

Brookwood Invitational Scholars' Bowl

Round 4

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Tossups

1. **This city's Qutb [KOOT-b] complex is home to a 20-foot-tall iron pillar and the world's tallest brick minaret. Its business district is called the Connaught Place. This city is the northernmost connected by the Golden Quadrilateral. The reformist party Aam Aadmi [AWM ODD-mee] currently holds power here. A Baha'i House of Worship in this city is shaped like a (*) lotus. A Durbar [DER-ber] held in this city in 1911 at its Red Fort welcomed King George V to the country. This non-Chinese city has the world's worst air pollution. The Yamuna River passes through Agra and this city, which became capital in August 1947 after the partition. For 10 points, name this capital of India.**

ANSWER: New Delhi [or Delhi]

2. **This composer was inspired by a pretty girl he had seen at the fair for his piece "Fairest of the Fair." This man wrote an operetta about a military captain in Peru. A piece by this composer named for Manhattan Beach oddly lacks a "stinger" at its end. This composer of (*) "El Capitan" put an unusually calm break strain in a piece he named after a newspaper. This composer of "The Washington Post" wrote the Marine Corps song "Semper Fidelis." His best known piece includes an exposed piccolo solo. For 10 points, name this the composer of "The Stars and Stripes Forever," known as America's "March King."**

ANSWER: John Philip Sousa

3. **A general named Bragadin from this city became a public symbol after he had both ears cut off, then was tied to a mast and was flayed alive. This city seized four bronze horse sculptures to get revenge for the Massacre of the Latins. This city first produced a nearly-pure gold coin called a ducat [duck-it]. The *Histoire de ma vie* was written by a notorious seducer from this city named (*) Casanova. This city led the Holy League that turned back the Ottomans at Lepanto. This "most serene Republic" sacked Constantinople during the Fourth Crusade under a blind doge. For 10 points, name this rival of Genoa, an Italian city which has lots of canals.**

ANSWER: Most Serene Republic of Venice [or Venezia; prompt on Famagusta]

4. **This character says, "I'm quite illiterate. But I read a lot." He reflects that you can't erase even half the four-letter words in the world, after reminiscing that the best part of a museum is that nobody in it moves. This character decides not to get on a merry-go-round, preferring to stand in the pouring rain. He breaks his (*) hand by punching in the windows of his garage the night that his brother Allie dies of leukemia. He asks several cab drivers if they know where the ducks in Central Park go in the winter. This character wears a red deerslayer hat, leaves Pencey Prep, and visits his sister Phoebe. For 10 points, name this protagonist of *The Catcher in the Rye*.**

ANSWER: Holden Caulfield [prompt on Caulfield]

5. **These objects diffuse slowly, with a drift velocity proportional to time between collisions, but they easily move through an empty lattice, in the Drude-Sommerfeld [DROO-duh SUM-er-feld] model. The hydraulic analogy explains their movement. Recombination occurs between these objects and holes. Deflection of these particles by an external (*) field creates a transverse voltage in the Hall effect. The left-hand rule is used for the magnetic field created by these particles. These particles move against conventional current. The oil drop experiment measured their charge. For 10 points, name these particles that flow through electrical circuits, which have a negative charge.**

ANSWER: electrons

6. Scythians whipped people with a rope covered in red paint until they participated in this activity. The *proedroi* [pro-uh-droy] supervised this event. The *leges tabellariae* [lej-uhs tah-bell-are-ee-ay] introduced rules for this activity in the *comitia* [com-it-ee-uh] in Rome. The *boule* [boo-lay] organized the *ecclesia* [uh-clay-zee-uh], during which people participated in this activity. Participants in this event were given one white and one black (*) stone. A form of this activity, which involved writing on shards of pottery, was used to determine which citizens were ostracized. Solon's reforms greatly expanded the number of people who could do this. For 10 points, name this activity by which citizens of the Athenian democracy chose their leaders.

