

## Don't Underestimate Our Set (DUOS) Packet 3

Head Editors: Sinecio Morales, Aarya Singh

Edited by: Justin Abel, Alexander Crowell, Rohan Ganeshan, Kaushik Gollamudi, Rohan Kher, Sinecio Morales, Aarya 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. **Beta-scission may occur in the production of these compounds when using molecules like AIBN or benzoyl peroxide. The distribution of these molecules' molecular masses is related to their dispersity index, and their stereochemistry classifies them into isotactic, syndiotactic, and atactic classes. The synthesis of these compounds is described as "living" if the growth of it does not necessarily (\*) terminate.** In general, the synthesis of these compounds proceeds through either "chain-growth" or "step-growth" mechanisms. Synthetic plastics, such as PVC and polystyrene, are primarily composed of these long-branching compounds. For 10 points, name these compounds consisting of repeated subunits called monomers.

ANSWER: **polymers** [accept degree of **polymerization**] <Tegulla - Chemistry>

2. **After seeing a corpse whose "face had scored a trench a foot deep," the narrator of a work by this author claims, "Never tell me, by the way, that the dead look peaceful." A work by this author claims the death of the Cleft Chin taxi driver lacked "depth" and places Jack the Ripper in a class by himself. The narrator of a work by this author claims that he is only an "absurd puppet" and believes that "when the white man turns tyrant, it is his own freedom that he destroys." "Meaningless words" and "dying metaphors" are criticized in an essay by this author of (\*) "The Decline of English Murder." This author translated part of the book of *Ecclesiastes* into "modern English of the worst sort" in his essay "Politics and the English Language." To "avoid looking a fool," the narrator of an essay by this author shoots an elephant while stationed in Burma. For 10 points, name this essayist and author of *1984*.**

ANSWER: George **Orwell** [Accept Eric Arthur **Blair**] <Ganeshan - British Literature>

3. **In 1903, rugby player Alfred Warbick was killed by one of these features named for its surrounding "Black Waters." The largest one of these features found in the Norris basin is next to another location home to them named the West Thumb. These features, found in a field near the Andes mountains named El Tatio, name a valley found near the terminus of the Kamchatka peninsula. Two of these features named Steamboat and Firehole are found in a park home to one of them known for a (\*) predictable pattern.** The Strokkur ["strow-koor"] on the island of Iceland is one of these features, as is one that performs an action every 76 minutes. One half of these fumaroles are found in a Western Wyoming park home to one of them named Old Faithful. For 10 points, name these erupting hydrothermal vents which are a trademark of Yellowstone National Park.

ANSWER: **geysers** [prompt on hot **springs**] <Ganeshan - Geography>

4. **This event's leader proclaimed "Liberty and Equality" in the Declaration of Camp Turel. Andre Rigaud fought the War of Knives against the leader of this event, which was planned by a group that sacrificed a black pig and drank its blood with the priest Dutty Boukman. In a history by C.L.R. James, he described the instigators of this event as the title (\*) "Black Jacobins."** Yellow fever devastated the army of this event's losing country, who sold the Louisiana Territory to America after it occurred. After this conflict, Jean-Jacques Dessalines became emperor of the colony where it occurred by an 1805 constitution. For 10 points, name this revolt led by Toussaint L'Ouverture of slaves in a French colony now governed from Port-au-Prince.

ANSWER: **Haitian Revolution** <Kher - World History>

5. **Exodus 22:1 explains that a person must pay five oxen or four sheep after they are found to have performed this action. In Matthew 6, Jesus tells the multitude to lay up "treasures in heaven, where neither moth nor rust doth corrupt," and people can't perform this action. According to Matthew and Mark, the two people who were crucified with Jesus were known for performing this action. When Jesus entered the temple courts, he mentioned that the temple of God had been made into a (\*) "den" of people who perform this crime.** Exodus 22:7 states that a person who performs this crime must pay back double what they gained from it. The 8th commandment states that "thou shalt not" perform, for 10 points, what crime of taking someone's possession without permission?

