

Don't Underestimate Our Set (DUOS) Packet 1

Head Editors: Sinecio Morales, Arya Singh

Edited by: Justin Abel, Alexander Crowell, Rohan Ganeshan, Kaushik Gollamudi, Rohan Kher, Sinecio Morales, Arya Singh, Shiva Tegulla, Charahc Young

Written by: Aatreya Bhattacharyya, Samuel Go, Vishnuu Gopi, James Healy, Zainab Memon, Shardul Parthasarathy, Anirudh Prasanna, Jason Wang, Allie Yang

1. **The "Memorial Day incident" occurred when workers in this industry were killed in Chicago while striking for the SWOC labor union. A company in this non-banking industry was founded by Charles Schwab in its namesake town of Bethlehem. Hugh O'Donnell advocated for workers in this industry during an event in which Robert Pattison sent in the National Guard. The lover of Emma Goldman, Alexander (*) Berkman, tried to stab an official in this industry. A company in this industry became the first billion dollar company in history after it was bought by J.P. Morgan. Henry Clay Frick called in the National Guard to put down the Homestead Strike in this industry, which was centered in Pittsburgh in the 19th century. For 10 points, name this industry that included a company that grew the wealth of Andrew Carnegie.**

ANSWER: **steel** industry <Kher - American History>

2. **A link between this pathway and the urea cycle creates a separate "bi-cycle" called the aspartate-argininosuccinate shunt. Anaplerotic reactions replenish key intermediates synthesized in this pathway, such as α -ketoglutarate ["alpha keto-glue-tar-ate"] and succinyl-coA. In this pathway, two reactions which successively add then remove a water molecule are catalyzed by aconitase. The first step of this pathway is an Aldol condensation which combines oxaloacetate with water and (*) acetyl-coA synthesized in a previous pathway. The net products of this reaction include one FADH₂ and three NADH molecules. The site of this metabolic pathway is the mitochondrial matrix. For 10 points, name this part of cellular respiration that occurs after glycolysis and before the electron transport chain.**

ANSWER: **Krebs cycle** [or **citric acid cycle** or **TCA cycle** or **tricarboxylic cycle**] <Tegulla - Biology>

3. **One work from this country opens with arpeggios played by two solo harps, which transitions into a brass chorale that introduces the theme [read slowly] "B flat, E flat, D, B flat" to depict the title "High Castle." The second movement of that work uses themes from the Italian song "La Montanona" and depicts a tribe of warrior women in its movement "Sarka." Anton Seidl famously conducted an E minor symphony from this country that modulates to C sharp minor from D flat major in its *Largo* second movement, which contains a wistful solo for the (*) English horn that quotes the melody from the spiritual "Goin' Home." A collection of nationalist tone poems from this country includes one depicting the title river, "Die Moldau." *Ma Vlast* and the "New World" Symphony are by composers from, for 10 points, what home country of Bedrich Smetana and Antonin Dvorak?**

ANSWER: **Czech Republic** [accept **Czechoslovakia**] <Crowell - Auditory Fine Arts>

4. **One of this thinker's paradoxes was expanded upon by the introduction of a rule-based mathematical operation by Saul Kripke called the "quus" ["koos"] function; that is this thinker's rule-following paradox. One early work by this thinker espoused a version of logical atomism that differed from Bertrand Russell's. That same work by this thinker explains the ambiguity of "seeing as" using the example of the duck-rabbit illusion. This thinker argued that (*) "private languages" are incoherent, a claim reinforced by a thought experiment by this philosopher that imagines that every person is given a box which, regardless of its actual contents, is assumed to be a beetle. For 10 points, name this Austrian-British analytic philosopher who proposed various language games in *Philosophical Investigations* and authored *Tractatus-Logico-Philosophicus*.**

ANSWER: Ludwig **Wittgenstein** <Tegulla - Philosophy>

5. **A ruler with this name authorized the forced migration and killing of about a million Muslims in the Circassian Genocide. The death of another ruler with this name led to a revolt of the Unions of Salvation and Welfare as well as the Northern and Southern Societies. After losing the Battle of Friedland, a ruler with this name became the non-French signatory of the Treaty of Tilsit. A ruler with this name created local assemblies named (*) zemstvos in an attempt to extend self-government. The first Russian tsar who fought Napoleon, and the name of a ruler who was killed by a bomb attack organized by the People's Will, both shared this name. For 10 points, give this name of the Russian tsar who freed the serfs.**

