

Bulldog High School Academic Tournament XXI (2012): Oh God, Not the Spider Cows!

Written by Yale Student Academic Competitions

Edited by Matt Jackson, with John Lawrence, Ashvin Srivatsa, and Sam Spaulding

Round 5 Tossups

1. In one scene in this novel, Mr. Giles and Mr. Brittles narrate how one of them shot the protagonist. The protagonist of this novel loses his place with the undertaker Mr. Sowerberry after beating Noah Claypole for insulting the memory of his dead mother. The protagonist is later cared for by Rose Maylie and Mr. Brownlow, before being kidnapped by Bill Sikes. The Artful Dodger leads the title character of this novel to join a gang of child pickpockets working for Fagin. For 10 points, name this novel by Charles Dickens about an orphan who is famously punished for asking for more gruel.

ANSWER: **Oliver Twist**, or *The Parish Boy's Progress* <JL>

2. This document was interpreted in an 1802 letter to the Danbury Baptists and by William Jennings Brennan's 1989 majority opinion in the case *Texas v. Johnson*. *Tinker v. Des Moines* established that this amendment applies to public school students, and this document's incorporation by the ruling in *Gitlow v. New York* extended it to the states. *Engel v. Vitale* established that public school prayer violates this amendment's "establishment clause". For 10 points, name this Constitutional amendment which, among other things, protects freedom of speech.

ANSWER: **First** Amendment to the United States Constitution [prompt "Constitution"; prompt "establishment clause" until "Brennan" is read] <AD>

3. This country carried out the Retribution operations and used aircraft cable to seize a multi-ton radar dish during the War of Attrition. This nation ran airlifts out of Aden during Operation Magic Carpet, and it was condemned by Resolution 242 of the UN Security Council. This country began Operation Wrath of God in response to the Munich Olympics Massacre, in which eleven of its athletes died. Its female leader Golda Meir got reports from the Mossad spy agency, much like David Ben-Gurion, its first Prime Minister. For 10 points, name this nation led by Benjamin Netanyahu, whose official languages include Hebrew.

ANSWER: State of **Israel** [or Mediat **Yisrael**, or Dawlat **Isra'il**] <SJW>

4. Members of this phylum use feather-like ctenidia in respiration. One order in this phylum has millimeter-wide axons, which Hodgkin and Huxley studied to discover action potentials. Conchiolin and chitin constitute the shells of these animals, which are derived from the dorsal body wall. The odontophore underlies a chitinous feeding structure called the radula. The body cavities of animals in this phylum are enclosed by the mantle. The muscular foot that characterizes members of this phylum gives rise to the tentacles in cephalopods. For 10 points, name this phylum which includes squid and hard-shelled oysters.

ANSWER: **Mollusca** [or **molluscs**; prompt on "Cephalopoda" or "cephalopods"; prompt on "Bivalvia" or "bivalves"; prompt on "squid" or "giant squid" before "squid" is read] <MJ>

5. This war's causes included objections to the Second Partition Treaty, and its loose ends were resolved at Rastatt. At its end, control of Nice [*NEES*] and Sicily passed to Victor Amadeus II of Savoy. As it withdrew from this war, Britain gained a monopoly on slave trading called the *asiento*, and gained control of Newfoundland and Gibraltar. The Treaty of Utrecht helped end this war; it recognized Philip of Anjou, a relative of the French Bourbon dynasty, as King Felipe Quinto [*KEEN-toh*]. For 10 points, name this war, which began in 1702 after the insane Charles II died with no Habsburg heirs to his European throne.

ANSWER: War of [the] **Spanish Succession** [accept **Queen Anne's War**] <MJ>

6. For a certain phenomenon occurring in water, this quantity equals approximately 10 to the minus 14 at room temperature. The logarithms of these quantities are proportional to changes in Gibbs free energy. ICE tables are a bookkeeping method used in computing these quantities. Solid and inert reagents do not affect these quantities, which are equal to the ratio of the forward and reverse rate constants. They are approximately computed using the law of mass action and qualitatively evaluated using Le Chatelier's principle. For 10 points, name these constants, which indicate the degree to which a reaction will proceed before its namesake state is reached.

