



1. One character in this play discusses the pervasive “holiday feeling” of Paris and says that he needs to find the “joy of life.” That character is said to look like his father when smoking a pipe in this play, which ends with him muttering, “the sun, the sun.” In this play, a limping carpenter dreams of opening a boarding house for sailors, and he eventually acquires the funds to do so by blackmailing a pastor who burns down an uninsured orphanage. This play, whose secondary characters include Jakob Engstrand and Pastor Manders, ends with the protagonist looking for pills to euthanize her syphilis-stricken son, Oswald. For 10 points, name this Henrik Ibsen play about Mrs. Alving’s past.

ANSWER: Ghosts [or Gengangere]

079-12-59-07102

2. During one of these events, Acestes shoots an arrow that catches fire in midair. During another event of this type, Athena causes Ajax Oileus to trip into the excrement of slaughtered cattle and swallow it. The Trojan women set fire to their ships during one of these events; Achilles reconciles with Agamemnon by giving him a spear during another, in which he also awards Odysseus with a bowl and Ajax with an ox. These events dominate the 23rd book of the *Iliad* and the 5th book of the *Aeneid*. For 10 points, name these games celebrated for Patroclus and Anchises in honor of their deaths.

ANSWER: funeral games [or the funeral games of Patroclus; or the funeral games of Anchises; or ludi funebres; prompt on answers like footraces, archery contests, or other specific contests]

080-12-59-07103

3. A controversy exists over whether this country’s Monte Verde site predates the Clovis people as the oldest civilization in the Americas. Its Maipo river valley is famed for Cabernet Sauvignon production. This country’s Trancura River is a popular rafting destination, as it flows past the active volcano Villarrica. Its Brunswick Peninsula is the site of its southernmost major city, Punta Arenas. One island possessed by this country is also called Rapa Nui and is known for its birdman cult and giant moai. It administers the Juan Fernandez Islands and Easter Island as special territories. For 10 points, name this South American country which shares Tierra del Fuego and a long border with Argentina.

ANSWER: Republic of Chile

015-12-59-07104

4. One quantity named for this man is squared, then multiplied by three, then divided by quantity  $8\pi$  times big G to obtain the critical density. In the Friedmann equation, one quantity named for this man is raised to the first power. One over a constant named for this man is roughly equal to the age of the universe, which is known as this man’s “time.” This man placed Seyfert galaxies at the center of his namesake “tuning fork.” This man used Cepheid variables to show that Andromeda was another galaxy. One constant named for this man is equal to 71 kilometers per second per megaparsec. For 10 points, name this astronomer whose namesake law is used to find the distance to astronomical objects.

ANSWER: Edwin Hubble

149-12-59-07105

5. One leader of this organization controversially wore a lapel pin depicting an apparition of a black Madonna. The editor of its magazine stated in one speech, "We draw a thick line on what has happened in the past." The *Theses on Hope and Hopelessness* were a key text for this organization, which grew out of a community organization called KOR. Secretary Kania's soft stance against this group led to the downfall of his government. A splinter group known as the "fighting" version of this organization formed after this group was outlawed in 1981. Later, this organization engaged in the Round Table Talks, which secured free elections during the regime of Wojciech Jaruzelski. For 10 points, name this anti-Communist party led by Lech Walesa.

ANSWER: Independent Self-Governing Trade Union "**Solidarity**" [or Niezalezny Samorzad Zwiazkow Zawodowych "**Solidarnosc**"]

079-12-59-07106

6. In Luchino Visconti's *The Damned*, Martin recreates one of this actress's performances in drag at his grandfather's birthday party. In a famous shot of this actress, the light falls on her fingers touching her chin and her upturned face as the rest of her body is shrouded in darkness. This star of *Shanghai Express* and *Blonde Venus* sings and lifts her knee while sitting on a barrel wearing a shiny top hat and dark stockings in her iconic role. This actress played Lola in *The Blue Angel*, the first of her seven films directed by Josef von Sternberg. For 10 points, name this classical Hollywood star, a native of Germany.

