PACE Partnership for Academic Competition Excellence

Tiebreaker Leg One

Team										Team								
Player Names																		
Q#					Bonus	Steals	Ques. Total	Run. Score						Bonus	Steals	Ques. Total	Run. score
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Final																	

Tiebreaker Leg Two

Team										Team								
Player Names																		
Q#					Bonus	Steals	Ques. Total	Run. Score						Bonus	Steals	Ques. Total	Run. score
1																	
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10																	
OT																	
Final																	

No substitutions, except for between tossup 10 and overtime. Start Leg Two with TU 11 and Bonus 11.

Individual performance in tiebreaker games is not tracked.
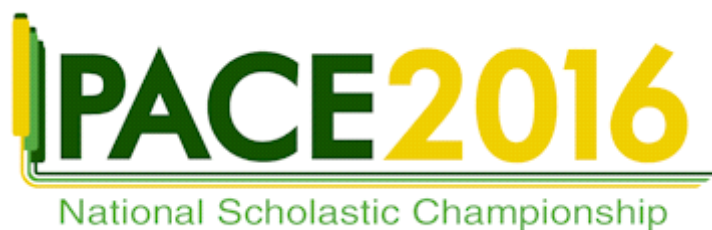
1. This person began his career repairing North Sea coal ships under James Walker of Whitby. He was awarded fifty pounds for mapping the dangerous Traverses of the St. Lawrence River for General Wolfe in the Seven Years' War. This captain was joined by the Swedish botanist Daniel Solander on a voyage where no crewmen died of scurvy. Joseph Banks accompanied this man on a voyage to observe the (*) transit of Venus from Tahiti. On a mission to find a missing southern continent, this explorer coined the name Sting Ray Harbor, but soon changed its name to Botany Bay. He unsuccessfully searched for the Northwest Passage on the *Discovery*. For 10 points, name this captain of the *Endeavour* who circumnavigated New Zealand and died in Hawaii.
ANSWER: Captain James **Cook** <Bentley>

2. The central atom of a molecule in this protein is usually coordinated to a histidine residue and not in plane, but the central atom moves in plane when its sixth coordination site is occupied. The Hill equation was originally developed by studying cooperative binding of this protein, which causes it to transition from the tense T state to the relaxed R state. Defects in its production causes (*) thalassemia **(THAL-uh-see-me-uh)**. The breakdown of this protein produces bilirubin **(BILL-ee-rue-ben)** as a byproduct. A drop in environmental pH causes a decrease in its binding affinity according to the Bohr effect. A porphyrin **(POOR-fur-in)** ring coordinated to a central iron atom is in each of this protein's four subunits. For 10 points, name this molecule that binds oxygen using heme.
ANSWER: **hemoglobin** [or **Hb**; do not prompt on "heme"] <Wang>

3. In a short story by this author, a wife is sent to the "booby hatch" after telling the authorities that her husband claimed to have seen the title animal. A character created by this author remains "inscrutable to the last." A story by this writer features the repeated noise "pocketa-pocketa-pocketa," during a sequence in which "The Commander" and "Lieutenant Berg" pilot a Navy (*) hydroplane. This author included his story "The Unicorn in the Garden" in the collection *Fables for Our Time*. *The New Yorker* first ran one of this writer's stories in which the title character imagines testifying in court, performing a surgery, and facing a firing squad as he waits for his wife to return from a drug store. For 10 points, name this author of "The Secret Life of Walter Mitty."
ANSWER: James **Thurber** [James Grover **Thurber**] <Jose>

4. The derivative of Gibbs free energy over RT with respect to T equals the negative of this quantity over R times T squared. Both terms of this quantity's total differential are positive. This quantity is usually assumed constant when a gas expands through a valve. For an ideal gas, the change in this quantity just equals C-sub-p times the change in (*) temperature. If the change in this quantity is negative, then the equilibrium constant goes down as temperature goes up. For an open system, this quantity replaces the internal energy in the First Law. The change in this quantity exactly equals the heat in a coffee-cup calorimeter. Gibbs energy is defined as it minus temperature times entropy. For 10 points, name this thermodynamic quantity symbolized H.
ANSWER: **enthalpy** [or **H** until it is read] <Silverman>