ANSWER: **equilibrium** constant [accept **K_{eq}**; accept **K_w**; prompt on "reaction quotient"; prompt on "dissociation constant"] <DSteinberg>

7. The decadent artist Gloriani appears in two of this author's novels: the first is about a sculptor who falls for Christina Light, the second about the spiritual awakening of Lambert Strether. This author of *Roderick Hudson* created a character who is romantically pursued by Caspar Goodwood, but tricked by Madame Merle into marrying Gilbert Osmond. Another character created by this author of *The Ambassadors* tries to convince Mrs. Grose that she has seen the ghost of Peter Quint. For 10 points, name this American author who wrote about Isabel Archer in *Portrait of a Lady* and the haunting of children in the Governess' charge in *The Turn of the Screw*.

ANSWER: Henry James <JL>

8. This man orchestrated an earlier composer's Variations on a Theme by Gluck, as well as Liszt's transcription of that earlier composer's *Ave verum corpus*, in his orchestral suite *Mozartiana*. This non-Beethoven composer wrote a symphony that begins with a "Fate" motive that reappears in the finale. In addition to that F-minor fourth symphony, he wrote a symphony with an unusual waltz-like movement in 5/4 time. Another of his orchestral works employs *La Marseillaise* and several cannon shots to depict the Battle of Borodino, from which it gets its title. For 10 points, name this Russian composer of the "Pathetique" symphony and the *1812 Overture*.

ANSWER: Pyotr Ilyich Tchaikovsky <KK>

9. This character discovered one companion in Grampa Canyon; that companion's first major action is to teleport out of Butch's clutches. In one game, this character won't fight you until you find the Machine Part in a building owned by this character. This character's three elder sisters inform her that they have won a trip around the world in *Gotta Catch Ya Later!*. After defeating her in her first video game appearance, you earn a badge which grants control of Pokemon through level 30. When one of her Pokemon is struck on the head, it develops psychic powers. For 10 points, name this owner of a Psyduck, whose bike was stolen by Ash Ketchum in episode 1.

ANSWER: Misty [or Kasumi; prompt on "the Tomboyish Mermaid"] <AS>

10. Navigation systems described by this word use gyroscopes to independently dead-reckon their own trajectories. In all reference frames described by this word, Lorentz scalars are measured to have the same length, and Newton's laws are true without fictitious forces. A rotational quantity described by this word is related along three different axes in plane figures, according to the perpendicular-axis theorem. Eotvos was the first to prove a result underlying general relativity: that the gravitational form of mass was equal to this form of mass. For 10 points, name this tendency of a body at rest to remain at rest, the subject of Newton's first law of motion, which is measured by mass.

ANSWER: inertia [or word forms; or inertial navigation systems; or inertial reference frames; or moment of inertia; or inertial mass; do not accept anything containing "non-inertial"] <AS>

11. In Matthew 13:47, Jesus compares these things to men's souls sorted out by God at the Last Judgment. In Matthew 17:24, Jesus tells Peter that he will find a two-drachma temple tax inside one of them. After John the Baptist's death, two of these things were brought to Jesus before the only miracle documented in all four Gospels. Saint Peter worked with these creatures before becoming an apostle, and in a post-Resurrection miracle, the disciples found 153 of them on the Sea of Galilee. For 10 points, name these creatures whose left-facing 'ichthys' symbol represents Jesus, and which fed the multitudes alongside loaves.

ANSWER: fishes [accept ichthys before mentioned] <SSp>

12. One writer from this country intersperses the story of Tita's love for Pedro with recipes from this nation's cuisine, in her novel *Like Water for Chocolate*. Another author from this nation modeled the title character on Ambrose Bierce in his *The Old Gringo*, but is more famous for a work about the title tycoon, *The Death of Artemio Cruz*. A third author from this nation reflected on his countrymen's history in essays like "Sons of La Malinche" in the collection *The Labyrinth of Solitude*. For 10 points, name this home country of Laura Esquivel, Carlos Fuentes, and Octavio Paz.

ANSWER: Mexico [or the United Mexican States or los Estados Unidos Mexicanos] <SJW>

13. One opera based on this story contains the mad scene "L'altra notte." That work, titled for this story's antagonist, is the only finished opera by Arrigo Boito. The title character of one opera based on this story sings "Salut! demeure chaste et pure" to his young love, who is later inspired by the sight of herself in a mirror to sing the "Jewel Song." The title character kills Valentin, the brother of Marguerite, in that opera by Gounod, and Berlioz included the Rákóczi March in a "dramatic legend" about the "damnation" of the same character. For 10 points, name this common inspiration for opera composers, a story about a scholar who makes a deal with Mephistopheles.

