COLLABORATIVE ACADEMIC SPRING TOURNAMENT 2019

Edited by Alston Boyd, Eric Mukherjee, Jacob O'Rourke, Jakob Myers, Kai Smith, and Olivia Lamberti. Written by Akshay Govindan, Arjun Nageswaran, Deepak Moparthi, Eric Mukherjee, Geoffrey Chen, Govind Prabhakar, Jacob Augelli, Jakob Myers, Moses Schindler, Noah Sheidlower, Olivia Lamberti, Raj Paul, Vishwa Shanmugam, and William Golden.

PACKET 5 TOSSUPS

- 1. In a play by this author, Moses and Homer are among the refugees fleeing a giant wall of ice who visit the central family. In that play by this author, the wheel and the alphabet are invented by George Antrobus. In a different play by this author, one character asks "Do any human beings ever realize life while they live it?". He wrote a play in which a girl tries to relive her (*) 12th birthday after she marries George Gibbs. Emily Webb returns to her cemetery at the end of that play by this author, which is narrated by the Stage Manager and is set in Grover's Corners. For 10 points, name this American playwright of *The Skin of Our Teeth* and *Our Town*. ANSWER: Thornton Wilder [or Thornton Niven Wilder] <NS>
- 2. Christian Marclay created a 24-hour installation that mainly showed images of these objects. A painting in the Naive style by Marc Chagall depicts Jesus Christ with the head of one of these objects. In a different painting, a black one of these objects and a golden candlestick are depicted in front of a mirror. That object sits on a mantelpiece above a (*) locomotive in a painting by Rene Magritte. In a Salvador Dalí painting of a Catalonian seascape, a deformed one of these objects is draped over a tree branch. For 10 points, identify these objects, three of which appear to be melting in *The Persistence of Memory*.

 ANSWER: clocks [accept watches or timepieces] < JA>
- 3. The children of nobles in this empire went to schools called *calmecacs*, as documented in a book by Bernardino de Sahagún named for Florence. This empire was made up of three city-states, or *altepetl* ("all-TEH-pih-til"). The words *avocado* and *chocolate* come from the (*) Nahuatl ("nah-WAHT-ull") language spoken by people in this empire. It was founded near Lake Texcoco after a priest witnessed an eagle eating a snake on a cactus. Montezuma II led this empire until he was overthrown in 1520 by Hernan Cortes. For 10 points, name this empire whose capital, Tenochtitlan ("teh-NOTCH-tit-LAHN"), was located in modern-day Mexico City. ANSWER: Aztec Empire <WG>
- 4. In the first draft of this poem, "my friend" may refer to this poem's original dedicatee, Jessie Pope. The speaker of this poem sees men "deaf even to the hoots of tired, outstripped Five-Nines" and hears "gargling" as "bitter as the cud of vile, incurable sores." An "ecstasy of fumbling" for a (*) gas mask occurs in this poem, which describes people "bent double, like old beggars under sacks." In this poem, a man plunges at the speaker, "guttering, choking, drowning," before the speaker notes one would not say the title phrase "to children ardent for some desperate glory." For 10 points, name this poem set during World War I and written by Wilfred Owen.

 ANSWER: "Dulce et Decorum Est" <NS>
- 5. The origin of the mythical Kayanian race is described in this religion's creation text, which is known as the Bundahishn. The first prophet of this religion experienced a vision of Vohu Manah, one of six "beneficent immortals" called *amesha spenta*. One heresy in this religion introduces a "first principle" named Zurvan. The (*) Avesta is the primary text of this religion, whose adherents worship in fire temples and believe in the eternal conflict between Ahriman and Ahura Mazda. For 10 points, name this dualistic Persian religion founded by a namesake prophet also known as Zarathustra.

ANSWER: Zoroastrianism <JA>

6. Samples in this technique are often mixed in a glycerol ("GLIH-sir-all") buffer to make them settle. Tris-Borate-EDTA and Tris-Acetate-EDTA are common buffers for this technique, which is typically run from "black to red." This technique is conducted before the transfer step of a Southern blot. Molecular weight usually determines the rate of (*) migration in this technique. A highly carcinogenic dye called ethidium bromide ("uh-THID-ee-um BROH-myde") is used to visualize e, which relies on an agarose matrix. For ten points, name this technique which separates DNA using an electric field.

