

Tossups

1. The *Manchester Guardian* published two articles about this event based on a memorandum allegedly written by Ernst Oberfohren. Otto Katz and Willi Muenzenberg published an account of this event in the *Brown Books* that was largely discredited in articles in *Der Spiegel* in 1960 by amateur historian Fritz Tobias. Ernst Torgler was found not guilty for causing this event in the Leipzig Trial, which was followed by Soviet citizenship being granted to Blagoy Popov, Vasil Tanev, and Georgi Dimitrov, three Bulgarians put on trial for it. This event was committed by the Dutchman Marinus van der Lubbe, and it led to a namesake decree that was used by the Nazis to target Communists. For 10 points, name this 1933 act of arson on the legislative building of the Weimar Republic.

ANSWER: **Reichstag fire** [accept equivalent answers such as **burning of the Reichstag** building]

2. Howard Becker prepared a master's thesis studying this behavior that he converted into chapters 3 and 4 of *Outsiders*. Gary Becker and Kevin Murphy created a "rational" theory of it based on utility-maximization. An experiment on this phenomenon found that residents of an 8.8 square meter plywood enclosure availed themselves of sugared water much less than those in wire cages. Bruce Alexander studied this phenomenon at Simon Fraser University by building Rat Park. One of the DSM-4 criteria for this condition is reduced participation in social activities. Built-up biological tolerance contributes to its "physical" form, though its "psychological" form can also be potent. For 10 points, identify this behavior exhibited by Mick Jagger, Thomas de Quincey, and Rob Ford.

ANSWER: drug **addiction** [or **drug use**; or **drug abuse**; or drug **dependence**; accept **marijuana addiction** until "rational," prompt on deviance]

3. In one work, this character decides that he is not worthy to get married until he wins five battles. In another work, this character grabs a lion and puts it back in its cage with his bare hands while two other men cower in fear. The princes of Carrión plot this character's exile and marry his daughters Elvira and Sol, though they later beat them up and tie them to trees. In a play, this character disarms Don Sanche in a duel, allowing him to marry his love Chimène. That play caused a quarrel with the French Academy because it did not respect the classical unities. In all of the aforementioned works, this character regains his lost honor by defeating the Moors in battle. For 10 points, name this Castilian hero who is the subject of a play by Pierre Corneille.

ANSWER: El **Cid** [or Le **Cid**; or Rodrigo **Díaz** de Vivar; or **Rodrigo** Díaz de Vivar; or Don **Rodrigue**]

4. A prime minister of this country resigned after it was revealed that expensive generators from the American energy company Richmond Development did not arrive to help during a power crisis. This country followed the Nyalali Commission by moving to a multi-party system from the single party rule of the CCM. The shortage of vegetable oil after World War II led to a scheme to use land in this modern-day country to grow groundnuts. The first president of this country encouraged a process of villagization as a part of his collectivization policy called ujamaa. That president invaded Uganda to oust Idi Amin and issued the Arusha Declaration. For 10 points, name this East African country once ruled by Julius Nyerere and formed from the union of a coastal province with the island of Zanzibar.

ANSWER: United Republic of **Tanzania** [or Jamhuri ya Muungano wa **Tanzania**]

5. This character says "That's not cigars, baby, that's love" when a woman feels light-headed after accepting a smoke from him. A line from this character inspired the Yo La Tengo song "Let's Save Tony Orlando's House." He ends one episode by saying "I'll leave you with what we all came here to see: hardcore nudity!" after which a reel of censored nude moments plays. This host of the 138th Episode Spectacular becomes engaged to a DMV employee at the behest of his agent MacArthur Parker, who hopes to dispel rumors about this man's relations with fish. In that episode, "A Fish Called Selma," he uses a variation of his catchphrase by saying "you may remember me from such dates as last night's dinner." For 10 points, name this recurring washed-up B movie actor on *The Simpsons*.