ANSWER: **Alexander** [accept **Alexander I** or **Alexander II**] <Prasanna - European History>

6. In a novel by this author, one character ingests roses and perfumes to immerse himself with the scent of his beloved, but vomits instead. In another novel by this author, a plague of insomnia is started by a dirt-eating orphan, which causes characters to forget their lives. A character created by this author dies while chasing his pet parrot up a mango tree following the suicide of Jeremiah de Saint-Amour. In a novel by this author, ants consume a character who, as a result of incest, is born with a (*) pig's tail. In another novel by this author, a yellow flag above a riverboat allows Florentina and Fermina to pursue a relationship. Jose Arcadio and Ursula appear in a novel by this author that chronicles the Buendia family's residency in the town of Macondo. For 10 points, name this Colombian author of *Love in the Time of Cholera* and *One Hundred Years of Solitude*.

ANSWER: Gabriel Garcia Marquez <Ganeshan - World Literature>

7. During one dispute, this figure jumped off a cliff to retrieve a ring in order to prove his parentage, and received a crown from a goddess as a result. This figure's son was dragged to death by his horses after this figure's second wife failed to seduce that son. During a failed trip to the Underworld, this hero was rescued from the Chair of Forgetfulness by Heracles and left his friend, Pirithous, behind. This figure slew such characters as Sinis, who tied people to trees, and a bandit who kicked people into a sea monster named (*) Sciron. Aegeus killed himself by jumping into the sea after this figure forgot to change his ship's flags. Before performing his most famous feat, this hero was given a magic ball of string by the princess Ariadne. For 10 points, name this hero who slayed the Minotaur.

ANSWER: Theseus <Gollamudi - Mythology>

8. A substance used in this technique's matrix is made by reacting TEMED ["teh-med"] with a radical initiator such as ammonium persulfate. The results of this technique are covered with a sheet of nitrocellulose before being visualized via a Southern Blot. The TAE buffer often used in this technique consists of acetic acid, EDTA, and Tris. Uneven heating in this technique causes "smiling" to occur. One variety of this technique which uses sodium lauryl sulfate is (*) PAGE. Ladders are used as markers in this technique, in which combs are inserted into matrices of agarose or polyacrylamide to form wells. For 10 points, identify this technique used for separating and analyzing macromolecules by applying an electric field to them.

ANSWER: gel electrophoresis [accept SDS-PAGE until "EDTA"] <Gollamudi - Chemistry>

9. It's not Norway, but the introduction of Sami reindeer to an island owned by this country damaged its entire flora and later was home to a whaling station at Grytviken ["grit-vye-kehr"]. An island owned by this country, the world's smallest inhabited colony, was subject to a 2004 controversy that convicted six of its males with underage sexual assault. This country controls the most remote island in the world, Tristan da Cunha ["day coon-hah"]. Sheep farming is mainly practiced near Port Stanley on an island controlled by this country, home to the territories of (*) South Georgia and Ascension Island. A Caribbean territory controlled by this country is a controversial offshore financial haven due to its negligible corporate tax. It currently controls the Falkland Islands and the aforementioned Cayman islands. For 10 points, name this European country whose territories are ruled by its head of state, Queen Elizabeth II.

ANSWER: The United Kingdom of Great Britain and Northern Ireland [do NOT accept or prompt on England, accept EITHER underlined portion] <Ganeshan - Geography>

10. A character in this novel is disturbed by the statuette of a figurine who holds coins in its mouth and whose base reads "At Yo' Service." Another character in this novel named Sixo pursues an affair with a "Thirty-mile woman" and later is tortured and burnt to death by Schoolteacher. The protagonist of this novel, who possesses a "chokecherry tree" on her back, has sex with a man whose "flakes of rust" on his "tobacco tin" heart fell away. Stamp Paid ferries the protagonist of this novel, who attacks Mr. Bodwin with an ice pick and witnesses the death of (*) Baby Suggs. Denver grows jealous of Paul D in this novel, which takes place in a "spiteful" location "full of a baby's venom." The title character of this novel haunts 124 Bluestone Road. Sethe kills her infant daughter to void her from slavery in, for 10 points, what Toni Morrison novel?

