BHSAT XX (2011): This One Doesn't Bilow, We Promise!
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Edited by Matt Jackson and John Lawrence, with Danila Kabotyanski and Sam Spaulding

Round 1 Tossups

1. One unseen character in this play is Olga, who cannot bring herself to cry at another character's funeral. One character in this play complains that a green sofa clashes with her blue dress, while another character is angry that he was not allowed to bring his toothbrush. One character in this play drowned a baby she had with Roger, while another is an army deserter from Brazil. Near the end of this play, Estelle stabs Inez with a paper-knife, which does not harm her, because Inez is already dead. For 10 points, Garcin declares that "Hell is other people" while trapped in a room with two companions in what play by Jean-Paul Sartre?
ANSWER: *No Exit* [or *Huis Clos*]

2. This being accepted death only when he found that the life-giving plant he sought had been stolen by a snake. After his death, he was considered a minor deity associated with Tammuz, since he himself also descended to the underworld. This man's former rival and later companion was created from clay by Aruru. This man's search for Utnapishtim is largely inspired by that companion's death. That companion helped this man slay the bull of heaven, and lived in the wilderness with beasts before being tamed by a temple prostitute. Identify, for 10 points, this friend of Enkidu, a Sumerian king of Uruk who fails to attain immortality in his namesake Mesopotamian epic.
ANSWER: **Gilgamesh** [or **Bilgames**]

3. The texture of ragged hair matches the texture of the ragged dress in this artist's wooden sculpture, *Magdalene Penitent*. The tomb of Antipope John XXIII was co-designed by him with his mentor, Michelozzo. This artist designed marble statues of St. John and St. Mark to stand in the exterior niches of the Orsanmichele. His equestrian statue of the condotierro Erasmo da Narni stands in the Piazza del Santo in Padua. He depicted the title biblical figure naked except for a helmet, with a down-pointed sword, and a foot on Goliath's head. For 10 points, this is what Renaissance sculptor of *Gattamaleta* and a bronze *David*?
ANSWER: **Donatello** [or Donato di Niccolò di Betto **Bardi**]

4. This adjective partly names Mirabeau Lamar's worthless currency in the Republic of Texas and a group which massacred Fort Mims, but lost at Horseshoe Bend to Andrew Jackson; those Creek Indians had this type of "sticks." Métis leader Louis Riel rebelled near Canada's river of this name. One period named for this color included the Palmer raids; in another, Joseph Welch asked "Have you no decency?" to a Wisconsin senator, a member of the House Un-American Activities Committe. For 10 points, give this color against which Joe McCarthy led an anti-Communist "scare".
ANSWER: **red** [accept **redbacks, Red** sticks, etc. while the clue referring to that specific thing is being read]

5. This man argued that religion restrains native instincts in *The Future of an Illusion*. This writer of *On Narcissism* discussed the "Rat Man" and Bertha Pappenheim, under the pseudonym of Anna O. He developed the "death instinct" which opposed Libido, or Eros, in *Beyond the Pleasure Principle.* He described a "latency" after the "phallic" stage of development, and a theory of his concerning castration anxiety is named for a Theban king. For 10 points, name this author whose *The Interpretation of Dreams* proposed the Oedipus complex and who developed the id, ego, and superego as the founder of psychoanalysis.
ANSWER: Sigmund Schlomo **Freud**

6. Arnold Beckman invented a device using a glass electrode to measure this. It can be found by replacing the reaction quotient by the activity coefficient in the Nernst equation. Often used to measure the same property as the Hammett function, it was revised in terms of activity after its definition by Søren Sørensen. This value is computed from the log of the dissociation constant using the Henderson-Hasselbalch equation, and is roughly equal to the negative log of the concentration of H-plus ions. Estimated by litmus paper, for 10 points, name this measure of acidity with a range from 0 to 14.
ANSWER **pH** [accept **power of hydrogen**; prompt "acidity" or "basicity" before "Søren" is read; accept "**pOH**" before "Søren" is read]