ANSWER: the Faust legend <KK>

14. This author wrote about the title character visiting a resort in Aalsgaard and spotting Hans Hansen dance with his childhood love Ingeborg Holm in *Tonio Kroger*. In one of his novels, Antoine marries the beer merchant Alois Permaneder and Hanno dies of typhoid. One of this author's protagonists listens to debates between Naphtha and Settembrini while in the Berghof sanatorium. Besides Hans Castorp, this author's most famous protagonist succumbs to a cholera epidemic after developing an illicit passion for the Polish youth Tadzio. For 10 points, name this German author of *Buddenbrooks*, *The Magic Mountain*, and *Death in Venice*.

ANSWER: Thomas Mann <JL>

15. In one essay, this man argued that Rome's executive stability was hampered by having two consuls. He used his own money to hush up the husband of his mistress Maria Reynolds. This politician used funding-at-par and assumption of states' debts, which he argued for in his "Report on the Public Credit". This New Yorker, born in the West Indies, strongly advocated for the First Bank of the United States at its creation and authored a majority of the *Federalist* papers. For 10 points, name this man shot dead by Aaron Burr in a duel, who served as the first Secretary of the Treasury and now graces the 10-dollar bill.

ANSWER: Alexander Hamilton <MJ>

16. The Wang encoding links these constructs to the class of recursive functions, which Godel had earlier proved to be equivalent to the lambda calculus. For a given number of states, the one that produces the most ones is known as a busy beaver. Their theorizer determined that it is not possible to know in advance whether one of these will run forever. They consist of an infinite tape, a read/write head, and a finite list of instructions. For 10 points, name these theoretical primitive computers, named for the cracker of the Enigma code, which can compute anything that is computable.

ANSWER: Turing machines <SS>

17. This nation contains the world's longest sand beach, Cox's Bazar. Its northeasterly region of Sylhet contains many tea gardens, and its seven divisions are themselves divided into *upazilas*. This country contains the eastern half of the Sundarbans mangrove forest. This nation's capital is home to the Grameen Bank, which gives out microloans, and its second largest city is Chittagong. Frequent floods disturb the delta of the Brahmaputra and Ganges rivers in, for 10 points, what country that seceded from Pakistan, found east of the Indian state of West Bengal?

ANSWER: People's Republic of Bangladesh [or Gônoprojatontri Bangladesh] <MJ>

18. One of his paintings is dominated by a large snowy peak on the right, and contains a very yellow sun in the upper-left shining through a dark-grey cloud which dwarfs the army moving at the bottom. In another painting by this artist of *Snowstorm: Hannibal and his Army Crossing the Alps*, the sun sets to the right of a tugboat tugging a gunboat that fought at Trafalgar. His most famous painting shows a boat in the water to the left of Maidenhead Bridge, which is being crossed by a speeding train. For 10 points, name this English landscape painter of *The Fighting Temeraire* and *Rain, Steam, and Speed*.

ANSWER: J[oseph] M[allord] W[illiam] Turner <JL>

19. This thinker used the phrase "fell dead-born from the press" to describe the reception of his first philosophy book. He detailed attempts to reason from logical organization within nature to the existence of a God by Demea, Philo and Cleanthes in his *Dialogues Concerning Natural Religion*. This philosopher distinguished two types of knowledge via his namesake fork, gave a negative resolution to the "is-ought" problem, and objected to his own skepticism by bringing up the "missing shade of blue". For 10 points, name this author of *An Enquiry Concerning Human Understanding*, an 18th-century Scotsman.

ANSWER: David Hume <DSteinberg>

20. Hannah Arendt wrote that this series of events was set up by the Panama scandal two years before, and Barbara Tuchman's account, in *A Proud Tower*, largely ignores Félix Faure's role. It began after a note about the 120-millimeter gun was found in Max von Schwarzkoppen's trash can; that note was written by Ferdinand Walsin Esterhazy. This crisis's victim was imprisoned alone on Devil's Island, and the arguments during it included an open letter called *J'Accuse!* by Emile Zola. For 10 points, name this huge Third Republic-era crisis in which a baseless treason conviction ruined a French officer's life largely because he was Jewish.

ANSWER: Dreyfus affair, scandal, etc. [accept more specific answers such as the conviction of Alfred Dreyfus]
<MJ>

[STOP HERE]

[You have reached the end of the round. Do not continue reading unless the game is tied or a tossup was thrown out earlier in the round.]