ANSWER: **stealing** [or **robbery**; accept word forms and synonyms] <Wang - Religion>

6. One character in a play by this author states that “[he] would love to help humanity on a Warner Brothers salary.” A character created by this author states, “I don’t have a thing in the ground” while frantically planting seeds in his front yard. In one of this man’s plays, a character shrieks “I have given you my soul, leave me my name!” Anne Deever reads a letter that eventually causes Larry to commit suicide in a play by this author where a man is thrown into prison for selling defective (\*) airplane parts. After demanding “more weight,” Giles Corey is crushed by rocks in one play by this man. Before a car crash causes the title event of one play by this author, a hallucination leads Willy Loman to believe his brother agrees with a plan to commit suicide for life insurance money. For 10 points, name this American playwright of *All My Sons*, *The Crucible*, and *Death of a Salesman*.

ANSWER: Arthur Miller <Morales - American Literature>

7. Herodotus described how the wife of one holder of this position once advised her father to stay virtuous when bribed and later discovered news of an incoming invasion by clearing wax from a tablet. Gorgo was the wife of a holder of this position who, upon being asked to surrender, said "molon labe." Holders of this position governed with the help of a council of people over the age of sixty called the (\*) gerousia as well as judges called ephors. Members of the Agiad and Eurypontid dynasties both jointly held this position. A holder of this position died in a last stand with 300 of his soldiers against Xerxes I's army. For 10 points, give this position held by Leonidas and other rulers of a militaristic Greek city-state.

ANSWER: king of Sparta [accept equivalents] <Kher - Ancient/Other History>

8. Misako Koyama’s observations of this object led to the formulation of Sporer’s law based on her “butterfly diagrams.” Projects, such as the Homestake experiment, collected particles from this object to prove the existence of neutrino oscillation. The objective of NASA’s Parker probe is to study a region of this object, whose surface-based field loop lines were discovered earlier by the SOHO spacecraft. When this object is barely visible, it appears as a collection of (\*) bright dots called Baily’s beads. The outermost layer of this celestial body is an extensive zone of plasma called the corona, which can be seen even behind the moon during an eclipse. For 10 points, name this star around which all planets in the Solar System orbit.

ANSWER: the Sun <Tegulla - Other Science>

9. A sarabande, galliard, and bransle are incorporated into a ballet for twelve dancers by this composer that follows *Apollon Musagete* and *Orpheus* in his “Greek Trilogy.” Another ballet by this composer uses themes likely written by Pergolesi and was rearranged into his *Suite Italienne*. This composer of *Agon* superimposed C and F-sharp major triads in a ballet that opens at the Shrovetide Fair. This composer’s ballet (\*) *Pulcinella* signified the beginning of his Neoclassical phase. During his Serial period, this composer produced a ballet chronicling Prince Ivan’s encounter with thirteen princesses who are under the spell of Koschei the Immortal. A section titled “The Adoration of the Earth” precedes the “Sacrificial Dance” that claims the life of a young virgin in another ballet by this composer. For 10 points, name this composer of *Petrushka*, *The Firebird* and *The Rite of Spring*.

ANSWER: Igor Stravinsky <Crowell - Other Fine Arts>

10. Changes in this quantity are dependent on fluctuating marginal benefits under Lindahl equilibrium. The magnitude of this quantity is inversely proportional to the elasticity of price based on current demand, according to a rule devised by Frank Ramsey. Harberger’s triangle can visualize the effects of this quantity as a “wedge” driven between payment by consumers and profit for sellers, resulting in (\*) deadweight loss. The point at which further increasing this quantity decreases revenue is represented by the maximum of a roughly parabolic Laffer curve. A progressive type of this quantity steadily increases with wealth, as is exemplified by America’s namesake “brackets” for this quantity. Purchasing non-essential goods often involves paying the luxury form of, for 10 points, what concept which involves government-levied finances that are collected by the IRS?

