Tossups

1. **Some members of this phylum breathe using their plated book lungs while other organs are housed in the hemocoel. This phylum is characterized by, and named for, their jointed legs, and organisms in this phylum have a** (*) segmented body protected by an exoskeleton. The classes Trilobita and Arachnida fall under, for 10 points, what phylum that includes invertebrates like crustaceans, spiders and insects?
Answer: **Arthropod**a (accept **Arthropod**s)

2. **This author defines injustice as the breaking of a covenant, leaving everything else as just. In the same work, he describes a world without arts, letters, or industry; that world is avoided if people enter into a** (*) social contract under a sovereign with absolute power, so that life would not be "solitary, poor, nasty, brutish, and short" as it is in the state of nature. For 10 points, name this English philosopher, the author of *Leviathan*.
Answer: Thomas **Hobbes**

3. **The Soloviev-Imamura intensity scale rate the intensity of these events. Shoaling causes these phenomena to slow down as they approach land, and if a trough, rather than a crest, is the first part of this phenomenon to** (*) reach land, then drawback occurs, creating an apparently low tide. Underwater earthquakes can cause, for 10 points, what kind of dangerous tidal wave that devastated Japan in 2011?
Answer: **tsunami** (prompt on tidal wave before mentioned)

4. **German soldiers and a dog named Princess capture the protagonist of this novel as he flees the Battle of the Bulge. Edgar Derby is executed for stealing a teapot in this novel, and Paul Lazzaro commits murder to avenge the death of** (*) Roland Weary. The protagonist travels to Tralfamadore and becomes unstuck in time. For 10 point, "The Children's Crusade" subtitles this Kurt Vonnegut novel about Billy Pilgrim and the firebombing of Dresden.
Answer: **Slaughterhouse-Five**, or The Children's Crusade: A Duty-Dance with Death

5. **One proposal regarding this legislation would have freed slaves on their 25th birthday; the Senate's refusal to accept that Tallmadge Amendment delayed this agreement by a year. The** (*) *Dred Scott* case ruled it unconstitutional, though it had already been repealed by Stephen Douglas's Kansas-Nebraska Act. Maine joined the union as a free state via, for 10 points, what agreement that established a certain slave state west of the Mississippi River?
Answer: **Missouri Compromise** (or **Compromise of 1820**)

6. **The armor of these mythological figures reflects light to make the Aurora borealis as this group travels through the sky with the Einherjar [INE-hare-yahr] on their way to Folkvang ["FOLK"-vahng], Freyja's "field of warriors." This group includes Gunnr and the** (*) shieldmaiden Brunhilde, and they take half the warriors killed in battle to Valhalla as part of their duties as "choosers of the slain." For 10 points, name these female Norse spirits of the battlefield.
Answer: **Valkyrie**s (accept Valkyrja [val-keer-yah] or Valkyrjur [val-keer-yur]; accept die Walküre or die Walküren)

7. **Willard Van Dyke and Edward Weston were co-founders of a group of artists in this medium called f/64 ["f"-stop-"64"]. Poor passengers in the lower deck of a ship are depicted using this medium in *The Steerage* by Alfred** (*) Stieglitz. *Moon and Half Dome* and *Migrant Mother* are images in this medium created by Ansel Adams and Dorothea Lange. For 10 points, name this artistic technique used to capture a post-war kiss in Times Square.
Answer: **photography** (accept word forms)

8. **One song on this album asks "Were you telling lies?" and "Was I so unwise?" In addition to "The Night Before," this album includes "You've Got to Hide Your Love Away" and the original British release of** (*) "Yesterday." This album is the soundtrack to the second film by its band, and its title track recalls a time "when I was younger, so much younger than today." For 10 points, name this Beatles album in which John Lennon pleads "I need somebody."
Answer: **Help!**