ANSWER: voting [or electing; or suffrage; prompt on participating in politics or participating in the assembly or assembling other answers implying a civic duty]

7. One of this poet's speakers describes a "luster in the air" in autumn and proclaims that "the day becomes more solemn and serene/when noon is past." In another poem, this poet asks its subject "What objects are the fountains/Of thy happy strain?" This author of "Hymn to Intellectual Beauty" mourned John (*) Keats in *Adonais* [ad-oh-NYE-us]. A quote from one of this poet's works names Noël Coward's play *Blithe Spirit*. This author created a speaker who meets a "traveler from antique land" who tells him of "two vast and trunkless legs" in a desert. For 10 points, name this English poet of "To a Skylark" and "Ozymandias."

ANSWER: Percy Bysshe Shelley [prompt on "Shelley"]

8. These substances must obey the Hume-Rothery rules. These materials are strengthened during precipitation hardening, which prevents the movement of dislocations. They have both a solid-us and a liquid-us melting point, and also may have a eutectic point. These substances form when atoms substitute or interstice into a crystal lattice. Examples of these materials, like martensite or cementite, are (*) combinations of ferrite and austenite. When they contain mercury, they are called amalgams. They are equivalent to solid solutions. For 10 points, name these materials like pewter, steel, and bronze, which are mixtures of metals.

ANSWER: alloys [or solid solutions until it is read; prompt on solutions; ask for less specificity for answers of carbon steel]

9. This thinker compared the soul to a chariot with two horses representing the rational, spirited, and appetitive. He invented the third man argument. Porphyry [PORE-fur-ee] and Plotinus revived this man's ideas. This philosopher considered that all observable characteristics of objects are copies of ideal abstractions in an alternate world. This thinker used his theory of (*) Forms in a metaphor explaining that reality may really just be prisoners chained to the wall of a cave. He wrote about love at a drinking party, and, in a dialogue about justice, considered philosopher-kings who govern *The Republic*. For 10 points, name this student of Socrates.

ANSWER: Plato

10. In an early use of computer animation, this film's title sequence focuses on a woman's lips, then eyes, then the screen turns red. This film popularized a technique where the camera angle pulls away while zooming in, or the "dolly zoom." Two deaths in this movie occur at Mission San José Bautista's (*) bell tower. Its protagonist takes a woman to Muir Woods after saving her from drowning under the Golden Gate Bridge. In this film, Kim Novak's character impersonates Madeleine Elster to have her death ruled a suicide. Jimmy Stewart plays Detective Scottie in this 1958 film. For 10 points, name this Hitchcock thriller about a man afraid of heights.

ANSWER: Vertigo

11. Plots of this quantity against time may show a lag phase and a log phase. Fitness increases with this quantity in the Allee effect. Quorum sensing is activated when this quantity is large. This quantity suddenly increases during irruption, which can lead to an overshoot, during which it suddenly drops. The time derivative of this quantity is proportional to this (*) quantity, times K minus this quantity, in the logistic equation. This quantity is estimated by tagging, releasing, and then recapturing. It increases exponentially until it levels off at the carrying capacity. For 10 points, name this quantity, the number of organisms in a given area.

ANSWER: population [or population density; prompt on number of organisms or similar answers]

12. Due to the black drop effect, this man, Charles Green, and Daniel Solander measured different contact times. Naturalist Joseph Banks joined this man on an expedition which first encountered the Gweagal [GWAY-gaul] people. This man named Port Jackson and Cape York. Arthur Philip's First Fleet landed at a bay this man named for its (*) biodiversity. This man voyaged to *Terra australis incognita*, right after he observed a transit of Venus in Tahiti. During a boat-stealing dispute, this explorer was killed by Hawaiian natives. He named New South Wales on his first Oceanian voyage aboard the *Endeavor*. For 10 points, name this Englishman who first explored Australia.

ANSWER: Captain James Cook

13. A character created by this author gets ostracized from society for refusing to praise a terrible sonnet. This author's heavily censored version of the Don Juan story includes the character of Sganarelle [SS-GAWN-uh-rell]. A husband hides underneath a table to see if his wife gets seduced in a scene from one of this author's plays, which ends when (*) Louis XIV magically appears to save the day. This author ironically died on stage while performing as *The Imaginary Invalid*. He wrote about a brutally honest Alceste in *The Misanthrope* and dismissed religious hypocrisy in *Tartuffe* [tar-TOOF]. For 10 points, name this French comedic playwright.