5. In 1979, this industry hired the businessman "Red" Adair to respond to the Ixtoc disaster. In the early 20th century, much of Florida's east coast was developed by a retired businessman from this industry named Henry Flagler. In Tampico, Mexico, a boom in this non-meatpacking industry was spurred by the California tycoon Edward Doheny, whose career later became the inspiration for an Upton Sinclair novel. (*) *McClure's* published a nineteen-part expose of a company in this industry authored by muckraker Ida Tarbell. In 1922, members of this industry bribed Secretary of the Interior Albert Fall to lease them government land in Wyoming, resulting in the Teapot Dome Scandal. For 10 points, name this industry dominated by John D. Rockefeller.
ANSWER: **oil** industry [or **petroleum** industry; or crude **oil** industry; or **kerosene** industry; or **gasoline** industry; prompt on energy or fuel] <Wang>

6. This novel's epilogue describes a small flame "burning anew among the old stones" of a chapel. A painter of Latin American ruins in this novel completes a series of medallion murals in the garden room of a country estate. In their college days, this novel's characters use a megaphone to proclaim "The Waste Land" across the quad and put each other into the Mercury Fountain at (*) Oxford. An alcoholic in this novel serves as a porter at a Tunisian monastery years after carrying around a teddy bear named Aloysius. This novel's protagonist has an affair with Julia, the fiancee of Rex Mottram and sister of Sebastian Flyte. For 10 points, name this novel about Captain Charles Ryder's entanglements with the aristocratic Marchmain family, by Evelyn Waugh.
ANSWER: ***Brideshead Revisited*** <Mehigan>

7. Right outside of this building is *Infinite Life*, a sculpture made from elevator cables. From 6 to 10pm, this building flashes a different color of the spectrum depending on the weekday. For vertical transportation, this building uses two sky lobbies and multiple double-deck elevators that are the fastest elevators in the world. This building's 89th, 90th and 91st floors make use of the world's largest mass (*) damper to protect it from natural disasters. This blue-green building was the world's tallest building until 2010. Inspired by bamboo's form, C. Y. Lee directed the design of this skyscraper and made eight outwardly pointing tiers to make it resemble a Buddhist pagoda. For 10 points, name this skyscraper found in the capital of Taiwan.
ANSWER: **Taipei 101** [accept **Taipei World Financial Center**; do not accept or prompt on "Taipei"] <Jose>

8. This symphony's opening theme is introduced by the cellos, who outline the notes of an E-flat major triad before making a chromatic descent down to C-sharp. The trio section of its scherzo begins with three horns imitating hunting calls. Often considered the start of its composer's middle period, its first movement calls for a solo horn to reintroduce the main theme four bars before the recapitulation. This symphony's fourth movement is a set of variations on a theme from the composer's (*) ballet *The Creatures of Prometheus*; its second movement is a C minor funeral march. This 1804 symphony was rededicated "to the memory of a great man" after its composer heard that Napoleon had crowned himself emperor. For 10 points, name this third symphony by Ludwig van Beethoven.
ANSWER: *Eroica* Symphony [or Symphony No. **3** by Ludwig van **Beethoven** before "third" is read; or obvious equivalents] <Kim>

9. Smith and Denton argued that today's teenagers follow a "moralistic therapeutic" version of this belief. Samuel Clarke distinguished four types of this belief, and Anthony Collins drew on Locke's views to defend this viewpoint, as did Matthew Tindal in the book *Christianity as Old as the Creation*. The cut-and-glued book *The Life and Morals of Jesus of Nazareth* is said to express this idea since the (*) miracles of Christ are removed. In *The Age of Reason*, Thomas Paine promoted this position. Jacques-Louis David organized a festival of a religion centered on this idea, started by Robespierre, called the Cult of the Supreme Being. For 10 points, Benjamin Franklin and Thomas Jefferson believed in what Enlightenment-era belief that claims God set the world into motion, but does not intervene?
ANSWER: **deism** [accept word forms; prompt on free-**think**ing or word forms] <Jose>

10. This artist's time spent living in Cullercoats, England inspired his painting in which a man views a crashing wave while sitting on a piece of driftwood. An African American man puts the finishing touches on his garish outfit in this artist's *Dressing for the Carnival*. This artist stretched an animal pelt over a barrel to paint *The Fox Hunt* in his Prouts Neck, Maine studio. A child falls to the grass while playing the title (*) game in this artist's *Snap the Whip*. A man in red holds the line for the sail of a catboat from Gloucester (GLAH-ster) in this artist's painting *Breezing Up*. In one of his best known paintings, sharks circle a black man floating along in the title current. For 10 points, name this American artist of *The Gulf Stream*.
ANSWER: Winslow **Homer** <Bentley>