ANSWER: **Troy McClure** [accept either]

6. These quantities are the arguments of the logarithms in the von Mangoldt function, which is itself summed to yield the second Chebyshev function. Using the evenly-spaced integer topology, Fürstenberg re-proved that there were aleph-null many of these values. The work of Goldston et al. employing the Elliott-Halberstam conjecture was

a precursor to Zhang's proof of bounded gaps between them. Thanks to the AKS algorithm, it is polytime-decidable whether or not a number is one of these numbers. The distribution of these numbers is described by the law " $\pi(x)$ is asymptotic to x over $\log x$," where " $\pi(x)$ " is the function that counts these numbers. They are typically generated by sieving, as originally done by Eratosthenes. For 10 points, what numbers are divisible only by one and themselves?

ANSWER: prime numbers [or primes]

7. Leos Janacek's *Jealousy* began life as a composition of this kind. One composition of this kind includes a clarinet cadenza followed by a sad Hungarian-inspired theme representing mourning for fallen soldiers. Another of these pieces, which was supposedly composed in such a hurry that the pages from the original score were tossed out of a window one by one to waiting copyists, begins with several snare drum rolls. Mozart began one of his with three trombone chords representing a secret knock. Franz von Suppé is most famous for pieces of this type, like the one for *Light Cavalry*. One piece of this type ends with a galop announced by trumpets, representing Swiss soldiers fighting their Austrian oppressors. For 10 points, name these pieces played before *The Thieving Magpie*, *William Tell*, and other operas.

ANSWER: overture to operas [be lenient and prompt on operas or operettas until "before" is read in the giveaway; do not accept "concert overtures"]

8. This animal is sometimes referred to by the euphemism "davar akher," meaning "another thing." These animals are the most important status symbol among the Papuan people of New Guinea, who give them as dowries. A black one in the center of the *dharmachakra* wheel symbolizes ignorance among the "three poisons" of Buddhism, between a snake and a bird. In the Gospel of Luke, a craving for the carob husks eaten by these animals inspires the Prodigal Son to stop caring for them and return home. Among the Gerasenes, the exorcism of the demon Legion led many of these animals to drive themselves into the Sea of Galilee. For 10 points, name these livestock animals which are neither halal nor kosher, and proverbially fail to appreciate the pearls thrown before them.

ANSWER: pigs [or swine; or boars; or sows]

9. A protein abbreviated RANTES, also known as CCL5, is crucial for this process. Activation of this process causes Weibel-Palade bodies to release P-selectin, and it also leads to the production of CRP. Phospholipase A2 promotes this process by forming arachidonic acid, which is oxidized into eicosanoids called leukotrienes. IL-17 and TNF-alpha are cytokines that signal for this process to occur. As part of the complement system, C5a recruits cells for it. This process is characterized by the four "ORs": rubor, tumor, calor, and dolor. The binding of substrate to Toll-like receptors causes mast cells to release histamine-containing granules at the start of this pathway. Edema is a common symptom of it. For 10 points, name this process in which an affected area gets hotter, redder, and swells.

ANSWER: inflammation [or inflammatory response; prompt on allergic response or word forms]

10. In a story by this author, Helene and Henry Nash fall in love when they meet as actors in a production of *Streetcar Named Desire*, then ask variants of the title question as they are cast as lovers in other famous plays. He used the term "mouse-traps" to describe the twist endings in his stories, such as "Who Am I This Time?" He wrote a story in which Nancy McLuhan is kidnapped by the "Nothinghead" Billy the Poet, who refuses to take "Ethical Birth Control" drugs. He wrote a story that culminates in a levitating dance between a ballerina named the Empress and the title character, a kid with above-average intelligence who is killed by the Handicapper General Diana Glampers. For 10 points, name this author of "Welcome to the Monkey House," "Harrison Bergeron," and *Slaughterhouse 5*.

ANSWER: Kurt Vonnegut, Jr.

11. One of this director's films opens with a long sequence shot in which a character exalts a different director's *Touch of Evil* for using the same technique. He featured Ivor Novello as a character and used several of his songs in a whodunit late in his career. In another film by him, a sexual encounter broadcast over a PA system earns a woman the nickname "Hot Lips," and the main characters play a football game before heading home in their stolen Jeep. A large cast converges at an outdoor concert at the Parthenon Theater in one film by this director, and another focuses on Duke, Trapper, and Hawkeye, three army doctors during the Korean War. For 10 points, name this New Hollywood director of *The Player*, *Gosford Park*, *MASH*, and a film about country music called *Nashville*.