ANSWER: tax rate [accept word forms and specific types of tax] <Tegulla - Social Science>

11. This politician was identified as a member of the "Atari" group of his political party due to the cause he supports in a film presenting "the slideshow." This politician's father joined Estes Kefauver and Lyndon Johnson in rejecting the Southern Manifesto. While serving as her state's Secretary of State, Katherine Harris helped this politician's opponent defeat him in an election. This politician's documentary (\*) *An Inconvenient Truth* demonstrates his climate change activism. Voters accidentally chose Pat Buchanan instead of this man on the "butterfly ballots" in an election decided by this man's defeat in a Supreme Court case that ended recounts in Florida. For 10 points, name this Vice President under Bill Clinton who lost the presidential election of 2000 to George W. Bush.

ANSWER: Al Gore [or Albert Gore Jr.] <Kher - American History>

12. *Description acceptable.* This sentiment gained popularity following the rise in Guillain-Barré syndrome in 1976. A rise in this sentiment among Americans occurred following the Gardasil controversy. Historically, people have justified this sentiment by citing the usage of a preservative called thimerosal and aluminum-salt-based adjuvants. A false 1998 study conducted by (\*) Andrew Wakefield supporting this movement supposedly found a link between a certain substance and an increased incidence of autism among children. Recent right-wing conspiracies that support this sentiment express doubt towards substances produced by Pfizer and Moderna. For 10 points, name this sentiment held by those who are against immunization.

ANSWER: anti-vaccination [accept anti-vaxxer; accept descriptions like being against vaccines or vaccines being harmful] <Tegulla - General Knowledge>

13. This organism was shown to be able to adapt to a DM25 medium by gaining the ability to metabolize citrate. Gene exchange via conjugation was first discovered through work on this organism done by Edward Tatum and Joshua Lederberg. One experiment subjected this organism to solutions of ammonia chloride containing either the nitrogen-14 or nitrogen-15 isotope. In order to prove that the carrier of genetic material is DNA, this organism was infected with (\*) T2 bacteriophages in the Hershey-Chase experiment. Jacob and Monod discovered the existence of the *lac* operon in this organism with serotype O157:H7 ["O-1-5-7-H-7"] that produces Shiga toxin. For 10 points, name this Gram-negative bacteria that can cause food poisoning.

ANSWER: Escherichia coli <Morales - Biology>

14. The artist of this painting enlisted the aid of Alexandre Correard to construct a model of its central subject. Prior to its execution, the artist of this painting met with Henri Savigny, who modelled along with Eugene Delacroix in it. Preparatory sketches for this painting include one of a disembodied arm on a pile of feet. The artist's abolitionist sympathies possibly explain the placement of a black man at the top of a (\*) human pyramid in this painting. That man can be seen standing atop a barrel and waving a red and white cloth to attract the attention of the *HMS Argus*. Corpses litter the bottom of this painting, strewn across dislodged wooden beams amid turbulent water. For 10 points, name this Theodore Gericault painting that depicts the remnants of the crew of the title shipwrecked vessel.

ANSWER: *The Raft of the Medusa* <Crowell - Visual Fine Arts>

15. An essay at the beginning of this collection states that to "read one line of [this work's author] is to forget all the troubles in the world." This collection ends with the speaker imagining a "flock of homesick cranes" as his life comes towards an end. A section of this collection describes a place "on the seashore of endless worlds" where children "who do not know how to cast nets" convene. One poem in this collection describes a place as "where knowledge is free" and "where the mind is without fear" and ends with the remark (\*) "let my country awake!" The introduction of this collection was authored by William Butler Yeats. The first poem of this collection begins "Thou hast made me endless, such is thy pleasure" and was originally written in Bengali. For 10 points, name this collection written by Rabindranath ["ruh-bin-druh-noth"] Tagore also known as *Song Offerings*.

