hsapq

1. **In rotifera (roh-TIH-fer-ah), flame cells contain a group of these projections surrounded by a tubule, and they serve to move ova down the fallopian tubes in the uterus. Like flagella, they contain a 9+2 doublet of microtubules around a central pair. These structures also line the respiratory epithelium (eh-pih-THEE-lee-um), where their (*)** beating helps move debris out of the lungs. For 10 points, name these motile hairlike projections used by some cells to move around and sense their environment.
ANSWER: **cilia** or **cilium**

048-12-53-01102

2. **Margaret Thatcher's government closed twenty of these places in 1984, leading to a year-long strike. After children were banned from working in these in Britain, ponies often took their place. Safety in these places improved with John Buddle's air ventilation system and Humphrey Davy's safety lamp. Flooding in these places was lessened by Thomas Newcomen's steam engine, which extractions from here often (*)** fueled. For 10 points, name these places where a fossil fuel is extracted from the ground.
ANSWER: British **coal mine**s [prompt on **mine**s]

121-12-53-01103

3. **This agency operates the thirty-eight mile NLAX railroad, which helps transport equipment it needs from Utha's Thiokol factory. In 2011, this agency announced the development of the new SLS. An accident caused by a faulty o-ring on equipment belonging to this organization resulted in the "Touched the Face of God" speech. Richard Nixon prepared an alternate (*)** speech in case of a failure by a mission by this organization; instead, that mission resulted in a man saying "One small step for a man, one giant leap for mankind." For 10 points, name this government body whose celestial reserch included sending Neil Armstrong to the moon.
ANSWER: **NASA** [or the **N**ational **A**eronautics and **S**pace **A**dministration]

002-12-53-01104

4. **Leucippos (lou-SIP-us) dresses up as a woman in order to get closer to this figure, but after the disguise fails Leucippos is stabbed to death. The most famous story involving this figure occurred after another god made fun of Eros' archery skills. This figure pleaded with her father Peneus to help her escape her pursuer, resulting in her (*)** transformation. For 10 points, name this nymph loved and chased by Apollo who was turned into a laurel tree.
ANSWER: **Daphne**

048-12-53-01105

5. **The eigenstates of the quantum version of this system are given by the Hermite polynomials. The Q factor for one of these systems is given by one half of the damping ratio, while the potential energy stored in another type of this system is given by one-half k times the (*)** displacement distance squared. The force exerted by that type of this system is given by negative the spring constant times the displacement. For 10 points, the simple version of what system is governed by Hooke's Law and models a spring?
ANSWER: **harmonic oscillator** [or simple **harmonic oscillator**; or damped **harmonic oscillator**]

149-12-53-01106

6. **One portrait of this man shows him wearing an ornate white-and-red robe and holding a pair of scepters and was created by Ingres (ANG-ruh). He is touching the armpit of a plague victim at Jaffa in a painting by Gros. Another artist depicted him kneeling down on a black and gold pillow during his coronation. That same artist showed him on the back of a rearing horse as his men carry cannons in the background in a painting of him** (*) "Crossing the Alps." For 10 points, name this patron of Jacques-Louis David, a French emperor from Corsica.
ANSWER: **Napoleon** Bonaparte [or Napoleon **Bonaparte**]

7. **This character notes that "more horrible than" an orphan's curse is one of a "dead man's eye" after recounting how he saw two hundred of his companions fall dead. Of his loneliness, he muses, "a thousand thousand slimy things lived on; and so did I." He laments,** (*) "Water, water everywhere, nor any drop to drink," while accosting a Wedding-Guest with his tale of woe, which began when he shot an albatross. For 10 points, name title old seaman of a Samuel Taylor Coleridge poem knowns as his "Rime."
ANSWER: the **Ancient Mariner**

8. **In a poem honoring this conflict's soldiers, the writer states that "their monument sticks like a fishbone in the city's throat." "A Word for the Hour" disparages one side in this conflict, and in another poem by the same author, the title woman urges soldiers in this war to "spare your country's flag." Robert** (*) Lowell and John Greenleaf Whittier wrote about this war, and a novel set during this war features Jim Conklin and Henry Fleming, who acquires the title wound. For 10 points, name this war, the subject of *The Red Badge of Courage.*
ANSWER: American **Civil War**