ANSWER: Molière [or Jean-Baptiste Poquelin]

Moderator note: Emphasize, using "air quotes" or some other method, that the first two sentences in this tossup are direct quotes.

14. In a society following this movement, "the present dominates the past." In a chapter titled for this movement "in relation to the various existing opposition parties", it is said to turn its attention to Germany. All the old powers of Europe are said to "have entered into a holy alliance to exorcise" the (*) specter of this movement. The theory of these people is summed up in a single sentence: "Abolition of private property." A text titled for this movement has chapters like "Bourgeois [booj-WAH] and Proletarians" and ends by proclaiming, "Workers of the World, Unite!" For 10 points, name this movement whose manifesto was written by Marx and Engels.

ANSWER: Communism [or word forms; or the Communist Manifesto; prompt on Marxism]

15. The Trilateral Contact Group attempted to end this conflict. People who died early in this conflict were known as "Heaven's Hundred" after they were killed by the Berkut police. A group of unknown soldiers in this war were called the "little green men." Two protocols signed at Minsk attempted to end this conflict. Two battles were fought during this war at an (*) airport named for Sergei Prokofiev in Donetsk. The Euromaidan protests against president Viktor Yanukovich [yawn-oo-KOH-vitch] led to this war, which is mostly centered in Donbass. For 10 points, name this conflict in which troops under Vladimir Putin have invaded a neighboring country.

ANSWER: War between Russia and Ukraine [or the War in Donbass; or Russian invasion of Ukraine; or Russian intervention into Ukraine; or Russian intervention into Crimea; or Ukrainian Civil War; accept any answer that mentions either the Ukraine or Crimea]

16. The Pecora Commission, formed to investigate this event, blamed it on Charles Mitchell. Clarence Hatry's corruption investigation happened a month before this event. The Babson break was caused by a prediction of it. The P/E ratio hit a record peak before this 20th century event. GM co-founder William Durant went bankrupt trying to prevent it. This event took place a month after the (*) Smoot-Hawley tariff was signed. This event lasted between Black Thursday and Black Tuesday and is often blamed on overspending on the margin. For 10 points, name this event which occurred in October 1929 on Wall Street and ushered in the Great Depression.

ANSWER: 1929 Wall Street stock market crash [or the Wall Street crash; or obvious equivalents; prompt on the Great Depression; must mention stocks or Wall Street for points]

17. Pressure is proportional to the exponential of this quantity in the hypsometric equation. Devices measuring this quantity often have three pointers and use an aneroid barometer. As this quantity increases, temperature decreases, then increases, then decreases again, since the lapse rate changes sign. The Karman line is defined as the limit of this quantity at which (*) lift velocity equals orbital velocity. Gravitational acceleration decreases with the square of this quantity. It increases from the mesosphere to the thermosphere to the exosphere. For 10 points, name this quantity, the distance an object is from the surface of the earth.

ANSWER: altitude [or height; or elevation; prompt on distance or radius]

18. A mythical character from this country owned a club that killed people from one end and resurrected them on the other end and a cauldron that never emptied. The Mythological Cycle and the Historical Cycle are from this country. Taboos called *geis* [GAY-uhs], such as never being able to eat dog meat, are prevalent in its myths. The Stone of Destiny in this country sat atop the (*) Hill of Tara. A hero from here faces off against the Morrigan in order to protect a cow. Ossian narrates this country's Fenian Cycle, which describes a hero who sucks his thumb for knowledge. For 10 points, name this country whose mythology venerates Cu Chulainn [COO COO-lain] and fears banshees.

ANSWER: Ireland [or Irish myth; prompt on Celtic myth]

19. An artist from this movement painted an angel tugging on the hair of a naked goddess for the dressing room of his patroness. A dog rests at the feet of two lovers reading love letters in a painting from its *Progress of Love* series. In a painting from this movement, a man lies in a bush beneath a Cupid putting its finger to its lips. In a (*) *fête galante* [FETT guh-LONT] from this movement, set on the birthplace of Venus, three pairs of lovers embark on a voyage to Cythera. The definitive painting from this movement has a woman in a pink dress being pushed by her husband on a swing. For 10 points, name this ornate movement that followed the Baroque in France.