ANSWER: Marlene **Dietrich**

014-12-59-07107

7. One room in these locations was topped by a bronze shield that could be elevated and lowered with chains. 130 curse tablets were discovered at one of these places dedicated to the goddess Sulis. In these locations, citizens made use of the sharp strigil in a practice depicted in the *Apoxyomenos* sculpture. They made use of hypocaust technology and contained an outdoor *palaestra* used for exercise. Famous examples of these structures were built by Diocletian and Caracalla. They contained the *apodyterium*, but their most frequently-used rooms were the *frigidarium*, *tepidarium*, and *caldarium*. For 10 points, name these public structures, also known as *thermae*, where Romans cleaned themselves.

ANSWER: Roman **baths** [or **balneae**; accept **thermae** before read]

080-12-59-07108

8. These structures can change size as a result of the XMAP215 protein in *Xenopus* eggs. Vinca alkaloids inhibit the formation of these structures. In these structures, CLASP inhibits a process called "catastrophe," which is followed by "rescue" in a growth process caused by the hydrolysis of GTP called dynamic instability. The drugs colchicine and taxol stop the polymerization of these structures' alpha and beta dimers, which bind to GTP. They nucleate with the help of gamma-ring proteins in their namesake organizing centers. Kinesins moves molecules to their plus ends, and dyneins move molecules to their negative ends. They come in a 9 plus 2 arrangement in flagella. For 10 points, name these components of the cytoskeleton made of tubulin.

ANSWER: **microtubules** [or **tubulin** till mention]

079-12-59-07109

9. Robert Armin played several examples of these characters, including one who marries the goatherd Audrey even as he predicts the marriage will not last. Another delivers the line, "And I'll go to bed at noon" before his unexplained disappearance from his play. That character recites a strange prophecy he claims Merlin will repeat in the future, and many scholars have suggested he and Cordelia were played by the same boy actor. Another of these characters pretends to be a priest to help Maria and Sir Toby Belch into making Malvolio believe he has been locked up for insanity. Feste and Touchstone are examples of, for 10 points, what motley-dressed characters, who are often sources of comic relief?

ANSWER: **fools** [or **clowns**]

121-12-59-07110

10. The lowermost step visible in this painting is inscribed with a quote in Latin from Quintilian and a quote in Greek from Longinus. The background of this work contains a temple whose frieze was taken from the work of John Flaxman. On its right side, three men in a crowd proffer a lyre, a hammer, and a golden box. The title character of this painting is flanked by two women in red and green dress, attributed respectively with a sword and an oar. In this painting, "sovereign geniuses" like Moliere, Dante, and Shakespeare stand around as the winged Nike prepares to wreath the title character. For 10 points, name this Neoclassical painting by Jean-Dominique Ingres, which celebrates the author of the *Iliad*.

ANSWER: *The **Apotheosis of Homer***

080-12-59-07111

11. This poem describes how "barred clouds bloom the soft-dying day, and touch the stubble plains with rosy hue." The speaker tells this poem's addressee, "Sometimes whoever seeks abroad may find thee sitting careless on a granary floor." This poem mentions how "in a wailful choir the small gnats mourn...and gathering swallows twitter in the skies." Although not titled as one, this poem is the last of its author's 1819 odes, and its final stanza begins by asking, "Where are the songs of Spring?" For 10 points, name this poem about a "season of mists and mellow fruitfulness" written by John Keats.

ANSWER: "**To Autumn**"

014-12-59-07112

12. This country's mythology includes a group of seven gods who sail on the "treasure ship" to hand out gifts on New Year's Day. Its folktales also tell of birdlike monsters able to disguise themselves as "mountain priests," whose name means "heavenly dogs." Humans can escape another monster from this country's folklore by bowing and forcing it to bow back, thus causing it to spill the water stored inside its head. Monsters in this country's legends include the tengu and the kappa. For 10 points, name this country which reveres *kami* like Amaterasu.