ANSWER: Robert Altman

12. The wife of a member of this family funded the research of Gregory Pincus to develop the first birth control pill. Theodore Francis Green's actions in Rhode Island so angered another member of this family that he had a star cut out from the flag of the Tribune Tower, and that man used his position as editor of the *Chicago Tribune* to support the isolationist movement. This family lost a patent infringement lawsuit to John Henry Manny, who employed lawyers Edwin M. Stanton and Abraham Lincoln. The Virginia patriarch of this family founded the precursor to International Harvester, which established a factory in Chicago to mass produce a horse-drawn device for cutting crops. For 10 points, name this prominent American family whose member Cyrus invented the mechanical reaper.
ANSWER: McCormick family [or Katharine Dexter McCormick; or Stanley McCormick; or Colonel McCormick; or Robert Rutherford McCormick; or Cyrus McCormick]

13. This thinker once asked why *Hamlet* couldn't have been written in the court of Genghis Khan. He compared the best despotism to the "temple of Sarastro," and his anthology *The Proper Study of Mankind* features his revival of interest in Vico, Hamann, and Herder. This man's belief in the "incommensurability" of values led him to value pluralism. This advisor of Charles Taylor's doctorate at Oxford coined the term "Counter-Enlightenment." He separated the idea of self-mastery out from the absence of coercion or interference, and claimed that Tolstoy knew one big thing *and* many little things, in styles personified by two animals. For 10 points, name this political theorist who wrote "Two Concepts of Liberty" and penned "The Hedgehog and the Fox."
ANSWER: Sir Isaiah Berlin

14. In a poem by this author, "the autumnal evening darkens round" as the speaker heads toward the title location. That poem's speaker is "between two worlds, one dead, the other powerless to be born." The speaker of another poem by this man painfully remembers a single elm tree, which reminds him of the title character. Another of this author's speakers highlights the insufficiency of "the world, which seems to lie before us like a land of dreams," exclaiming "Ah, love, let us be true to one another!" He produced a pastoral elegy for his youthfully-departed friend Arthur Clough. His most famous poem contains the image of a "darkling plain" where "ignorant armies clash by night." For 10 points, name this British poet of "Stanzas from the Grand Chartreuse," "Thyrsis," and "Dover Beach."
ANSWER: Matthew Arnold

15. This hero killed a Greek king's daughter in battle at Ventry on the White Strand. He's not Theseus, but he led a group which gets trapped in a banquet hall by being rooted to their seats. A woman who spurned this hero later gets a craving for rowan berries. This man either held a sharp spear against his head or inhaled poison to stay awake and slay the harp-playing fire goblin Aillen. This man lets a companion die due to the "love spot" on the companion's forehead, and avenges his father, who died at the battle of Knock, after retrieving a Treasure Bag. This man's poet son returned from Tir na Nog after 300 years, and he himself fought against Goll mac Morna. For 10 points, name this father of Ossian, who burnt his thumb cooking the Salmon of Knowledge and led the Fianna.
ANSWER: Finn macCool [or Fionn mac Cumhail; or Demne Máel]

16. The tension force—or more precisely the tension force density—due to this quantity is proportional to this quantity dot grad applied to this quantity. This quantity may be computed using the Jefimenko equation that contains a cross product. The first adiabatic invariant is exploited in a device that traps plasma in a region where this quantity is locally minimal; that device is its namesake "mirror." It is generated by undulators and wigglers, which are used to deflect and beam ultrarelativistic charged particles in synchrotrons. The strength of this divergenceless field due to steady currents may be computed with the Biot-Savart law. For 10 points, name this vector field whose field lines technically do not begin or end, but are usually drawn leaving and entering north and south poles.
ANSWER: magnetic field [or B field; or magnetic flux density; accept H field; accept magnetic field strength; prompt on magnetism or word forms]