11. After this country sent an unsuccessful embassy to China, its monarch was told to "tremblingly obey and show no negligence" in a letter by the Qianlong (chien-lung) Emperor. The Canton commissioner Lin Zexu (dzuh-shyoo) sent an open letter of complaint to this country's monarch in 1839. An officer from this country led the Ever Victorious Army during the Taiping Rebellion, earning the nickname "Chinese." A war began in (*) 1856 after Chinese officials seized a former pirate ship flying this country's flag, the *Arrow*. This country's troops helped French troops sack the Summer Palace in 1860. This country signed the "unequal treaty" of Nanking after a war fought to preserve its trade of opium to China. For 10 points, name this country that controlled Hong Kong.
ANSWER: **U**nited **K**ingdom of Great Britain and Ireland [or Great **Britain**; or the **British** Empire; prompt on England] <Wang>

12. Along with a church, the village of Jukkasjärvi (YOOK-koss-YAIR-vee) constructs one of these buildings annually near the Torne River. At one of these buildings in Kansas City, over 100 people were killed after two walkways collapsed during a dance party in 1981. Jason Collins and transgender model Geena Rocera appeared in an LGBT marketing campaign for buildings of this type despite their founders devout Mormon faith. A 105-story, pyramid-shaped building of this type called the (*) Ryugyong (RYOO-kyung) has been under perpetual construction due to distressed North Korean economy. In 1946, Menachem Begin (BAY-geen) helped bomb the British headquarters at one of these places in Jerusalem named for King David. In Dubai, the sail-shaped Burj Al Arab was once the world's tallest one of these buildings. For 10 points, name these commercial locations that provide lodging for guests.
ANSWER: **hotel**s <Wang>

13. In a poem, the speaker finds himself "sans [this thing], sans Song, sans Singer" after a death of "Dust into Dust." That poem compares the oozing of this thing with the falling of the "Leaves of Life." In a poem about this product, the speaker laments his loneliness under "flowering trees" and hangs out with his shadow before describing an appointment to meet in the (*) Milky Way. That poem about enjoying this product "by moonlight" is by Li Bai. A poem which describes the way "The Moving Finger writes; and, having writ, Moves on" praises this product extensively. Robert FitzGerald's *The Rubaiyat of Omar Khayyam* describes the joy of "a loaf of bread, a jug of [this], and thou." For 10 points, identify this alcohol which Khayyam described as "daughter of the vine."
ANSWER: **wine** [prompt on alcohol or any less specific answer] <Alston>

14. The sum over all particles in a system of this quantity dotted with position equals the scalar virial. The derivative of the Lagrangian with respect to the time derivative of a generalized coordinate gives this quantity. This quantity is related to position via a Fourier transform. The magnitude of the wavevector is proportional to this quantity, since it equals Planck's constant divided by the (*) de Broglie wavelength of a matter wave. This quantity squared divided by twice the mass gives kinetic energy. Its time derivative equals force by Newton's second law. The change in this quantity equals impulse. For 10 points, all collisions conserve what quantity, which is equal to mass times velocity and denoted p?
ANSWER: linear **momentum** [prompt on p, do not accept or prompt on "angular momentum" or "L"] <Busse>

15. Ewald Hering proposed the opponent process theory of this trait, which suggests that antagonist chemicals combine to give humans this ability. The Young-Helmholtz theory was the earliest theory of this trait, which classifies certain cells as "short preferring," "medium preferring" or "long preferring." Individuals who lack the ability to completely use this sense may be afflicted with (*) protanopia or deuteranopia. The chemist John Dalton was impaired in this sense and names the disorder that afflicts it. In the Ishihara test of this ability, agents will either discern the number '71' or '74' composed of various dots. In humans, cone cells, but not rod cells, are responsible for this sense. For 10 points, name this ability of an organism to distinguish hues.
ANSWER: **color** vision [prompt on vision or eyesight or sight or seeing] <Jose>