ANSWER: gel electrophoresis [accept pulsed-field gel electrophoresis] <AG>

- 7. In one work, this philosopher noted that "there is so much graciousness in cunning" before noting that "every profound spirit needs a mask." This man, whose sister Elisabeth Forster published his unfinished writings, identified amor fati as the "formula for greatness in a human being" by which one can "say yes to life." That work begins, "Suppose truth is a (*) woman, what then?" Before defining his project as a "revaluation of all values," this man contrasted the Apollonian ("APP-pull-OH-nee-yun") and the Dionysian ("DIE-oh-NEE-see-yun") in *The Birth of Tragedy*. He described Christianity as "slave morality" in *Beyond Good and Evil*. For 10 points, name this philosopher who declared that "God is dead."

 ANSWER: Friedrich Nietzsche <GC>
- 8. After thirty years of reign, holders of this position ran around a course four times in the Sed Festival. A holder of this title is shown about to decapitate his opponent with a mace in the Narmer Palette. Another holder of this position collected precious metals and spices on an expedition to Punt, which is located south of (*) Nubia. Yet another holder of this title moved the capital to Amarna, where he instituted a monotheistic system of worship around the sun god Aten. A crook and a flail represent holders of this position, who were often buried at the Valley of the Kings. For 10 points, name this position, whose holders include Hatshepsut and King Tut.

 ANSWERS: pharaohs of Egypt [prompt on rulers of Ancient Egypt, kings of Ancient Egypt, or equivalents] <WG>
- 9. Differences in this quantity between two systems can be calculated by sampling each state using the Bennett acceptance ratio. That form of this quantity is equal to negative "k T times the logarithm of the partition function." Surface tension equals the partial derivative of one type of this quantity with respect to area. This quantity is used to classify reactions as (*) spontaneous. Exergonic systems have negative values for this quantity. This quantity measures the maximum amount of work a system can do, and one form of it is equal to H minus TS. For ten points, name this quantity, examples of which are named for Gibbs and Helmholtz. ANSWER: <u>free energy</u> [accept Gibbs <u>free energy</u> and Helmholtz <u>free energy</u>; prompt on <u>energy</u>] <AG>
- 10. Charlotte gives one of these objects to her uptight cousin Arthur in a short story by Henry James. One of these objects appears in the title of a story in which a character is "made drunk with pleasure" at an event hosted by the Minister of Public Instruction. In that story, one of them is most likely left behind in a (*) cab after the protagonist leaves a ball. That character and her husband work for ten years to pay back Madame Forestier after she loaned them one of these objects. In a twist ending, Madame Loisel ("LWAH-zel") discovers one of these objects was worthless. For 10 points, a Guy de Maupassant story is titled for what kind of jewelry?

 ANSWER: necklace [accept "The Necklace", the short story is Henry James' "Paste"] <WG>
- 11. People near this body of water often live in longhouses called *malocas*. This river's basin contains a tract of the land preserved for the Man of the Hole, an isolated native whose territory is threatened by ranchers from Rondonia. The largest cities lying on this river are Belem and (*) Manaus. The largest blackwater river in the world is a tributary of this river called the Rio Negro. Animals found in this river include a pink dolphin and the carnivorous red-bellied piranha. The most biodiverse region in the world is the rainforest surrounding this river. For 10 points, name this longest river in South America.

ANSWER: **Amazon** River <WG>

- 12. A modern instrument used in this country is often played cross-legged, with the scroll resting on the player's feet. An alapa begins a type of music from this country that gradually crescendos and can last over thirty minutes. Traditional music from here features a repetitive drone often played by the stringed tanpura. In its north, musicians play a set of two (*) tabla drums, which often accompany a harmonium. Scales called ragas form the foundation of this country's classical music. In 1968, the Beatles visited this country and were taught by a Hindustani musician. For 10 points, name this country where Ravi Shankar mastered the sitar. ANSWER: India <WG>
- 13. The sulfide of this element is used as an infrared window in optics. Ions of this element are held in place by two cysteine ("SIS-teen") residues and two histidine residues in this element's namesake finger motif. This element is oxidized to its +2 oxidation state at a standard potential of negative 0.76 volts in a Daniell ("DAN-yul") cell, where its oxidation is coupled to the reduction of (*) copper. A coat of this element is added to steel or iron to slow the process of rusting. Brass is formed from this metal and copper. For ten points, name this element with atomic symbol Zn.