9. **In one of this man's novels, Elwin Ransom learns that Earth is "Thulcandra," a "silent planet" in this author's "Space" trilogy. Bree and Hwin help Shasta in one of this man's novels, and in another Prince Rilian is tied nightly to the title** (*) *Silver Chair*. The Pevensie children become kings and queens with the guidance of Aslan in a work by, for 10 points, this author, whose *The Lion, the Witch, and the Wardrobe* begins *The Chronicles of Narnia*.
Answer: C(live) S (taples) ("Jack") **Lewis**

10. **The English case of James Somersett illegalized this concept, as did Princess Isabel's "Golden Law" in Brazil. One form of this practice treats its subject as chattel; that form did not apply to the Spanish encomienda or to the** (*) helots of Ancient Sparta. This concept formed the Middle Passage of a triangular Atlantic trade route in the 1700s. Abolitionists opposed, for 10 points, what system of forced labor?
Answer: **slavery** (accept word forms and equivalents like the **slave** trade)

Half Time

11. **Mandaeans frequently perform this action, which Peter likened to an Old Testament disaster survived by eight people. The son of Elizabeth saw the Holy Spirit visibly descend on** (*) Jesus during this ritual. A Protestant sect named for this ritual restricts participants to adults and performs this rite by immersion since John performed this ritual in the water of the Jordan. For 10 points, name this Christian sacrament in which a person is doused with holy water.
Answer: **baptism** (accept word forms like baptizing)

12. **The protagonist's grandson, Niou [nee-oh], and his wife's illegitimate son, Kaoru [kah-oh-roo], pursue three sisters in the last third of this novel, after the title figure's death. This novel's protagonist is briefly exiled to Suma by the emperor, his illegitimate son. A friend of** (*) Tō no Chūjō [toh noh choo-joh] raises Fujitsubo's [foo-jee-tsoo-boh's] niece to be the perfect wife for the title "shining" Japanese prince in this novel. For 10 points, name this early novel by Murasaki Shikibu [moo-rah-sah-kee shee-kee-boo].
Answer: The Tale of **Genji** (accept **Genji** Monogatari [geh-n-jee moh-noh-gah-tah-ree])

13. **The Betterton-Kroll process removes bismuth from ores of this element and, with sulfur, it is found in the mineral galena. The tetraethyl form of this element raises octane ratings in gasoline. Oxides of this element form** (*) crystal glass, and this element and tin combine to make solder. This element can provide shielding from radiation and was once used in pipes and paints. For 10 points, name this toxic element with chemical symbol Pb.
Answer: **Lead**

14. **In 2008, Justice Antonin Scalia interpreted this amendment's phrase "the People" as referring to individuals. That opinion in *District of Columbia vs. Heller* was expanded to the states in the 2010 case** (*) *McDonald vs. Chicago*, giving individuals the protection of this amendment even if they are not part of a "well-regulated militia." For 10 points, name this amendment in the Bill of Rights that guarantees the right to keep and bear arms.
Answer: **Second** Amendment to the U.S. Constitution (accept Amendment **2**)

15. **A precise statement of Newton's second law is that the derivative of this quantity with respect to time equals the net force on an object. The change in this quantity is called impulse. Unlike with kinetic energy, both** (*) inelastic and elastic collisions keep this value constant, according to its namesake law of conservation. For 10 points, name this vector quantity abbreviated **p**, equal to mass times velocity.
ANSWER: linear **momentum** (prompt on **p** before it is mentioned)

16. **In this battle, Mervyn Bennion earned a posthumous Medal of Honor commanding the *USS West Virginia*. Its targets included Hickam Air Field, which was attacked just before the delivery of a 14-part message declaring war. A third wave of attackers was cancelled by** (*) Chuichi Nagumo, and bombers in its first wave sunk the USS Arizona. For 10 points, name this December 7th, 1941 surprise attack on Hawaii that triggered the U.S. entry into World War II.
Answer: Attack on **Pearl Harbor** (accept clear equivalents for "attack")