16. After men such as Michael Pitt-Rivers and Lord Montagu were convicted of this crime in the 1950s, the Wolfenden Report recommended that the Labouchere Amendment concerning this crime be abolished. A celebrity who was convicted of this crime had his 5,000 pound bail paid by Reverend Stewart Headlam and had earlier sued the Marquess of Queensberry for libel over accusations of this crime. Two years after being convicted of this crime, a man who had worked at Hut 8 at (*) Bletchley Park committed suicide by cyanide. A man in prison for this crime wrote *De Profundis*. In 1952, the mathematician who broke the Enigma Code was convicted of this crime and underwent chemical castration. For 10 points, name this former crime used to prosecute Alan Turing and Oscar Wilde.
ANSWER: **homosexual** acts [or **homosexual**ity; or obvious equivalents of being **gay**; or **sodomy**; or gross **indecency**; or **buggery**; prompt on sex] <Bentley>

17. Western access to this peninsula is controlled by the Mitla Pass, which was once seized by the 202ⁿᵈ Brigade of paratroopers without government approval. In Operation Badr, an army invaded this peninsula by using water cannons to tear down the fortifications and cross the Great Bitter Lake. A war began shortly after U Thant agreed to withdraw UNEF forces from this peninsula's southern port of (*) Sharm el-Sheikh (sharm el-SHAKE). It is bordered to the southeast by the Straits of Tiran and the Gulf of Aqaba, which were closed to shipping in 1956 and 1967. Per the Camp David Accords, Menachem Begin (BAY-geen) agreed to return this peninsula, which had been seized by Israel in the Six Day War. For 10 points, name this Egyptian peninsula east of the Suez Canal.
ANSWER: **Sinai** Peninsula <Wang>

18. A holder of this position promised the head of an onion, the hairs of a man, and the life of a fish in order to propitiate a god. The last holder of this position bought three books of prophecy at a high price after his refusals had prompted the seller to burn six other books. Another man in this position had two chariots pull apart Mettius Fufetius. The second holder of this title supposedly married the nymph (*) Egeria. An augury contest in which two men saw varying numbers of vultures led the first holder of this position to kill his brother. A holder of this title fought against Titus Tatius after he ordered the abduction of women from the Sabines. Tarquinius Superbus and Numa Pompilius held, for 10 points, what monarchical position whose first holder was Romulus?
ANSWER: **king of Rome** [prompt on ruler of Rome or similar answers not mentioning a king; prompt on king. Do not accept or prompt on "Roman emperor" or similar answers implying imperial power.] <Jose>
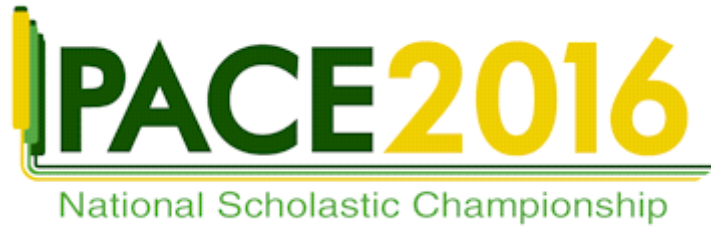
19. A character with this first name admits that he seeks only entertainment and turns down a love letter in a passage sometimes called his "sermon." A character with this name witnesses a flood which kills his beloved Parasha, after which he pathetically defies a statue that proceeds to chase him throughout St. Petersburg. The protagonist of "The Bronze Horseman" has this first name, as does a character who inherits his uncle's countryside mansion in a poem written in (*) sonnets with alternating masculine and feminine rhymes. A superfluous man with this first name rebuffs Tatiana and dances with Olga at her name day celebration, leading to a duel with Lensky. For 10 points, give this first name of Onegin in a verse novel by Alexander Pushkin.
ANSWER: **Eugene** [or **Yevgeni**; or ***Eugene Onegin***] <Alston>

20. In deriving the equation named for these objects, the second order term consisting of "dm times dv" is usually neglected, since it is the product of two differentials. Gustav de Laval designed an hourglass-shaped tube that is used to improve the efficiency of them. An equation which states the change in velocity of these objects is proportional to the logarithm of the initial mass over the final mass is (*) named for Konstantin Tsiolkovsky. A coaxial pintle injector is sometimes used in these devices to accelerate the combustion of gases when they use liquid fuel. Two boosters of this kind of engine are attached to an orbiter in a space shuttle. For 10 points, name these engines that achieve thrust by expelling fuel, and which may consist of different "stages."
ANSWER: **rocket**s [accept **rocket** engines] <Jose>