7. Norman Morrison did this in front of Robert McNamara's office in 1965, and Ryszard Siwiec did this in protest in Czechoslovakia. Entire villages performed this act as a form of "baptism" during the Great Schism of the Russian Orthodox Church. After a female municipal worker publicly humiliated him, Mohamed Bouazizi performed this act in front of a regional governor's office, catalyzing the 2010 Tunisian Revolution and inspiring thirty-six copy cat events in the Arab world. Rage Against the Machine's self-titled album featured a Pulitzer-winning picture of Thich Quang Duc performing this act. For 10 points, what suicidal act is often performed with a can of gasoline and a match?
ANSWER: **self-immolation** [accept any variation of **lighting yourself on fire**, prompt on "protest" before mention]

8. The anoa and babirusa are endemic to this country. This country borders the Banda Sea and Makassar Strait, and Bandung and Surabaya are this country's third and second largest cities respectively. The Wallace Line runs through this country, and a separatist insurgency in the province of Aceh finally ended in 2005. Puncak Jaya is the country's highest mountain. For 10 points, name this archipelagic country that includes the islands of Sulawesi, Sumatra, and Java, and whose capital is Jakarta.
ANSWER: **Indonesia**

9. One opera by this composer contains a "Song to the Moon" sung by the titular water nymph, *Rusalka*. The scherzo of his second piano quintet is a furiant, a type of dance that also appears in his collection modeled after Brahms's *Hungarian Dances*. The second movement of his best-known symphony opens with an English horn solo that was later popularized as the spiritual-like song "Goin' Home," and the symphony gets its nickname from the influence of American folk music. For 10 points, name this Czech composer of two sets of *Slavonic Dances* and the "New World" Symphony.
ANSWER: Antonin **Dvorak**

10. This empire used the *mita* system of mandatory service to build its roads. A 1780s rebel took the name of its ruler Tupac Amaru; after the Siege of Cajamarca, one of its leaders was placed in a Ransom Room filled with gold. Engulfed by civil war after Huayna Capac's death, this empire's messengers used knotted strings called *quipu* to transmit messages, and its last effective ruler, Atahualpa, was executed in 1532. For 10 points, name this empire conquered by Francisco Pizarro's Spaniards, which built Cuzco and Machu Picchu in what's now Peru.
ANSWER: **Inca** Empire [accept **Tawantinsuyu**]

11. In a novel by this author, the aspiring actress Margot takes advantage of her former lover Albinus' blindness by stealing his money, torturing him, and eventually murdering him. Another novel by this author chronicles the namesake professor as he attempts to adjust to American life after escaping from 1950's communist Russia. These novels are *Laughter in the Dark* and *Pnin*. Another work by this author is presented as a poem consisting of 999 lines, written by the fictional John Shade, with comments by Charles Kinbote. For 10 points, name this creator of Humbert Humbert, the author of *Pale Fire* and *Lolita*.
ANSWER: Vladimir **Nabokov**

12. This leader spent thirty-eight years in the city of Gibeah. A member of the Tribe of Benjamin and the son of Kish, this religious figure refused to execute King Agag the Amalekite and opposed a divine mandate regarding special privileges of Levite priests by personally offering sacrifices to God. He was then told that God would summarily depose him. Later, an evil spirit possessed this man to kill his eventual successor, a general in his army. Advised by Samuel, for 10 points, name this first king of Israel, succeeded by David.
ANSWER: **Saul**

13. This equation states that in conservative force fields, the sum of kinetic energy per mass, the force potential, and the ratio of pressure to density is constant. It can also be written as the integral of an equation named for Euler. Its application to constricted conditions describes the Venturi effect. Derived from conservation of energy and only applicable to inviscid flow, it is often used incorrectly to explain how airplanes fly or sailboats travel. For 10 points, name this equation inversely relating pressure and velocity, first expounded in *Hydrodynamica* by a Dutch-Swiss mathematician.
ANSWER: **Bernoulli**'s equation [or **Bernoulli**'s principle, or **Bernoulli**'s theorem]