17. Two paintings originally thought to belong to this series actually depict Alexander Reid, an art dealer from Glasgow. In one of these paintings, the subject casts a diagonal shadow as he stands between two trees, facing the viewer and carrying art supplies under his left arm. Two of them are titled after their subject wearing a dark felt hat. The artist of these paintings often exchanged them with Emile Bernard, who executed similar paintings with these artworks in the background. The last of these, "without beard," was given to the artist's mother as a birthday gift. Another was dedicated to the artist's former roommate Paul Gauguin, and several feature a trademark yellow straw hat. For 10 points, name these paintings, including two with a bandaged ear, depicting the artist of *Starry Night*.

ANSWER: self-portraits by Vincent van Gogh [prompt on partial answer]

18. This is the most famous chemist who took N-halogenated amides and amines, then reacted them with strong acids to get cyclic amines like piperidine. Sulfuric acid was used in this man's namesake voltameter. One of his reactions proceeds with the addition of bromine and alkali, forming a hypobromite, before an alkyl group migrates to form a linear intermediate. Bulky bases that cause the beta hydrogen to be oriented syn periplanar to the leaving group form this man's namesake product in E2 reactions. Silver oxide is added to a quaternary amine to form the less substituted alkene, contradicting Zaitsev's rule, in another reaction named for this man. An isocyanate forms during the conversion of an amide to an amine in his rearrangement. For 10 points, name this German chemist.

ANSWER: August Wilhelm von Hofmann

19. One character in this novel disputes the narrator's assertion that he is immortal, responding "Of what use or sense is an immortality of piggishness?" That character is later stopped in his murderous tracks by a sudden stroke, even though he had earlier single-handedly beaten up a bunch of his rebellious subordinates and kidnapped men working for his brother Death. The protagonist of this novel casts away on an island with his love interest, the demure poet Maud Brewster. The protagonist, who is nicknamed Hump, is rescued from an accident in San Francisco Bay by the *Ghost*, a seal-hunting ship ruled by the title character, Captain Larson. For 10 points, name this novel about the nautical adventures of the intellectual Humphrey van Weyden, written by Jack London.

ANSWER: *The Sea-Wolf*

20. This man set up courts to hear cases for the poor that became the Court of Requests. He tried to curb excesses in the royal household and reduced the number of gentlemen of the Privy Chamber in the Eltham Ordinances. This successor of William Warham bypassed Parliament to try to finance a war with France through the Amicable Grant. With Lorenzo Campeggio, this man was made a joint papal legate despite never having visited Rome. Before it was taken by a monarch, the Hampton Court Palace was this man's home. He arranged a meeting with Francis I on the Field of the Cloth of Gold. This man was arrested for treason after he failed to get the Pope to annul a marriage to Catherine of Aragon. For 10 points, name this powerful cardinal early in the reign of Henry VIII.

ANSWER: Thomas Wolsey

TB 1. Tiberius set up a five-man commission and a fund to compensate for damages caused by a fire that broke out in one of these locations. Although it wasn't a forum, one of these locations was where an arch was built by Lucius Stertinius and where a triple arch honored Titus. The Flaminian Obelisk was brought from Egypt to a location of this type, where a shrine-like pulvinar was built inside by Augustus. The largest one of these buildings was constructed in the Vallis Murcia. Turning points called metae were located at the ends of spinas and near gates called carceres in these locations, where seven ova or dolphin markers were used to count laps. For 10 points, name these buildings used for such sporting events as chariot races, and which included a large one in Rome called the Maximus.

ANSWER: circuses [or Circus Maximus]

TB 2. Though sometimes referred to as a dialect of this language, Elfdalian is generally considered to be a separate language by linguists. Perfect verb forms in this language are produced by using a supine with an auxiliary verb. This language experienced a "you-reform" in the late 1960s that popularized the second-person singular pronoun "du" to replace a complex system of honorifics. This is the most prominent language to have a voiceless palatal-velar fricative, which is represented in orthography as the "sj sound." A milestone in the use of this language was the 1541 publication of the *Gustav Vasa Bible*. For 10 points, name this most widely spoken of the North Germanic, or Scandinavian, languages.