21. One of these shapes named after Cyril Perry is defined using two isodynamic points and a third point. The Darboux product is defined for these objects and is proportional to the cosine of the angle of intersection. The power of a point theorem relates the distance of a point to one of these things using the formula *AP* times *AQ*. The midpoint of each side of a triangle, the foot of each altitude, and the (*) midpoint of each line segment stretching from the vertex to the orthocenter are the nine points used to define one of these shapes. The classic problem of "squaring" this shape was shown to be impossible when pi was proven to be transcendental. Zero eccentricity characterizes, for 10 points, what conic section with one focus, unlike an ellipse?
ANSWER: **circle**s <Jose>

1. The artist painted over his signature in a painting of some of these things "In the Evening Sun," and, beginning in 1890, that same artist created around 30 separate painting of these objects in fields near his home in Giverny. For 10 points each:
[10] Name these objects, the subject of the first deliberate series painted by an artist whose later series include variations on poplar trees and water lilies.
ANSWER: **haystack**s [or **stacks of wheat**; or **grainstack**s]
[10] The *Haystacks* series was painted by this French artist, whose painting *Impression Sunrise* lends its name to the Impressionism school.
ANSWER: Claude **Monet**
[10] On a visit to England, Monet painted multiple images of this building, often engulfed by fog. J. M. W. Turner made two paintings of this building on fire.
ANSWER: Houses of **Parliament** [or Palace of **Westminster**] <Bentley>

2. A hymn in the *Pyramid Texts* recounts this god's act of washing the entrails of a dead pharaoh. For 10 points each:
[10] Name this god who weighed a dead person's heart to see if their soul would venture into the afterlife or be eaten by a monstrous demon named Ammit. He was depicted with the head of a jackal.
ANSWER: **Anubis**
[10] The hearts of the dead were weighed against a feather from this goddess of truth and justice.
ANSWER: **Maat** [or **Ma'at**]
[10] Before mummification, the organs were stored in these ceremonial containers, which were guarded by Hapi, Duamutef, Imseti, and Qebehsenuef, four sons of Horus.
ANSWER: **canopic** jars <Jose>

3. Identify the following about some well-preserved ancient humans, for 10 points each.
[10] Scientists extracted two red blood cells from the arrow wound of this "iceman," making them the oldest intact blood cells ever recovered from a human. This man bore a pure copper axe, and was discovered in the Tyrolean Alps in 1991.
ANSWER: **Ötzi (URT-see)** the Iceman [or **Similaun** Man; or the Man from **Hauslabjoch**; or **Hauslabjoch** mummy]
[10] Ötzi is considered a "natural" object of this type. Artificial examples of these objects were produced after dehydrating the body, removing the organs, and performing other rituals by the Ancient Egyptians.
ANSWER: **mummy**
[10] The Tollund Man and Koelbjerg Woman were natural mummies whose bodies were preserved by the anaerobic conditions of these wetlands.
ANSWER: peat **bog**s <Bentley>

4. This person was arrested in London in 1998 due to human rights violations during his presidency, but he was eventually released due to his ill health. For 10 points each:
[10] Name this leader who took financial advice from a group nicknamed the Chicago boys. He came to power in 1973 following a coup that overthrew Salvador Allende.
ANSWER: Augusto José Ramón **Pinochet** Ugarte
[10] Augusto Pinochet headed this South American country now led by Michelle Bachelet. This country's independence from Spain was fought for by José Miguel Carrera and Bernardo O'Higgins.
ANSWER: Republic of **Chile**
[10] Pinochet's trial addressed his administration's suppression of dissent through Operation Colombo and this operation supported by the United States in several South American countries.
ANSWER: Operation **Condor** [or *Operación Cóndor*; or *Plan Cóndor*; or *Operação Condor*]<Reinstein>

5. In one equation, the reciprocal of this quantity is set equal to the refractive index minus one times the difference between the reciprocals of the radii of curvature. For 10 points each:
[10] Name this quantity. The power of an optical element is defined as the reciprocal of this quantity, which represents an object distance where the optical element will converge parallel input light beams to one point.
ANSWER: **focal length** [accept descriptive answers indicating this is the **distance** from an optical element to the **focus** or **focal** point]
[10] A convex one of these optical elements will focus light to a point behind it. These objects are contrasted with mirrors.
ANSWER: **lens**es
[10] The power of a lens is often measured in these units. A lens with a value of N for power in these units brings light to the focus at 1 over N meters.
ANSWER: **diopter**s <Busse>