ANSWER: **Japan** [or **Nippon**]

080-12-59-07113

13. The fatty substance Lecithin is typically used as one of these compounds in food. These compounds are classified according to their tails and their counter ion. One of these compounds is used in polyacrylamide gel electrophoresis to denature proteins. Aggregates of these compounds dispersed in a liquid colloid are known as micelles. Sodium doceyl sulfate or SDS is an example of these compounds. These compounds are amphiphilic since they have hydrophobic and hydrophilic regions. Different types of these compounds include detergents, emulsifiers and dispersants. For 10 points, name these compounds that reduce surface tension.

ANSWER: **surfactant** [prompt on **detergent**s before mentioned]

149-12-59-07114

14. One of this ruler's first acts was to execute Marina Mnischev and her son, the four-year-old "little brigand." He was advised by the war hero Dmitri Pozharsky. During this man's reign, the Truce of Deulino was signed with Poland, and the Treaty of Stolbovo was signed with Sweden. This man's father was accused of treason and sent into exile, where he became a priest under the name Filaret. This man was offered the throne after being chosen by the zemsky sobor while he was living with his mother at a monastery. This man strengthened both Russia's central government and the institution of serfdom during his rule, which ended the Time of Troubles. For 10 points, name this tsar who started the Romanov dynasty.

ANSWER: **Michael** Fyodorovich Romanov [or **Mikhail**]

105-12-59-07115

15. One way of participating in this activity is to use the "mpura" or "pardon me" approach which, if used too much, will lead to feuds. In one work, an author and his wife create great solidarity with villagers after they all flee from the police after attending one of these events. That author uses the Erving Goffman-coined terms "focused gathering" and "status bloodbath" to describe it, writing that it takes on greater significance if it is "between near status equals." "Notes" on one of these events appear in an essay titled "Deep Play," which is found in the book *The Interpretation of Cultures* as an example of thick description. For 10 points, name this illegal activity, which Clifford Geertz used to analyze Balinese culture.

ANSWER: **cockfights** [or **cockfighting**]

052-12-59-07116

16. It's not a string instrument, but Beethoven's Ninth requires these instruments to play a double stop. Two of these instruments disrupt the opening theme of the finale of another work by playing F/B and D-flat/G tritones. That work requires them to change their pitch while playing, features them at opposite ends of the orchestra, and is Carl Nielsen's "Inextinguishable" Symphony. In the original version of Grieg's Piano Concerto, they add to a horn crescendo by playing a namesake "roll." In another solo, these instruments play two notes over and over to represent hunters in *Peter and the Wolf*. For 10 points, identify this percussion instrument also known as the kettledrum.

ANSWER: **timpani** [accept singular **timpano**; accept **kettledrums** before it is read]

066-12-59-07117

17. One form of this quantity has an interior contribution of one-half, or  $\mu$  over 2 times  $\mu$  naught, that disappears at higher frequencies. When  $Y$  equals 0 due to the skin effect, one form of this quantity reduces to another. The Gaussian unit for it is one ninth times ten to the negative eleven times the SI unit for it. The phasor form of this quantity is equal to it times pi over 2. Leakage flux arises when a portion of a transformer with this quantity is in series with a mutually-coupled pair of devices with this quantity. Coming in "mutual" and "self" forms, this quantity is multiplied by one half  $I$  squared to obtain the energy that can be stored in a magnetic field by a device drawn as a coil. For 10 points, name this quantity, symbolized  $L$ , that is measured in henries.