ANSWER: <u>zinc</u> [accept <u>Zn</u> before mention] <AG>

14. As a child, this character appeared on a TV show and claimed to want "100 kids" so "no one can say no to being my friend." This character gives laptop batteries to students instead of fulfilling his promise to pay their college tuition. An awkward dinner party leads to a fight between him and his girlfriend (*) Jan. This character has a one-sided relationship with the temp Ryan, and hates the HR rep Toby. Jim and Pam work under this man at the Dunder-Mifflin Paper Company. "That's what she said" is a catchphrase of, for 10 points, what character played by Steve Carell on *The Office*?

ANSWER: Michael Scott [or Michael Gary Scott] <WG>

15. The 1833 ascension of a ruler of this name to the throne provoked the Carlist Wars. Another ruler with this name conspired with Roger Mortimer to depose her husband Edward II and was nicknamed the "She-Wolf of France." A third ruler with this name issued the Alhambra Decrees, expelling (*) Jews from her country, and conquered the Moorish kingdom of Granada, ending the Reconquista ("ray-con-KEY-sta") and leading to the unification of Spain. For 10 points, give this name of a queen from Castile who sponsored Christopher Columbus' voyages with her husband Ferdinand.

ANSWER: <u>Isabella</u> [accept <u>Isabella</u> II of Spain; or <u>Isabella</u> of France; or <u>Isabella</u> I of Castile] <WG>

16. A poem in this language follows a hoopoe ("HOO-pow") who leads the birds of the world across seven valleys to find a mythical bird who appears in China. That poem inspired another poet to write the "Song of the Reed Flute" in this language, the prologue to his *Spiritual Couplets*. A poem in this language contains the line "the (*) Moving Finger writes; and, having writ, moves on." That collection, translated by Edward Fitzgerald, includes poems depicting a man "singing in the Wildness" and the speaker's desire for "A Jug of Wine, a Loaf of Bread, and Thou." For 10 points, name this language used by Attar, Rumi, and Omar Khayyam's ("kye-YAHM's") *Rubaiyat* ("roo-BYE-YAHT") in what is now Iran.

ANSWER: Persian [accept Farsi] <NS>

17. This figure acquired one epithet after killing a giant and turning his flayed skin into a cloak. This figure crushed Enceladus beneath the island of Sicily. In the Trojan War, this deity assumed the form of Deiphobus to goad Hector into a confrontation with Achilles. This goddess killed Ajax the Lesser to avenge the rape of Cassandra, who was torn away from a wooden (*) statue of this goddess known as the Palladium. This daughter of Metis was born in full armor after Zeus' head was split with an axe. For 10 points, identify this goddess of war and wisdom, the namesake of the largest city in Greece.

ANSWER: Athena [accept Pallas before "Palladium"; accept Minerva before "Zeus"] <JA>

- 18. The results of this action are analogized to computer programs in the Curry-Howard correspondence. Appel and Haken used a computer to do this action in their most well known work. The end of this process is often indicated by either an empty square, Halmos symbol, or the letters (*) QED. Intermediate results found during this process are called lemmas. This process can be done by considering the contrapositive, since it has the same truth value as the original statement. For 10 points, name this process that shows a theorem is true.

 ANSWER: proving a theorem [or constructing a proof or other answers involving making proofs; accept proving specific theorems, like the "ABC conjecture" or "4-color map theorem"; prompt on answers about showing some statement is true or correct] <VS>
- 19. A chef from this state, Paul Prudhomme, popularized the turducken. In this state, people have been encouraged to eat a large invasive rodent called the nutria. A sandwich popularized by Sicilian immigrants in this state contains olive salad and is called the muffuletta. This state is the origin of a doughnut covered with (*) powdered sugar called a beignet ("ben-YAY"). This state's Avery Island is the traditional growing site of the peppers that make up Tabasco sauce. Red beans and rice is a popular side dish here which may be served with a po'boy, jambalaya, or gumbo. For 10 points, name this state which prominently features Creole and Cajun cuisine. ANSWER: Louisiana <WG>
- 20. This court case was decided on the same day as *Doe v. Bolton*. Due to the backlash over this case, the Hyde Amendment was passed, restricting federal funds. Harry Blackmun's majority opinion for this case heavily cited the Due Process Clause. (*) Norma McCorvey was the plaintiff in this case, whose central ruling was upheld by *Planned Parenthood v. Casey*. This case established that the right to privacy applied to women seeking to perform a procedure during the first trimester. For 10 points, name this 1972 Supreme Court case that decriminalized abortion.