6. The sale of these things inspired the rhyme, "When the coin in the coffer rings, the soul from Purgatory springs!" For 10 points each:
[10] Name these remissions for sins, which Christians paid for in order to reduce time spent in Purgatory. The sale of these things was denounced in Martin Luther's 95 Theses.
ANSWER: **indulgence**s
[10] This seller of indulgences earned the opposition of Martin Luther by proclaiming, "You should know: whoever has confessed and is contrite and puts alms into the box...will have all his sins forgotten."
ANSWER: Johann **Tetzel**
[10] Tetzel responded to Luther's 95 Theses with 106 theses ghostwritten by Konrad Wimpina and named for this city. This capital city of Napoleon's Confederation of the Rhine was the site of a united German parliament in 1848.
ANSWER: **Frankfurt** am Main <Bentley>

7. The Banach-Tarski paradox is fundamentally a paradox about this quantity, since the axiom of choice seems to allow one to repeatedly duplicate it. For 10 points each:
[10] Name this quantity, which is finite for Gabriel's Horn, even though it has an infinite surface area. For a pyramid, this property is equal to basal area times height divided by three.
ANSWER: **volume**
[10] This is the volume of the Gabriel's Horn on the standard Cartesian coordinate system. The solution of the Basel problem is this value squared divided by 6.
ANSWER: **pi**
[10] The function at the heart of the Basel problem is a special case of this function when s = 2. According to a certain hypothesis, all of the zeros of this function lie along a "critical line."
ANSWER: Riemann **zeta** function [prompt on Riemann function] <Jose>

8. This poem tells its addressee "Thou shalt lie down with patriarchs of the infant world...and hoary seers of ages past" in "one mighty sepulchre." For 10 points each:
[10] Name this poem, which opens by describing how Nature "speaks a various language" to those who commune with her "visible forms."
ANSWER: "**Thanatopsis**"
[10] "Thanatopsis" is a meditation on death written by this American poet, who was just seventeen when it was published. His other nature-inspired poetry includes "To a Waterfowl."
ANSWER: William Cullen **Bryant**
[10] "Thanatopsis" reassures its reader that earthy life isn't all that exciting, seeing as "the gay will laugh when thou art gone, the solemn brood of care plod on, and each one as before will chase his favorite" one of these things.
ANSWER: **phantom**s <Jose>

9. In *The Professor and the Madman*, Simon Winchester describes how the insane murderer W. C. Minor was largely responsible for many of the entries in this reference work. For 10 points each:
[10] Name this approximately 20-volume British reference work on the English language.
ANSWER: ***Oxford English Dictionary*** [accept **OED**; prompt on Oxford Dictionary but do not accept or prompt on "Oxford Dictionary of English"]
[10] This author wrote many of the "w" etymologies in updated editions of the Dictionary, and satirized its researchers in his story "Farmer Giles of Ham." He was a member of a notable literary clique centered around Owen Barfield.
ANSWER: J. R. R. **Tolkien** [or John Ronald Reuel **Tolkien**]
[10] The OED notably omitted almost all risqué words until after a pivotal 1960 trial, in which Mervyn Griffith-Jones was unable to convince a jury to ban this British novel.
ANSWER: ***Lady Chatterley's Lover*** <Jose>

10. A parody poem by Anthony Hecht states that a woman had read this author "in fairly good translation." For 10 points each:
[10] Name this playwright, who in another poem is thought to have considered the "turbid ebb and flow of human misery" when he heard the "eternal note of sadness" on the Aegean.
ANSWER: **Sophocles**
[10] "Sophocles appears in this poem by Matthew Arnold whose speaker contemplates the loss of religious faith in the modern world. This poem begins by stating "the sea is calm tonight."
ANSWER: "**Dover Beach**"
[10] At the conclusion of "Dover Beach," Matthew Arnold imagines a "darkling plain, swept by confused alarms of struggle and flight," where these kinds of armies "clash by night."
ANSWER: **ignorant** armies <Jose>