ANSWER: **inductance**

020-12-59-07118

18. This author wrote a work in which the protagonist screams, "Don't! Break! Human! Pride!" after being berated by vocal teacher Judith Fellowes. In that work by this man, the Herzkopfs are a German couple staying at a location run by Maxine Faulk. This author created the Reverend Lawrence Shannon, an ex-minister who arrives at the Costa Verde Hotel in Mexico as a tourist guide. In another of his works, a character is haunted by the recent death of his football playing friend, Skipper. In that play by this man, Gooper and Mae eagerly await their inheritance, while Maggie and her husband Brick eventually reveal that Big Daddy is dying. For 10 points, name this playwright who wrote *The Night of the Iguana* and *Cat on a Hot Tin Roof*.

ANSWER: Tennessee **Williams** [or Thomas Lanier **Williams III**]

052-12-59-07119

19. This thinker criticized proofs of Euclid's parallel postulate since they attempt to use abstract concepts to show what is clear from perception. He gave 38 ways to win an argument in the sarcastic *The Art of Being Right*. Becoming, Knowing, Being, and Willing are the title concepts of one work by this author. In addition to *On the Fourfold Root of the Principle of Sufficient Reason*, he wrote a work that reexamined the "thing-in-itself." The two title concepts of that work refer to nature's desire for life and the image of what is external to the mind. For 10 points, name this pessimistic philosopher who wrote *The World as Will and Representation*.

ANSWER: Arthur **Schopenhauer**

127-12-59-07120

20. Ronald Ridenhour wrote an important letter about this event, the aftermath of which was photographed by Ronald Haeberle. Oran K. Henderson was the highest-ranking officer tried in relation to this event. Glenn Andreotta, Lawrence Colburn, and pilot Hugh Thompson received awards thirty years after this event for their actions. "Pinkville" was the codename for the location of this event, which Colin Powell has been accused of covering up. The initial stages of this event were organized by Ernest Medina. Second Lieutenant William Calley was the only individual convicted in response to this event. For 10 points, name this 1968 massacre of hundreds of unarmed villagers in South Vietnam.

ANSWER: **My Lai** Massacre

014-12-59-07121

21. One character in this novel sings the blues song "Mama Doan Wan' No Peas." One of this novel's characters nearly had sex with Romola Martin while working as a hotel's bookkeeper. Another character sells silver polish door-to-door and jokes around because he used to be a clown. The dwarf Abe Kusich works as a bookie for Miguel's cockfights in this novel. At the end of this novel, the brat Adore Loomis throws a rock at one of the main characters, whose violent reaction causes a mob to riot against him. The other main character is painting a canvas called *The Burning of Los Angeles*. For 10 points, the designer Tod Hackett and the screenwriter Homer Simpson are the protagonists of what Hollywood-set novel by Nathanael West?

ANSWER: *The **Day of the Locust***

079-12-59-07122

22. Stanley Engerman and Robert Fogel argued that this institution was less inefficient than it is often thought to have been in their book *Time on the Cross*. George Fitzhugh called it "the best form of socialism" in one of his books. This institution derives from "great truth" according to the "Cornerstone speech." In response to remarks made by William Rives, it was called not a "lesser evil but a positive good." In the United States, codes regulating this institution were based on those of rice planters in Barbados. People involved in it took the Middle Passage from Africa to the New World. For 10 points, name this system of forced labor that was outlawed by the Thirteenth Amendment.

ANSWER: American **slavery** [or equivalent answers]

121-12-59-07123

23. Heinz Kohut believed mental duress was caused by an incomplete kind of this, which could be filled with transitional objects. D.W. Winnicott proposed a “false” type of this concept was responsible for psychological disorder. George Herbert Mead argued children show an understanding of a crude form of it when roleplaying. Mead also divided this concept into the “I” and “me” in his book titled for mind, this concept, and society. The mirror test shows most animals are not aware of this concept, viewing their reflections as other individuals. The desire “to become everything one is capable of becoming” defines the actualization of this concept according to Abraham Maslow. For 10 points, name this projection of one's identity.