ANSWER: rococo

20. A character in this book is offered to trade a crown for his rake, but he prefers instead to wipe up filth from the floor. This book, which was delivered "in the similitude of a dream", begins with an Apology from the Author. Its second part lists the struggles of Christiana and her four sons. The chapters in *Little Women* are named for events from this book. This novel's protagonist is sent to prison for condemning worshippers of (*) Beelzebub at Vanity Fair. The protagonist of this book kills Apollyon in the Valley of Humiliation and goes to the Celestial City. For 10 points, name this Christian allegory about Christian, which was written by John Bunyan.

ANSWER: *The Pilgrim's Progress from This World to That Which Is to Come; Delivered under the Similitude of a Dream*

TB: Tetra·cycline binds to this organelle. The sedimentation rate of each component of this structure is measured in Svedberg units. This organelle's structure is the main evidence for RNA world. Free "NH₃ plus" groups condense with "CO₂ minus" groups to form an amide in a reaction catalyzed by this structure. In this organelle, a (*) cloverleaf macromolecule binds to the E site through its anticodon loop. These organelles are synthesized by the nucleolus and come in "free" and "bound" forms. They stud the rough endoplasmic reticulum. For 10 points, name these organelles where translation occurs, the site of protein synthesis.

ANSWER: ribosomes

Bonuses

1. In as much gruesome detail as you can muster, describe how each of these characters created by Edgar Allan Poe dies. For 10 points each:

[10] In “The Tell-Tale Heart”, the narrator kills the old man in this manner. After it slashes Madame L’Espanaye’s [LESS-pawn-ay’s] throat with a razor, an orangutan kills her daughter in this way in “The Murders in the Rue Morgue.”

ANSWER: **suffocation** [or **smothering**; or **strangling**; or **choking**; or **squeezing his/her throat**; or **asphyxiation**; or other equivalents that involve not receiving sufficient oxygen to live]

[10] In “The Cask of Amontillado”, Montresor presumably kills Fortunato by doing this to him, then waiting for him to suffocate. The narrator of “The Black Cat” accidentally does *this* to the cat, but this time the cat lives.

ANSWER: **walling him up** [or **enclosing** him in walls; or **entombment**; or **locking up** in a catacomb; or being **buried alive**; any similar answers involving small confined spaces are fine]

[10] Prince Prospero and the rest of his guests at a colorful seven-room ball die from this disease in an 1842 Poe story.

ANSWER: the **Red Death** [or the **Masque of the Red Death**; prompt on **plague**]

2. Name these people that asserted the laws of thermodynamics, for 10 points each:

[10] The first law is often attributed to an experiment involving a flywheel conducted by this Englishman, who lends his name to the SI unit of energy.

ANSWER: James Prescott **Joule**

[10] This physicist’s description of the Second Law precludes the extraction of work from a gas colder than its surroundings. He’s the namesake of a process in which a gas is cooled by throttling it through a valve.

ANSWER: William **Thomson** [or Lord **Kelvin**; or the 1st Baron **Kelvin**]

[10] The Third Law is attributed to this German, whose namesake equation in chemistry reads, “E equals E-nought minus RT over nF times the natural logarithm of Q.”

ANSWER: Walther **Nernst**

3. A woman with red hair wearing a red dress in this painting is staring at her finger and sits next to a man wearing a dark suit and a hat. For 10 points each:

[10] Name this painting, which takes the unusual vantage point of a viewer on a sharp-angled street corner, looking through the glass panes of a nearby restaurant.

ANSWER: **Nighthawks**

[10] This American artist painted *Nighthawks*.

ANSWER: Edward **Hopper**

[10] Hopper sold his first painting at this exhibition in 1913, the first modern art show in the United States.

Duchamp’s *Nude Descending a Staircase* was introduced at it.