17. **This type of conditional statement is formed by negating both the condition and the consequence. This concept does not exist for square matrices with determinant zero or for functions that are not one-to-one and onto. Reciprocals form this concept for** (*) multiplication of non-zero real numbers; that is, multiplying a number and this type of number results in the identity, 1. For 10 points, name this mathematical concept of "un-doing" a process.
ANSWER: **inverse** (accept word forms and additional information)

18. **One album by this artist includes "The Pan Piper," "Saeta," and "Solea," written by Gil Evans, while an album featuring this artist's nonet includes the song "Boplicity." He headed a sextet, including saxophonists Cannonball Adderley and** (*) John Coltrane, for the songs "Freddie Freeloader" and "So What." For 10 points, what jazz trumpeter of *Sketches of Spain* appears on the covers of his albums *Birth of the Cool* and *Kind of Blue*?
Answer: Miles **Davis**

19. **This man's Chief Minister, Thomas Cromwell, dissolved the monasteries, even though this man had written *Defence of the Seven Sacraments*, an anti-Lutheran pamphlet that earned him the title "Defender of the Faith." Archbishop of** (*) Canterbury Thomas Cranmer organized the annulment of this man's first marriage. For 10 points, name this English king who broke from the Roman Catholic Church to divorce Catherine of Aragon, the first of his six wives.
Answer: King **Henry VIII** Tudor (prompt on King Henry)

20. **A character in this work asks, "Did my heart love 'til now? Forswear it, sight! / For I ne'er saw true beauty 'til this night!" despite his previous love for Rosaline. In this play, one character kills his wife's cousin and Count** (*) Paris after falling in love at a ball hosted by his enemy. A golden statue depicting the title lovers is built in Verona to stop the feud between the Capulets and Montagues in, for 10 points, what Shakespeare play about "a pair of star-cross'd lovers?"
Answer: The (Most Excellent and Lamentable) Tragedy of **Romeo and Juliet**

Bonuses

1. These authors popularized stories such as "Cinderella" and "Rumpelstiltskin." For 10 points each,
[10] Name these brothers whose collection *Children's and Household Tales* included stories like "Rapunzel" and "Hansel and Gretel."
Answer: The Brothers **Grimm** (accept Wilhelm and Jacob **Grimm**)
[10] The Grimm brothers rewrote many of the tales of this Frenchman, who also created Puss in Boots and Little Red Riding Hood.
Answer: Charles **Perrault**
[10] Perrault created this storyteller for his fairy tales, contrasted with Mother Hubbard, who is sometimes depicted as a bird.
Answer: **Mother Goose** (accept **Mère l'Oye**)

2. During high tide, one of these structures at the Itsukushima Shrine appears to float in the nearby water. For 10 points each,
[10] Give this term for a gate marking the entrance to a sacred shrine in a Japanese spiritual tradition.
Answer: **torii**
[10] This tradition coexists with Buddhism as Japan's predominant faith. This tradition's spirits, such as Amaterasu, are referred to as kami.
Answer: **Shinto**ism
[10] Shinto rituals involving this ceremony include the central couple taking three sips of sake from each of three cups; today, this is often followed by the exchanging of rings.
Answer: **wedding** ceremony

3. For 10 points each, give the following about important signatures in American history.
[10] The large, elaborate signature of this President of the Continental only appears on the "engrossed" copy of the Declaration of Independence that was signed in August, 1776.
Answer: John **Hancock**
[10] More than 1,000 economists signed a petition begging President Herbert Hoover to veto this bill, but he signed it anyway. This Act raised tariff rates to their highest rates in a century, and is considered to have exacerbated the Great Depression.
Answer: **Hawley-Smoot** (or **Smoot-Hawley**) Tariff (Act or Law or Bill)
[10] When this President signed the Civil Rights Act of 1964, he remarked that Democrats would "lose the South for a generation." He did lose five Southern states in his successful 1964 re-election, and declined to run for a second full term in 1968.
Answer: **L**yndon Baines **Johnson** (or **LBJ**)