9. **One part of this country has a name referring to its Lake Matano iron mines. This nation controls the Lesser Sunda Islands along with an island home to separatist region of Aceh (AH-chuh). Another island of this nation lies south of the Strait of** (*) Malacca and is home to rare species of orangutans and tigers. This nation's province of Irian Jaya is on the western half of the island of New Guinea. This nation also controls the southern portion of Borneo. For 10 points, name this Asian nation whose islands include Sumatra and Java.
ANSWER: Republic of **Indonesia**

10. **While in this position, Richard Olney advised sending marshals to end the Pullman Strike. Another man in this position sent marshals to the University of Mississippi to allow James Meredith to enroll there. Robert Bork took this position after the man who had held it resigned rather than fire Archibald Cox. The first man to hold this position was** (*) Edmund Randolph. For 10 points, name this Cabinet position that has been filled by Robert Kennedy, Elliot Richardson, and most recently Eric Holder.
ANSWER: **Attorney General** of the United States

11. **The Second Act of Supremacy and an Act of Uniformity were passed early in the reign of this monarch, whose motto was "Video et taceo." The Ridolfi Plot and the Babington Plot were investigated by this leader's spymaster Francis Walsingham. Those plots sought to replace this ruler with** (*) Mary, Queen of Scots, whom this monarch had executed. For 10 points, name this daughter of Henry VIII and Anne Boleyn, who preceded James I and succeeded her sister Mary I as Queen of England.
ANSWER: **Elizabeth I** of England [prompt on **Elizabeth**]

12. **In one story by this author, the townspeople become bored by the title character when a girl is turned into a giant spider. This author of "A Very Old Man with Enormous Wings" also wrote a novel about Florentino Ariza, who ages and has hundreds of affairs while awaiting his true love, Fermina Daza. In another novel by this author of (*)** *Love in the Time of Cholera,* Jose Arcadio Buendia (bwen-DEE-uh) founds Macondo. For 10 points, name this Colombian magical realist author of *One Hundred Years of Solitude.*
ANSWER: Gabriel **Garcia Marquez** [prompt on **Marquez**]

13. **This instrument is the first to play the melody of "The Dragoons of Alcala" in Bizet's first** *Carmen* **suite. The Berceuse from** *The Firebird* **is played by this solo instrument, which Stravinsky used in an uncharacteristically high register in the opening of** *The (*) Rite of Spring*. Along with its larger relative, this instrument depicts some unruly brooms in *The Sorcerer's Apprentice*. For 10 points, name this double-reed instrument larger than an English horn or oboe, but smaller than a contra.
ANSWER: **bassoon**

14. **Tourism in this country was developed after the overthrow of Dumarsais Estime by Paul Magloire. A private police force called the Tontons Macoutes served this country's President Francois Papa Doc Duvalier. Jean-Jacques Dessalines and Henry Christophe won independence for this country after the death of a former (*)** slave named Toussaint L'Ouverture. For 10 points, name this Caribbean country on the western side of Hispaniola with a capital located at Port-au-Prince.
ANSWER: Republic of **Haiti** [or Republique d'**Haiti**; or Republik d' **Ayiti**]

15. **This work's second act begins with the aria "Fair moon, to thee I sing." One character in this work is accompanied by a retinue including Cousin Hebe, while another declares that he swears or becomes seasick never, or hardly ever. After learning that Captain (*)** Corcoran and Ralph Rackstraw were switched as infants, both Josephine and Little Buttercup marry their desired husbands in this operetta. For 10 points, name this Gilbert and Sullivan comedy about social class in the British Navy and on the title ship.
ANSWER: *HMS **Pinafore**, or The Lass That Loved a Sailor*

16. **One variant of this piece of equipment has a protrusion called a hose barb that allows for simple attachment of a vacuum pump. That variant is named for Eduard Buchner (BYOOK-nehr). One of these objects with a thin neck and single marking is the volumetric variety. Another one of these objects specifically designed to minimize loss by (*)** evaporation is named for Emil Erlenmeyer (EARL-len-mie-yer). For 10 points, name this basic piece of laboratory equipment, a vessel typically made of glass that is used for measuring and holding liquids.
ANSWER: **flask**s