21. A wheel and this object are held by Taranis, a Celtic god the Romans encountered. In Hindu myth, a holder of this object destroyed ninety-nine fortresses and rides Airavata, a white elephant; that holder was defeated by a son of Ravana, and is remembered in the *Rig Veda* for defeating the serpent Vritra with one called the *vajra*. In Greek tradition, one of these killed Asclepius and they were made by Arges, Steropes, and Brontes, a team of Cyclopes. In Norse myth, they are released from a boomerang-like returning hammer. For 10 points, name this natural phenomenon used as a weapon by Zeus.

ANSWER: lightning bolts [or thunderbolts; prompt "thunder" alone] <SSp>

Round 5 Bonuses

1. For a linear equation in standard form, this quantity is the quotient of the x-coefficient and the y-coefficient. For 10 points each:

[10] Name this quantity, conceptualized as “rise over run” and measured by the derivative.

ANSWER: slope [accept gradient; accept things like slope to the tangent line]

[10] This function of the slope yields the angle that a line makes with the y-axis. The sine of this function of x equals x divided by the square root of one plus x squared.

ANSWER: arctangent [or atan; or inverse tangent; accept any of these followed by “of x” or “of the slope”; or obvious equivalents]

[10] Slope fields are a graphic way of solving these equations. They may be numerically solved by Euler’s method, and in general relate functions to their own derivatives.

ANSWER: first-order ordinary differential equations [or ODEs] <AS>

2. Sir Thomas Lawrence called this painting “the philosophy of art”. For 10 points each:

[10] Name this painting of the Infanta Margarita with her ladies-in-waiting, dwarves, and a dog.

ANSWER: *Las Meninas* [or *The Maids of Honor*]

[10] *Las Meninas* is by this Spanish painter of *The Rokeby Venus*.

ANSWER: Diego [Rodriguez de Silva y] Velazquez

[10] In preparation for his portrait of Pope Innocent X, Velasquez painted this *morisco* student of his.

ANSWER: Juan de Pareja [prompt on partial answer] <JL>

3. His favorite song is “It’s Raining Men,” and after being disappointed at finding twenty dollars instead of a peanut, his brain informs him that “Money can be exchanged for goods and services.” For 10 points each:

[10] Name this character from a popular Fox cartoon, a bald, overweight Springfield resident whose children are Bart, Lisa, and Maggie.

ANSWER: Homer Simpson [accept either]

[10] Homer works at the Springfield Nuclear Power Plant, which is owned by this billionaire Yale alum. He lost his trillion-dollar bill to Fidel Castro, and his Social Security Number is 000-00-0002.

ANSWER: Charles Montgomery (Monty) Burns

[10] Bart’s favorite superhero is Radioactive Man, who is played in the movie version by this action hero. When asked about the gas mileage he gets on his SUV, he responds, “One highway, zero city.”

ANSWER: Rainier Luftwaffe Wolfcastle <KK>

4. The title character of this novel gazes longingly at a green light on the dock across the way from his house in West Egg. For 10 points each:

[10] Name this novel about a certain bootlegger’s love for Daisy Buchanan.

ANSWER: *The Great Gatsby*

[10] *The Great Gatsby* is by this American author whose short story collections include *Flappers and Philosophers* and *Tales of the Jazz Age*.

ANSWER: F[rancis] Scott Fitzgerald

[10] This novel, Fitzgerald’s first, details Amory Blaine’s adventures at Princeton and his romantic entanglements Isabelle Borge, Rosalind Connage, and Eleanor Savage.

ANSWER: *This Side of Paradise* <JL>

5. Answer some questions about the issue of illegal immigration in Arizona, for 10 points each.

[10] This Maricopa County sheriff, who bragged about running a “concentration camp” made of tents when his jail ran out of room, has been outspoken in his opposition to illegal immigration.

ANSWER: Joseph M. “Joe” Arpaio

[10] Arpaio strongly supported this piece of Arizona legislation, which critics claimed would lead to racial profiling.

ANSWER: SB1070 [also accept Arizona Senate Bill 1070 or The Support Our Law Enforcement and Safe Neighborhoods Act]

[10] Janet Napolitano, Arizona’s former governor, opposed the bill in her position as head of this department founded by George W. Bush after 9/11.