4. The protagonist witnesses the oppression of Balnibarbi by the floating cloud city, Laputa. For 10 points each,
[10] Name this novel in which the title adventurer concludes that the society of the Houyhnhnms [h-WIN-ims] is preferable to that of humans after traveling in Brobdingnag and Lilliput.
Answer: **Gulliver's Travels**, or, Travels into Several Remote Nations of the World, by Lemuel Gulliver
[10] *Gulliver's Travels* is by this British satirist of *The Battle of the Books*, who issued a "Modest Proposal" for relieving the stress of Irish poverty.
Answer: Jonathan **Swift**
[10] Swift satirized Henry VIII as "Harry Huff" in this allegorical novel, in which Peter, Martin, and Jack each represent a primary branch of Christianity.
Answer: A **Tale of a Tub**

5. A substance's phase of matter depends on temperature and pressure. For 10 points each,
[10] Give the name for the point on a temperature-pressure graph at which solid, liquid, and gas phases can exist in equilibrium.
Answer: **Triple** point
[10] Dry ice often undergoes this transition from a solid directly to a gas, without entering the liquid phase.
Answer: **Sublimation** (accept word forms)
[10] Beyond a certain temperature and pressure, a substance achieves this phase in which liquid and gas are indistinguishable.
Answer: **Supercritical** fluid

6. It is the larger of South America's two landlocked countries. For 10 points each,
[10] Name this country with capitals at La Paz and Sucre. It is named for a South American liberator.
Answer: Plurinational State of **Bolivia**
[10] This lake on the border of Bolivia and Peru is the namesake of a large endangered species of frog. It is the world's highest commercially navigable lake.
Answer: Lake **Titicaca**
[10] Bolivia's Altiplano contains this large saline lake that is fed by the Desaguadero River. It is Bolivia's second largest lake, and it has been polluted by nearby mining.
Answer: Lake **Poopo** [paw-aw-PAW] (be lenient on pronunciation)

7. July 4 of this year saw scientists announce they may have discovered this particle. For 10 points each,
[10] Name this theoretical particle whose existence would support the Standard Model. Named for an English physicist, it is sometimes referred to by the media as the "God particle."
Answer: **Higgs** boson (or **Higgs** particle)
[10] The Higgs boson and its associated field are thought to imbue other particles with this property. A measure of inertia, its SI unit is the kilogram.
Answer: **mass** (do not accept "weight")
[10] That announcement was made by this organization that developed the World Wide Web and operates the Large Hadron Collider near its Geneva, Switzerland headquarters.
Answer: **CERN** (accept **European Organization for Nuclear Research** or **Organisation européenne pour la recherche nucléaire** or **Conseil Européen pour la Recherche Nucléaire**)

8. A house is leased for the title character of this opera by her husband, Pinkerton; the deal is for 999 years, but can be cancelled every month. For 10 points each,
   [10] Name this opera, whose title character, Cio-Cio San, kills herself after learning that Pinkerton has married another woman.
   Answer: **Madame Butterfly** (accept **Madama Butterfly**)
   [10] In this opera by the composer of *Madame Butterfly*, Prince Calaf correctly answers the title princess' three riddles. This unfinished work features the aria "Nessun Dorma."
   Answer: **Turandot**
   [10] This Italian composed the music for *Madame Butterfly* and *Turandot*, as well as *Tosca*.
   Answer: Giacomo **Puccini**

9. It is convenient to use this coordinate system to graph cardioids. For 10 points each,
   [10] Name this coordinate system that uses distance from the origin and angle from the positive *x*-axis to define points.
   Answer: **polar** coordinate system
   [10] The first coordinate in the polar system represents this type of length, which is multiplied by 2 pi to give a circle's circumference.
   Answer: **radius**
   [10] This other coordinate system, in three dimensions, uses two angles; in addition to the theta used in polar coordinates, it adds phi, the angle down from the third dimension's axis.
   Answer: **spherical** coordinates