17. **In one short story by this author, Dr. Rabin works at the title mental asylum and discusses the meaning of life with a postmaster. In another of his stories, a man has an affair with a woman he met while on holiday in Yalta. In addition to "Ward No. 6" and "The Lady with the Dog," he wrote a work that ends with the suicide of (*)** Konstantin, who earlier reveals that he shot the title bird. For 10 points, name this Russian dramatist of plays such as *The Seagull* and *The Cherry Orchard.*
ANSWER: Anton Pavlovich **Chekhov**

18. **Deposits formed by these events are known as diluvium. J. Harlen Bretz researched a series of them in the American Northwest named for Missoula. The exceedance probability can be used to predict the "hundred-year" type of these events. Runaway subduction is one component of a largely discredited theory in which one of these events is the main driver of geological history. (*)** Storm surges, heavy rain, or melting snow can cause, for 10 points, what events in which water covers normally dry land?
ANSWER: **flood**s

19. **Jean-Paul Nerriere has created a list of words in "Globish," the parts of this language most commonly used by non-native speakers in business matters. Chancery Standard became the most common dialect of the (*)** Middle form of this language. The two highest vowels became diphthongs in this language's Great Vowel Shift during the fifteenth century. For 10 points, name this language with forms such as Estuary, Received Pronunciation, Indian, Southern American, and standard Midwestern.
ANSWER: **English**

20. **This man wrote of an "active intellect" which Thomas Aquinas interpreted to mean God. The "active intellect" is a part of the soul only humans possess, but he says that the nutritive and sensory parts are shared by animals. Syllogistic logic is discussed in his (*)** *Prior Analytics,* which is often grouped with five other books to make up the *Organon.* The purpose of virtue is eudaimonia, and one can achieve virtue by pursuing the "golden mean," according to his *Nicomachean Ethics.* For 10 points, name this ancient Greek philosopher, a student of Plato, who ran the Lyceum.
ANSWER: **Aristotle**

21. **One experiment that tested this theory used detectors on Mount Washington in New Hampshire to determine the change in the number of particles with a 1.5 microsecond half-life. In addition to describing why muons reach the Earth's surface, this theory replaces Galilean transformations with Lorentz transformations, which allows for (*)** length contraction and mass dilation to occur. For 10 points, name this theory developed in 1905 that led to the formula $E=mc^2$ from Albert Einstein.
ANSWER: **special relativity** [or **special theory of relativity**; prompt on **relativity**]

22. **This man ordered the Harrying of the North, which devastated Northumbria and he was often aided by his half-brothers Odo and Robert. This man's greatest victory is depicted on the Bayeux Tapestry and was preceded by the Battle of Stamford Bridge. That battle saw this man defeat (*)** Harold Godwinson for control of a kingdom for which this man issued the Domesday Book. For 10 points, name this victor at the 1066 Battle of Hastings who served as the first Norman king of England.
ANSWER: **William I** [or **William the Conqueror**; or **William the Bastard**; or **Guillaume le Conquerant**; or **Guillaume le Batard**; prompt on **William**; prompt on **Guillaume**]

23. **In one novel by this writer, Count Mosca begins an immoral affair with the protagonist's aunt Gina. The protagonist of that novel fathers a child with Clelia before retiring to the title Carthusian monastery. In another novel by this writer, the protagonist seduces his second employer's daughter Mathilde de la Mole. This author wrote about (*)** Julien Sorel's attempts to gain status through the church and the military in a novel titled after the colors symbolizing those institutions. For 10 points, name this French writer who wrote *The Charterhouse of Parma* and *The Red and the Black.*
ANSWER: **Stendhal** [or Marie-Henri **Beyle**]

1. With the opening of the Millennium Underground in 1896, this city became the world's second to run a subway system. For 10 points each:
[10] Name this city, which was occupied by Soviet tanks in 1956.
ANSWER: **Budapest**
[10] The first subway system was in this city, where it is known as "The Tube" and instructs riders to "mind the gap."
ANSWER: **London**
[10] The first subway in the U.S. opened in this city in 1897. Currently, its "T" system makes such stops as North Quincy, Back Bay, and Northeastern University.
ANSWER: **Boston**