ANSWER: **Armory** Show

4. The Iron Brigade, under the control of this army, got its nickname from John Gibbon during the Second Battle of Bull Run. For 10 points each:

[10] Name this army which got destroyed during the Seven Days’ Battles after launching the failed Peninsula Campaign. It merged with the Army of Virginia after Second Bull Run.

ANSWER: Army of the **Potomac** [prompt on **Union** army; prompt on the **North** or similar answers]

[10] The losing general for most of the Peninsula Campaign was this obnoxious general who ran against Lincoln in 1864 on the Democratic ticket and lost.

ANSWER: General George Brinton **McClellan**

[10] The winning general during the Seven Days was this brilliant Southerner who replaced Joseph Johnston and surrendered to Grant at Appomattox.

ANSWER: Robert Edward **Lee**

5. Answer the following about big political campaign donations, for 10 points each:

[10] The *Citizens United* Supreme Court case paved the way for the “super” form of these organizations which raise money for candidates and campaigns.

ANSWER: **political action committees** [or **PACs**; or **super PACs**]

[10] This man propped up Democratic candidates with more than 27 million dollars in 2014. This one-time Republican hates guns and soft drinks, and served as independent mayor of New York City from 2002 until 2013.
ANSWER: Michael **Bloomberg**

[10] This business magnate and important right-wing donor owns the pro-Netanyahu newspaper *Israel HaYom* and lent a lot of support to Newt Gingrich in 2012. He's also the CEO of Las Vegas Sands.

ANSWER: Sheldon **Adelson**

6. Answer the following about differences between Mahayana and Theravada Buddhism, for 10 points each:

[10] Whereas Theravada Buddhists aim to become *arahants* by achieving this state, Mahayana Buddhists instead desire to become *bodhisattvas*. This state is the release from *samsara*, the cycle of rebirth.

ANSWER: **nirvana**

[10] Unlike Theravada Buddhists, many Mahayana Buddhists follow this secular practice. This practice, which is required in Jainism, is followed by many Seventh-Day Adventists, as well as by many Copts during Lent.

ANSWER: **vegetarianism** [or **veganism**; or obvious equivalents]

[10] Unlike Mahayana Buddhists, Theravada Buddhists strictly follow this "Canon", a *tripitaka* named for the common language of ancient Buddhists, which is roughly analogous to Sanskrit in Hinduism.

ANSWER: **Pali** Canon

7. This structure is composed of microtubules, microfilaments, and intermediate filaments. For 10 points each:

[10] Name this structure that supports the cell and allows it to move about.

ANSWER: **cytoskeleton**

[10] Type I and II intermediate filaments are composed of this family of sulfur-rich proteins, which are synthesized in namesake cornified cells in the epidermis. These proteins are also abundant in human hair.

ANSWER: **keratins**

[10] The last class of intermediate filaments, lamins, localize to this cellular membrane. The Ran-GTP cycle transports proteins through this membrane, which is covered in pores.

ANSWER: **nuclear** membrane [or the nuclear **envelope**; or the **nucleus**]

8. For 10 points each, answer the following about the Franco-Prussian War:

[10] This Prime Minister of Prussia and mastermind of German unification goaded France into declaring war after doctoring the Ems Dispatch.

ANSWER: Otto von **Bismarck**

[10] The Ems Dispatch concerned the vacant throne in this European country, after its recent abdication by Isabella II. A succession dispute in this country led to the Carlist movement.

ANSWER: Kingdom of **Spain**

[10] After Prussia and the rest of its German allies defeated France, Wilhelm I was proclaimed German Emperor at this location. Bismarck declared the German Empire at the treaty ending the war, which was signed in this building.

ANSWER: Palace of **Versailles** [or the **Hall of Mirrors**]

9. Answer the following about creepy psychological experiments that took place in Palo Alto, California, for 10 points each:

[10] Philip Zimbardo led an experiment in 1971 in which the basement of the psychology building at Stanford was turned into one of these institutions, which quickly slipped into authoritarianism.

ANSWER: a **prison** [or a **jail**; or obvious equivalents]

[10] Walter Mischel led a study in delayed gratification in the 60s at Stanford in which children were offered one of these foodstuffs immediately, or two of them, if they could wait 15 minutes to eat the first one.