ANSWER: Swedish [or svenska]

Bonuses:

1. For scale-invariant systems, this quantity is the negative average of pressure times volume. For 10 points each:
[10] Name this quantity, usually expressed as $U - TS - \mu N$. The state function of a similarly-named canonical ensemble, it's minimized when no particles or heat are being transferred between the system and a reservoir.

ANSWER: grand potential [prompt on partial answer; prompt on phi or omega]

[10] This quantity named for an American chemist gives a measure of the "useful work" which can be obtained from a system and is expressed as $H - TS$. When it is less than zero, a reaction is spontaneous.

ANSWER: Gibbs free energy [prompt on free energy; prompt on G]

[10] The grand potential and Gibbs free energy are both examples of this kind of property, such as mass and volume, which depends on the amount of a substance or material in a system.

ANSWER: extensive properties

2. Delmore Schwartz's unsuccessful epic *Genesis* was an early example of a poem written in this style, whose name was coined by the critic M. L. Rosenthal. For 10 points each:

[10] Identify this style of poetry used by the frighteningly candid Sharon Olds, and by Robert Lowell in many poems from his collection *Life Studies*.

ANSWER: confessional poetry [accept word forms]

[10] In 1960, *Life Studies* won the National Book Award and the Pulitzer Prize went to this collection by W.D. Snodgrass, which alternates images of the Korean War with those illustrating the author's divorce and separation from his daughter.

ANSWER: Heart's Needle

[10] This author bared her soul in poems like "Lady Lazarus," "Ariel," and "Daddy" prior to committing suicide in 1963.

ANSWER: Sylvia Plath

3. A story about this battle claims the Austrians were forced to surrender because they did not realize their Russian allies still used the Julian calendar. For 10 points each:

[10] Name this 1805 decisive victory for Napoleon over Mack von Lieberich near a German city on the Danube.

ANSWER: Battle of Ulm

[10] Napoleon followed up on his victory at Ulm by personally fighting against and defeating Francis II and Alexander I in this battle, which led to the Peace of Pressburg.

ANSWER: Battle of Austerlitz [or Battle of the Three Emperors]

[10] This Russian general failed to reach Ulm in time to help the Austrian forces. He fought against Napoleon at Austerlitz and again during the French invasion of Russia.

ANSWER: Mikhail Illarionovich Golenischchev-Kutuzov

4. In *Play It Again*, Guardian Editor-in-Chief Alan Rusbridger describes the year he spent attempting to learn the first of these pieces. For 10 points each:

[10] Name these four difficult solo piano pieces, inspired by poems by Adam Mickiewicz, the first of which opens with a Neapolitan sixth chord.

ANSWER: Frederic Chopin's ballades [prompt on ballades]

[10] The "ballade-form" that Chopin used was a variant of this form. Italian for "sounded," this word denotes pieces for a solo instrument, unlike concertos.

ANSWER: sonata-allegro form [accept first movement form as well]

[10] This portion of the first ballade, marked "presto con fuoco," is written with a 2/2 time signature. This term denotes the concluding passage of a movement or a piece, independent from the rest of its structure.

ANSWER: coda

5. One of these events, seen by three shepherds' children in Fátima, Portugal in 1917, included a promise that World War I would end, despite warnings of impending hellfire yet to come. For 10 points each:

[10] Name this type of religious event. Roses dropped out of a cloak during another of these on Tepeyac Hill which included a speech in Nahuatl.

ANSWER: apparitions of the Virgin Mary [or Marian apparitions; or visions of the Virgin Mary; or apparitions

of a **Lady**; accept answers with **Mary** or "the **Theotokos**" in place of "Virgin"; prompt on "apparitions", "visions," or "dreams"]

[10] The Virgin of Guadalupe has been venerated since a 1556 apparition in this country, where families put out yellow marigolds and eat candy skulls for Día de los Muertos.