11. Answer the following about neo-paganism, for 10 points each:
[10] Many members of this religion follow its "Rede," which states "An it harm none, do what ye will." Gerald Gardner popularized this faith which is often associated with witchcraft and symbolized by a pentagram.
ANSWER: **Wicca**n
[10] Like the more traditional Forn Sed, this form of Germanic neopaganism venerates Norse deities.
ANSWER: **Ásatrú**
[10] Many neo-pagan religions can be described by this term, which denotes the belief that non-human entities like animals and plants have spiritual essences. Edward Tylor coined this term, which can also be applied to Shinto.
ANSWER: **animism** [accept **animist** religions] <Kothari>

12. Stephen Carpenter has conducted a number of whole-lake experiments on this phenomenon to demonstrate that it exhibits alternative stable states. For 10 points each:
[10] Name this phenomenon in which excess nutrient inputs into aquatic systems cause algal blooms, which in turn result in hypoxia.
ANSWER: **eutrophication** [or word forms]
[10] The main culprits in eutrophication are phosphorus and this element, which is fixed into ammonia or ammonium compounds by legume-associated rhizobia.
ANSWER: **nitrogen** [or **N**]
[10] Eutrophication causes an initial increase in this ecosystem property, which equals the standing crop divided by the turnover rate. Its net value equals its gross value minus respiration.
ANSWER: **primary productivity** [or word forms; or net **primary productivity** or gross **primary productivity**; or **NPP** or **GPP**; prompt on productivity] <Kothari>

13. This country's President Petro Poroshenko asked Prime Minister Arseniy Yatsenyuk to step down in February 2016, but Yatsenyuk did not resign until April. For 10 points each:
[10] Name this country with an ongoing dispute with Russia over the Crimean peninsula.
ANSWER: **Ukraine**
[10] President Poroshenko promised to sell his lucrative chocolate business in 2014. Documents released in the 2016 Panama Papers scandal show that this Panamanian law firm set up an offshore holding company for the business.
ANSWER: **Mossack Fonseca**
[10] Yatsenyuk did not want to resign immediately because he wanted this party that he co-founded in 2014 to remain in power. He left the Fatherland Party to form this party.
ANSWER: **People's Front** [or **Popular Front** or **Naroadnee Front**] <Reinstein>

14. A dispute between this country and Italy over control of Trieste was resolved by an international commission in 1954. For 10 points each:
[10] Name this country which Stalin expelled from the Cominform in 1948, prompting its head of state, a former leader of the Partisans, to adopt a policy of self-management.
ANSWER: **Yugoslavia** [or Kingdom of **Yugoslavia** or Kingdom of **Serbs, Croats and Slovenes**]
[10] An earlier dispute between Italy and Yugoslavia occurred when the poet Gabriele D'Annunzio seized this port city and proclaimed it the Regency of Carnaro. D'Annunzio founded his "City of the Holocaust" in this city, located in present-day Croatia.
ANSWER: **Fiume** [or **Rijeka** or **Reka**]
[10] A 1920 treaty with Greece gave Italy control of islands such as this one, whose namesake Colossus statue was one of the Seven Wonders of the Ancient World.
ANSWER: **Rhodes** [or **Rodos**] <Bentley>

15. This character gives a speech describing the "quality of mercy," which "droppeth as the gentle rain from heaven." For 10 points each:
[10] Name this character, whose hand is won by Bassanio's selection of a worn lead casket in a test of her suitors demanded by her father's will.
ANSWER: **Portia**
[10] Portia appears in this William Shakespeare play. In this play, Bassanio is lent a sum of money by Shylock, who intends to take a pound of flesh from Antonio if it is not repaid.
ANSWER: The **Merchant of Venice**
[10] In Act IV, Portia disguises herself as a judge and rewards Shylock his pound of flesh under the condition that he extract it under this restriction. If he violates this condition, Shylock would forfeit all of his property to the state of Venice.
ANSWER: **not spilling** a drop of Christian **blood** [or clear equivalents] <Manners>

16. Gustave Dore depicted spectators extending their long noses into the cage of the title character in one of his illustrations of this book. For 10 points each:
[10] Name this novel. A sketch by Pablo Picasso uses scribbled black lines to depict the silhouettes of this novel's two main characters under a shining sun.
ANSWER: **Don Quixote** [or The Ingenious Gentleman **Don Quixote** of La Mancha or El ingenioso hidalgo **don Quijote** de la Mancha]
[10] Around the same time that he made the Don Quixote sketch, Picasso created a series of 58 paintings based on this 1656 painting. In some variations, Picasso changed the two lights at the top of this painting to hooks, the dog in the bottom right to a dachshund, and the man in the background doorway to a shadow.
ANSWER: **Las Meninas** [or The **Maids of Honor**]
[10] The original Las Meninas was painted by this Spanish master of The Surrender of Breda.
ANSWER: Diego **Velazquez** [or Diego Rodríguez de Silva y **Velázquez**] <Bentley>