ANSWER: Gitanjali [accept Song Offerings before mention] <Bhattacharyya - World Literature>

16. This school of thought decides whether an entity is to “obtain” or “subsist” based on whether its composition is corporeal. Members of this school of thought argue that phases of the universe are separated by destructive “conflagration” events called *ekpýrōsis* [“ek-pi-roh-sys”]. According to this school of thought, the only controllable phenomena are those of our own volition, or *prohairesis*. The philosopher and historian Arrian compiled the (\*) *Enchiridion*, a “handbook” of commentaries on this school of thought by the slave Epictetus. A collection of journals titled *Meditations* was written by another member of this school, founded by Zeno of Citium. Marcus Aurelius belonged to, for 10 points, what Greek school of thought that emphasizes the necessity of strict adherence to virtues and detachment from worldly emotions?

ANSWER: Stoicism <Tegulla - Philosophy>

17. Movements titled “Le Verbe” and “Desseins eternels” were part of a piece written for this instrument by Oliver Messiaen titled *La Nativité du seigneur*. Aristide Cavallé-Coll created many of these instruments for renowned players of it, who included Louis Vierne and Marcel Dupre. Charles-Marie Widor wrote ten symphonies for this instrument, which plays a grand C major opening in the “Maestoso” finale of a piece titled for it. Legendarily, one composer walked 250 miles to watch the Abendmusik concerts organized by a virtuoso of this instrument, (\*) Dietrich Buxtehude. Camille Saint-Saens’s C minor third symphony is nicknamed for its prominent usage of these instruments. This instrument plays a mordent A to open Bach’s *Toccatà and Fugue in D minor*. For 10 points, name this keyboard instrument that utilizes enormous pipes to create sound.

ANSWER: pipe organ <Ganeshan - Auditory Fine Arts>

18. During this conflict, the CNT and POUM factions fought in a city's streets in the May Days. A photograph of this conflict included one showing a firing squad shooting the Sacred Heart of Jesus. Juan Negrin controversially financed this war by transferring gold reserves to Moscow. A probably-faked photograph taken by Robert Capa shows a "Falling Soldier" in this war. During this war, both Jose Sanjurjo and the coiner of the term (\*) "fifth column," Emilio Mola, died in a plane crash. The U.S. sent the Abraham Lincoln Brigade to aid one side in this conflict, during which the German Condor Legion bombed Guernica. For 10 points, name this war in which Republican forces were defeated by Nationalists under the leadership of Francisco Franco.

ANSWER: Spanish Civil War <Crowell - European History>

19. In a novel, this character watches the narrator furiously lamenting his Snoopy poster while copying lines from *Crime and Punishment*. This character tears off the suits of his love interest’s sister and has sex with her while becoming part of a revolution in Ataguitania. This character meets a man who builds sculptures out of books on a way to meet an expert in Cimmerian culture named Professor Uzzi-Tuzii [“ooze-ee tooze-ee”]. This character pursues the translator Ernes Marana and is additionally shown part of (\*) Silas Flannery’s diary. This character serves as the protagonist of a novel which contains fragments of books such as *Outside the Town of Malbork*. At a bookstore, this character meets his primary love interest, Ludmilla [“lood-meel-ah”], and attempts to read the title novel with her. For 10 points, name this protagonist of *If on a winter’s night a traveler*, which is written in second person.

ANSWER: you [accept The Reader of *If on a winter’s night a traveler*, accept The Protagonist of *If on a winter’s night a traveler* until mentioned and prompt on partial answer; accept any description of themselves such as myself or me] <Ganeshan - European Literature>

20. Values denoted with the subscripts p-c and p-a represent this quantity’s negative and positive maxima for the curve plotted on a cyclic voltammogram. Multiplying this quantity by surface area yields the magnetic dipole moment. Joule’s first law states that the square of this quantity times resistance is proportional to the heat equivalent of power. Characteristics of this quantity are related to the magnetic field induced by it in the equation for the (\*) Biot-Savart [“BEE-oh sah-VART”] law. The amount of this quantity going into a junction is the same as the amount going out, according to Kirchoff’s junction rule. According to Ohm’s law, this quantity equals voltage divided by resistance. For 10 points, name this quantity which measures the flow of charge.

ANSWER: current [accept I, current density] <Tegulla - Physics>