ANSWER: Beloved <Ganeshan - American Literature>

11. **Infrared reflectography shows that a work by this artist mentions the twelve privileges of Mary described by Savonarola on twelve ribbons. A different painting by this artist featured at the Uffizi utilized *tempera* and portrayed the title character flanked by six women; that work is the *Madonna of the Pomegranate*. This artist referenced the Book of Revelation with a Greek inscription in his only signed work, (*) *The Mystical Nativity*. This artist painted a figure wearing a red robe and a sheath at the far left of a painting set in an orange grove. Zephyrus and Chloris appear in both that painting and another by this artist in which the titular nude stands on a seashell that is being blown to shore. For 10 points, name this Italian Renaissance painter of *La Primavera* and *The Birth of Venus*.**

ANSWER: Sandro **Botticelli** [or Alessandro di Mariano di Vanni **Filipepi**] <Prasanna - Visual Fine Arts>

12. **It's not magnetic moment, but Feynman diagram one-loops explain why this quantity's *g-factor* is slightly greater than 2. This quantity's quantum mechanical operator equals \hbar over two multiplied by components of the three Pauli matrices. The quantization of this quantity was proven following the observation of silver atoms accumulating at discrete points on a detector screen in the (*) Stern-Gerlach experiment. On configuration diagrams, an up or down arrow represents possible values of this quantity. Two electrons must have opposite values for this quantity in order for them to occupy the same orbital. Bosons have integer values for this quantity. For 10 points, name this quantity, the intrinsic angular momentum of a particle.**

ANSWER: **spin** [accept **intrinsic angular momentum**; do NOT accept or prompt on "angular momentum"] <Tegulla - Physics>

13. **An author who wrote in this language asked "what have poets, in any case, to do with sin" in a poem that declares "for one moment of peace, I would give the peace of the tomb." An author who wrote in this language that stated "Can you describe this?" in the section "Instead of a Preface" was one of the leading poets of the Acmeist school. The protagonist of a poem in this language climbs onto a marble lion in the city square to survive a sudden flood while he is chased by the title (*) statue. The poems "Requiem" and "Poem Without a Hero" were authored by a poet in this language. A verse novel in this language describes the story of a "superfluous man" who dances at a name day celebration and eventually kills Lensky in a duel. "The Bronze Horseman" and *Eugene Onegin* were written in, for 10 points, what language used by Anna Akhmatova ["akh-maht-oh-vah"] and Alexander Pushkin ["poosh-keen"]?**

ANSWER: **Russian** <Memon - European Literature>

14. **This company is the subject of a namesake "conflict prevention" theory formulated by Thomas Friedman in his book *The Lexus and The Olive Tree*. Sociologist George Ritzer coined the term for a phenomenon named for this company which leads to cultural homogeneity. Director Morgan Spurlock filmed his 30-day journey of buying food solely from this company in his 2004 documentary titled (*) "SuperSize Me". Stella Liebeck sued this company for burns she obtained due to spilling allegedly overheated coffee bought from this company on her lap. On September 8th of 2020, this food company introduced a Travis Scott-themed meal, which was essentially bacon added to a Quarter Pounder meal. For 10 points, name this fast-food chain known for its slogan "I'm lovin' it!"**

ANSWER: **McDonald's** <Tegulla - General Knowledge>

15. **The product of two, *i*, and this number appears in the denominator of Cauchy's ["KOW-shee"] integral formula. The square root of twice this number appears in the denominator for the function of the Gaussian distribution. Euler solved the Basel problem by stating that the sum of reciprocals of all of the squared natural numbers equals this number (*) squared divided by six. The graph of the tangent function has x-intercepts at integer multiples of this number. According to Euler's identity, e to the power of this number times *i* equals -1. Two times this number, or tau, is equal to the number of radians in a circle. For 10 points, name this transcendental number defined as the ratio between circumference and diameter.**