019-12-53-01201

2. The pharmacist Homais (oh-MY) persuades this character to attempt an operation on a clubfoot, which he fails at miserably. For 10 points each:
[10] Name this character whose wife Emma has an affair with Leon Dupuis (doo-PWEE).
ANSWER: **Charles** Bovary [or **Dr. Bovary**; prompt on **Bovary**]
[10] *Madame Bovary* was written by this French author, who wrote about Frederic Moreau in *Sentimental Education.*
ANSWER: Gustave **Flaubert** (flow-BAIR)
[10] Emma Bovary also has an affair with this gentleman, whom she showers with expensive gifts despite his enormous wealth.
ANSWER: **Rodolphe** Boulanger (boo-lahn-ZHAY) [or Rodolphe **Boulanger**]

015-12-53-01202

3. Recently, this man raised the question of whether the US had developed an illicit technology to give left-wing leaders cancer. For 10 points each:
[10] Name this man who led a "Bolivarian Revolution" in his home country and recently received cancer treatment in Cuba.
ANSWER: Hugo Rafael **Chavez** Frias
[10] Chavez is the current president of this Latin American country. One of its diplomats, Livia Acosta Noguera, was expelled from Miami in January 2012 for discussing cyber-attacks on the United States in Mexico.
ANSWER: Bolivarian Republic of **Venezuela**
[10] In December 2011, the International Chamber of Commerce ordered Venezuelan state oil company PDVSA to pay nine hundred million dollars to this company, whose assets Venezuela appropriated.
ANSWER: **Exxon**-Mobil

080-12-53-01203

4. Sections of this work include the "Dance of the Reed Flutes," "Trepak," and the "Arabian Dance." For 10 points each:
[10] Name this Tchaikovsky ballet adapted from an E. T. A. Hoffmann story, which begins with Herr Drosselmeier giving Clara the title toy.
ANSWER: The *__Nutcracker__*
[10] In one scene, the Nutcracker fights this seven-headed rodent villain. Clara throws her slipper at this character, enabling the Nutcracker to kill him.
ANSWER: the **Mouse King** [or **King of Mice** or obvious equivalents]
[10] The "Dance of the Sugar Plum Fairy" from *The Nutcracker* features this keyboard instrument, which produces its glockenspiel-like sound by hitting steel bars with piano hammers.
ANSWER: **celesta**

126-12-53-01204

5. These simplifications of a physical system usually consist of nothing more than a box with a bunch of arrows pointing out of it. For 10 points each:
[10] Name these diagrams that are used to show the direction of forces acting on a given object.
ANSWER: **free body** diagrams [or **FBD**s]
[10] This force acts by a surface on a body to counteract the weight of the body. It is always drawn perpendicular to the surface.
ANSWER: **normal** force
[10] For an object on a ramp, the magnitude of the normal force is equal to the weight of the object times this ramp-dependent function.
ANSWER: the **cosine of the angle of the ramp** [or obvious equivalents including **cos**ine, such as **cos**ine **theta**]

003-12-53-01205

6. This man was assassinated on the northern end of the Latin Bridge. For 10 points each:
[10] Name this archduke whose 1914 assassination triggered World War One.
ANSWER: **Franz Ferdinand**
[10] Franz Ferdinand was assassinated by this Yugoslav nationalist.
ANSWER: Gavrilo **Princip**
[10] Princip was a member of this shadowy Serbian group that hoped to draw Russian support by assassinating Franz Ferdinand.
ANSWER: **Black Hand** [or **Unification or Death**; or **Cma Ruka**; or **Ujedinjenje Ili Smrt**]

064-12-53-01206

7. This man received economic advice from a group called the "Chicago Boys." For 10 points each:
[10] Name this dictator of Chile who ruled from 1974 to 1990. When he died in 2006, he had 300 criminal charges pending against him for his various human rights violations and embezzlement.
ANSWER: Augusto Jose Ramon **Pinochet** Ugarte
[10] Pinochet took power after overthrowing this democratically elected socialist leader. He allegedly killed himself during the right-wing coup in 1973.
ANSWER: Salvador **Allende** Gossens
[10] During the Pinochet regime, his forces joined other right-wing dictators in this campaign of oppression and assassinations directed against socialists and communists. Other forces to participate in this campaign included Alfredo Stroessner's Paraguayan troops.
ANSWER: Operation **Condor** [or Plan **Condor**]