ANSWER: the **self** [prompt on **identity** or other equivalents]

121-12-59-07124



1. This opera ends with shots firing that turn out to be rejoicing and not those of a firing squad. For 10 points each:

[10] Name this opera in which the servant Ninetta is sentenced to death by the villainous Mayor after the title creature is responsible for taking a silver spoon. It features the aria “Deh, tu reggi in tal momento.”

ANSWER: *La gazza ladra* [or *The Thieving Magpie*]

[10] *The Thieving Magpie* is a work by this Italian composer, who also composed the opera *The Barber of Seville* and *William Tell*.

ANSWER: Gioachino Antonio **Rossini**

[10] Rossini wrote this opera in which the title character is the stepdaughter of Don Magnifico and forced to work as a maid, but finds happiness in the hands of Prince Ramiro. The title character’s real name is Angelina.

ANSWER: *La Cenerentola*, *ossia La bontia in trionfo* [or *Cinderella*, or **Goodness Triumphant**]

052-12-59-07201

2. These winds generate a great deal of turbulence known to airline pilots as "clear-air turbulence." For 10 points each:

[10] Name these discontinuous bands of relatively strong winds found in the upper troposphere.

ANSWER: **jet streams**

[10] Jet streams stop at this boundary layer in the atmosphere at which the temperature inversion between the stratosphere and the troposphere occurs.

ANSWER: **tropopause**

[10] This quantity is equal to the rate at which temperature decreases as height increases. The dry adiabatic version of this quantity is the rate at which the temperature of a parcel of dry air decreases as it rises in the atmosphere.

ANSWER: **lapse** rate

149-12-59-07202

3. Arthur Griffith called this play a “vile and inhuman story.” For 10 points each:

[10] Name this play by John Millington Synge. It tells of Christy Mahon, who claims to the occupants of Flaherty’s tavern that he has killed his father, and it caused riots when it premiered in January 1907.

ANSWER: *The Playboy of the Western World*

[10] Synge was born on this island. The play is set in this island’s County Mayo and it was first performed at the Abbey Theatre in its most populous city.

ANSWER: **Ireland**

[10] Riots again broke out during the premiere of this Sean O’Casey play in February 1926. Its characters include bricklayer Jack Clitheroe, a member of the Irish Citizen Army, and his wife Nora, and its final two acts take place during the Easter Rising.

ANSWER: *The Plough and the Stars*

052-12-59-07203

4. This author wrote about two young women's attempts to convince their guardian that their lovers are moon-people in the *commedia dell'arte*-inspired *Emperor of the Moon*. For 10 points each:

[10] Name this first female professional playwright in England. Her prose works include one about a "Royal Slave," *Oroonoko*.

ANSWER: Aphra **Behn**

[10] This Behn play follows a bunch of young Englishmen who cavort around Naples during Carnival. At its end, Hellena marries Wilmore instead of joining a convent.

ANSWER: *The Rover*

[10] On top of being a playwright, Aphra Behn worked in this profession for Charles II. People of this profession are the subject of novels by John le Carre and Ian Fleming.

ANSWER: **spy** [or **secret agent**; or obvious equivalents]

080-12-59-07204

5. For 10 points each, name some stuff about the Gnostic gospels.

[10] The Gnostic gospel of this person consists of sayings of Jesus but does not contain an account of his life or explicitly refer to his divinity. Its author is notable for attempting to spread Christianity to India.

ANSWER: **Thomas**

[10] The discovery of the Gospel of Thomas led greater credence to the theory of this source's existence. This source, with a one letter name, contained many sayings of Jesus and was used as the source material for the gospels of Matthew and Luke.

ANSWER: **Q** Document [or **Quelle**]

[10] Elaine Pagels, who wrote *Beyond Belief* about the Gospel of Thomas, also wrote an introduction to this cache of documents, found in 1945 in Egypt and written by the Gnostics.