14. The artist laid out his principles of art for art's sake and improving nature in his *Ten O'Clock Lecture*. He painted Joanna Hefferman holding a lily and standing in a dress of the titular color in his *The White Girl.* A barge sits at the bottom of the span of the title structure over the river Thames in one painting of his, while another depicts golden fireworks going off in a black, night sky. Those two canvases, *Old Battersea Bridge* and *Falling Rocket*, are part of his series of *Nocturnes*. For 10 points, this is what 19th century American painter whose *Arrangement in Gray and Black No. 1* is a portrait of his mother?
ANSWER: James McNeill **Whistler**

15. This man trumped up one rival's attempt to profit from the liquidation of his country's East India Company to eliminate that rival, and failed to commit suicide by a gunshot to the jaw prior to his execution. This member of a faction named for its high seating, the Mountain, was followed by Saint-Just and replaced the Cult of Reason with the Cult of the Supreme Being. Falling out of favor during the Thermidorean reaction, this rival of Georges Danton presided over the Jacobins and headed the Committee of Public Safety. For 10 points, name this leader of the Reign of Terror during the French Revolution.
ANSWER: Maximillien Francois Marie Isidore de **Robespierre**

16. Some figures in this work "build harpsichords in their loft" and "throw their watches off the roof to cast their ballot for Eternity outside of time" Those figures in this poem are described as journeying to, dying in, and watching over Denver. The second section describes a figure "whose breast is a cannibal dynamo" and "whose blood is running money". That figure appears in a section before the speaker declares he is with Carl in Rockland, and that figure is named Moloch. Beginning with the line "I saw the best minds of my generation destroyed by madness", for 10 points, name this Beat Generation hippie anthem, the most famous work of Allen Ginsberg.
ANSWER: **"Howl"**

17. In one work, he insisted that beautiful Maori tattoos do not belong on the human face; in another, he sought a so-called Copernican revolution of metaphysics. His political essays include "Idea For a Universal History" and "Perpetual Peace." He identified time and space as preconditions for the understanding, distinguished between the sensory phenomenon and noumenal things-in-themselves, and sought to determine whether a priori synthetic judgments are possible. He advocates treating people as ends, not means, in *Groundwork for the Metaphysics of Morals* in terms of the categorical imperative. For 10 points, name this author of *Critique of Pure Reason*.
ANSWER: Immanuel **Kant**

18. Repeated use of this function on any input converges to its fixed point at which x and y are about .749, which is the Dottie number. This function appears in the integral formula for Fourier coefficients denoted a-sub-0 through a-sub-n. A variant of it used to model hanging chains in uniform gravity is the "hyperbolic" type, and its Taylor series begins with 1, minus x squared over two, plus x to the fourth over twenty-four. Its namesake law generalizes the Pythagorean Theorem, and this reciprocal of secant is equal to the x-coordinate of the unit circle. For 10 points, name this trigonometric function equal to adjacent over hypotenuse in right triangles, the complement of the sine.
ANSWER: **cos**ine of x, theta, etc. [do not accept "sin"]

19. One character in this novel knits a green purse for a man she hopes to get engaged to, but that man breaks it off when he gets drunk off of a bowl of punch in Vauxhall. Another character is encouraged to marry the half-black heiress, Miss Swartz. One character in this novel gets herself out of debt by selling her horses during the Battle of Waterloo, having previously been cut off for marrying the son of Sir Pitt, Rawdon Crawley. William Dobbin does not disillusion one protagonist about the extreme shortcomings of her husband, George Osborne . That character is Amelia Sedley. For 10 points, Becky Sharp features in what "novel without a hero" by William Thackeray?
ANSWER: *Vanity Fair*

20. A confederation founded in this nation's fortress of Bar resisted eastern encroachment. This nation, first established under the Piast dynasty, once had a three-house parliament that allowed any member to veto a bill, the Sejm. The thirteenth of Wilson's Fourteen Points demanded this nation's free access to a northern seaport. This country's Union of Lublin phase was ended by three partitions, and a union leader who organized a strike in its shipyards, Lech Walesa, became its first post-Communist President. For 10 points, identify this nation, the location of Solidarity, Auschwitz, and the Warsaw Ghetto.
ANSWER: **Poland**