ANSWER: **Roe** v. Wade <WG>

PACKET 5 BONUSES

- 1. The octet rule and electron counting are used to draw these diagrams, which depict the total charge on a molecule by putting the whole diagram in brackets and putting the charge in a superscript. For 10 points each:
- [10] Name these "dot" diagrams of molecules, named for an American chemist.

ANSWER: <u>Lewis</u> dot structures [or <u>Lewis</u> dot diagrams or <u>Lewis</u> electron dot diagrams]

[10] This phenomenon occurs when there exist multiple Lewis structures for a single molecule, resulting in delocalization of charge. The carbonate ion is a classic example.

ANSWER: resonance

[10] After you've drawn a Lewis structure, you can calculate this value for each atom. This value is equal to number of valence electrons minus nonbonding valence electrons minus half the number of electrons in bonds.

ANSWER: **formal charge** [do NOT accept or prompt on "charge"]

- 2. This monarch faced a rebellion from Yemelyan Pugachev, who assumed the identity of the dead Peter III. For 10 points each:
- [10] Name this Empress of Russia, nicknamed "the Great," who corresponded with many Enlightenment thinkers.

ANSWER: <u>Catherine</u> the Great [or <u>Catherine</u> II; or <u>Yekaterina</u> Velikaya; or <u>Sophie</u> Friederike Auguste von Anhalt-Zerbst]

[10] Pugachev's Rebellion was put down by this Russian general, who fought in over 60 battles and never lost one.

ANSWER: Alexander Suvorov [or Alexander Vasilyevich Suvorov, Count Zimnisky]

[10] Suvorov put down a revolt from the Bar Confederation nobles in this country. Catherine the Great partitioned this country three times, resulting in the end of its commonwealth with Lithuania.

ANSWER: **Poland** [or the **Polish**-Lithuanian Commonwealth] <WG>

- 3. One of this man's works is a vocal work set to verses by James Agee, describing the title city. For 10 points each:
- [10] Name this American composer of *Knoxville: Summer of 1915*. Other works by him include the opera *Vanessa* and *Adagio for Strings*.

ANSWER: Samuel Barber [or Samuel Osborne Barber II]

[10 Barber's Knoxville: Summer of 1915 was commissioned by Serge Koussevitzky, a player of this instrument. This is the largest and lowest pitched string instrument.

ANSWER: double **bass** (accept string **bass**)

[10] Another piece commissioned by Koussevitzky was this man's Turangalila-Symphonie

("too-RON-ga-LEE-la-symphony"). This man was inspired by World War II to write his *Quartet for the End of Time* for clarinet, violin, cello, and piano.

ANSWER: Olivier Messiaen [or Olivier Eugene Prosper Charles Messiaen] <AN>

- 4. Answer the following about progressive rising star Alexandria Ocasio-Cortez, for 10 points each:
- [10] Ocasio-Cortez defeated incumbent Joe Crowley in this state's 14th congressional district. Progressive primary challengers to this state's governor included Zephyr Teachout in 2014 and Cynthia Nixon in 2018.

ANSWER: New York

- [10] After winning in a stunning upset, Ocasio-Cortez travelled with this politician in key primaries to stump for progressive candidates. Like Ocasio-Cortez, this Senator from Vermont considers himself a democratic socialist. ANSWER: Bernie **Sanders** [or Bernard **Sanders**]
- [10] Ocasio-Cortez's endorsement failed to help Abdul El-Sayed's bid to win the Democratic nomination for this position. Gretchen Whitmer and Bill Schuette were the two major candidates for this position in the general election. ANSWER: **governor** of **Michigan** (prompt on **governor**) <AN>

- 5. In the super variety of these devices, ions form double layers in response to a voltage. For ten points each:
- [10] Name these devices, whose parallel plate version consists of two conductors separated by a dielectric

("DI-ee-LEK-trik"). Along with resistors and inductors, they are found in RLC circuits.