052-12-53-01207

8. The first book of this poem recounts the legend of the Redcrosse Knight. For 10 points each:
[10] Name this epic allegorical poem in which knights serve the title character Gloriana, who represents Elizabeth I.
ANSWER: The *Faerie Queen*
[10] *The Faerie Queen* was written by this English poet.
ANSWER: Edmund **Spenser**
[10] This series of Spenser poems contains a first and last eclogue presenting the complaints of a shepherd boy named Colin Clout.
ANSWER: The *Shepheardes Calender*

9. A small crucifix peeks out in the top left of this work, and the table in the center has a lute with a broken string sitting next to an open hymnbook. For 10 points each:
[10] Identify this 16th century painting, which depicts Jean of Dinteville and Georges de Selve standing next to one another.
ANSWER: The French *Ambassadors*
[10] This German renaissance artist painted a large anamorphic skull in *The Ambassadors*. He was court painter for a king of England.
ANSWER: Hans **Holbein** (HOLE-bine) the Younger
[10] Holbein was court painter for this English king, in which capacity he created portraits of figures like Thomas More and Anne Boleyn.
ANSWER: **Henry VIII** Tudor

10. This scientist was the first to create a pure sample of heavy water, and he also coined the name for the photon. For 10 points each:
[10] Name this American scientist who created a way of showing lone pairs of electrons remaining in bonded molecules, which are namesake dot diagrams.
ANSWER: Gilbert Newton **Lewis**
[10] Lewis believed that these types of bonds, which are formed between non-metals, occurred when two atoms shared electron pairs.
ANSWER: **covalent** bonds
[10] Lewis also used the term odd molecule to describe these species with an odd number of electrons that are easily formed by peroxides.
ANSWER: free **radical**s

11. This man was the king of Aragon starting in 1479. For 10 points each:
[10] Name this Spanish ruler who married Isabella I of Castille in 1469.
ANSWER: **Ferdinand** II [or **Ferdinand** the Catholic; or **Fernando** el Catolico]
[10] Ferdinand and Isabella made a decree in 1492 named after this large palace in Granada built by the Moors in the fourteenth century.
ANSWER: **Alhambra**
[10] Ferdinand and Isabella's reign ultimately saw the end of this period of Spanish history, which saw Christian forces take over the Iberian Peninsula from the Muslims.
ANSWER: **Reconquista**

12. The chorus of this play chants "brekekex-koax-koax." For 10 points each:
[10] Name this play in which Dionysus descends to the underworld to retrieve Euripides (yur-IP-ih-dees) but decides to return with Aeschylus instead.
ANSWER: The *Frogs* [or *Batrachoi*]
[10] This Greek comic playwright, who wrote about Pheidippides's (fay-DIP-uh-deez) instruction at the Thinkery in *The Clouds,* wrote *The Frogs.*
ANSWER: **Aristophanes** (air-ih-STAHF-uh-nees)
[10] In Aristophanes's *The Birds,* the Athenian Pisthetaerus (pis-thay-TIE-ros) convinces the title characters to build this city in the sky. It comes to replace Mount Olympus as the center of power in the cosmos.
ANSWER: **Cloudcuckooland** [or **Nephelokokkygia**]

13. This figure is the son of the sky god Nyame (nee-AW-may) and his wife Asase (uh-SAW-say) Ya. For 10 points each:
[10] Name this trickster god from West African mythology about whom tales were also told around the Caribbean.
ANSWER: **Anansi** (uh-NON-see) [or Kwaku **Ananse**]
[10] Anansi is this kind of creature. In one story, the origin of Anansi's eight thin legs is described.
ANSWER: **spider**
[10] In another myth, Anansi wants all of these things from Nyame, so he has to collect various objects such as a python and a leopard through trickery to trade.
ANSWER: the world's **stories** [or **myth**s; or equivalents]

14. This equation is written as p squared plus two pq plus q squared equals one, where p and q represent the dominant and recessive alleles. For 10 points each:
[10] Name this law that says evolution will not occur under a set of five highly unlikely conditions.
ANSWER: **Hardy-Weinberg**
[10] The Hardy-Weinberg law does not hold when this process occurs. This process involves a change in the genome which may a harmful or beneficial effect.
ANSWER: **mutation**s
[10] Chance occurrences, such as the founder effect, can affect the gene pool of a population in this general phenomenon.
ANSWER: **genetic drift**