ANSWER: **Mexico**

[10] In Mexico, Guatemala, and Spain, this nine-day celebration precedes Christmas. It often involves a parade-like recreation of Mary and Joseph's search for shelter, including knocking on doors within a house.

ANSWER: Las **Posadas**

6. In a novel by this author, the narrator schleps a borrowed record player on the train to his lover's house, because she will only have sex with him with Debussy's "La Mer" playing. For 10 points each:

[10] Name this author of an autobiographical novel in which he attempts to seduce literally every single woman, eventually ending up in an alternate dimension accessed through the vagina of one of his targets. That novel is nicknamed his "Inferno."

ANSWER: Guillermo Cabrera **Infante**

[10] This Mexican author used the term "Spanish" to characterize Infante's wordplay-heavy diction. He wrote about a corrupt politician on his deathbed in his novel *The Death of Artemio Cruz*.

ANSWER: Carlos **Fuentes** (Macias)

[10] Owing to Infante's secondary career, several characters in his novels avidly pursue this hobby, which Korean War veteran Binx Bolling uses as a means of escapism in a novel by Walker Percy.

ANSWER: watching **movies** [or going to the **movies**]

7. One proponent of this approach conducted the "Movies and Conduct" study, which showed that people learned life skills by going to the cinema. For 10 points each:

[10] Identify this term coined by Herbert Blumer, a theoretical approach largely developed by George Herbert Mead which holds that meaning is derived from experiences people have with others in society.

ANSWER: **symbolic interactionism** [accept word forms and prompt on a partial answer]

[10] Two answers required. Mead came up with a way to differentiate the socialized and active aspects of a person by using these two pronouns that one commonly uses to refer to oneself in the first person.

ANSWER: **I** and **me** [accept in either order]

[10] Symbolic interactionism influenced this classic book in sociology of knowledge, co-written by Peter Berger and Thomas Luckmann. It describes the process of institutionalization of reciprocal interactions between people.

ANSWER: *The **Social Construction of Reality***

8. Guanwa Palace and the Promenade of Musical Shoes were built for a member of this group, who was offered as tribute to Fu Chai of Wu. For 10 points each:

[10] Name this historical group of women that included Xi Shi and Yang Guifei, who caused problems for the powerful men they attracted.

ANSWER: **Four Beauties** [or **Four Great Beauties**; or **Si Da Meiren**; or **Si Da Mei Nu**]

[10] The last of the Four Beauties, Yang Guifei, was the consort of Emperor Xuanzong of this Chinese dynasty, which was weakened by the An Lushan Rebellion.

ANSWER: **Tang** Dynasty

[10] The first beauty, Xi Shi, lived near the end of this period of Chinese history named for a Confucius-authored chronicle, which itself is named for two seasons.

ANSWER: **Spring and Autumn** Period [or **Chunqiu** Shidai]

9. Some very large antidunes have been formed by these phenomena. For 10 points each:

[10] Name these gravity-driven phenomena in which sediment-laden water moves rapidly downslope through clear water.

ANSWER: **turbidity** currents [prompt on "current"; prompt on "sediment gravity flow" or any part of that]

[10] The rocks produced by turbidity currents are classified as *this* type of sedimentary rock because they are formed from namesake sediment fragments laid down by moving fluids. They are classed as conglomerates, sandstones, or mudrocks.

ANSWER: **clastic** sedimentary rock

[10] Many turbidity currents, including the one that occurred in 1929 at Grand Banks, are triggered by these seismic

phenomena which are measured using the Richter scale.

ANSWER: earthquakes

10. Answer these questions about the ethical theory of Thomas Aquinas, for 10 points each.

[10] In this comprehensive, unfinished tome on Christian doctrine, formatted as replies to objections, Aquinas wrote that good deeds require the proper “interior act” of the will underlying them to count as good.

ANSWER: Summa theologiae [or Summa theologiae]

[10] This Thomist theory argues that states *can* initiate violent action when they have fair cause, right intent, and legitimate authority to do so as a last resort.