ANSWER: a **marshmallow**

[10] Ron Jones ran this social experiment in 1967, at Cubberley High School in Palo Alto. During this experiment, students joined an-increasingly authoritarian club and began acting like Nazis by making the namesake salute.

ANSWER: The **Third Wave** experiment [or the **Wave**]

10. This character wins the game of Questions, 27 to 3, without even knowing that he was playing, though he does have six rhetorical questions and two repetitions. For 10 points each:

[10] Name this character who blows out a lantern, then swaps out a letter. In Act III, this character jumps into the leftmost barrel on a pirate ship, opposite both the Player and the two title characters, and never returns onstage.

ANSWER: Prince **Hamlet**

[10] Hamlet's "To be or not to be" speech takes place completely offstage, though, in this tragicomedy written by Tom Stoppard, which retells the story of *Hamlet*.

ANSWER: **Rosencrantz and Guildenstern are Dead**

[10] Because it's parodying *Hamlet*, *Rosencrantz and Guildenstern are Dead* takes place largely in this European country, of which Hamlet is the prince.

ANSWER: **Denmark**

11. Artemis created this creature in response to a hunter's boast that he would kill every living thing. For 10 points each:

[10] Name this creature which killed Orion.

ANSWER: **Scorpio** [or **Scorpius**; or a **scorpion**]

[10] In another myth, it was apparently Scorpio and Cancer who scared this lad so much that he crashed the sun chariot. This son of Helios had to be killed by Zeus after his antics resulted in the Ethiopians having black skin.

ANSWER: **Phaethon**

[10] Cancer got his own spot in the sky while harassing Heracles during his Second Labor, which involved killing this multi-headed monster near Lerna.

ANSWER: Lernaean **Hydra**

12. Answer the following about the theory behind the music of atonal composer Arnold Schoenberg. For 10 points each:

[10] Schoenberg developed a system of serialism named for this many tones, which used tone rows to avoid staying in keys.

ANSWER: **twelve**-tone technique [or **dodecaphony**; or **twelve-tone** serialism; or **twelve-tone** composition]

[10] The name of the twelve-tone technique comes from the number of semitones in this scale, which includes every note played by half-step. Schoenberg's music is sometimes referred to by this scale's namesake "ism."

ANSWER: **chromatic** scale [or **chromaticism**]

[10] Schoenberg wrote about the correct way to perform this vocal style in his foreword to the melodrama *Pierrot Lunaire*. This style, with a German name, is the mix of singing and speaking the text of the song.

ANSWER: **sprechstimme** [or **"spoken voice"**; do not accept or prompt on *"sprechgesang"* or "spoken singing", but be reasonable about pronunciation]

13. During the Il-Khan sack of this city in 1258, its river was said to run black with ink, due to all the destroyed books from its library. For 10 points each:

[10] Name this city where the House of Wisdom was located. It was the capital of the Abbasids.

ANSWER: **Baghdad**

[10] The Abbasid caliphate took over from this earlier caliphate, which far exceeded the conquests of the Rashidun. Its capital was at Damascus.

ANSWER: **Umayyad** Caliphate

[10] Before sacking Baghdad, the Il-Khans also dismantled this Nizari Shi'ite sect, whose elite members were called *fedayeen*. The fictional obsession of this sect for hashish was invented in the 19th century.

ANSWER: **Assassins** [or **Hashshashin**]

Note to moderator: Read the second and third parts of this bonus slowly.

14. Answer the following about polar coordinates, for 10 points each:

[10] Polar coordinates are represented on a graph of this shape. Trigonometric quantities are often remembered using one of these shapes with unit radius.

ANSWER: **circles** [or **unit circles**]

[10] What is the x-coordinate of a point located at radius r and angle theta in polar coordinates? Your answer must be in terms of r and theta.

ANSWER: **r** times the **cosine** of **theta** [or **r cos theta**; or **r cosine theta**; or obvious equivalents]

[10] The polar equation "r equals cosine of theta" plots a circle centered at this point in rectangular coordinates. You must provide both x and y coordinates.