17. The main character of this play is hauled before a tribunal for mocking a rival's romantic sonnet. For 10 points each:
[10] Name this play whose excessively-honest title character is rejected by Celimene (seh-lee-men), prompting him to renounce society and go live as a hermit.
ANSWER: The **Misanthrope**, or the Cantankerous Lover [or Le **Misanthrope** ou l'Atrabilaire amoureux]
[10] In this other play by the author of The Misanthrope, Elmire's husband, Orgon, hides under a table to hear the title hypocritical holy man making advances to her.
ANSWER: **Tartuffe**, or the Impostor [or The **Hypocrite**]
[10] This 17th-century French playwright wrote The Misanthrope after some of his earlier satirical comedies, such as Tartuffe, were banned by the government of Louis XIV.
ANSWER: **Molière** [or Jean-Baptiste **Poquelin**] <Brownstein>

18. This composer wrote his fourth symphony as an expression of musical life-force. For 10 points each:
[10] Name this Danish composer who called for two dueling sets of timpani in that fourth symphony, which is called the "Inextinguishable."
ANSWER: Carl **Nielsen** [or Carl August **Nielsen**]
[10] Nielsen's last concerto is for this woodwind instrument, for which Carl Maria von Weber wrote two concertos of his own. Anton Stadler was one of the earliest virtuosi on this instrument, which usually has a black body.
ANSWER: **clarinet**
[10] Nielsen composed four of these chamber pieces, the most popular of which is the G minor first. Bedrich Smetana's first piece in this genre is called "From My Life", while Beethoven wrote three nicknamed for the Russian Count Andrey Razumovsky.
ANSWER: **string quartet**s [prompt on quartet] <Carson>

19. The first settlers of this colony established a settlement on Yamacraw Bluff in 1733. For 10 points each:
[10] Name this American colony founded by James Oglethorpe. During the Civil War, this state was devastated by William T. Sherman's March to the Sea.
ANSWER: **Georgia**
[10] In *Georgia: A Short History*, the historian E. Merton Coulter argued that "Probably not a dozen people who had been in jail for [being in this condition] ever went to Georgia," despite the colony's later reputation as being a haven for people in this condition.
ANSWER: **debt** bondage [or **debt** slavery; or being in **debt**]
[10] Some Scots founded a settlement of this name in Georgia in 1736. A notorious scheme of this name to colonize Panama bankrupted Scotland in the late 17th century and led to the Act of Union.
ANSWER: **Darien** <Bentley>

20. Mercury, the element extracted from cinnabar, is often added to a metal to create one of these mixtures called an amalgam. For 10 points each:
[10] Name these solid solutions, exemplified by bronze or brass, which are mixtures of metals with another chemical element.
ANSWER: **alloy**s
[10] Some alloys have this desirable property of being easily deformed under tension, such as when they are pulled. This property allows a metal or alloy to be easily drawn out into wires.
ANSWER: **ductility** [accept word forms such as **ductile**]
[10] After creating an alloy, this process cools it rapidly to achieve the ideal material properties, such as during the production of steel to retain hardness. This term also means the deactivation of leftover reactants in chemical reactions.
ANSWER: **quench**ing <Jose>

21. One man often celebrated during this period is Garret Morgan, who patented one of the first of stop lights to have three distinct states. For 10 points each:
[10] Name this month-long celebration of people such as Booker T. Washington and inventor George Washington Carver.
ANSWER: **Black History** Month [or **Negro History Week** or National **African American History** Month]
[10] Black History Month gained federal recognition under this president. In college, this man declared that he would sit out a football game against Georgia Tech if William Ward, Michigan's only African American player, was not allowed to play.
ANSWER: Gerald **Ford** [or Jerry **Ford** or Gerald Rudolph **Ford** Jr. or Leslie Lynch **King** Jr.]
[10] Black History Month often honors Madame C. J. Walker, who became the first black female millionaire in America by founding a company that sold this general type of product.
ANSWER: **cosmetic**s [or **beauty** products; or **hair** tonic; or obvious equivalents] <Bentley>