10] Nikos Kazantzakis wrote one book about "Zorba", a Romanian-born man from this country. This country is also the home to a legendarily blind poet who composed *The Iliad*.

ANSWER: Greece [or Hellenic Republic or Ellas or Ellada or Elliniki Dhimokratia; accept Greek]

[10] In *Zorba the Greek*, the narrator carries around a book written by this author, whom he refers to as his "travelling companion". This author wrote about his love for Beatrice in the poetry collection *La Vita Nuova*.

ANSWER: Dante degli Alighieri [accept either underlined part]

15. For 10 points each, identify these historical people who walked really far.

[10] To escape from Nationalist forces, this future Chairman of China led his Communist forces on a 6000-mile retreat during the Long March.

ANSWER: Mao Zedong [or Mao Tse-tung; accept Chairman Mao]

[10] During the Great Trek of the early 19th century, thousands of these settlers left the Cape Colony and established their own independent republics within the African interior.

ANSWER: Boers [or Voortrekkers or Trekkers or Trekboers; accept Afrikaners; prompt on "Dutch"]

[10] In his classic work *Anabasis*, this Greek historian recounted his experiences as a member of the Ten Thousand, a Greek mercenary army that was forced to march hundreds of miles to the Black Sea after they were trapped in the Persian Empire.

ANSWER: Xenophon

16. This philosopher stated that even though science may "at first make us shiver after the cosy indoor warmth of traditional humanizing myths", it was ultimately revitalizing, in his essay *What I Believe*. For 10 points each:

[10] Name this thinker who followed *What I Believe* with his more famous essay on his atheism, "Why I Am Not a Christian."

ANSWER: Bertrand Russell [or Bertrand Arthur William Russell, 3rd Earl Russell]

[10] Bertrand Russell collaborated with Alfred North Whitehead for a work attempting to axiomatize this field. A similarly-titled work by Isaac Newton developed calculus, a subject in this field.

ANSWER: mathematics [accept Principia Mathematica]

[10] This hypothetical object was proposed by Russell in a thought experiment that aimed to shift the burden of the proof from the skeptic to the person making unfalsifiable claims.

ANSWER: Russell's teapot

17. Every year on Carnival, this city hosts the largest Mardi Gras celebration in the United States. For 10 points each:

[10] Name this Louisiana city that was severely damaged by Hurricane Katrina.

ANSWER: **New Orleans** [or La **Nouvelle-Orléans**; or **NOLA**]

[10] This historic city "quarter," the oldest neighborhood in New Orleans, was relatively protected from Hurricane Katrina due to its high elevation.

ANSWER: **French** Quarter [or **Vieux Carré**; prompt on "the Quarter"; prompt on "Old Square"]

[10] The French Quarter takes its name from the French-speaking Cajuns, who settled in Louisiana after fleeing this Canadian region that the British captured along with Quebec during the 18th-century French and Indian War.

ANSWER: **Acadia**

18. This element's ability to form four bonds at a time makes it essential for the structures of many biological compounds.

For 10 points each:

[10] Name this element, the "chemical basis of all known life".

ANSWER: **carbon** [accept **C**]

[10] This most common allotrope of carbon is formed from stacks of loosely bound sheets, in contrast to a rarer cousin with a more rigid crystalline structure.

ANSWER: **graphite** [prompt on "graphene"]

[10] These structures are formed from an artificial allotrope of carbon and have been lauded as the future of material sciences, with properties like extreme tensile strength and extremely high albedos.

ANSWER: carbon **nanotubes** [prompt on "fullerenes"; prompt on "buckminsterfullerenes"; prompt on "graphene"]

19. Some art critics believe that this painting was a companion piece to its artist's *Pallas and the Centaur*. For 10 points each:

[10] Name this painting, which also shows Mercury holding up his caduceus, the Three Graces dancing, and Zephyrus turning Chloris into Flora in an orange grove.

ANSWER: *La **Primavera*** [or *The **Allegory of Spring***]

[10] This student of Fra Filippo Lippi and artist of *Primavera* depicted another scene involving the Zephyrus and the title goddess in his *The Birth of Venus*.

ANSWER: Sandro **Botticelli** [or Alessandro di Mariano di Vanni **Filipepi**]

[10] Both of those paintings are thought to have been influenced by this philosophical school, whose members included Marsilio Ficino. A key idea of this school is that Venus had two forms, a "celestial" and "mundane" form.

ANSWER: neo**platonism** [accept word forms such as Neo**platonic**]

20. This novel's title refers to the shape of the Poisson distribution and the statistical distribution of rocket impacts, among other things. For 10 points each:

[10] Name this novel in which Tyrone Slothrop's sexual encounters presage V-2 rocket strikes in World War II England.

ANSWER: **Gravity's Rainbow**

[10] This author of *Gravity's Rainbow* also wrote about Oedipa Maas and the Trystero Corporation in *The Crying of Lot 49*.

ANSWER: Thomas **Pynchon**

[10] The real life Pyncheon family appears in this novel by a different author based on his family's activity in the Salem Witch Trials. In this novel, a portrait of the Colonel is supernaturally stuck to the walls of the title location.

ANSWER: *The **House of the Seven Gables*** [by Nathaniel Hawthorne]

21. These organisms are unique for their possession of a true cloaca despite being mammals, which allows them to perform the action they are best known for. For 10 points each:

[10] Name this order of mammals that gives birth by laying eggs. All known species of this classification live on Australia and surrounding islands.

ANSWER: monotremes [or Monotremata]

[10] This most famous monotreme has a spur on its hind legs, which is venomous in males. It possesses a distinctive duckbill and a beaver-like tail.

ANSWER: duck-billed platypus [or *Ornithorhynchus anatinus*]

[10] Platypi are able to detect these phenomena because of rows of specially modified cells in their beak, which allows them to sense prey hiding in the mud. Sharks can also detect these phenomena.

ANSWER: electric fields [accept answers that describe the ability to detect electricity]