ANSWER: the **Nag Hammadi** texts

040-12-59-07205

6. Answer these questions about the Reconquista, for 10 points each.

[10] These Christian people declared the Reconquista in 711. These victors at Covadonga settled Spain after losing to Clovis at Vouillé; in 410, their king Alaric sacked Rome.

ANSWER: **Visigoths** [prompt on **Goths**]

[10] One turning point in the Reconquista was this 1212 battle, at which Sancho VII's Navarrese troops cut down a human shield of slaves chained around the tents of al-Nasir's Almohad forces.

ANSWER: Battle of Las **Navas de Tolosa** [or Battle of **al-Uqab**]

[10] This founder of the Kingdom of Asturias began the Reconquista with his victory at Covadonga in 722.

ANSWER: **Pelagius** of Asturias [or **Pelayo** of Asturias]

104-12-59-07206

7. Red and white phosphorus are examples of them. For 10 points each:

[10] Name these multiple forms of the same element, such as diamond and graphite for carbon.

ANSWER: **allotropes** [accept word forms like **allotropy** or **allotropism**]

[10] This element exists in a number of cyclic allotropes. This element is most commonly found in a ring of eight atoms that has a yellow-green color.

ANSWER: **sulfur**

[10] At iron's transition from ferrite to austenite, it loses this crystal structure whose unit cell consists of an atom stationed at each corner of the unit cell and another atom located in the center of the unit cell.

ANSWER: **body centered cubic** [or **bcc**]

064-12-59-07207

8. At this event, Nelson Rockefeller was heckled for over fifteen minutes, and Margaret Chase Smith's name was entered for nomination in a historic moment. For 10 points each:

[10] Name this event that took place at the San Francisco "Cow Palace." Its most notable moment featured the eventual nominee saying "extremism in the defense of liberty is no vice," and "moderation in the pursuit of justice is no virtue."

ANSWER: **1964 Republican National Convention** [or **1964 RNC**]

[10] That nominee, who would go on to lose to Lyndon Johnson, was this Arizona conservative. His aggressive foreign policy views were mocked by the LBJ campaign's infamous "daisy spot."

ANSWER: Barry Morris **Goldwater**

[10] In the 1980s, Goldwater said that "every good Christian ought to kick" this man in the rear. This co-founder of the Moral Majority sued *Hustler* magazine in 1983 for libel and emotional distress.

ANSWER: Jerry Lamon **Falwell, Sr.**

052-12-59-07208

9. Answer these questions about the *School of Athens*, for 10 points each.

[10] It was painted by this Renaissance artist, also known for the *Sistine Madonna*.

ANSWER: **Raphael** Sanzio [or Raphael **Sanzio**]

[10] In the background, on the left wall, is a relief sculpture of this Greek god. A marble sculpture of this god can be found in the Belvedere Courtyard.

ANSWER: **Apollo**

[10] Michelangelo was the model for Raphael's depiction of this man, who wears large boots and uses a marble slab as his writing desk apart from the other thinkers. He is thus depicted as "the weeping philosopher."

ANSWER: **Heraclitus**

080-12-59-07209

10. This character parachutes from a plane taking him to Moscow, stranding him in the Sahara until he is rescued by an Arab caravan. For 10 points each:

[10] Name this literary character, the illegitimate son of a munitions salesman. In such novels as *World's End* and *Dragon's Teeth*, he gets involved in two world wars and takes on missions for President Franklin Roosevelt.

ANSWER: **Lanny** Budd [or Lanny **Budd**]

[10] Lanny Budd was created by this author, a muckraker who exposed the meat packing industry in *The Jungle*.

ANSWER: Upton Beall **Sinclair** Jr.

[10] In this Sinclair novel, "Bunny" Ross is the son of a tycoon in the namesake industry. Bunny has an affair with the actress Vee Tracy, while another character is the Communist Paul Watkins.