ANSWER: **pi** [or **π**] <Tegulla - Other Science>

16. During this war, soldiers fighting for the 12th Battalion published a newspaper called *The Wipers Times*. An outbreak of a disease prominent in this war, which some theorists claimed was caused by the poisoning of aspirin, occurred at Fort Riley, Kansas. A disease was named for the country of King Alfonso XIII after countries fighting this war (*) censored information about its deaths. Unofficial ceasefires during this war exemplified soldiers' "live and let live" attitude during the "Christmas Truce." A gangrene-causing disease called a certain structure's "foot" was common in this war, whose last year saw the beginning of a worldwide pandemic caused by the H1N1 virus. The Spanish flu began near the conclusion of, for 10 points, what war which saw many diseases spread among soldiers because of "trench warfare?"

ANSWER: World War I [or the First World War, or the Great War] <Kher - Ancient/Other History>

17. During this event, it is tradition to share the meat in three equal parts with family, friends, and poor people. There are three different types of this event; the most common being the Tamattu' form, in which participants shave or trim their hair. Another ritual of this event is running between two mountains to mimic Hagar's search for water for her thirsty son, Ishmael. Participants of this event dress in two sheets of unstitched white cloth, called (*) ihram garments, to enter a pure, sacred state. All members of a certain religion must perform this ritual at least once in their life if they are capable of it. Important ceremonies in this religion include the stoning of the devil and circling the Kaaba counterclockwise seven times. For 10 points, name this pillar of Islam that mandates Muslims to make a pilgrimage to Mecca.

ANSWER: haji [or hadj, hadji, haj; do NOT accept or prompt on hijrah] <Memon - Religion>

18. Lorenzo Tio inspired a work by this composer that inverts the traditional pitches of the clarinet and trombone to produce a so-called "mike tone." Paul Gonsalves revitalized this musician's career with a twenty-seven bar saxophone solo at the 1956 Newport Jazz Festival in a performance of *Diminuendo and Crescendo in Blue*. "Work Song" and "Come Sunday" appear in the first movement of a tone poem by this musician depicting African-American history entitled (*) *Black, Brown and Beige*.

This musician often collaborated with Billy Strayhorn, and Cab Calloway's band replaced his position at the Cotton Club. This musician behind the standard "Mood Indigo" wrote a work that details the "quickest way" to the Sugar Hill in Harlem. For 10 points, name this pianist who wrote the standards "It Don't Mean a Thing (if it Ain't Got that Swing)" and "Take the 'A' Train."

ANSWER: Duke Ellington [or Edward Kennedy Ellington] <Crowell - Other Fine Arts>

19. In a novel, one of these people convinces Wamba to create a disguise for his father while another is rescued by "The Black Sluggard." Saturn intervenes following contrasting prayers to Diana and Venus in a story titled for these people that served as the basis for a play partially authored by John Fletcher. One of these people receives a deer, a boar, and a fox in exchange for three kisses and accepts a magic girdle. While imprisoned by Theseus, the two central characters in a story titled for these people, Arcite and Palamon, gather 100 men to fight for the love of (*) Emily. One of these people seeks to defeat "the Disinherited One" or Desdichado and defends the Jewish woman Rebecca from Brian de Bois-Gilbert. The first tale in the Canterbury Tales is narrated by one of these people. Ivanhoe is one of, for 10 points, what chivalrous medieval warriors who include Sir Gawain? ANSWER: knights [accept "The Knight's Tale," "Sir Gawain and the Green Knight"] <Ganeshan - British Literature>

20. Accounts of living among these people were written by Frederick Edward Maning. When these people refused to pay small taxes to Henry Menzies, the bloodless "Dog Tax War" began. These people were responsible for the death and slaughtering of 60 sailors in the Boyd Massacre. After chopping a gift given to James Busby, these people fought the (*) Flagstaff War under their leader Hone Heke. William Hobson signed a document with these people handing over control of their home country. These people fought bloody inner conflicts dubbed the Musket Wars. The Haka dance is performed by these people, who are designated parliamentary seats in Wellington. For 10 points, name this indigenous ethnic group of New Zealand.

ANSWER: Māori <Ganeshan - World History>