TB. These organelles contain succinate dehydrogenase complexes and use ubiquinone, or coenzyme q, to transport electrons between the iron-sulfur proteins in Complexes I and III. These shape-changing organelles oxidize NADH and pyruvate, and their unique, maternally-inherited DNA suggests that, like chloroplasts, they were once endosymbionts. The inner of their two membranes have cristae, which are squiggle-shaped folds where the electron transport chain occurs. For 10 points, name these cellular organelles in which the Krebs cycle and oxidative phosphorylation occur, synthesizing ATP for energy for the cell.
ANSWER: **mitochondria** [or **mitochondrion**s]

Round 1 Bonuses

1. Often described by the Newton's cannon thought experiment, it occurs when a tangentially moving object is pulled by gravity as a centripetal force, but has enough velocity to avoid falling. For 10 points each:
[10] First, name this path followed by objects in freefall, which Kepler's First Law says is elliptical for planets.
ANSWER: **orbit**al motion
[10] At these five eponymous points, the gravitational force between two massive bodies cancels, allowing objects at these points to remain stationary relative to those bodies.
ANSWER: **Lagrange** points
[10] In this type of high-altitude orbit, an object revolves with exactly the orbital period of the planet's rotational period, thereby staying over a specific point of the Earth at all times. GPS satellites use it.
ANSWER: **geostationary** orbit [accept **geosynchronous** orbit]

2. The speaker of the poem asks "Did he who made the Lamb make thee?", referring to an earlier poem by its author. For 10 points each:
[10] This is what poem that describes the title creature as "burning bright / In the forest of the night"?
ANSWER: "The **Tyger**"
[10] "The Tyger" is one of the *Songs of Experience* by this English Romantic poet. Other poems in that collection include "The Clod and the Pebble" and "The Chimney Sweeper".
ANSWER: William **Blake**
[10] The speaker turns his wrath into the title plant, which he waters with his tears, and which ends up killing his enemy in this other Blake poem from *Songs of Experience*.
ANSWER: "A **Poison Tree**"

3. One notable performer on this instrument was Jacqueline du Pré, whose recording of Elgar's concerto for this instrument in E minor is considered a classic. For 10 points each:
[10] Name this instrument also played by Mstislav Rostropovich, which along with two violins and a viola makes up a string quartet.
ANSWER: violon**cello**
[10] This Chinese-American cellist plays a Stradivarius instrument once owned by Jacqueline du Pré. In addition to classical music, he is known for crossover work with his Silk Road Ensemble.
ANSWER: Yo-Yo **Ma**
[10] One of the best-known cellists of all time is this Spanish cellist from the first half of the twentieth century who made the first recording of Bach's Cello Suites and is often credited with popularizing those pieces.
ANSWER: Pablo **Casals**

4. He was originally named Temujin. For 10 points each:
[10] First, name this leader who unified the Mongols and started their conquests before dying around 1227. His descendants include Hulagu and Ogedei.
ANSWER: **Genghis** Khan [accept **Chinggis** Khan; prompt "Khan"]
[10] This allegedly deformed conqueror, who ruled from Samarkand, claimed descent from Genghis Khan. His armies sacked Damascus, and his rival was Tokhtamysh.
ANSWER: **Tamurlane** [or **Tamburlaine** or **Timur** the Lame or **Timur Lenk**]
[10] After sacking Ankara in Turkey, Tamerlane allegedly made a pyramid of these objects.
ANSWER: human **skull**s

5. Agni gave a gift to this warrior, which he then used to slay his foe and half-brother, Karna. For 10 points each:
[10] Identify this third of the Pandavas, sired by Indra, whose chariot was driven by Krishna at the Battle of Kurukshetra.
ANSWER: **Arjun**a
[10] The Pandavas fought against their cousins, members of this lineage, led by patriarch Dhritarashtra and his son Duryodhana.
ANSWER: **Kaurava**s [prompt on **Kuru**s]
[10] The narrative of the Pandavas and Kauravas is narrated in this longest Indian epic, composed by Veda Vyasa. The Bhagavad Gita is part of this work.
ANSWER: **Mahabharata**