ANSWER: **Oil!**

052-12-59-07210

11. One of this composer's piano pieces was used for *Alfred Hitchcock Presents*. For 10 points each:

[10] Name this composer of *Funeral March of a Marionette* and the *Pontifical March*.

ANSWER: Charles-François **Gounod**

[10] Gounod set this prayer to the Virgin Mary over an arrangement of Bach's Prelude No. 1 from *The Well-Tempered Clavier*.

ANSWER: **Ave Maria**

[10] Another popular setting of the *Ave Maria* is a piece in this composer's setting of Walter Scott's *Lady of the Lake*.

ANSWER: Franz Peter **Schubert**

066-12-59-07211

12. The ideal magnetohydrodynamic equations only apply to these substances when they are strongly collisional. For 10 points each:

[10] Name this state of matter formed by heating a gas so that many of its particles are ionized.

ANSWER: **plasma**

[10] For plasmas whose charged particles have long-range interactions, this variant of the Boltzmann transport equation is used.

ANSWER: **Vlasov**-Maxwell equation [or **Vlasov**-Poisson equation; do not accept "Maxwell equation"; do not accept "Poisson equation"]

[10] At high densities and temperatures in QCD, asymptotically free quarks will exist in a "plasma" with these mediators of the strong force.

ANSWER: **gluons**

020-12-59-07212

13. A "good woman from Vishegorye" blesses this character to live another twenty years and gives him a sum of sixty kopecks to donate to someone poorer than herself. For 10 points each:

[10] Name this saintly monk who takes Alyosha as a novice and was inspired by the real-life Saint Ambrose of Optina.

ANSWER: Father **Zosima**

[10] Father Zosima appears in this Dostoevsky novel in which Dmitri is arrested for the murder of his father Fyodor, the patriarch of the title family.

ANSWER: *The **Brothers Karamazov*** [or ***Brat'ya Karamazovy***]

[10] This brother of Alyosha relates the story of the "Grand Inquisitor" to him and develops an atheistic worldview in response to human suffering.

ANSWER: **Ivan** Fyodorovich Karamazov [or **Vanya**; or **Vanka**; or **Vanechka**; prompt on **Karamazov**]

020-12-59-07213

14. This effect was first seen in commanding officers' judgments of their men, and recent research has focused on when it is caused by attractiveness, showing that more beautiful people are treated differently in dictator game scenarios. For 10 points each:

[10] Name this effect in which an overall impression of a person influences judgments of their specific characteristics.

ANSWER: **halo** effect

[10] The halo effect was first postulated by this psychologist, who used a hungry cat trapped in a puzzle box in his development of the law of effect.

ANSWER: Edward **Thorndike**

[10] Thorndike was a proponent of the "active" form of this concept, for which he formulated the laws of readiness, exercise, and effect. Its "associative" type requires two linked stimuli, and, in general, it refers to the acquiring or adjustment of knowledge.

ANSWER: **learning**

040-12-59-07214

15. This city in the First Coast region surrounds the St. John's River, and takes up most of Duval County. For 10 points each:

[10] Name this city in Florida's northeast, America's largest by area and Florida's largest by population size.

ANSWER: **Jacksonville**, Florida

[10] This town south of Jacksonville is notable for its founding in 1565 by Spanish settlers, making it the oldest continuously-inhabited European settlement in the Americas.

ANSWER: **St. Augustine**

[10] Jacksonville is home to the largest building of this kind in Florida; other notable ones include the Geisel one in San Diego and one whose entrance is flanked by statues of "patience" and "fortitude."

ANSWER: **library** [or **libraries**]

104-12-59-07215

16. This god of air is the husband of Tefnut. For 10 points each:

[10] Name this early Egyptian god, the father of Geb and Nut who separated the earth from the sky.

ANSWER: **Shu**

[10] This supreme god of the sun fathered Shu and Tefnut. The first humans were formed from the tears of this god often depicted as a falcon with a sun disc on his head.