ANSWER: Department of Homeland Security [accept Secretary of Homeland Security; prompt “DHS”] <SL>

6. Tacitus's *Annals* note that the sitting emperor was in Antium during this disaster, which casts doubt on Suetonius's assertion that he started it. For 10 points each:

[10] Name this disaster which in any case destroyed eleven districts of the Imperial City over the course of six days in 64 AD.

ANSWER: Great **Fire** of **Rome** [prompt partial answer]

[10] This unstable Roman emperor began the first persecution of Christians after the Great Fire. Cassius Dio claims he played a lyre and sang while Rome was burning.

ANSWER: **Nero** Claudius Caesar Augustus Germanicus

[10] Tacitus recounts how Nero forced this man, his chief advisor and tutor, to commit suicide. This Stoic playwright worked with the Praetorian Burrus to guide the empire during Nero's boyhood.

ANSWER: Lucius Annaeus **Seneca** [or **Seneca** the Younger] <RB>

7. His "tulip chairs" were popularized by the Star Trek TV series. For 10 points each:

[10] Name this Finnish-American architect, who designed the catenary Gateway Arch in St. Louis and the TWA Flight Center at John F. Kennedy International Airport.

ANSWER: **Eero Saarinen** [prompt on "Saarinen" and on "E. Saarinen" since the father had the same first initial]

[10] Eero Saarinen also designed the main terminal for this other American airport. Its ceiling is also a catenary curve.

ANSWER: Washington **Dulles** International Airport [prompt on "Washington" or "Washington D.C."]

[10] Another architecturally significant airport is the Kansai International Airport in Osaka, whose International Terminal was designed by this architect. He collaborated with Richard Rogers on the Centre Pompidou.

ANSWER: Renzo **Piano** <JL>

8. He wrote *The Economic Consequences of the Peace* after World War I to express doubts about the Treaty of Versailles. For 10 points each:

[10] Name this British economist whose *General Theory of Employment, Interest, and Money* advocates for government spending to end recessions.

ANSWER: John Maynard **Keynes**

[10] Keynes's views were opposed by this school, which distrusted quantitative analysis and really liked Say's law that supply creates demand, which Keynes hated. Its members included Ludwig von Mises and F. A. Hayek.

ANSWER: **Austrian** school of economics

[10] This quantity's curve intersects with a 45-degree line on a Keynesian cross diagram. It is defined mathematically as C plus I plus G plus the difference of exports and imports.

ANSWER: **aggregate demand** [do not accept or prompt "demand"] <SSp/MJ>

9. The coiner of this term believed that practitioners of this style were realizing concepts from The Myth of Sisyphus through their art. For 10 points each:

[10] Name this term, coined by Martin Esslin, to describe the works of playwrights such as Jean Genet and Arthur Adamov.

ANSWER: Theatre of the **Absurd** [Accept word variants, like **Absurdism** or **Absurdist**]

[10] In this Absurdist play, the workplace of Dudard, Daisy, and Mr. Papillon is closed after a transformed colleague destroys a stairwell and Berenger is the only person not to turn into the title animal.

ANSWER: *The* **Rhinoceros**

[10] *The Rhinoceros* was written by this Romanian-born playwright, also known for *The Bald Soprano* and *The Future is in Eggs*.

ANSWER: Eugène **Ionesco** <SJW>

10. This prolific letter-writer published only two full-length books during his lifetime; one such book was his *Theodicy*. For 10 points each:

[10] Name this German philosopher and polymath who discovered calculus independently of Isaac Newton.

ANSWER: Gottfried Wilhelm **Leibniz**

[10] Leibniz used the principle of sufficient reason to derive this often-ridiculed claim about the world we live in. It follows from the existence of a perfectly good God with free choice at the time of creation.

ANSWER: we live in the **best** of all **possible worlds** [or “this is the **optimal world**”; or Leibnizian **optimism**; prompt partial answers; be lenient but prompt any answer about the **best** world which doesn’t specify “possible”; do NOT accept any answers including “all is for the best”]

[10] Leibniz believed that the world consists of these “windowless,” singular substances, which unlike atoms don’t interact and don’t have defined size.

ANSWER: **monads** <DSteinberg>

11. One heir to this dynasty perished on the White Ship, an accident which caused a dynastic crisis after Henry I’s death. For 10 points each:

[10] Name this English royal house with roots in Viking raiders who settled the namesake French region. It was established by William the Conqueror after a namesake 1066 “conquest”.