6. Answer some questions about ionic solids, for 10 points each.
[10] Since ionic solids rarely have independent molecules, they are identified with this formula which expresses the ratio between elements in simplest terms.
ANSWER: **empirical** formula
[10] For an ionic solid, this quantity is defined as its enthalpy of formation relative to separated gaseous ions. Equivalently, it is the energy necessary to separate the solid into gaseous ionic components.
ANSWER: **lattice energy** [accept **lattice enthalpy**; prompt "U-sub-L;" prompt "E"]
[10] This thermodynamic approach can be used to calculate an ionic solid's lattice energy from its other reaction enthalpies. It assumes that energy is a state function, which is part of Hess's Law.
ANSWER: **Born-Haber** cycle [or **Haber-Born** cycle]

7. This play's protagonist, Konstantin Treplyov, embarrasses his mother, Arkadina, by penning a dense symbolist play that she denigrates. For 10 points each:
[10] Name this play in which Konstantin delivers the title bird to Nina in an expression of his love, although she eventually rejects both the bird and his love, causing Konstantin to commit suicide.
ANSWER: The *Seagull*
[10] Name this playwright of *The Seagull,* a Russian doctor who also wrote *The Three Sisters*, *Uncle Vanya*, and *The Cherry Orchard*.
ANSWER: Anton **Chekhov**
[10] This is the name given to Chekhov's idea that objects that are introduced into the story seemingly offhandedly, should actually turn out to figure significantly into the plot
ANSWER: **Chekhov's gun**

8. The lyricist in this songwriting team also collaborated with Jerome Kern on *Show Boat*, and they collaborated on a show featuring the song "If I Loved You," *Carousel*. For 10 points each:
[10] Identify this songwriting team known for musicals such as *The Sound of Music*, *The King and I*, and *Flower Drum Song*.
ANSWER: Richard **Rodgers** and Oscar **Hammerstein** II
[10] The first Rodgers and Hammerstein collaboration was this musical based on Lynn Riggs's play *Green Grow the Lilacs*. It tells of the romance between Curly and Laurey and includes the song "Oh, What a Beautiful Mornin'."
ANSWER: *Oklahoma!*
[10] The operatic bass Ezio Pinza sang this song in the original Broadway production of *South Pacific*. It describes a time when "you may see a stranger."
ANSWER: "**Some Enchanted Evening**"

9. This leader's troops obtained their namesake outfits from extras in a Uruguayan storehouse when he fought there and in Argentina. For 10 points each:
[10] Name this bearded Italian whose Red Shirts later conquered the Kingdom of Two Sicilies, uniting Italy in 1861.
ANSWER: Giuseppe **Garibaldi**
[10] Garibaldi and Prime Minister Cavour united Italy under this royal house, whose members included Victor Emmanuel II and a fighter during the War of Spanish Succession named Eugene.
ANSWER: House of **Savoy**
[10] An earlier, failed Italian unification group, the Carbonari, was a union of workers with this industrial substance. It, along with steel, was traded in a six-nation community which preceded the European Union.
ANSWER: **coal** [do not prompt "carbon"]

10. Many Japanese identify themselves as members of multiple religions. Answer some questions about those religions, for 10 points each.
[10] This religion, native to Japan, is polytheistic, and incorporates the veneration of spirits known as *kami*. Holy places in this religion include shrines like Kizomizu, and feature tori gates. Deities venerated in this religion include Susanoo and Ame-no-Uzume.
ANSWER: **Shinto** [or **kami-no-michi**]
[10] Along with Shinto, this branch of Buddhism plays a major role in Japanese culture. Unlike its "smaller vehicle" counterpart, adherents of this branch venerate bodhisattvas.
ANSWER: **Mahayana** Buddhism
[10] Though Hirohito was forced to repudiate his belief in his own divinity as part of the *ningen-sengen*, prior Japanese emperors claimed divine descent by virtue of descent from this first emperor, who himself was believed to be a direct descendant of Amaterasu.
ANSWER: Emperor **Jimmu** [or **Wakamikenu**-no-Mikoto; or **Sano**-no-Mikoto; or **Kamuyamato** Iwarebiko]