ANSWER: just war theory [or bellum iustum; or ius ad bellum]

[10] This Thomist ethical principle allows individuals to commit unintended immoral consequences of an intended moral deed. Aquinas introduced it in the second part of the *Summa* when discussing self-defense.

ANSWER: doctrine of double effect [or principle of double effect; or rule of double effect]

11. Theater directors have a lot of fun staging the explosion in Act IV, Scene V of this play. For 10 points each:

[10] Name this comedy whose cast of “gulls” includes the Anabaptists Ananias and Tribulation Wholesome, as well as the wildly popular tobaccoist Abel Drugger.

ANSWER: *The Alchemist*

[10] *The Alchemist* was written by this English playwright who also produced *Volpone*.

ANSWERS: Benjamin Jonson

[10] The main setting of *The Alchemist*, Lovewit’s house, was modeled after this building, a playhouse located in a former priory where the play was first staged by the King’s Men in 1610.

ANSWER: Blackfriars Theatre

12. Name some things about photojournalism, for 10 points each:

[10] *Life* photographer Margaret Bourke-White photographed this leader at his spinning wheel just hours before he was assassinated by Nathuram Godse.

ANSWER: Mohandas Karamchand Gandhi [or Mahatma Gandhi]

[10] This Frenchman, one of the first photojournalists, captured a man jumping into a puddle in his *Behind the Gare Saint-Lazare*.

ANSWER: Henri Cartier-Bresson

[10] Robert Sargent depicted this event in his photo *Into the Jaws of Death*. Robert Capa’s *Magnificent Eleven* were pictures of this event that were ruined by the staff of *Life* magazine.

ANSWER: D-Day landings [or Normandy invasion, prompt on “World War II”]

13. Powell et al discovered the pion using apparatuses employing this technique. For 10 points each:

[10] Name this technique that uses a photographic plate coated with a namesake type of colloid to record the tracks of charged particles that have passed through. It is now more commonly used in radiotherapy than in particle physics.

ANSWER: nuclear emulsion plate [prompt on “emulsion plate”; prompt on “emulsion”]

[10] Nuclear emulsion was superseded by this particle-detection apparatus whose design won a Nobel for Donald Glaser. It consists of a vessel filled with a superheated liquid, unlike its predecessor, which used a supersaturated vapor.

ANSWER: bubble chamber

[10] More modern approaches to particle detection typically use these devices, which measure the amount of energy deposited in them by a particle. In chemistry, they are used to measure the heat produced by a reaction.

ANSWER: calorimeters

14. In art, this personification was depicted as a woman holding a flower in one hand and holding her skirt off the ground with the other. For 10 points each:

[10] Name this mental state embodied by the Greek Elpis and the Roman Spes, a good thing which remains unreleased after a parade of evils erupts out of Pandora’s box.

ANSWER: hope

[10] Pandora’s name is given only in this source, a didactic poem by Hesiod which gives farming advice and recounts the “five ages of man.”

ANSWER: Works and Days [or Ergai kai Hemerai; or Opera et Dies]

[10] The tale of this Arcadian tyrant is preceded by Ovid's version of the "ages of man" in Book I of *Metamorphoses*. This man's willingness to feed Zeus human flesh inspires a great flood survived by Pandora's daughter Pyrrha.

ANSWER: Lycaon

15. Many people in this painting were inspired by the muscular manual laborers and male prostitutes that the artist regularly saw in Roman public baths. For 10 points each:

[10] Name this large painting by Michelangelo which was targeted by a "fig leaves" campaign to cover the genitals of several people. It shows Christ either sending souls to heaven or damning them to hell.

ANSWER: The Last Judgment

[10] The censorship of *The Last Judgment* was performed by this painter, who thus earned the nicknamed "Il Braghettone," or "the breeches-maker."

ANSWER: Daniele da Volterra [accept either name; or Daniele Ricciarelli]

[10] The nipple-grabbing and tongue-kissing in this artist's *Allegory of Venus and Cupid* were censored, though no such changes were made to a painting by him in which the two hang out with an old man and a screaming lady.