ANSWER: The **Norman** dynasty [or **Normans**]

[10] After the death of Henry I, this man claimed the throne. He fought the civil war known as “the Anarchy” against the Empress Matilda, and eventually won.

ANSWER: **Stephen** of Blois

[10] This father of Richard Lionheart succeeded Stephen, becoming the first monarch of the Plantagenet dynasty. He married Eleanor of Aquitaine, and later did penance for having Thomas Becket murdered.

ANSWER: **Henry II** [Accept “**Henry Curtmantle**” and “**Henry Fitz-Empress**”] <SJW>

12. [Note to Moderator: Please read the third part slowly, because it contains a mathematical expression.]

This quantity, related to the permittivity and permeability of free space, is the speed at which electromagnetic radiation travels. For 10 points each:

[10] Name this speed, which special relativity assumes is identical in all inertial reference frames.

ANSWER: the **speed of light** in vacuum [or obvious equivalents; or **c**]

[10] Special relativity predicts this effect, in which clocks in motion are observed to run more slowly. Objects in a gravitational field are also predicted to experience this effect, according to general relativity.

ANSWER: **time dilation** [accept **gravitational time dilation**]

[10] The degree to which time is dilated is proportional to the Lorentz factor, which is equal to: one, divided by the square root of, one minus, *this quantity* squared.

ANSWER: relative **velocity divided by the speed of light** [or obvious equivalents, which may use **v** instead of “velocity” and **c** instead of “the speed of light”; or **v over c**; or **beta**] <AD>

13. This nation’s Indian possession was called Goa, and until a revolt spearheaded by FRELIMO, it held colonial power in Mozambique. For 10 points each:

[10] Name this European nation which gained renown by sending out many explorers under the Aviz and Braganza dynasties. It lost control of Brazil in 1822, though Brazil still speaks its language.

ANSWER: Kingdom of **Portugal** [or Reino de **Portugal**]

[10] Portuguese explorers could sail windward quickly using this smaller, shallow-keeled ship type with a right-triangular lateen sail on each of its two or three masts.

ANSWER: **caravels** [or **caravelas** latinas]

[10] This Portuguese explorer led two caravels in the first successful journey around Africa’s Cape of Good Hope.

ANSWER: Bartholomeu **Dias** [or Bartholomew **Diaz**] <MJ>

14. These mixtures are homogeneous, and alloys are an example of the solid-solid variety. For 10 points each:

[10] Name these mixtures in which one substance's particles are uniformly mixed throughout another. Table salt in water is an example.

ANSWER: solutions [accept solid solutions]

[10] Though most metal sulfates are soluble in water, and a few, such as silver, calcium, and mercury sulfates, are only slightly soluble in water, the sulfate salts of three non-radioactive metals are virtually insoluble in water. Name any one of those three metals.

ANSWER: lead or strontium or barium [or Pb or Sr or Ba; accept lead sulfate or strontium sulfate or barium sulfate; accept lead (II) sulfate; accept PbSO₄ or SrSO₄ or BaSO₄; accept if more than one correct answer is given]

[10] Barium sulfate's insolubility allows it to be used as a radiocontrast agent in the gastrointestinal tract, to improve images taken with this kind of light. Diffraction with this type of light is often used to determine crystal structures.

ANSWER: X-rays <AS>

15. For 10 points each, answer these questions about religion in Japan.

[10] This sect of Buddhism is popular in Japan. Its practitioners aim for a temporary loss of self, using puzzling statements called koans and meditation.

ANSWER: Zen Buddhism [or Ch'an Buddhism; prompt "Mahayana"]

[10] The Japanese people once believed that their emperors all descended from this chief Shinto goddess, the *kami* of the sun. In one myth the other gods have to get her out after she hides in a cave.

ANSWER: Amaterasu-Omikami

[10] These gates mark the beginning of sacred ground at a Shinto temple. They are usually made of wood with two horizontal cross-bars at their tops.

ANSWER: torii <SSp>

16. These figures perform the not-so-exciting task of serving ale to the *einherjar*. For 10 points each:

[10] Name these women who more excitingly ride out on horseback to find slain warriors and bring them to Valhalla in preparation for the battles of the Norse apocalypse, Ragnarok.

ANSWER: valkyries

[10] The Valkyries are often conflated with fighting "maidens" who are named for their use of these objects. Zeus and Athena are identified with one called the Aegis.