11. This event can occur non-biologically during lightning strikes. For 10 points each:
[10] Name this biological process occurring in cyanobacteria and plants, which converts the most abundant element in the atmosphere to ammonia.
ANSWER: **nitrogen fixation**
[10] Nitrogen fixation occurs largely in the roots of this family of plants which often grow bean pods. They include peas, peanut plants, alfalfa, and clover.
ANSWER: **legume**s [accept **Fabacea**e]
[10] These mutualistic bacteria dwell in the root nodules of legumes and help them undergo nitrogen fixation.
ANSWER: **Rhizobia** [or **Rhizobium**]

12. For 10 points each, answer these seemingly unrelated questions:
[10] Starring Dulé Hill and James Roday, the main protagonist of this television show is obsessed with pineapples. The actors playing a pair of detectives for the Santa Barbara police each starred in made-for-TV movies: *Model Behavior* and *The Luck of the Irish*.
ANSWER: *Psych*
[10] In the series finale of season 3 of *Psych*, fake psychic Shawn Spencer is challenged by Mr. Yang, a serial killer based on this famous Bay Area serial killer who was active in 60's and 70's California. A movie based on this killer was released in 2007.
ANSWER: **Zodiac** Killer
[10] The Zodiac Killer's connection to an actual zodiac is nebulous. Also nebulous is this constellation which was popularized in early 2011 as the "13th zodiac sign" to account for the change in the location of stars due to Earth's precession. It's rather nebulous why anyone cared.
ANSWER: **Ophiuchus**

13. The women in this novel have formed a study group called the Thanatopsis Club. For 10 points each:
[10] Carol Kenicott is the main character of what novel about small-town life, set in Gopher Prairie?
ANSWER: *Main Street*
[10] *Main Street* is by this American novelist, who wrote about the title inhabitant of the fictional city and state Zenith, Winnepac in *Babbit*.
ANSWER: Sinclair **Lewis**
[10] This other inhabitant of Zenith is the owner of the Revelation Motors Company, the husband of Fran Voelker, with whom he travels Europe, and the title character of a Sinclair Lewis novel.
ANSWER: Samuel **Dodsworth**

14. This artist's aunt stands with her two children, next to her seated husband, with his back to the viewer in his *The Belleli Family*. For 10 points each:
[10] Name this French impressionist known for paintings of *Racehorses at Longchamp* and paintings of dancers, like *Stage Rehearsal*.
ANSWER: Edgar **Degas**
[10] A miserable-looking woman stares abstractedly into space while a glass of the titular alcoholic beverage sits in front of her in this Degas painting.
ANSWER: *L'**Absinthe*** [or *The **Absinthe Drinker***; or *Glass of **Absinthe***; or *Figures at **Café***]
[10] Degas was friend and mentor to this painter of *The Boating Party* and many paintings of mother-and-child pairs, such as *The Bath*.
ANSWER: Mary **Cassatt**

15. Robert Graves subtitled his *The White Goddess* "a Historical Grammar of Poetic" *this*, and Roland Barthes examined "The World of Wrestling" and "Toys" in a book named for a set of these. For 10 points each:
[10] Name this concept whose Zuni variety titles an anthropological survey by Ruth Benedict.
ANSWER: **myth**ology [or **myth**ologies]
[10] This French anthropologist developed his structuralist approach to myth in *Mythologiques*, which includes *The Raw and the Cooked*. He also wrote the memoir *Tristes Tropiques* and *The Elementary Structures of Kinship*.
ANSWER: Claude **Lévi-Strauss**
[10] Otto Rank uses psychoanalytic methods in his *The Myth of the Birth of* this.mythological figure, who undergoes the "monomyth" quest and is *with a Thousand Faces* in a Joseph Campbell work.
ANSWER: the **hero**