ANSWER: capacitors

[10] Capacitors' namesake quantity, capacitance, is measured using an SI unit named for this man. This physicist's namesake law relates magnetic flux and electromotive force and describes the induction he discovered.

ANSWER: Michael Faraday

[10] The dielectrics in capacitors can experience "soakage," where a voltage arises after the device is discharged. Soakage is a general case of this phenomenon, which forms namesake loops on magnetization diagrams.

ANSWER: <u>hysteresis</u> ("his-tuh-REE-sis") <AG>

- 6. The protagonist of a novel from this country renames a farm called Winterhouses to Summerhouses. For 10 points each:
- [10] Identify this country, the setting of a novel in which Bjartur marries Rosa who ultimately dies in childbirth. The author of that novel, *Independent People*, also wrote a novel named for this country's *Bell*.

ANSWER: **Iceland**

[10] The aforementioned author, Halldor Laxness, drew inspiration from and edited these historical Icelandic prose narratives that feature vikings. The *Volsung* is a Norse type of these books.

ANSWER: Icelandic <u>saga</u>s [accept family <u>saga</u>s]

[10] Bernard Marx is banished to Iceland in this author's novel Brave New World.

ANSWER: Aldous **Huxley** <NS>

- 7. This person collaborated with Henry Ford in an attempt to make a rubber substitute. For 10 points each:
- [10] Name this African-American agricultural scientist, who made many different products from peanuts and sweet potatoes.

ANSWER: George Washington Carver

[10] Carver was awarded the Spingarn Medal by this civil rights organization co-founded by W.E.B. DuBois (du-BOYCE).

ANSWER: NAACP [or National Association for the Advancement of Colored People]

[10] Carver spent decades working at this university in Alabama. The first black military aviators in the U.S. Armed Forces, who served during World War II, were trained at this university.

ANSWER: <u>Tuskegee</u> Institute [or <u>Tuskegee</u> University; or the <u>Tuskegee</u> Airmen] <WG>

- 8. This author wrote about the Bliss family, who each invite a different guest to spend the weekend in their country house. For 10 points each:
- [10] Name this author of *Hay Fever*, who wrote about Ruth's death and Elvira's ghost in a play centering on Charles Condomine, titled *Blithe Spirit*.

ANSWER: Noel Coward

[10] Noel Coward took the title of his play *Blithe Spirit* from "To a Skylark," a poem by this British author. His play *Prometheus Unbound* depicts Prometheus reuniting with his love Asia after being freed by Hercules.

ANSWER: Percy Bysshe Shelley

[10] Coward wrote *After the Ball*, which is an adaptation of this playwright's *Lady Windermere's Fan*. This Irishman wrote about Jack Worthing and Algernon Moncrieff adopting the same name in *The Importance of Being Earnest*.

ANSWER: Oscar Wilde [or Oscar Fingal O'Flahertie Wills Wilde] <NS>

- 9. A frequent Coen Brothers collaborator with this profession, Roger Deakins, won an Oscar in 2018 after 14 nominations. For 10 points each:
- [10] Name this job, also known as the director of photography, which is in charge of managing the camera and lighting of a film.

ANSWER: **cinematographer** [accept word forms like **cinematography**]

[10] In this kind of shot, the camera is mounted on a dolly and follows an object in order to immerse the viewer in the action.

ANSWER: **tracking** shot [or **trucking** shot]

[10] A cinematographer with this surname is a frequent collaborator of filmmaker Claire Denis. At the end of a 1962 film by a man with this surname, the camera tracks Michel as he stumbles across the street after he is shot by police.

ANSWER: Godard [accept Agnès Godard or Jean-Luc Godard] <WG>

- 10. Answer some questions about nudge theory, which was described by its formulator Richard Thaler as "removing the obstacle" which prevents people from making otherwise beneficial choices. For 10 points each:
- [10] One of the practical applications of nudge theory involves requiring employers to automatically enroll workers in a savings plan for this action. One may receive a pension after taking this action.