15. This short story was later included in *The Adventures of James Harris.* For 10 points each:
[10] Name this 1948 short story in which Mr. Summers and Mr. Graves conduct the title event resulting in the stoning of Tessie Hutchinson.
ANSWER: "The **Lottery**"
[10] "The Lottery" was written by this American writer.
ANSWER: Shirley Hardie **Jackson**
[10] Shirley Jackson's "The Lottery" was published in this literary magazine that was founded by Harold W. Ross.
ANSWER: The *New Yorker*

16. This structure often takes up the majority of space in a plant cell. For 10 points each:
[10] Name this large membrane-bound organelle that holds water in a plant cell.
ANSWER: **vacuole**
[10] The vacuole is responsible for maintaining this pressure, which pushes the plasma membrane against the cell walls of plants and thus maintains hydraulic stiffness.
ANSWER: **turgor** pressure [or **turgidity**]
[10] Smaller vacuoles are found in this type of undifferentiated plant cell found in high concentration at the root tip.
ANSWER: **meristem**s

17. Several American television shows had their original incarnation in the United Kingdom. For 10 points each:
[10] This sitcom was based on the British show *Till Death Us Do Part*. It focused on the bigoted Archie Bunker and his quarrels with his liberal son-in-law, affectionately referred to as "Meathead."
ANSWER: ***All in the Family***
[10] This show was based on a British show about a pair of junk dealers. It starred Redd Foxx as the title character, who likes to refer to his son Lamont as "Big Dummy."
ANSWER: ***Sanford and Son***
[10] David Brent ran the Slough branch of Wernham Hogg in the British version of this sitcom. The first several seasons of the American version of this show focused on Michael Scott's management of the Scranton branch of Dunder Mifflin.
ANSWER: *The **Office***

18. His orchestral works include *El Salon Mexico* and the ballet *Billy the Kid.* For 10 points each:
[10] Name this American composer who incorporated the melody "Simple Gifts" into *Appalachian Spring*.
ANSWER: Aaron **Copland**
[10] The orchestral suite from this other ballet by Copland includes the movements "Buckaroo Holiday" and "Hoedown."
ANSWER: ***Rodeo***
[10] Copland's *Outdoor Overture* features solos for the trumpet, clarinet, and this other wind instrument. Copland also wrote a *Duo* for this instrument and piano, and Charles Ives's *The Unanswered Question* uses four of these to contrast with the trumpet.
ANSWER: **flute**

19. The inverse of this function is called the cosecant (coh-SEE-kant) function. For 10 points each:
[10] Name this trigonometric (trig-OH-no-met-rick) function which for an angle in a right triangle is equal to the opposite side divided by the hypotenuse.
ANSWER: **sine** function [prompt on **sin**]
[10] Adding the square of the sine function plus the square of the cosine function for a given angle equals this value.
ANSWER: **one**
[10] According to a trigonometric identity, two times the sine of theta times the cosine of theta equals the sine of this value.
ANSWER: **two multiplied by theta** [or **two times theta**; do not prompt on "theta"]

20. This organization was formed in Pulaski, Tennessee, by a group of Confederate veterans. For 10 points each:
[10] Name this white supremacist organization known for its iconic white hoods.
ANSWER: **Ku Klux Klan** [or **KKK**]
[10] This Confederate general was the first grand wizard of the Ku Klux Klan.
ANSWER: Nathan Bedford **Forrest**
[10] Nathan Bedford Forrest was described as a military genius despite his slaughter of 300 black prisoners at this fort.
ANSWER: Fort **Pillow**

21. This ruler issued the October Manifesto, and his minister Pyotr Stolypin objected to the influence of Grigory Rasputin over this ruler. For 10 points each:
[10] Name this last emperor of Russia.
ANSWER: **Nicholas II** of Russia [or **Nikolay Aleksandrovich**; prompt on **Nicholas**]
[10] Nicholas II was the last ruler of this long-ruling Russian dynasty.
ANSWER: **Romanov**
[10] After Nicholas's overthrow and before the Bolshevik takeover, the Russian provisional government was headed by this man from July to October 1917.
ANSWER: Aleksandr Fyodorovich **Kerensky**