ANSWER: **Ra** [or Amun-**Ra**; or **Ra**-Horakhty; or Atum-**Ra**]

[10] This giant snake attacks Ra's solar barge daily. Like Set, he serves as a symbol of chaos and destruction.

ANSWER: **Apep**

105-12-59-07216

17. This alliance resulted in one navy joining up with the forces of Admiral Barbarossa. For 10 points each: [10] Name this alliance that, despite being called "unholy," was crucial for a European power under Francis I, who formed it after being defeated by Charles V at Pavia. The two powers jointly fought such campaigns as the 1543 siege of Nice.

ANSWER: **French-Ottoman** alliance [or **French-Turkish** alliance; accept word forms]

[10] Charles V was a member of this house, which took its name from a fortress built in Switzerland. This house produced many Holy Roman Emperors and eventually split into Austrian and Spanish branches.

ANSWER: **Hapsburg** [or **Habsburg**]

[10] The Ottomans were irked when the French, under the reign of this son of Francis I, signed the Peace of Cateau-Cambresis, ending war with the Hapsburgs. This ruler died during a 1559 jousting match.

ANSWER: **Henry II** of France [or **Henri II**; prompt on **Henry**]

052-12-59-07217

18. It can be seen in liverworts, mosses, and some algae. For 10 points each:

[10] Give this term for the life cycle of plants in which a haploid stage is followed by a diploid stage, meaning that it is sometimes a sporophyte and sometimes a gametophyte.

ANSWER: **alternation of generations**

[10] The gametophyte produces spores by this process of cell division in which the step of crossing over between homologous chromosomes ensures that the genetic material of the end products is not identical to the parent cells.

ANSWER: **meiosis**

[10] This is the term for the joining of homologous chromosomes during prophase I of meiosis.

ANSWER: **synapsis**

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19. Esteban and Uncle Pio die on this novel's title structure. For 10 points each:

[10] Name this novel, in which Brother Juniper attempts to explain how the deaths of five people were all part of God's plan, but only gets burnt at the stake for his trouble.

ANSWER: The **Bridge of San Luis Rey**

[10] *The Bridge of San Luis Rey* was written by this man, who also wrote about the inhabitants of Grover's Corners in the play *Our Town*.

ANSWER: Thornton Niven **Wilder**

[10] Wilder's play *The Skin of Our Teeth* focuses on this family, who are present during the three surrealistic acts. During the play, this family endures an ice age and the aftermath of a war, and the family patriarch, George, becomes head of the Fraternal Order of Mammals.

ANSWER: **Antrobus**

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20. This king banned sport hunting and allowed prisoners to walk free for one day of the year. For 10 points each:

[10] Name this Mauryan king who converted to Buddhism after initially being a bloodthirsty tyrant.

ANSWER: **Ashoka** the Great [or **Asoka**]

[10] Ashoka promised roadside assistance and promoted kindness to animals in these 33 works, inscribed on rocks, pillars, boulders, and cave walls.

ANSWER: Ashoka's **edicts**

[10] The most famous artifact from Ashoka's reign is a pillar with four lions on its capital located at this site.

ANSWER: **Sarnatha** [or **Mrigadava**; or **Migadaya**; or **Rishipattana**; or **Isipatana**]

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21. The general solution to the inhomogeneous one-dimensional version of this equation is d'Alembert's formula. For 10 points each:

[10] Name this second-order linear PDE, which states that the second partial time derivative of  $u$  equals  $c$  squared times the Laplacian of  $u$ .

ANSWER: **wave** equation

[10] One can derive the one-dimensional wave equation from this principle of elasticity, stated as  $F$  equals negative  $kx$ .

ANSWER: **Hooke's** law

[10] For a resonant, rotating wave, one can use this technique by which a small term is added to a solvable problem to approximate the solution to a problem not exactly solvable.

ANSWER: **perturbation** theory

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