ANSWER: shields

[10] The Norns, a different set of Norse mythical females, who determine the fates of men near one of these locales named for Urdr. Odin gave up an eye to gain wisdom from one of these named for Mimir.

ANSWER: wells <MJ>

17. His most famous verse begins "A Book of Verses underneath the Bough / A Jug of Wine, A Loaf of Bread—and Thou". For 10 points each:

[10] Name this astronomer poet, whose *Rubaiyat* was famously translated by Edward Fitzgerald.

ANSWER: Omar Khayyam

[10] This Sufi mystical poet, who resided in Seljuk territory, is most famous for a collection of religious poems called the *Ma'navi*, or *Spiritual Couplets*.

ANSWER: Rumi [or Jalala ad-Din Muhammad Balkhi; or Mevlana]

[10] Omar Khayyam and Rumi both wrote in this language, the primary language of modern-day Iran.

ANSWER: Persian [or Farsi] <JL>

18. Answer some questions about winners of the Man Booker Prize, for 10 points each.

[10] This Japanese-born British author wrote the winner of the 1989 Booker Prize, a novel about the butler Stevens titled *The Remains of the Day*.

ANSWER: Kazuo Ishiguro

[10] This author of *The Children's Book* wrote about two academics studying the fictional poets Randolph Henry Ash and Christabel LaMotte in *Possession*.

ANSWER: A.S. Byatt [or Dame Antonia Susan Duffy]

[10] Thomas Keneally won the 1982 Booker Prize for a novel about this German industrialist who saved over one thousand lives of Jews during the Holocaust. It was adapted into an Academy Award-winning film.

ANSWER: Oskar Schindler <JL>

19. This property, unique to eukaryotes, is determined in some reptiles by the temperature at which they are incubated. For 10 points each:

[10] Name this property which is determined by the X and Y chromosomes in humans.

ANSWER: biological **sex** [do not accept “gender” because that term is not used for the same thing in the sciences]

[10] The roughly 1:1 sex ratio in humans is explained by that ratio being this kind of behavioural strategy, which is a type of Nash equilibrium. These strategies prohibit the proliferation of alternative strategies, and the hawk-dove game is often studied in terms of them.

ANSWER: **evolutionary stable** strategy [or **evolutionarily stable** strategy; or **ESS**]

[10] This behavior, which may have evolved through kin selection, is most prominently present in eusocial species, in which certain organisms will sacrifice themselves to increase overall population fitness. Prairie dog alarm calls may be one form of this behavior.

ANSWER: **altruism** [or obvious equivalents containing “altruism” or a word form] <AS>

20. Answer these questions about boats used during the Civil War, for 10 points each.

[10] This Union general used ships in the Cumberland River to bombard Fort Donelson, earning the nickname “Unconditional Surrender” years before he accepted Lee’s surrender and became President.

ANSWER: Ulysses S[impson] **Grant**

[10] The Confederates made this first ironclad, which sat largely underwater, from a captured frigate. It totally wrecked everything until it fought the Union ironclad *Monitor* inconclusively at Hampton Roads.

ANSWER: CSS **Virginia** [or USS **Merrimack**]

[10] At this 1864 battle, Union commander David Farragut ordered his ships to go full steam ahead through an underwater minefield, after which the CSS *Tennessee* was the only ship to meet them.

ANSWER: Battle of **Mobile** Bay <MJ>

21. [NOTE TO MODERATOR: Do NOT read the alternate answer to the first bonus part if teams do not give it as their answer.]

This work’s fourth movement, “Urlicht,” is a setting of a text from the collection of folk poetry *Des Knaben Wunderhorn*. For 10 points each:

[10] Name this C-minor symphony that takes its alternate title from a poem by Friedrich Klopstock, which is sung by the chorus on the final movement.

ANSWER: **Resurrection** Symphony, [or Symphony no. **2** by Gustav **Mahler**]

[10] This man composed the *Resurrection Symphony*, as well as the “Symphony of a Thousand” and a piece based on Hans Bethge’s translations of Chinese poetry, *The Song of the Earth*.

ANSWER: Gustav **Mahler**

[10] Mahler was best known in his day as a conductor, from 1897 to 1907 directing the Court Opera in this city, later home to a compositional “school” headed by Arnold Schoenberg. Earlier residents included Mozart and Beethoven.

ANSWER: **Vienna** <KK>