ANSWER: Il Bronzino [or Agnolo Bronzino; or Agnolo di Cosimo]

16. A man with this title was forced to resign after he told Pat Boone that the three things black people wanted were a "tight pussy," some "loose shoes," and "a warm place to shit." For 10 points each:

[10] Identify this Cabinet post held by Earl Butz, which had earlier been held separately by father and son Henry C. and Henry A. Wallace.

ANSWER: Secretary of Agriculture

[10] Another Secretary of Agriculture, Ezra Taft Benson, served as the thirteenth president of this religious group, some of whose members carried out the Mountain Meadows Massacre after moving to the Utah Territory.

ANSWER: Mormon Church [or LDS Church; or Church of Jesus Christ of Latter-day Saints]

[10] The USDA was elevated to a Cabinet-level department by this president, who vetoed the Texas Seed Bill and was attacked for having an illegitimate child with Maria Halpin.

ANSWER: Samuel Grover Cleveland

17. Name some things about international cultural festivals for 10 points each:

[10] The festival of San Fermin in this Spanish city features the Running of the Bulls.

ANSWER: Pamplona

[10] Chinese New Year ends with a festival named for these objects, which often have riddles written on them. They are also central to the Ti Peng festival in Thailand.

ANSWER: sky lanterns

[10] One popular festival in this country is the Battle of the Oranges in its town of Ivrea. Its most famous festival concludes with a contest deciding the most beautiful mask.

ANSWER: Italy

18. A conquest of this empire resulted in the formation of the Empire of Nicaea, the Empire of Trebizond, and the Despotate of Epirus. For 10 points each:

[10] Identify this non-Muslim empire whose capital was sacked in 1204 by Christian soldiers during the Fourth Crusade.

ANSWER: Byzantine Empire [or Eastern Roman Empire]

[10] This pope called for the Fourth Crusade. He also convoked the Fourth Lateran Council, which confirmed Frederick II as Holy Roman Emperor.

ANSWER: Innocent III [or Lothar of Segni; or Lotario di Segni; prompt on "Innocent"]

[10] Innocent supported Stephen Langton in England during a feud following the death of this archbishop of Canterbury and Lord Chancellor, who improved recordkeeping by starting the feet of fines and charter roll.

ANSWER: Hubert Walter

19. An undesirable outcome in this process is the binding of dye to a primer dimer. For 10 points each:

[10] Name this variant of PCR which is carried out in a thermocycler that illuminates samples with light and detects fluorescence, giving information about DNA amplification as it is happening.

ANSWER: **quantitative** polymerase chain reaction [or **qPCR**; or **real-time** polymerase chain reaction; prompt on **RT-PCR**]

[10] When referred to as real-time PCR, qPCR is commonly mistaken for reverse transcription PCR, which is a similar technique that can be used to detect this kind of nucleic acid with ribose and uracil instead of thymine.

ANSWER: **RNA** [or **ribonucleic acid**; accept specific types of RNA such as **tRNA** or **mRNA**]

[10] In qPCR, you can identify specific DNA fragments because the derivative of fluorescence peaks at this temperature, when half the DNA is single-stranded. CG-rich primers usually have higher values for this quantity.

ANSWER: **melting** temperature [or **T_m**; do not accept “melting point”]

20. Public awareness of this organization was raised in the 1960s and 70s by Leonardo Sciascia’s novels *Equal Danger* and *The Day of the Owl*. For 10 points each:

[10] Name this criminal syndicate which murders Astorre’s adopted father Aprile in *Omerta*, the final book in a trilogy by Mario Puzo.

ANSWER: Sicilian **Mafia** [or **Cosa Nostra**]

[10] One of the earliest literary portrayals of the Sicilian Mafia was “The Gold Key,” a story by this writer who is also known for a novel about Padron Ntoni and his family, including Bastianazzo, who dies in a shipwreck.

ANSWER: Giovanni Carmelo **Verga**

[10] This author wrote about Mafia thievery of cattle in “The Dissolution of the League” and wrote a play in which Count de Nolli pays actors to pretend to be court subjects of his uncle, who thinks he’s a Holy Roman Emperor.

ANSWER: Luigi **Pirandello**