10. For 10 points each, name the following Spanish rulers.
    [10] These monarchs conquered Granada, the last Muslim stronghold in Spain, and financed Christopher Columbus' expedition to the New World.
    Answer: **Ferdinand** II of Aragon and **Isabella** I of Castille (accept the **Catholic Monarchs**)
    [10] This Spanish king was married to Mary I and sent the Armada to attempt to conquer England.
    Answer: **Philip II**
    [10] Francisco Franco named this current King of Spain his successor shortly before his death.
    Answer: **Juan Carlos** I

11. This figure was the father of Voluptas by a mortal woman whose beauty rivaled that of this god's mother. For 10 points each,
    [10] Name this Greco-Roman deity, who was wounded by his own golden arrow when Venus sent him to play a trick on Psyche [SY-kee].
    Answer: **Cupid**o (accept **Eros**)
    [10] Like the Norse goddess Frigg and Cupid's mother, Venus, Cupid represents this human emotion, which he can create by shooting someone with his golden arrows.
    Answer: romantic **love** (accept equivalents, including **affection**)
    [10] This Babylonian love goddess sent the Bull of Heaven against Gilgamesh when he refused to marry her.
    Answer: **Ishtar**

12. Parts of this organ include the sclera and the fovea, which is used for focus. For 10 points each,
[10] Name this organ that takes in light and is used for vision.
Answer: **Eye**
[10] This net-like tissue in the back of the eye takes light rays and converts them into electrical signals before they are sent to the brain to be processed.
Answer: **Retina**
[10] This type of photoreceptor cell in the retina can detect different wavelengths of light; as a result, deficiencies in this type of cell can lead to color blindness.
Answer: **Cones**

13. For 10 points each, give the following related to first Persian invasion of Greece.
[10] This "Great" Persian leader, who avenged the death of Cyrus the Great by attacking Scythia, invaded Greece after the Ionian Revolt.
Answer: **Darius I** [the first] or **Darius the Great**)
[10] The Persians were slaughtered by heavily armored hoplites under the Athenian strategos Miltiades at this 490 BC battle, after which the runner Pheidippides relayed news back to Athens.
Answer: Battle of **Marathon**
[10] The Persian army at Marathon lacked this elite corps of 10,000 Imperial Guards. These troops accompanied Xerxes the Great on the second invasion of Greece 10 years after Marathon.
Answer: **Immortal**s

14. [**NOTE**: The quote in the bonus lead-in should be full of [sic] notes, but it'd be a terrible clutter. Just read it as written. Thanks!]
In June 2012, one user of this service announced "Can't sleep. Its almost 6am here in Paris. Been up for hours playing fruit ninja. Woe to the person who wants to be excused from suffering!" For 10 points each,
[10] Name this website with more than half a billion users, including the novelty account @KimKierkegaard ["At Kim Kierkegaard"], which mashes up quotes from Kim Kardashian and Soren Kierkegaard in 140 characters or less.
Answer: **Twitter**.com
[10] In 2009, this London landmark gained an unofficial Twitter account; each of its more than 20,000 tweets consists of between 1 and 12 repetitions of the word "BONG."
Answer: **Big Ben** (accept @big_ben_clock ["At Big Ben Clock"])
[10] Users attempting to load Twitter during a service outage are greeted by eight birds using strings to lift one of these animals.
Answer: Fail **Whale**