ANSWER: <u>retire</u>ment [accept word forms such as <u>retiring</u>]

[10] Another example of nudge theory in daily life is in these locations, which often place highly demanded goods like dairy in a location which forces buyers to travel around the location, leading to impulsive purchases.

ANSWER: super<u>market</u>s [accept any answer mentioning <u>store</u>s]

[10] Nudge theory relies on the fact that human beings do not perfectly possess this quality. The theoretical *Homo economicus* [emphasize] *does* act in this way, since it will always choose the option which maximizes utility regardless of its emotional instincts.

ANSWER: **rational**ity <AG>

- 11. This woman developed the Coxcomb chart in order to prove many soldiers died of infections. For 10 points each:
- [10] Name this nurse, who was nicknamed "The Lady with the Lamp." Her practices greatly reduced the death rate of soldiers during the Crimean War.

ANSWER: Florence **Nightingale**

[10] Nightingale developed her nursing techniques during this period of British history named for a 19th century queen.

ANSWER: Victorian Era [or the reign of Queen Victoria]

[10] This man, who personally operated on Queen Victoria, pioneered antiseptic surgery by sterilizing his medical equipment before operations.

ANSWER: Joseph Lister <WG>

- 12. All procedures modeled with this concept can be theoretically modeled iteratively as well. For 10 points each:
- [10] This concept in programming involves a method calling itself until a base case is reached, at which point a value is repeatedly returned.

ANSWER: recursion

[10] This form of recursion involves the recursive return statement being placed at the end of the method, with no computations taking place after.

ANSWER: tail-recursion

[10] Iterated recurrences can be modelled on one of these constructs, which display the cost of work done at each point in the recursion. The binary variety of this construct has nodes that have a maximum of 2 children.

ANSWER: trees <DM>

- 13. Let's go canoeing! For 10 points each:
- [10] Canoes typically sit higher in the water than these similar, close-decked vessels. Originally used by Arctic peoples for hunting seals, these boats are now distinguished by their two-bladed paddles.

ANSWER: kavaks

[10] The earliest canoes were called dugouts, referring to their creation from these natural objects. Dugout canoes were constructed by hollowing out these objects before warping them into shape via heat or tension.

ANSWER: <u>log</u>s [or <u>tree trunk</u>s; accept <u>trees</u>; prompt on <u>wood</u> or other equivalents]

[10] Polynesian canoes typically featured one of these stabilizing attachments. These objects consist of a floating beam that lies parallel to the hull of the boat and is suspended off the side with multiple spars.

ANSWER: outriggers <JA>

- 14. Answer the following about Jewish customs on major holidays. For 10 points each:
- [10] The Kol Nidre prayer is sung during this Jewish Day of Atonement which occurs during the month of Tishrei.

ANSWER: Yom Kippur

[10] On Rosh Hashanah, many cast away sins by performing Tashlikh, which sometimes involves throwing bread into a body of water. Rosh Hashanah is the Jewish version of this day, which falls in the Gregorian calendar on January 1st.

ANSWER: <u>New Year</u> [accept obvious equivalents]

[10] During this holiday, Jews typically shake the lulav and etrog while reciting seven *hashanot*. This festival, followed by Simchat Torah, commemorates the Israelites' 40-year journey in the desert living in temporary huts.

ANSWER: Sukkot [or Feast of Booths or Feast of Tabernacles] <NS>

- 15. Answer the following about world leaders who really wanted people to read their books, for 10 points each:
- [10] The *Little Red Book*, a collection of quotations by this communist Chinese leader, was mandatory for all citizens to own during the Cultural Revolution.

ANSWER: Mao Zedong [or Chairman Mao; or Mao Tse-tung]

[10] Mao's *Little Red Book* inspired this dictator to outline his political philosophy in *The Green Book*, which was mandatory for students to read in Libya until his 2011 death.

ANSWER: Muammar Gaddafi [or Muammar al-Qaddafi]

[10] The insane dictator Saparmurat Niyazov, who ruled this Central Asian country for 15 years, claimed that reading his book the *Rukhnama* would get you into heaven.