16. America's largest state is also one of its least populated. For 10 points each:
[10] This is Alaska's largest city, home to over half its population.
ANSWER: **Anchorage**
[10] This western Alaskan city was a gold mining boom town, and is the end point of the Iditarod Trail Sled Dog Race.
ANSWER: **Nome**
[10] The Japanese occupied two Aleutian islands during World War II, one of which was inhabited by native Aleuts and was the site of major fighting. Name either.
ANSWER: **Attu** or **Kiska**

17. For 10 points each, name these Pharaohs from the Egyptian 18th Dynasty.
[10] Possibly preceded by Smenkhkare, this "Boy King," mummified at age 18, had his tomb discovered by Howard Carter in 1922.
ANSWER: **Tutankhamun** [accept King **Tut**; prompt "Tutankhaten" but don't let teams know you should prompt on that due to the next part]
[10] This father of Tutankhamun changed his name to reflect the sun-disk god for whom he attempted to replace the Egyptian pantheon with a new faith.
ANSWER: **Akhenaten** [accept **Amenhotep IV**]
[10] This pharaoh sent expeditions to Puntland in modern-day Somalia. She was succeeded by Thutmose III, during whose reign several historical records had this female pharaoh's image wiped from them.
ANSWER: **Hatshepsut**

18. Identify these data structures used in computer science, for 10 points each.
[10] Used in binary search as well as syntax diagrams in linguistics, these graphs feature a highest "root node" and lead down to childless nodes known as "leaves".
ANSWER: **tree**s
[10] Unlike queues, elements can be pushed onto or popped off of these structures, which always deal with inputs in a "last-in, first-out" manner.
ANSWER: **stack**s
[10] This type of array employs a namesake function which indexes large pieces of data called keys to associated slots for easy search. "Collisions" in these occur when two keys map to the same value in one of these.
ANSWER: **hash** table [or **hash** map; do not accept "hash function"]

19. Answer the following questions about Classical philosophers, for 10 points each.
[10] One philosopher of this name from Elea was a student of Parmenides, and according to a Platonic dialogue, debated a young Socrates. His paradoxes of motion feature the motionless arrow and Achilles racing a tortoise.
ANSWER: **Zeno**
[10] Another philosopher, Zeno of Citium, founded this school of philosophy, whose adherents included Epictetus and the Roman Emperor Marcus Aurelius. It proposed that virtue was the only good.
ANSWER: **Stoicism**
[10] Another Roman stoic philosopher was this man, who advised the Emperor Nero and was forced to commit suicide after the Pisonian conspiracy. His dialogues include *On the shortness of life* and *On the happy life*.
ANSWER: **Seneca** the Younger

20. The novel opens with a frame narrative based on the author's own experiences working as a customs officer. For 10 points each:
[10] This is what novel by Nathaniel Hawthorne in which Hester Prynne is forced to wear the title symbol as punishment for committing adultery with Arthur Dimmesdale.
ANSWER: *The **Scarlet Letter***
[10] The villain of the novel, this character is Hester's husband newly arrived in America, intent upon taking revenge upon Dimmesdale for his crime.
ANSWER: **Roger Chillingworth** [accept either]
[10] This character, actually a real-life historical figure, is the governor of Boston in *The Scarlet Letter*. He is oblivious to the fact that his sister, Ann Hibbins, is actually a witch.
ANSWER: Governor Richard **Bellingham**

TB. Answer some questions about early industry in the United States, for 10 points each.
[10] This 1791 Eli Whitney invention mechanized the separation of seeds from the namesake crop's fibers, increasing its production by the plantation-slavery system.
ANSWER: **cotton** en**gin**e
[10] Starting in the 1820s, this Massachusetts city northwest of Boston used Southern cotton and a workforce of locally-hired girls to produce textiles in its mills.
ANSWER: **Lowell**
[10] Samuel Slater introduced the first American water-powered mills in this state, which had earlier seen the burning of the *Gaspée* by the Sons of Liberty in Narragansett Bay. It later was home to Dorr's Rebellion.
ANSWER: **Rhode Island** and Providence Plantations