15. This recluse is often called the Belle of Amherst. For 10 points each,
[10] Name this American poet of "This is my letter to the world," who wrote "I'm Nobody! Who are you?" and "I heard a fly buzz when I died."
Answer: Emily Elizabeth **Dickinson**
[10] Known by its first line, this Dickinson poem describes a ride with the title entity, who "kindly stopped for" the speaker in a carriage that "held but ourselves / and Immortality."
Answer: **Because I could not stop for Death** (accept poem **712**)
[10] This Dickinson poem says "Might I but Moor / To-night with thee," and says that were the speaker "with thee," the title time would be "our luxury."
Answer: **Wild Nights** (accept poem **269**)

16. For 10 points each, name these American painters.
    [10] This regionalist from Iowa painted his dentist posing as a farmer holding a pitchfork in front of the title house in *American Gothic*.
    Answer: Grant DeVolson **Wood**
    [10] This abstract expressionist creator of *Blue Poles* and *Lavender Mist* distinctively dribbled paint onto the canvas, earning himself the nickname "Jack the Dripper."
    Answer: (Paul) Jackson **Pollock**
    [10] This founder of the Hudson River School depicted the rise and fall of a fictional city in *The Course of Empire* series, and painted the Connecticut river valley in *The Oxbow*.
    Answer: Thomas **Cole**

17. For 10 points each, give the following about casting deciding votes in American politics.
    [10] In the U.S. Senate, if a vote is tied, this person casts the tiebreaking vote; that's the only situation in which this person is allowed to cast a Senate vote.
    Answer: **Vice President** of the United States (prompt on "President of the Senate," but do not prompt on "President" alone)
    [10] In a Presidential election, if no candidate receives 270 votes in this body - due to a tie or any other reason - then the House of Representatives will decide the winner.
    Answer: **Electoral College**
    [10] Edmund Ross served as the swing vote in this event, in which 19 Senators voted to acquit the 17th President of charges including "high crimes and misdemeanors," in accordance with Article 2 of the Constitution.
    Answer: **Impeachment** trial of **A**ndrew **Johnson** (accept word forms and additional information; prompt on partial answers)

18. For 10 points each, give the following about classical conditioning.
    [10] The roots of classical conditioning lie in an experiment conducted on these animals, who were given food while a bell rang. After repetition, these animals salivated upon just hearing the bell.
    Answer: **dog**s (or **C**anis **l**upus **familiaris**)
    [10] This Russian psychologist performed that experiment on dogs. He was awarded the 1904 Nobel Prize for Physiology and Medicine for his study of digestion.
    Answer: Ivan (Petrovich) **Pavlov**
    [10] This other psychologist studied classical conditioning in the Little Albert experiment, in which he conditioned a child to fear furry animals by associating them with loud noises.
    Answer: John B(roadus) **Watson**

19. The wheels of this craft leave tracks that spell "JPL," for Jet Propulsion Laboratory, in Morse code. For 10 points each,
    [10] Name this six-wheeled NASA rover that touched down at Bradbury Landing in the Gale Crater in August, 2012.
    Answer: **Curiosity**
    [10] *Curiosity* landed in an alluvial fan on this "red" planet; photo analysis of pebbles on the surface of this planet give evidence that water once flowed on its surface.
    ANSWER: **Mars**
    [10] The *Curiosity* rover is powered by heat emitted from a sample of this radioactive element's 238 isotope. That isotope of this element can be produced by processing spent nuclear fuel.
    ANSWER: **Plutonium**-238

20. This poem begins "Much have I travell'd in the realms of gold, and many goodly states and kingdoms seen." For 10 points each,

[10] Name this sonnet, inspired by a new translation of the *Iliad* and the *Odyssey*.

Answer: **On First Looking Into Chapman's Homer**

[10] "On First Looking Into Chapman's Homer" is a poem by this English poet of "Bright star, would I were steadfast as thou art" and "Ode on a Grecian Urn."

Answer: John **Keats**

[10] Keats also wrote an "Ode to" one of these musical birds, which "wast not born for death." That poem declares "the voice I hear this passing night was heard / In ancient days by emperor and clown."

Answer: **nightingale** (accept Ode to a Nightingale)