ANSWER: Turkmenistan <WG>

- 16. Diacylglycerol ("di-AA-sil-GLIH-sir-all") is produced in a signaling cascade which increases intracellular concentrations of this element. For ten points each:
- [10] Name this element whose plus-two ions bind to EF hand motifs of proteins. This element's carbonate makes up the shells of many marine organisms.

ANSWER: calcium

[10] An increased amount of calcium ions unblocks actin active sites, allowing the formation of cross bridges between thin and thick filaments in this tissue. This tissue is split into skeletal, smooth, and cardiac types.

ANSWER: muscle

[10] Diacylglycerol works in conjunction with calcium to activate one of these enzymes. Enzymes in this general class add phosphate groups to other molecules from ATP.

ANSWER: kinase <AG>

- 17. Stalagmites rise from the floors of these places, and stalactites descend from the roofs. For 10 points each:
- [10] Name these underground locations which one can explore while spelunking.

ANSWER: caves [or caverns]

[10] A popular tourist attraction in this state is Carlsbad Caverns National Park. In 1947, a UFO allegedly crashed in this state's city of Roswell.

ANSWER: New Mexico

[10] Blanchard Springs Caverns is located in a national forest with this name. The city of Branson is a tourist hub in aregion with this name, which also contains a plateau that the Osage River drains into.

ANSWER: <u>Ozark</u> [accept <u>Ozark</u> National Forests; or <u>Ozark</u> Plateau; or <u>Ozark</u> Mountains] <WG>

- 18. One book set in this country describes the author's childhood on a coffee plantation in the Ngong Hills. For 10 points each:
- [10] Name this country, the setting of a memoir whose narrator falls in love with Denys Finch Hatton. Ngugi wa Thiong'o, an author from this country, wrote how he would abandon English in favor of the native Gikuyu language.

ANSWER: Kenya

[10] This Danish author wrote the aforementioned novel *Out of Africa*. She also wrote the short story "Babette's Feast."

ANSWER: Isak <u>Dinesen</u> [accept Karen von <u>Blixen</u>]

[10] The cook that titles "Babette's Feast" wins 10,000 francs in one of these games of chance. One of these events decides which resident of a town is stoned to death in a Shirley Jackson short story named for one of them.

ANSWER: a <u>lottery</u> [or <u>lotteries</u>; accept "The <u>Lottery</u>"] <NS>

- 19. Nelson Rockefeller commissioned a work of this type, but ultimately had it destroyed due to his unhappiness with a prominent portrait of Lenin at its left. For 10 points each:
- [10] Identify this general type of artwork. In that work, communism is represented by a headless statue and capitalism is represented by Zeus throwing a thunderbolt at the title *Man at the Crossroads*.

ANSWER: <u>mural</u> [prompt on <u>painting</u> but do NOT prompt on "fresco" or other answers]

[10] Man at the Crossroads is a work by this Mexican muralist who created a series of frescoes depicting Ford Motor Company in Detroit. He was the husband of Frida Kahlo.

ANSWER: Diego Rivera

[10] One of these figures stands elegantly dressed at the center of Rivera's mural *Dream of a Sunday Afternoon in Alameda Park*. Van Gogh also painted one of these figures holding a cigarette.

ANSWER: skeleton [prompt on corpses, bones, dead people or similar answers] <NS>

- 20. This fictional substance was created by Dr. Felix Hoenikker to help the military to cross swamps. For 10 points each:
- [10] Name this fictional substance, which Papa Monzano consumes to commit suicide. This substance melts at 114.4 degrees Fahrenheit, and acts as a seed crystal.

ANSWER: ice-nine

[10] Ice-nine appears in *Cat's Cradle*, a novel by this author. The science fiction writer Kilgore Trout appears in many of this author's books, such as *Breakfast of Champions*.

ANSWER: Kurt **Vonnegut** [or Kurt **Vonnegut**, Jr.]

[10] Kurt Vonnegut is most famous for writing this book, where Billy Pilgrim becomes "unstuck in time" and survives the firebombing of Dresden.

ANSWER: <u>Slaughterhouse-Five</u> [or <u>Slaughterhouse-Five</u>; or, The Children's Crusade: A Duty-Dance with Death] <GC>