ANSWER: **(1/2, 0)** [or **x equals one-half, y equals 0**; prompt on partial answer]

15. An Anthony Hecht poem mentions that Matthew Arnold's girl "had read/<this author> in a fairly good translation, and caught that bitter allusion to the sea." For 10 points each:

[10] Name this author, who, according to another poem, heard the “eternal note of sadness” which brought “into his mind the turbid ebb and flow of human misery.”

ANSWER: Sophocles

[10] Sophocles’ *Antigone* is staged by cellmates in *The Island*, a play by this author. This author criticized apartheid in a Broadway hit about the black men Willie and Sam, and their “master” Hally.

ANSWER: Athol Fugard

[10] This classical playwright snubbed Sophocles, calling Aeschylus and Euripides the greatest tragic playwrights, in his comedy *The Frogs*. He also wrote *Lysistrata*.

ANSWER: Aristophanes

16. This architect used a hyperbolic cosine equation to design the Gateway Arch in St. Louis. For 10 points each:

[10] Name this architect who designed the TWA Terminal at JFK International Airport, as well as the “Tulip” chair from *Star Trek*.

ANSWER: Eero Saarin

[10] Saarinen judged, and picked the winner, for the architectural design competition for this building. This building’s unusual design has fourteen shells with equal curvature, all created as sections from a single sphere.

ANSWER: Sydney Opera House [prompt on partial answer]

[10] Saarinen also used a catenary roof in his design for the main terminal of an airport in this city. The world’s tallest obelisk, located in this city, stands east of the Reflecting Pool on the National Mall.

ANSWER: Washington, D.C. [or Washington D.C.; or the District of Columbia]

17. This man declared “Poyekhali!” while on Vostok 1. For 10 points each:

[10] Name this man who died in a routine training flight in March 1968, seven years after he became the first person to go into outer space.

ANSWER: Yuri Gagarin

[10] Gagarin is probably the best-known person to be labelled with this term, the Soviet equivalent of the American “astronaut.”

ANSWER: cosmonaut

[10] Gagarin died in the “15” class of these fighter jets, which were built by the Soviet Union for Korea and fought in a narrow strip of land near the Yalu River in the ‘50s.

ANSWER: MiG-15 fighter jets [or Mikoyan-Gurevich; or MiG Alley]

18. These objects are the namesake of a tongue-in-cheek holiday on May 25, invented in response to a passage that describes a “frod who really knows where” one of these objects is. For 10 points each:

[10] Name these objects, which are just “about the most massively useful things an interstellar hitchhiker can have.”

ANSWER: towels

[10] The frod who totally has got his towel under control is this character from Betelgeuse, who convinces Arthur Dent to leave Earth minutes before it is demolished by Vogons.

ANSWER: Ford Prefect [or Ford Prefect]

[10] May 25 is the birthday of this British author, who apparently came up with the idea for *The Hitchhiker’s Guide to the Galaxy* while lying drunk in a field in Austria.

ANSWER: Douglas Adams

19. Answer the following about polymerization, for 10 points each:

[10] Controlled polymerization can be dangerous because the reactions often have this property, causing them to evolve heat to the surroundings.

ANSWER: exothermic [prompt on a negative change in enthalpy]

[10] Condensation polymerizations work by forming covalent bonds and eliminating this compound. This compound is added to break apart a compound in hydrolysis.

ANSWER: water [or H₂O]

[10] These compounds form as intermediates during addition polymerizations. These diamagnetic compounds form when halogens or ethers homo-lyze under ultraviolet light.

ANSWER: free radicals

20. After this character's death, a manager's boy points out, "he dead." For 10 points each:

[10] Name this ivory-crazy tradesman from *Heart of Darkness* whom Marlow unsuccessfully fetches. He dies uttering, "The horror! The horror!"

ANSWER: Mr. **Kurtz**

[10] This Polish-British author wrote *Heart of Darkness*.

ANSWER: Joseph **Conrad** [or Jozef Teodor **Konrad**]

[10] Marlow makes the trip up the Congo with the help of around twenty people that Conrad refers to with this word, because of the long poles that they carry. These sailors are obsessed with ivory too.

ANSWER: the "**pilgrims**"